

**CAREER ADAPTABILITY, SENSE OF COHERENCE AND CAREER SELF-EFFICACY OF  
STUDENTS AT A RESIDENTIAL UNIVERSITY**

by

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Exact wording of the title of the dissertation as appearing on the copies submitted for examination:

Career adaptability, sense of coherence and career self-efficacy of students at a residential university

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I declare that the above dissertation is my own work and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

KatyVa  
SIGNATURE

18 January 2019  
DATE

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## **SUMMARY**

### **CAREER ADAPTABILITY, SENSE OF COHERENCE AND CAREER SELF-EFFICACY OF STUDENTS AT A RESIDENTIAL UNIVERSITY**

**BY**

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The aim of the dissertation was to examine the relationship between career adaptability, sense of coherence (SOC) and career decision-making self-efficacy (CDMSE), and whether there were any demographic differences, namely age, gender and race, between the constructs.

The Career Adaptability Scale South Africa (CAAS-South Africa), Orientation to Life Questionnaire (OLQ-13), Career Decision Self-Efficacy Scale Short Form (CDSE-SF) and a demographical questionnaire were applied in a convenience sample comprising 317 undergraduate students at a residential university in South Africa.

The results indicated a moderate positive relationship between career adaptability, and SOC, and a strong positive relationship between career adaptability and CDMSE. CDMSE predicted career adaptability with a variance of 43%. SOC did not emerge as a significant predictor of career adaptability. No gender differences were found.

This study makes a valuable contribution to the existing literature and practice, showing that CDMSE and SOC can have an impact on the career adaptability of undergraduate students.

### **Keywords**

Career adaptability; career adapt-abilities; adaptability; sense of coherence; career self-efficacy; career decision-making self-efficacy; career decision self-efficacy; self-efficacy; residential university students; undergraduate university students; university students

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## **CHAPTER 1: SCIENTIFIC ORIENTATION TO THE STUDY**

This study explored the relationship between the career adaptability, sense of coherence and career decision-making self-efficacy of undergraduate students at a residential university in South Africa. This chapter provides the background to and motivation for the research, followed by the problem statement, aims and objectives. The paradigm perspective and the research methodology are discussed, as well as the procedures for executing the research. The chapter concludes with an outline of the chapters.

### **1.1 BACKGROUND TO THE RESEARCH**

Business in the 21<sup>st</sup> century is less stable (McComb & Viviers, 2012), highly competitive and demanding (Muller & Rothmann, 2009). In South Africa, the labour market is becoming increasingly unpredictable (Coetzee & Oosthuizen, 2012) and there is a severe crisis in youth unemployment (Ismail, Ferreira, & Coetzee, 2016). These rapidly changing work environments, work structures and the introduction of new technologies have resulted in the need for individuals to acquire new and multiple career skills (Ebenehi, Rashid, & Bakar, 2016). Careers have become more diverse, flexible, global, boundaryless and fragmented (Bocciardi, Caputo, Fregonese, Langher, & Sartori, 2017; Jiang, 2017). As a result, career trajectories are changing from linear to dynamic (Santilli, Marcionetti, Rochat, Rossier, & Nota, 2017). Individuals are no longer looking for lifetime employment; instead they seek experience, remuneration and change (Nel, Crafford, & Roodt, 2004; Spurk, Kauffeld, Meinecke, & Ebner, 2016). Many South Africans have faced and will continue to face challenging circumstances in their career development. These challenges include a lack of opportunity to explore and commit themselves to stable careers, unstable and unpredictable environmental factors, a lack of role models and support systems, unemployment and labour legislation (Watson, Brand, Stead, & Ellis, 2001).

Thousands of professionals are being lost each year in South Africa due to dissatisfaction with their working and living conditions (Crush & Pendleton, 2011; McComb & Viviers, 2012). There has been a decrease in confidence, and individuals have cited racial and gender discrimination as factors, as well as their expectations of bonuses, salary increases and business growth as reasons for leaving South Africa (Surge in business, 2017). This is creating a skills gap as the current youth of South Africa are not developing the necessary skills or experience required to function effectively in the working world (Ismail et al., 2016). There seems to be a problem in the retention and success of students in higher education (Coetzee & Oosthuizen, 2012). Graduates are increasingly being expected to have knowledge and skills in a wide variety of jobs (Coetzee, Ferreira, & Potgieter, 2015) and have a range of transferable skills and attributes (Ismail et al., 2016). However, according to Coetzee and Oosthuizen (2012), the number of employable students is affected by the dropout, success and throughput rates. Many students feel an increased level of stress in their first year at university as they are underprepared for the potentially high demands of higher education, they are in unfamiliar territory and may feel disconnected and that they lack the necessary resources and motivation. The dropout rate for first-year university students is as high as 40%, and only 15% of first-year students graduate (Mokgele & Rothmann, 2014). There are thus competencies necessary to assist these students to acquire skills and behaviours that will help them to cope and prepare for their careers while at university. One such competency may be the development of career adaptability.

Savickas (1997, p. 254) defined career adaptability as “the readiness to cope with the predictable tasks of being prepared for and participating in the work role and with the unpredictable adjustments prompted by changes in the work and working conditions”. Career adaptability can be seen as a psychosocial construct that represents individuals’ behaviours, attitudes and competencies for coping with changing and challenging work conditions and demands, as well as current and anticipated tasks, transitions and traumas in their occupational roles, which, to some degree, alter their social integration. Career adaptability is not a fixed dimension and can be acquired (Bocciardi et al., 2017; Coetzee & Roythorne-Jacobs, 2014; Savickas & Porfeli, 2012). According to Miles and Naidoo (2017), individuals’

cognitive processes regulate their choices, and they are thus active agents in their career development.

Career adaptability consists of four dimensions, known as adapt-abilities, that is, concern, control, curiosity and confidence. Concern and confidence are the strongest predictors of career success (Bocciardi et al., 2017; Savickas & Porfeli, 2012). Ferreira, Coetzee, and Masenge (2013) added commitment to the adapt-abilities to create five specific attitudes, beliefs and competencies in career adaptability, which forms the problem-solving strategies and coping behaviours individuals use to combine their vocational self-concept with work roles.

Career adaptability is a key determinant of significant career outcomes such as better school-to-work transition (Chong & Leong, 2017), academic satisfaction and career optimism (Paradnikė & Bandzevičienė, 2016). In the academic setting, it is possible that greater levels of career adaptability resources could lead to better adaptation and well-being (Paradnikė & Bandzevičienė, 2016). Thus, amidst increased environmental pressure, career adaptability is a vital factor to ensure student commitment and motivation.

It has been shown that positive psychological traits can predict career adaptability (Buyukgoze-Kavas, 2016). A vital positive psychological trait that aids in understanding how individuals cope with stress is sense of coherence (SOC). SOC was developed by Aaron Antonovsky (1993, p. 731) as a “global orientation to one’s inner and outer environments which is hypothesized to be a significant determinant of location and movement on the health ease/dis-ease continuum”. Antonovsky (1987) believed that SOC develops through childhood, adolescents and early adulthood and becomes relatively stable after the age of 30. However, SOC is not fixed in adulthood. Drastic or traumatic life events or even a job change can alter a person’s SOC (Albertsen, Nielsen, & Borg, 2001; Barnard, 2013). Diraz, Ortlepp, and Greyling (2003) postulated that SOC is influenced by how individuals cope with experiences in their environment. SOC is a basis for coping with stress where

positive coping behaviours are stimulated and provide motivation, but SOC is not a coping strategy (Antonovsky, 1993; Feldt, Leskinen, & Kinnunen, 2005; Johnston et al., 2013). According to Antonovsky (1987), SOC can be measured by three interrelated components, namely comprehensibility, manageability and meaningfulness.

Comprehensibility is the cognitive component of SOC and enables an individual to see his or her environment as structured and predictable (Barnard, 2013), understandable (Feldt et al., 2005) and consistent (Davidson, Feldman, & Margalit, 2012). Incoming stimuli are regarded as orderly and clear, and make cognitive sense (Coetzee & Oosthuizen, 2012). Comprehensibility is also the sense that things in life happen for a reason and there are explanations for whatever happens (Davidson et al., 2012). Manageability is the sense that one has all the resources at one's disposal to manage life demands (Barnard, 2013; Coetzee & Oosthuizen, 2012), there is a sense that things can be managed and there is flexibility in one's choice of strategies (Davidson et al., 2012). Meaningfulness is the emotional component of SOC. Stimuli are perceived to be motivationally relevant (Barnard, 2013), and challenges are regarded as worth engaging and investing effort in (Coetzee & Oosthuizen, 2012; McComb & Viviers, 2012). Antonovsky considered meaningfulness to be the most important component of SOC (McComb & Viviers, 2012).

Self-efficacy, as positive psychological trait, is the belief that one has the competence to complete unique tasks and cope with difficult, stressful or challenging circumstances. According to Betz and Hackett (2006), self-efficacy theory provides a way to understand and include multiple influences on career choices and is a key concept in understanding career development. It is a cognitive appraisal or judgement of future performance capabilities (Betz & Hackett, 2006) and influences an individual's decision to approach or avoid a task, his or her level of performance and persistence in completing the task (Betz, 2007). An umbrella term for self-efficacy beliefs with regard to possible career-related fields of behaviour is "career self-efficacy" (Betz & Hackett, 2006). Career decision-making self-efficacy (CDMSE)

is a measure of self-efficacy expectations with regard to the tasks required in career decision making and is strongly and negatively related to an individual's career indecision. Career indecision occurs when an individual lacks structure and confidence in his or her career decisions (Taylor & Betz, 1983). According to Watson et al. (2001), individuals with stable and multiple trait career patterns have significantly higher CDMSE than individuals with unstable and more conventional career patterns. De Bruin and Bernard-Phera (2002) suggested that the more positive an individual is about his or her ability to make successful career decisions, the greater the chance that he or she will display positive attitudes towards career decision making in general. There are four sources of information and processes that develop CDMSE. These are performance accomplishments (master of experience), vicarious learning (modelling), psychological and affective states (emotional arousal) and verbal persuasion (encouragement) (Betz & Klein, 1996).

Watson et al. (2001) found in their research that CDMSE is an effective predictor of career exploratory behaviour in university students and is useful for understanding the career behaviours of South Africa's multicultural population. University students' beliefs about their educational and occupational abilities have also been reported to be significantly related to the nature and variety of the career options they considered (Betz & Klein, 1996). There is strong support, through meta-analyses and reviews, for the role of career self-efficacy as a predictor of academic performance, persistence and career decision-making intentions and behaviours (Betz & Klein, 1996). Undergraduate students who were undecided about their careers have been shown to have lower levels of CDMSE and reported less confidence in their ability to complete tasks that would allow them to make career decisions (Fenning & May, 2013).

## **1.2 PROBLEM STATEMENT AND MOTIVATION FOR THE RESEARCH**

It is imperative that individuals search for new or alternative job opportunities in today's unpredictable and dynamic changing career context (Coetzee & Harry, 2015). According to Shin and Lee (2016), this could result in taking risks in unfamiliar

settings when exploring their career options and making career decisions. To facilitate adjustment and proactive career behaviour of career development, career adaptability has become a vital component (Coetzee & Harry, 2015). Career adaptability contributes to positive transitions and personal functioning in teenagers, young adults, adults and older workers (Buyukgoze-Kavas, 2016). The school-to-work transition phase is one of the most critical steps in a student's career. This transition phase can determine a student's vocational outcome and career success. To help achieve this, career adaptability needs to be developed (Ismail et al., 2016; Paradnikė & Bandzevičienė, 2016).

Practical experiences and fostering career adaptability during higher education are one way to help students develop their career adaptability (Paradnikė & Bandzevičienė, 2016). It has been found that the greater an individual's level of career adaptability, the better his or her adaptation and well-being will be in the academic setting (Paradnikė & Bandzevičienė, 2016). Decision-making, problem-solving and self-efficacy skills are strong predictors of career adaptability (Coetzee et al., 2015; Ebenehi et al., 2016).

Students' choice of academic activities and their future academic goals are affected by their level of self-efficacy. When individuals have high levels of self-efficacy they can imagine an increased number of potential careers, prepare themselves for those careers, and become increasingly successful in managing obstacles along the way (Fenning & May, 2013). Undergraduate students who are undecided about their careers show lower levels of CDMSE and report less confidence in their ability to complete tasks that would allow them to make career decisions (Fenning & May, 2013). CDMSE is a crucial factor in influencing the career development process of young adults (Fenning & May, 2013).

Research on career adaptability in the African context is sparse. Further research, especially in terms of how this construct relates to other psychosocial attributes, is needed (Coetzee & Harry, 2015). Much of the research on career adaptability and

self-efficacy has been related to self-efficacy sources such as job search self-efficacy (Guan et al., 2013). More recently, a study by Ebenehi et al. (2016) found career self-efficacy to be the most influential predictor of career adaptability among higher education students in Nigeria. There is, however, currently a paucity of research that investigates the relationship between career self-efficacy and career adaptability among higher education students in a South African context. Harry and Coetzee (2013) as well as Harry (2015) found a significant relationship between SOC and career adaptability. Again, these findings have not been corroborated by other studies and specifically with a sample of undergraduate students. The aim of the current research was therefore to investigate the relationship between SOC, CDMSE and career adaptability, and whether SOC and CDMSE can be used as predictors of the career adaptability of undergraduate students at a residential university.

Research on the antecedents of career adaptability will have important implications for how to improve students' readiness and resources for making career choices and transitions (Guan et al., 2013) while they are still at university. Being able to predict an individual's career adaptability in the university setting may provide new ways for universities to help students adapt to the new and challenging roles they face. This might be extremely helpful for university students from poorer backgrounds as they might not have had the career planning advantages students from more affluent backgrounds have had. According to Maree (2012), few disadvantaged students receive adequate career counselling, and intervention strategies at higher education institutions have largely failed. This research could be used to improve the career counselling strategies with regard to career adaptability, SOC and CDMSE.

When investigating different constructs, it is important to remember that there are vast demographic differences among South Africa's population, and these could have an impact on the relationship between the constructs. Socioeconomic status (Rollins & Valdez, 2006) and gender (Kelly, 1993) have been shown to influence self-efficacy (Rollins & Valdez, 2006). Antonovsky (1993) had hoped that SOC would cut across gender lines, social class, religion and culture, thus making it universally

meaningful. Indeed, SOC has been found to apply cross-culturally (Nosheen, Riaz, & Batool, 2014). However, there is still a need for studies that explore the relationship between SOC and sociodemographic variables (Barnard, 2013). Gender (Coetzee & Harry, 2015) and individual characteristics such as the following have influenced career adaptability: an individual's personality, emotional intelligence, sense of control, future work self, proactivity, core self-evaluations, hope and optimism, sense of hardy control, tolerance of unpredictability, need for following social norms and need for acceptance (Johnston, 2016); individual differences such as approach-avoidance traits and contextual factors such as an individuals' career and education (Guan et al., 2013); career-specific parental behaviours; social support; unemployment; and educational and training experiences (Johnston, 2016). For this reason, the difference between the SOC, CDMSE and career adaptability of various age, gender and race groups was also investigated in this study.

The research questions for this study were formulated as follows:

- Is there a relationship between the career adaptability, SOC and CDMSE of undergraduate students at a residential university?
- Do SOC and CDMSE predict the career adaptability of undergraduate students at a residential university?
- Do demographic variables, namely age, gender and race, have an influence on the career adaptability, SOC and CDMSE of undergraduate students at a residential university?

### **1.3 AIMS OR RESEARCH OBJECTIVES**

In relation to the above-mentioned background and problem statement, the following general and specific aims were formulated:

#### **1.3.1 General aim**

The primary aim of the research was to explore the relationship between the career

adaptability, SOC and CDMSE of undergraduate students at a residential university. The secondary aim of the research was to determine whether the career adaptability, SOC and CDMSE of undergraduate students at a residential university differ significantly based on age, gender and race.

### **1.3.2 Specific aims**

The specific literature aims were formulated as follows:

- to determine how career adaptability is conceptualised in the literature;
- to determine how SOC is conceptualised in the literature;
- to determine how CDMSE is conceptualised in the literature;
- to explore the theoretical relationships between career adaptability, SOC and CDMSE based on current literature and research that has been conducted to date on career adaptability, SOC and CDMSE; and
- to conceptualise how demographic factors such as age, gender and race influence career adaptability, SOC and CDMSE based on the literature.

The specific empirical aims were as follow:

- to ascertain the career adaptability, SOC and CDMSE of undergraduate students at a residential university;
- to ascertain the relationship between the career adaptability, SOC and CDMSE of undergraduate students at a residential university;
- to ascertain whether SOC and CDMSE are predictors of the career adaptability of undergraduate students at a residential university;
- to ascertain whether age, gender and race groups differ with regard to the career adaptability, SOC, and CDMSE of undergraduate students at a residential university;
- to formulate recommendations for South African universities with regard to career adaptability, SOC and CDMSE of undergraduate students at a residential university; and
- to highlight areas for future research in the field of industrial and organisational psychology with regard to the career adaptability, SOC and CDMSE of undergraduate students at a residential university.

The background and problem statement identified the following research hypotheses that were empirically tested in this research:

- H1: SOC and CDMSE have a statistically and practically significant positive relationship with the career adaptability of undergraduate students at a residential university.
- H2: SOC and CDMSE statistically significantly predict the career adaptability of undergraduate students at a residential university.
- H3: Undergraduate students at a residential university from different age, gender and race groups, differ significantly with regard to their career adaptability, SOC and CDMSE.

## **1.4 THE PARADIGM PERSPECTIVE**

### **1.4.1 Disciplinary perspective**

#### *1.4.1.1 Industrial and organisational psychology*

Schreuder and Coetzee (2010, p. 2) defined industrial and organisational psychology as “the scientific study of people within their work environment, which includes the application of psychological principles, theory and research to the work setting”. Industrial psychology was originally known as personnel psychology and is the study of how individuals behave in the work setting (Schreuder & Coetzee, 2010), as well as in a wider diversity of settings outside the traditional work arena (Landy & Conte, 2016). The two objectives of industrial and organisational psychology are to conduct research in an effort to increase the knowledge and understanding of human work behaviour and to apply knowledge to improve work behaviour, the work environment and workers’ psychological conditions (Schreuder & Coetzee, 2010).

#### *1.4.1.2 Career psychology*

In the 1970s, career psychology was legitimised as a field within organisational studies (Schreuder & Coetzee, 2012). It is concerned with the interplay between individuals and environments and attempts to describe the nature of the patterns of

positions held and resultant experiences during an individual's lifespan. Career psychology focuses on providing models and explanations for organisational career-related activities. Such activities include an individual's interests, career options, motives and values, how individual, social, chance and environmental factors shape educational and training experiences, employee employability, career embeddedness and mobility, experiences of career well-being, job and career satisfaction, as well as career movements after organisational entry (Schreuder & Coetzee, 2010).

## **1.4.2 Theoretical paradigm**

### *1.4.2.1 The Salutogenic paradigm*

According to Antonovsky (1987), salutogenic orientation focuses on the origins of health. Salutogenesis is derived from the words *genesis* (origins) and *saluto* (health) (Vinje, Langeland, & Bull, 2017). It is an analytical approach (Mittelmark, Bull, & Bouwman, 2017), and focuses on health promotion as opposed to disease induction factors (Feldt et al., 2005). The basic philosophical assumption of the salutogenic paradigm is that instead of perceiving the human system as one that is sound unless it is attacked by some pathogen, the human system is viewed as basically unsound, continuously attacked by distributing processes and elements that could be prevented (Joseph & Sagy, 2017). Individuals are deemed to be located on a multidimensional health ease/disease continuum (Antonovsky, 1987). In such an approach, no one is categorised as healthy or diseased. All people are somewhere in between the imaginary poles of total wellness and total illness (Joseph & Sagy, 2017). Antonovsky (1987) suggested that by thinking salutogenically, individuals are compelled to devote energies to the formulation and advancement of a theory of coping.

Antonovsky (1993) developed salutogenesis as a theoretical model designed to advance the understanding of the relationships between stressors, coping and health. Stressors are seen as ever-present and the consequences of stressors are not viewed as necessarily pathological, but rather salutary, and dependent upon the

character of the stressor and the successful resolution of the tension (Antonovsky, 1987). The salutogenic paradigm has become crucial to understanding well-being, coping and resilience in other domains including school and work. According to Antonovsky (1993), SOC is at the core of the salutogenic paradigm.

#### *1.4.2.2 The functionalist paradigm*

Functionalism believes mental processes have purpose, and the focus is on how the mind adapts those purposes to changing environments (Comer, Gould, & Furnham, 2013) and how individuals adapt to their situation (Savickas, 1997). Stedman, Spalding, and Gagné (2016) stated that the functionalist paradigm believes outputs are related to all mental states. The following two basic questions are posed: “What do people do?” and “Why do they do it?” Questions are answered on the basis of empirical research about important variables in the adaptive process. According to Savickas (1997), the emphasis is on interrelated variables as opposed to constructing logical, deductive, superordinate superstructures. The functionalist paradigm was applicable to this study because the environment is changing and the way in which individuals deal with the changes is of interest. Since the focus of this study was on the individual’s ability to cope and adapt, the functionalist paradigm was deemed suitable.

#### **1.4.3 Empirical paradigm**

The research paradigm utilised in this study was positivism. Positivist research depends on quantifiable observation, which leads to statistical analysis. It adopts the ontological view that the world comprises discrete, observable elements and events that interact in an observable, determined and regular manner. Research is empirically observed and is aimed at explaining and predicting the construct. The researcher is independent from the study (Dudovsky, 2016).

### **1.5 LITERATURE REVIEW**

The literature review focused on prior research pertaining to career adaptability, SOC and CDMSE, whether or not there is a relationship between career adaptability, SOC, CDMSE, and whether SOC and CDMSE predict career adaptability. The

literature also focused on demographic variables, namely age, gender and race, and their influence on career adaptability, SOC and CDMSE.

Relevant articles published between 1983 and 2017 were identified using article databases such as the Unisa online library, EBSCOHost, Sabinet and SAGE journals. The following were used as search terms: sense of coherence; self-efficacy; career self-efficacy; career decision making self-efficacy; career adaptability; adapt; adaptability; university students; students at higher education institutions; students at a residential university.

The following seminal authors and their publications on the topic were consulted:

- *Aaron Antonovsky* and his publication *Unraveling the mystery of health how people manage and stay well* (1987) was consulted for the construct SOC.
- *Mark Savickas* and his publications *Career adaptability an integrative construct for life-span, life-space theory* (1997) and *The theory and practice of career construction* (2005) were consulted for the construct career adaptability.
- *Albert Bandura* and his publications *Self-efficacy toward a unifying theory of behavioural change* (1977), *Self-efficacy mechanism in human agency* (1982) and *Self-efficacy the exercise of control* (1997) were consulted for the construct self-efficacy.
- *Nancy Betz* and her publication *Career self-efficacy exemplary recent research and emerging directions* (2007) was consulted for the construct career self-efficacy.
- *Nancy Betz* and *Gail Hackett* and their publications *The relationship of career-related self-efficacy expectations to perceived career options in college women and men* (1981) and *Career self-efficacy theory back to the future* (2006) were consulted for the construct career self-efficacy.

The following journals were studied because of their relevance to the topic under investigation:

- British Journal of Guidance and Counselling
- Educational Psychologist
- European Journal of Training and Development
- Exploring New Horizons in Career Counselling
- Gifted Child Quarterly
- International Journal for research in Vocational Education and Training
- International Journal of Psychology: Biosychosocial Approach
- Journal of Black Psychology
- Journal of Career Assessment
- Journal of Career Development
- Journal of Psychology in Africa
- Journal of Vocational Behaviour
- Psychological reports
- Social Psychology of Education
- South African Journal of Human Resource Management
- South African Journal of Industrial Psychology
- South African Journal of Labour Relations
- South African Journal of Psychology
- The Career Development Quarterly
- The Journal of Psychology
- Work and Stress

Cross-referencing was done when identifying another important source of information while studying a specific article mentioning a reliable source.

## **1.6 RESEARCH APPROACH**

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

### **1.6.1 Phase 1: Literature review**

The literature review consisted of a review of career adaptability, SOC and CDMSE. These constructs were reviewed in the steps outlined below.

#### **Step 1: Conceptualise career adaptability**

The current literature on career adaptability was critically evaluated. The evaluation included an overview of the origins of career adaptability in current literature, the definition of career adaptability, the dimensions of career adaptability, the outcomes of career adaptability and previous research on career adaptability.

#### **Step 2: Conceptualise sense of coherence (SOC)**

The current literature on SOC was critically evaluated. The evaluation included a discussion on the history and development of SOC, definition and dimensions of SOC, outcomes of sense of coherence and previous research on SOC was evaluated and discussed.

#### **Step 3: Conceptualise career decision-making self-efficacy**

The current literature on CDMSE was critically evaluated. The evaluation included an overview of CDMSE, the definitions of CDMSE, and the dimensions of CDMSE. The

outcomes of CDMSE were discussed, and finally, previous research on CDMSE was evaluated and explained.

### **1.6.2 Phase 2: Empirical study**

The research encompassed a quantitative survey design comprising the steps outlined below.

#### Step 1: Determination and description of the sample

The population of the study was registered undergraduate students at a residential university. Availability sampling was used to compile the sample. Detailed information on this step is reported in Chapter 5.

#### Step 2: Choosing and motivating the psychometric battery

The psychometric instruments were chosen because they are each the most widely used scales and questionnaires for each of the relevant constructs included in the research. The scales have been shown to be valid and reliable in the South African context. Detailed information on these instruments is provided in Chapter 5.

#### Step3: Administration of the psychometric battery

The survey was e-mailed to the sample to complete. The processes used to collect data are explained in this step, and detailed information provided in Chapter 5.

#### Step 4: Scoring of the psychometric battery

The data was captured and analysed using SPSS. This step involved explaining how data was captured and analysed. Detailed information on the data capturing and analysis is provided in Chapter 5.

#### Step 5: Formulating the research hypothesis

This step involved a discussion of the research hypothesis for achieving the objectives. Detailed information on formulating the hypothesis is provided in Chapter 5.

#### Step 6: Statistical processing of data

SPSS was used to analyse the data. The statistical procedures applied are discussed in Chapter 5.

#### Step 7: Reporting and interpreting the results

The results were reported and interpreted through the use of descriptive and inferential statistics. The reporting and interpretation of the results are discussed in more detail in Chapter 6.

#### Step 8: Integration of research results

This step integrates the findings pertaining to the literature review with the results from the empirical research in order to present the overall findings of the research. The overall findings are reported in detail in Chapter 6.

#### Step 9: Formulation of conclusions, limitations, and recommendations

This step discusses the conclusion of the research based on the results of integration with the necessary literature presented and the results of the empirical study. The limitations of the research are highlighted and recommendations made on the career adaptability, SOC and CDMSE of undergraduate university students at residential universities in South Africa. The conclusions, limitations and recommendations are discussed in detail in Chapter 7.

## **1.7 CHAPTER LAYOUT**

The chapter layout in this dissertation is as follows:

Chapter 1. Introduction

Chapter 2. Career adaptability

Chapter 3. Sense of coherence

Chapter 4. Career decision-making self-efficacy

Chapter 5. Research methodology

Chapter 6. Results/findings

Chapter 7. Conclusions, limitations and recommendations

## **CHAPTER 2: CAREER ADAPTABILITY**

This chapter provides an overview of the origin of career adaptability. The construct is defined and the four dimensions of career adaptability explained. The outcomes of career adaptability are then discussed, and finally, previous research on career adaptability is reviewed.

### **2.1 THE ORIGIN OF CAREER ADAPTABILITY**

According to Shin and Lee (2016), the working world and job market as we know them are continuously changing. Changes to the working world include changes in work demands, increased diversity, dispersed workplaces, different work environments (Bocciardi et al., 2017), and economic, social and technological changes (Johnston, 2016). Economic conditions have become turbulent, and this has created significant work disruptions, including high unemployment, underemployment and greater job insecurity (Chong & Leong, 2017). Obtaining a university degree no longer guarantees employment (Shin & Lee, 2016). Hence, according to Coetzee and Harry (2015), the concept of a career in the 21<sup>st</sup> century is changing. A career in this century is characterised by uncertainty and frequent transitions (Coetzee & Harry, 2015) and a decrease in stability and security. Individuals are experiencing frequent career changes and are no longer staying with the same employer (Tladinyane & Van der Merwe, 2016). Career paths and patterns have become unpredictable owing to globalisation and workers moving across boundaries, organisations and enterprises (Coetzee et al., 2015). Career patterns are also becoming more diverse, boundaryless, non-linear, fragmented and global (Jiang, 2017), and an employee's ability to adapt to new work demands, diverse groups and different environments is becoming increasingly essential (Tladinyane & Van der Merwe, 2016).

Individuals have to develop professional skills that differ considerably from the knowledge and skills required in the 20<sup>th</sup> century. This includes the updating of knowledge, which is necessary for the use of increasingly sophisticated technology

(Santilli et al., 2017), as well as being more flexible with their career skills (Shin & Lee, 2016). For individuals to successfully develop their careers, they are required to develop the ability to adapt and navigate self-development in work and occupational contexts (Jiang, 2017). Promoting adaptability in career issues is thus crucial (Shin & Lee, 2016). The ability to adapt to the unpredictability and discontinuity of the labour market is the most significant and worthwhile ability for young people to develop in today's world (Savickas et al., 2009, as cited in Ginevra, Pallini, Vecchio, Nota, & Soresi, 2016). Individuals need a set of adaptive career behaviours in directing their own career development throughout their lives. In order to cope with the environmental changes and manage life transitions, individuals need psychological, social and identity resources (Paradnikė & Bandzevičienė, 2016). This has resulted in new constructs emerging, one of which is career adaptability (Paradnikė & Bandzevičienė, 2016).

Career adaptability reflects a process through which people build their professional lives in a dynamic manner, and at the same time demonstrate the ability to handle changes proactively and effectively with regard to the particular sociocultural and socioeconomic contexts in which they live (Tladinyane & Van der Merwe, 2016). In the 21<sup>st</sup> century, career adaptability may be more relevant than ever before (Glavin, 2015), and provides an appropriate scientific base to investigate and develop an individual's capability to adapt to changing career-related circumstances (Bocciardi et al., 2017). Career adaptability is a competence that can be acquired (Bocciardi et al., 2017) and is regarded as a malleable competency that can be developed instead of being a fixed inherent trait (Chong & Leong, 2017). Career adaptability responses are more behavioural in nature, and it is plausible that these are displayed as needed. It has been suggested that career adaptability changes over time, and, according to Johnston (2016), it is possible that a positive contribution may be boosted or diminished over time.

Career adaptability as a psychosocial resource and competency individuals use to navigate career-related transitions and changes, has gained prominence in the study of 21<sup>st</sup>-century careers (Coetzee & Harry, 2015) and has become a critical skill

(Coetzee & Roythorne-Jacobs, 2014; Duffy, 2010; Glavin, 2015; Tladinyane & Van der Merwe, 2016).

Initially, career adaptability was introduced as a theoretical construct to hypothesise how adults deal with or adjust to the challenges of a changing world of work (Buyukgoze-Kavas, 2016). According to Spurk et al. (2016), different structural conceptualisations and operationalisations of career adaptability have been developed and implemented in the past few years.

### **2.1.1 Life-span, life-space theory**

The career adaptability construct evolved from related theoretical constructs, namely adjustment and maturity (McIlveen & Midgley, 2015), and was first introduced by Super and Knasel (1981) as a psychosocial resource (Jiang, 2017). The life-span, life-space theory was created by Super and highlighted the connection between planful exploration and the positive implementation of the self-concept (Rottinghaus, Day, & Borgen, 2005). This theory describes how an individual's self-concept develops over time and across four different career stages, where each stage is categorised by a special set of concerns (Ismail, 2015). In Super's life-span, life-space theory, the individual's development, self and context are taken into consideration (Ismail, 2015). Career maturity has been conceptualised as the readiness of adolescents to make vocational and educational choices and relates to a number of strengths and attitudes. These strengths and attitudes include autonomy, a sense of personal control, a realistic comparison of strengths and weaknesses, high self-esteem, sound decision-making skills and a time perspective linking the past and future (Rottinghaus et al., 2005).

According to Rottinghaus et al. (2005), there are many shortcomings to the theory of career maturity. Maturation has been identified as the central process in adolescent career development, while being less useful for comprehending career development in adults (Savickas, 1997). Career maturity emphasises the tasks central to the exploration stage of adolescents, and the fund of information about careers and

rational decision making, but has limited utility in explaining the career development process across the entire life-span in a post-industrial economy (Rottinghaus et al., 2005). The term “maturity” creates an unnecessary assumption of maturation and growth. By eliminating maturity, Super and Knasel (1981) created “career adaptability” as the more appropriate term. According to Super and Knasel (1981), career adaptability encompasses the perspective of being forward looking and more positive.

The change from career maturity to career adaptability simplifies the life-span, life-space theory by using a single construct to explain development in children, adolescents and adults. The integrated life-span, life-space and self-concept segments focus each on the individual’s adaptation to the environmental context and emphasise a single source of motivation (Savickas, 1997). Savickas (1997) explained that adaptability indicated a significant skill in an individual’s ability to perform the career decision-making process and function in the working world (Ismail, 2015).

### **2.1.2 Career construction theory**

Career construction theory, which was developed by Savickas, is a career theory that seeks to explain occupational choice and work adjustment (Ismail, 2015). It is closely associated with the vocational psychology model of vocational development (Coetzee & Harry, 2015). The theory suggested that the criterion for career development and adjustment for employees is to continually adapt to their social environment in order to accomplish person-environment fit, as well as subjective and objective career success (Bocciardi et al., 2017; Ismail, 2015). Career construction theory deals with the ability of individuals to successfully negotiate career transitions between occupational positions (Ismail, 2015). The theory addresses the processes and outcomes of an individual’s attempts to meet his or her own and others’ expectations regarding successful working lives and careers. This includes the tasks of preparing for and actively facing new demands, transitions and disturbances (Bocciardi et al., 2017).

Career construction theory postulates that career adaptability represents individuals' readiness and resources for coping with career demands and stresses and is a key psychosocial capacity that helps them construct their vocational development (Chong & Leong, 2017). Career adaptability is seen as more unstable relative to personality traits, but more related to psychological capital. Jiang (2017) postulated that this helps form strategies for directing career behaviours, and represents the individual as his or her own personal agent. Career adaptability as a key component of career construction theory focuses on the propensity to foresee and adapt to career changes and role transitions over a given lifespan (Cook & Maree, 2016).

According to Cook and Maree (2016), in career construction theory, the transition through various life roles is seen as a dynamic, fluid process of meaning making, rather than a linear, fixed process of information gathering. Career development is deemed to be driven by adaptation to a series of transactions: school-to-work, job-to-job and occupation-to-occupation. The goal is to achieve person-environment integration (Guan et al., 2013).

According to career construction theory (Savickas, 2005), a higher level of adaptation (outcome) is expected for those who are both willing (adaptive) and able (adaptability) to perform behaviours that address changing conditions. Individuals with higher levels of career adaptability are likely to strengthen the positive effects of proactive career motivation on career-related outcomes (Guan et al., 2013). The theory also postulates that individuals who are highly conscientious, and enjoy engaging in work and pursuing goals, are more likely to develop greater career adaptability and be more successful in managing their careers (Chong & Leong, 2017).

According to the theory, career adaptability resources are necessary for individuals to fit themselves successfully to occupations, work and life situations that suit them. It is possible that greater levels of career adaptability resources could lead to a better adaptation and well-being in the academic setting (Paradnikė & Bandzevičienė,

2016). Adaptability resources help to inform the strategies that individuals use to direct their adaptive behaviours (Tladinyane & Van der Merwe, 2016). Johnston (2016) suggested that most career adaptability research has been positioned within career construction theory.

### **2.1.3 Life design paradigm**

Career adaptability is also part of the life design paradigm. This paradigm is an expansion of the 20<sup>th</sup>-century person-environment fit and development models. The paradigm was developed to help individuals better interpret the complexities of work and careers and the constraints brought about by economic conditions, globalisation and the digital revolution in today's work environment (Santilli et al., 2017). Santilli et al. (2017) stressed that, in order for individuals to cope with the challenges of today's society, they need to realise that career adaptability, hope and optimism play a critical role.

The life design paradigm focuses on adaptation, regulation and self-identity processes that allow individuals to self-manage and self-construct their life and career and make sense of their personal pathways. There is an emphasis on the need to support individuals to become experts in constructing their lives and careers, to deal with transitions, and to create hope and optimism for a meaningful future and life satisfaction (Santilli et al., 2017).

In the life design paradigm, it is suggested that preventive career interventions with children and adolescents are invaluable in preparing these young people for their future transitions – including the school-to-work transition – increasing their choice opportunities, detecting at-risk situations and decreasing social inequities (Santilli et al., 2017).

#### **2.1.4 Protean career theory**

In protean career theory, career adaptability is described as a meta-competency that is responsible for adaptable behaviour across career-related work and non-work domains (Spurk et al., 2016). A meta-competency is a capacity facilitating the acquisition of more specific competencies. As a meta-competency, career adaptability is able to predict the relevant advancement of career development as well as professional effectiveness.

At the core, all conceptualisations of career adaptability deal with adjustments to changes in the individual's career and work (Spurk et al., 2016). The construct has been expanded to refer to readiness to deal with changes and transitions across the life-span (Buyukgoze-Kavas, 2016) and is seen as a vital construct throughout the individual's life for sustaining employability (Coetzee et al., 2015).

The construct of career adaptability coincided with increased interest in adult development as well as more rapidly changing technology and economy. Career adaptability can help to highlight the problems of life-cycle transitions, beginning with the school-to-work transition. According to Savickas (1997), this is a transition that seems more like an adaptive challenge than a maturational task. Career adaptability has been shown to be essential for students struggling in the academic setting and preparing to transition into the labour market (Paradnikė & Bandzevičienė, 2016).

University students find themselves in the transition from school to work for long-term career success, and the importance of career adaptability cannot be overlooked (Paradnikė & Bandzevičienė, 2016). According to Guan et al. (2013), career adaptability is more changeable and proximal to the individual's self-regulation process in the career transition. The university years are and have always been characterised as the time when students make crucial decisions about their future employment. After graduation, these emerging adults face many career transitions for which they need varying degrees of coping skills and adaptability. Studies have

suggested that individuals with higher levels of career adaptability are more successful in mastering vocational transitions (Buyukgoze-Kavas, 2016).

Tladinyane and Van der Merwe (2016) postulated that as a personal resource, career adaptability relates specifically to the ability of individuals to manage their own careers, make career decisions and have the confidence to adapt to changing work environments. Career adaptability ensures organisational success because it is a vital factor to ensure commitment and motivation of the individual in the midst of increased environmental pressure (Tladinyane & Van der Merwe, 2016). By analysing the individual's career adaptability, guidance counsellors and practitioners can screen the presence of adaptability resources. These indicate useful strengths that individuals can capitalise on as they develop their careers. The absence of a resource will either be evident in the results of a career adaptability assessment or will be suggested by the presence of a particular career problem (Johnston, 2016).

## **2.2 DEFINITION OF CAREER ADAPTABILITY**

Super and Knasel (1981) were the first to define the term "career adaptability". It was an alternative to vocational maturity and was recommended for use in future research into the career attitudes and competencies of adult workers. The term changed from "maturation" to "adaptability" in order to cast the individual as a responsible agent within a dynamic environmental setting (Super & Knasel, 1981). Career adaptability was mainly relevant for adolescents as opposed to adults in that adolescents foresaw their possible future work selves and imagined themselves in a work role. Super and Knasel (1981, p. 195) defined career adaptability as an adult's "readiness to cope with changing work and working conditions".

Savickas (1997) extended the definition of career adaptability to include not only the readiness to cope with the changing work and working conditions, but also with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions. Savickas later evolved his definition of career adaptability as part of his career

construction theory 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” (Johnston, 2016, p. 2).

Career adaptability has subsequently been defined as the set of attitudes, behaviours and competencies that individuals use in coping with changing work conditions and demands. According to Savickas and Porfeli (2012), career adaptability comprises the following four dimensions: concern (planning, being planful), control (decision making, being decisive), curiosity (exploring, being inquisitive) and confidence (problem solving, being efficacious). However, some authors, such as Bimrose and Brown (2015) and Ferreira et al. (2013) have added a fifth dimension, namely commitment. These dimensions have been said to shape the actual problem-solving strategies and coping behaviour that individuals use to fuse their vocational self-concepts with work roles (Ferreira et al., 2013). As a focal variable in vocational psychology, career adaptability is defined as a combination of attitudes, competencies and behaviours that individuals use in fitting themselves to work that suits them (Jiang, 2017).

Taking into account the previous definitions and descriptions of career adaptability, career adaptability can be said to be a psychosocial construct unique to each individual as it denotes individuals’ resources for coping and dealing with change, as well as their resources that alter their social integration with current and anticipated tasks, transitions, traumas and adjustments in their occupational roles (Chong & Leong, 2017; Coetzee et al., 2015; Coetzee & Roythorne-Jacobs, 2014; Savickas & Porfeli, 2012), job crisis or career transitions (Coetzee & Roythorne-Jacobs, 2014), professional duties, events and situations individuals find themselves having to deal with (Tladinyane & Van der Merwe, 2016). Career adaptability denotes an individual’s readiness and resources for coping with repeated vocational choices, occupational transitions and work challenges (Glavin, 2015) and is crucial for vocational development (Celen-Demirtas, Konstam, & Tomek, 2015). According to Ginevra et al. (2016), career adaptability is the process by which people actively

construct their life careers through coping with continuously changing situations which they experience in their social contexts. Career adaptability refers to the self-regulatory strategies which individuals, using the developmental dimensions of self and environmental exploration, career planning and decision making, examine the opportunities available and make viable choices (Harry, 2015).

The definition of career adaptability has been integrated into an international multi-country investigation of career adaptability that has adopted a psycho-social perspective, where the importance of context is emphasised by considering the impact of change on social integration (Bimrose & Brown, 2015).

### **2.3 DIMENSIONS OF CAREER ADAPTABILITY**

Savickas (1997) conceptualised career adaptability as a higher-order, hierarchical construct with numerous dimensions at the first-order level. These dimensions reflect an integrated measure of an individual's overall career adaptability. Savickas and Porfeli (2012, p. 663) regarded the adaptability resources as human capital and defined them as "accumulated competencies and knowledge gained through education and experience". Human capital refers to what a person knows.

According to Dix and Savickas (2013), there are two dimensions to career adaptability. The first dimension is characterised by the correlation between an individual's level of development and his or her chronological age. It is measured by comparing the developmental tasks an individual is facing to the tasks he or she is expected to be dealing with based on his or her chronological age. The second dimension is characterised by the behaviours that are instrumental in adequately responding to developmental tasks. To measure this dimension, an individual's methods for coping with a task are compared to the typical behaviours of a group coping with that same task. The first dimension concentrates on developmental tasks, while the second focuses on coping responses (Dix & Savickas, 2013; Ismail, 2015).

The dimensions of career adaptability are also known as “adapt-abilities”, “the four Cs of career adaptability” (Ebenehi et al., 2016) or “adaptability resources” (Bimrose & Brown, 2015). The dimensions of career adaptability signify general adaptive resources and strategies needed by an individual at different career transitions, including those beginning in adolescence, as well as in general daily life (Ismail et al., 2016). The dimensions can jointly function to assist in managing work-related tasks and unexpected changes throughout individuals’ career development journey (Jiang, 2017), and enable them to adjust their behaviour to the changing needs and demands of the environment (Tladinyane & Van der Merwe, 2016). They determine an individual’s adaptive strategies and actions and inform him or her about the management of any career transitions (Celen-Demirtas et al., 2015). Savickas and Porfeli (2012) suggested that career adaptability dimensions develop through the interaction between the individual’s inner and outer worlds, and relate strongly to specific roles and contextual possibilities. The dimensions of career adaptability are self-regulatory, psychosocial competencies that condition the adapting strategies and behaviours while achieving adapting goals (Paradnikė & Bandzevičienė, 2016). The self-regulatory strengths or capacities underpinning individuals’ career adaptability are deemed to prepare them to cope with current and anticipated occupational changes, transitions and adjustments due to unpredictable changes in the work and working conditions (Coetzee et al., 2015; Johnston, 2016).

Individuals can draw upon their career adaptability resources to solve unfamiliar, complex and ill-defined problems presented by developmental vocational tasks, occupational transitions and work traumas. According to Chong and Leong (2017), individuals engage in a sense-making procedure whereby they evaluate their interests, skills and the career opportunities their environments have to offer. These resources do not lie within the core of the individual, but rather reside at the person-environment intersection (Savickas & Porfeli, 2012). The interaction between individuals and their environments can either enhance or suppress the process of successful adaptation (Bocciardi et al., 2017). Chong and Leong (2017) asserted that for individuals to have high career adaptability they are required to be highly engaged and actively involved in continuously evaluating and assessing their self and the environment.

The four dimensions of career adaptability, namely concern, control, curiosity and confidence are discussed below. As mentioned previously, commitment was identified as a fifth resource (Bimrose & Brown, 2015; Ferreira et al., 2013), but it is not discussed here since it was not deemed part of the measurement of career adaptability in this study. According to Guan et al. (2013), these four dimensions of career adaptability not only share commonalities with one another, but can also play different roles in predicting different types of career-related outcomes across various contexts.

### **2.3.1 Concern**

Savickas and Porfeli (2012) stated that concern is the extent to which an individual explores circumstances and seeks information about opportunities. Concern about the future helps individuals look ahead and prepare for what might come next (Savickas & Porfeli, 2012). It is the extent to which individuals are future oriented and prepare for upcoming tasks or challenges (Bocciardi et al., 2017). Concern therefore refers to developing a positive and optimistic attitude to the future (Bimrose & Brown, 2015). A concerned individual is mindful of his or her career development and objectives (Chong & Leong, 2017) because concern involves awareness and preparation to respond to the demands of the future work environment. Concern is a realisation on the part of individuals that it is important to think about their own future (Ginevra et al., 2016). According to Coetzee et al. (2015), individuals concerned about their future are aware, involved and preparatory.

Career concern is the capacity to be aware of and positively oriented to and plan for a vocational future (Coetzee & Harry, 2015). Career concern, with the associated attitude of and competence in planning, fosters coping behaviours of awareness and preparation, assisting individuals to respond to the demands of the work environment (Santilli et al., 2017). According to Coetzee et al. (2015), it involves future orientation, feeling optimistic about it and demonstrating a planful attitude about the future. Individuals who do not develop career concern may experience indecision and fail to make appropriate plans to attend to future educational and occupational decisions (Glavin, 2015).

### **2.3.2 Control**

Control is the extent of self-discipline as shown by being conscientious and responsible in making decisions. It enables individuals to take personal responsibility and become responsible for influencing or shaping themselves, their development and their environments to meet what comes next by using self-discipline, effort and persistence (Bocciardi et al., 2017; Savickas & Porfeli, 2012). Control emphasises the need for individuals to exercise a degree of influence over their situations (Bimrose & Brown, 2015). It is the tendency to think of the future as manageable. Ginevra et al. (2016) suggested that control implies the use of self-regulation strategies to adjust to the needs of different settings and exert influence on the context. Control promotes personal responsibility for one's career and work experiences. A decisive attitude, engaging in decision making and behaving assertively, may assist individuals to create the desired work experience (Santilli et al., 2017).

Individuals who exert control, stay motivated and disciplined to achieve their career goals (Chong & Leong, 2017). Career control involves a sense of self-direction and self-regulation on the part of an individual, prompted by taking responsibility for his or her future and the career decision-making tasks involved (Coetzee et al., 2015). Coetzee and Harry (2015) opined that career control is the capacity to take personal responsibility for career and work experiences, and having feelings of self-governance, persistence and decisiveness concerning a vocational future.

According to Guan et al. (2013), individuals with a higher level of career control, who appear more conscientious and deliberate in making significant career decisions and transitions, have been found to be more likely to obtain employment, and their job was more likely to fit their values, needs and abilities. Control has been reported to be positively associated with life satisfaction and positive affect (Johnston, 2016). Demonstrating personal control over their career enables an individual to embrace uncertainty and concomitant anxieties better (Coetzee et al., 2015).

Individuals who do not develop career control may lack conscientiousness and effort in decision making (Glavin, 2015). Problems in career control can manifest in career indecision and a struggle with uncertainty in today's work environment (Coetzee et al., 2015).

### **2.3.3 Curiosity**

Savickas and Porfeli (2012) postulated that curiosity is the degree to which an individual explores circumstances and seeks information about opportunities. It relates to the exploration of possible selves and social opportunities (Ginevra et al., 2016). When curiosity prompts individuals to think about themselves in various situations and roles, they explore possible selves and alternative scenarios that they might shape (Savickas & Porfeli, 2012). According to Bimrose and Brown (2015), the value in broadening horizons through the exploration of social opportunities and possibilities is emphasised. Curiosity involves individuals exploring possible future selves and opportunities, and thinking about how they might influence different work roles and environments (Bocciardi et al., 2017). Curiosity refers to an openness to options and information (Chong & Leong, 2017). Tladinyane and Van der Merwe (2016), suggested that curiosity encourages individuals to explore alternative selves and environments and to view themselves in different roles. An individual's curiosity about possible selves increases his or her active exploration behaviours (Tladinyane & Van der Merwe, 2016).

Career curiosity is a tendency to explore one's environment and, through information seeking and risk taking, gain new knowledge and competencies (Coetzee & Harry, 2015). Career curiosity is the open-mindedness in accessing career-related information, and the positive effect should be more prominent in predicting the individual's career exploration behaviour (Guan et al., 2013). Santilli et al. (2017) contended that through exploration and risk taking, career curiosity facilitates a good fit between the self and the world of work and suggests that individuals gain new knowledge and competencies.

Glavin (2015) claimed that individuals who do not develop career curiosity may develop a closed attitude towards new experiences and make career decisions based on limited information.

### **2.3.4 Confidence**

Confidence is the extent of certainty that one has the ability to face and solve vocational and career problems and do what needs to be done to overcome obstacles (Savickas & Porfeli, 2012; Tladinyane & Van der Merwe, 2016). Having confidence is to believe in oneself and one's ability to achieve what is necessary to achieve career goals (Bimrose & Brown, 2015). It is also the individual's belief in his or her ability to realise career aspirations (Chong & Leong, 2017). Confidence is the individual's belief that he or she can turn his or her career goals into reality, successfully solve problems and overcome obstacles (Bocciardi et al., 2017). According to Ginevra et al. (2016), confidence allows for standing by one's own aspirations and objectives despite difficulties.

Career confidence is demonstrated in how individuals deal with the numerous stressors they may encounter throughout their lifetime along their career journeys. These stressors could include sudden unemployment, lack of available jobs, health problems, family struggles, unexpected workplace challenges or pressure to learn new skills. Coetzee et al. (2015), posited that career confidence is reflected in demonstrating an efficacious attitude in solving problems and effectively navigating obstacles to constructing the future. Career confidence is the tendency to feel self-efficacious about the ability to master career-related challenges and successfully solve problems (Coetzee & Harry, 2015). Even in the face of obstacles and barriers, individuals with career confidence are able to stand by their own aspirations and objectives (Tladinyane & Van der Merwe, 2016). According to Guan et al. (2013), career confidence represents individuals' positive perceptions of their problem-solving skills across different situations and should be significantly related to their positive emotions and resilience in career transitions.

Perceived social support may reduce stress and increase confidence in a career process (Ebenehi et al., 2016). Confidence has been linked to self-efficacy and self-esteem. Santilli et al. (2017) stated that the belief in the self to master challenges and solve problems suggests the individual has the capability to respond to stressful situations. Confidence has been shown to be positively associated with life satisfaction and positive affect (Johnston, 2016). Confidence is a more significant predictor of all study engagement dimensions above individual characteristics such as age, gender and study year (Paradnikė & Bandzevičienė, 2016).

Glavin (2015) opined that individuals who do not develop career confidence may lack the initiative and desire to seek out new activities and opportunities. Career inhibition (contrary to career confidence) occurs when individuals feel they are unable to work through occupational difficulties (Coetzee et al., 2015).

The four dimensions of career adaptability are not equally strong predictors of career outcomes. The strongest predictors of career success are concern and confidence (Bocciardi et al., 2017). Coetzee and Harry (2015) acknowledged that career concern and career confidence are also vital requisites of subjective career success.

## **2.4 OUTCOMES OF CAREER ADAPTABILITY**

According to Glavin (2015), career adaptability emphasises the need for individuals to value flexibility, be alert to imminent changes, prepare for possibilities, remain open to opportunities, develop skills and manage repeated transitions. Individuals who possess these characteristics are more likely to respond to environmental changes and transitions and adapt timeously to the ever-changing landscape that characterises the new world of work. Career adaptability is a source of resilience for individuals in constructing their careers. It may influence the individual's attraction, retention and intention to leave an organisation (Coetzee & Stoltz, 2015). Bocciardi et al. (2017) found that all four career adaptability dimensions were negatively related to intention to leave a career and organisation.

Career adaptability has widely been acknowledged to provide resources and shape readiness for dealing with career demands and challenges, responding to the changing nature of careers and managing current and future occupation-relevant tasks, transitions and traumas (Jiang, 2017), as well as improve well-being (Johnston, 2016). Tladinyane and Van der Merwe (2016) postulated that career adaptability has an impact on various occupational outcomes, including job success, job satisfaction, tenure and engagement, and contributes to factors such as a stronger connection and fit with the organisation and a stronger sense of responsibility towards the organisation. Individuals with higher career adaptability are better able to deal with changes in their working environment (Tladinyane & Van der Merwe, 2016). The significance of career adaptability has also been demonstrated in its impact on important work and career outcomes, such as job performance, turnover, promotability, career plateaus and other well-being indicators (Jiang, 2017).

Career adaptability resources have been correlated to factors relating to positive career preparation and development (Coetzee & Harry, 2015), job transitions, career outcomes (Johnston, 2016), vocational identity, in-depth career exploration behaviour, career commitments (Savickas & Porfeli, 2012), career transition experience and better coping (Johnston, 2016). Positive correlations of career adaptability resources include employability, promotability, career satisfaction, a boundaryless mind-set and protean career attitudes, perceptions of professional competence and calling, perceptions of transferrable skills and career aspirations, the frequency of career exploration behaviours and career decidedness (Johnston, 2016).

Career adaptability has a positive impact on subjective as well as objective (promotability, salary and performance) measures of career success, tenacious goal pursuit, flexible goal adjustment (Bocciardi et al., 2017), and orientation to happiness (Coetzee & Harry, 2015). However, in terms of a reciprocal relationship, Bocciardi et al. (2017) found that objective career success did not have a relevant impact on career adaptability, despite previous studies proving otherwise. Bocciardi et al.

(2017) also reported that there was no association between job satisfaction and career adaptability.

Individuals who lack career adaptability may experience career maladjustment and excessive career stress (Chong & Leong, 2017). Bocciardi et al. (2017) argued that a negative relationship exists between career adaptability and work stress. It has been suggested that helping individuals develop greater career adaptability will enhance their career management process (Chong & Leong, 2017). Career adaptability has become an increasingly relevant and desirable competency among job seekers and employees owing to volatile economic conditions that have resulted in career uncertainty and ambiguous job roles (Chong & Leong, 2017). Coetzee et al. (2015) found a positive association between the employability capacities and career adaptability constructs of individuals. Unemployed individuals have been shown to display higher levels of career adaptability (Johnston, 2016), which have emerged as a required set of skills that can mitigate the adverse effects of unemployment on the vocational development of emerging adults (Celen-Demirtas et al., 2015).

According to Chong and Leong (2017), individuals with high career adaptability have been found to have better goal regulatory behaviours, and spend more time planning and experimenting with ways to achieve their goals. They proactively seek out developmental opportunities and this contributes to the skills and resources individuals can utilise when managing their careers (Chong & Leong, 2017). Individuals will take on varied job responsibilities positively, which means they will be more engaged in their jobs resulting in greater involvement and better self-presentation (Chong & Leong, 2017).

More broadly, career adaptability is positively related to outcomes such as general well-being, life satisfaction and quality of life (Santilli et al., 2017). Savickas and Porfeli (2012) reported that individuals with high levels of career adaptability are generally both cognitively and emotionally more ready to cope with more predictable tasks of preparing for and participating in the work role and with the unpredictable

adjustments brought about by changes in work and working role. Such individuals generally take a proactive stance towards managing their personal life and promoting their own well-being (Tladinyane & Van der Merwe, 2016). According to Johnston (2016), these individuals may feel less insecure as they perceive high levels of marketability and have been found to be more likely to leave an organisation and explore other options.

Adolescents with higher levels of career adaptability feel more career decided, future projected and more capable of creating their future intentions and transforming their intentions into goal-oriented behaviours (Ismail, 2015). Career adaptability positively correlates with school-to-work transitions and better job search strategies and re-employment quality (Chong & Leong, 2017). Johnston (2016) reported that university students preparing to enter the labour market have shown career adaptability (especially concern and control) to predict job search self-efficacy positively, which, in turn, relates positively to employment status. University students have been shown to have a positive correlation with career adaptability and the undergraduate's academic satisfaction and career optimism (Paradnikė & Bandzevičienė, 2016).

There have been limited longitudinal studies investigating career adaptability resources and general and professional well-being. In longitudinal studies over one year, career adaptability was positively associated with life satisfaction and self-rated health. Over three years, career adaptability was found to predict higher positive affect. Over four years, career adaptability resources were positively related to job satisfaction (Johnston, 2016). Career adaptability has been shown to predict the expected career-related outcomes despite more stable dispositions, such as personality traits and demographic variables (Paradnikė & Bandzevičienė, 2016).

## **2.5 PREVIOUS RESEARCH ON CAREER ADAPTABILITY**

### **2.5.1 Career adaptability and self-efficacy**

Previous research has found career adaptability to be positively associated with constructs that are integrated in, or resemble, core self-evaluations, including self-esteem, locus of control, job search self-efficacy and tenacious goal pursuit (Bocciardi et al., 2017). Bocciardi et al. (2017) found that work self-efficacy and search for work self-efficacy had the greatest impact on predicting career adaptability. Their research showed how career adaptability can be sustained through the development of secondary attitudes such as self-efficacy. They reported that commitment and work self-efficacy, and proactive career planning and frustration coping play a relevant role in predicting career adaptability. Concern and curiosity were found to be strongly predicted by education, self-efficacy at work and proactive career planning in the search for work self-efficacy (Bocciardi et al., 2017).

Ebenehi et al. (2016) reported that career self-efficacy or self-efficacy sources significantly predict career adaptability among adolescence, higher education students and existing workers. According to Johnston (2016), career decision-making self-efficacy has been found to mediate the relations between concern, control, confidence and academic satisfaction.

### **2.5.2 Career adaptability in higher education students**

Duffy (2010) found that students with a higher sense of personal control were more likely to view themselves as being adaptable to the world of work. The degree to which students' supportive relationships, self-esteem and positive outlook on their future career were related to adaptability, was partially mediated by their perceptions of control in their lives. Duffy (2010) discovered a strong bivariate relationship between sense of control and adaptability, which suggested that students who generally feel in control over their lives may be more inclined to perceive themselves as adaptable in their careers. Duffy (2010) also hypothesised that individuals who endorse a greater sense of personal control may be able to navigate the world of work more easily by proactively adjusting themselves to fit expectations. For

university students in particular, having a greater sense of control may be especially critical given the increased importance of adaptability throughout the career development process.

Studies have suggested that fostering career adaptability during higher education can help graduates manage the transition to professional contexts. The school-to-work transition is one of the most critical steps in graduates' careers that can determine vocational outcomes and future career success (Paradnikė & Bandzevičienė, 2016). According to Ebenehi et al. (2016), career adaptability among higher education students can be enhanced by involving them in self-motivated goal-setting activities, helping them to understand themselves and their environment, establishing plans for their future career, and having control over their decisions. By engaging in some vital social support from family, peers or friends and significant others around them, higher education students can increase their career adaptability (Ebenehi et al., 2016).

Paradnikė and Bandzevičienė (2016) found that study engagement positively correlated with the general score in career adaptability. Their results supported previous findings in employee and university student samples. In previous research, confidence was found to have the strongest correlation with components of engagement. It was reported that components of career adaptability predicted vigour, dedication and absorption above control variables. This further underscores the importance of career adaptability resources in the academic setting. This was in line with previous research studies in which only some dimensions of career adaptability were found to be significant predictors of career-related outcomes (Paradnikė & Bandzevičienė, 2016).

The study by Rottinghaus et al. (2005) indicated that optimistic and adaptable people appear to strive higher academically, report greater comfort with their educational and career-related plans, and engage in activities that advance their level of career insight. Rottinghaus et al. (2005) suggested that the large differences in level of

career optimism and career adaptability between those decided and undecided about their career plans could shed light on individual differences in adjustment to and enjoyment of university studies. However, Santilli et al. (2017) found that students who are confident in their career adaptabilities can still be dissatisfied with life if they feel stuck in their early career perspectives.

Career adaptability was shown, through research by Guan et al. (2013), to significantly predict Chinese college students' employment status at graduation and perceptions with their employers. These relations were mediated by job search self-efficacy. Guan et al. (2013) found that career concern and career control were the strongest predictors of job search self-efficacy. Another finding was that job search self-efficacy served as a significant mediator for the relations between career adaptability and job search outcomes. As career adaptability gives rise to the opinion that individuals possess multiple psychological resources in solving problems in their career development, it has been shown to exert positive influences on efficacy in job searches. According to Guan et al. (2013), this, in turn, regulates the individual's goal setting and persistence in the job search process.

Previous research (Ebenehi et al., 2016) found that students with higher career aspirations mediated by decision-making self-efficacy are likely to have higher career adaptability. Ebenehi et al. (2016) also reported that four predictor variables successfully predicted career adaptability among higher education students in Nigeria. These predictor variables were career self-efficacy source, personal goal orientation, career future concern and perceived social support. However, vocational identity was found not to be a predictor of career adaptability (Ebenehi et al., 2016).

According to Ebenehi et al. (2016), higher education students mostly express concern about their vocational identity with a level of curiosity and sense of control, which helps them to explore their self and the environment in order to make appropriate career choices. Students with higher career adaptability dimensions feel

more engrossed in their studies, energetic and dedicated (Paradnikė & Bandzevičienė, 2016).

An individual's level of education has been shown to have a relationship with career adaptability: students in their first and third years of university have been found to have a higher level of career adaptability compared to those in their second year. These results were for students in China, and further research would be needed (Ismail, 2015; Hou, Leung, Li, Li, & Xu, 2012). Students in their first year could be described as having higher career adaptability as they are exploring and engaging in different activities throughout their first year of university. The students could also be said to be more passionate about their futures and careers during the first year of university. Students' lower career adaptability in their second year of university was thought to stem from the fact that they become more in touch with the reality of life and the labour market (Hou et al., 2012) Bocciardi et al. (2017) reported that, education is related to concern and is a predictor of career adaptability. Other studies, however, have not found a relationship between career adaptability and education (Bocciardi et al., 2017); nor have they identified the effect of education on career adaptability (Ismail, 2015).

### **2.5.3 Career adaptability and age**

Several studies have reported the relationship between career adaptability and age, gender and education (Bocciardi et al., 2017). A study by Coetzee et al. (2015) found a lack of association between the biographical variables of age, gender and race and the participant's employability capacities and career adaptability. This lack of association has been attributed to the relatively small sample size in the study. Age has been found to be related to confidence and control (Bocciardi et al., 2017). Santilli et al. (2017) reported that disregarding age, career adaptability contributed positively to general life satisfaction. Older individuals have been found to have greater control and confidence. In his study, Ismail (2015) indicated that concern is negatively correlated with age. Ability and willingness to learn are negatively related to age – in other words, adaptation to change may become more difficult with age

(Ismail, 2015). It can be concluded that there is no definitive relationship between age and adaptability.

#### **2.5.4 Career adaptability and gender**

Career literature emphasises the importance of studying gender differences in the career context as the career needs and developmental patterns of women have been found to differ from those of men (Coetzee & Harry, 2015). In their study Coetzee and Harry (2015), found that gender significantly predicted career adaptability and females had significantly high career adaptability compared to males.

Adolescent girls have been found to score higher on career adaptability/maturity than their male counterparts (Coetzee & Harry, 2015). Research has suggested that adolescent males tend to have more uncertainty about their career aspirations than their female counterparts. Males depend more strongly on positive feedback and encouragement from their parents (Coetzee & Harry, 2015). Personal adaptability has been found to be related to differences in males' and females' responsiveness to organisational career management, with women responding more positively than men to organisational career management support (Coetzee & Harry, 2015). In their study, Coetzee and Harry (2015) found that female participants had higher levels of career concerns compared to males. However, this could be due to employment equity legislation opening new opportunities for women. Coetzee and Harry (2015) also reported that both female and male participants had low levels of career confidence, with males showing the lowest levels. Males have been found to score significantly higher on control, curiosity and confidence. However, no gender difference was evident in concern (Ismail, 2015).

The fact remains that research on gender and career adaptability remains limited and inconclusive. Some studies have found that career adaptability is significantly related to gender, whereas others have found no significant relationship between the two constructs (Coetzee & Harry, 2015).

### **2.5.5 Career adaptability and race**

With regard to race, Coetzee and Stoltz (2015) found that black participants showed higher levels of career adaptability than white participants. This may be due to the positive influence of the increased inter-organisational career opportunities available, especially to black employees in the post-apartheid era (Coetzee & Stoltz, 2015).

### **2.5.6 Predictors of career adaptability**

Researchers have tried to establish whether certain individual characteristics or contextual factors can be deemed predictors of career adaptability resources (Johnston, 2016). According to Johnston (2016), predictors of career adaptability resources (through cross-sectional research) include higher levels of emotional intelligence, a sense of control, a future work self, proactivity, core self-evaluations, hope and optimism, a high sense of hardy control and a low tolerance for unpredictability. Contextual factors that may be positive predictors of career adaptability resources include career-specific parental behaviour and positive relationships with parents, social support and unemployment (Johnston, 2016). Organisational features such as participation in decision making, autonomy and supervisory career support (information, advice and encouragement) have been shown in studies to potentially foster career adaptability (Bocciardi et al., 2017).

In the past decade, there have been several studies that have explored the antecedents and predictors of career adaptability (Bocciardi et al., 2017; Buyukgoze-Kavas, 2016). However, there have been calls for more research on the predictors of career adaptability (Coetzee & Harry, 2015). Existing research (Chong & Leong, 2017) has uncovered key variables linked to career adaptability, but these studies have mostly identified either antecedents of career adaptability or outcomes of career adaptability, and they have not tested a comprehensive model of indirect relationships between the antecedents and outcomes of career adaptability. Conscientiousness, cognitive flexibility and career environmental exploration were found to be significant antecedents of career adaptability (Chong & Leong, 2017). Their results suggested that career adaptability is an antecedent of strategic career

management and highlights the feasibility of enhancing individuals' career management through developing their career adaptability.

## **2.6 CONCLUSION**

There is a paucity of empirical research on career adaptability, particularly as it applies to university students. Most studies have explored components of adaptability such as self-efficacy, exploration and competence, and have failed to use an instrument that encapsulates the general construct of career adaptability (Duffy, 2010). The researcher in the current study was unable to find any studies that have investigated the relationship between sense of coherence and career adaptability.

Research on career adaptability in the African context is sparse and in need of further investigation (Coetzee & Harry, 2015) as most conceptual and empirical studies about career adaptability have been conducted in Western countries (Buyukgoze-Kavas, 2016). Maree (2012) has pleaded for further research on the career adaptability resources of young people and employed adults in the African context in the light of the importance attached to an individual's career adaptability (Coetzee & Harry, 2015).

## **2.7 CHAPTER SUMMARY**

This chapter first discussed the origins of career adaptability, including the life-span, life-space paradigm, career construction theory, the life design paradigm and protean career theory. The chapter then went on to define career adaptability, explain the four dimensions of career adaptability and highlight the outcomes of career adaptability. In conclusion, previous relevant research on career adaptability was explored.

The next chapter deals with the SOC concept. The history and development of SOC are discussed, followed by the definition and dimensions of the construct. The outcomes of the SOC concept are explained, and previous research is explored.

## **CHAPTER 3: SENSE OF COHERENCE**

This chapter first examines the history and development of SOC. The concept is defined and its dimensions explored. This is followed by a discussion of the outcomes of SOC. The chapter concludes with a review of previous research on SOC.

### **3.1 INTRODUCTION**

Companies in South Africa are facing dramatic changes to both their internal and external environments, resulting in employees facing new and significant changes (Muller & Rothmann, 2009). According to Oosthuizen and Van Lill, (2008), political and economic uncertainty, large-scale restructuring, affirmative action and empowerment deals have all contributed to feelings of uncertainty. This has been exacerbated by a skills shortage and a scarcity of high-level human resource employees, managers, professionals, technical and skilled workers (Oosthuizen & Van Lill, 2008). As a result, health and well-being research and the study of positive organisational behaviour in South African organisations has garnered major interest (Mayer & Van Zyl, 2013) in an effort to help employees cope with the changes and stay healthy.

Dooris, Doherty, and Orme (2017) posited that universities can be regarded as large organisations in which individuals learn, work, interact and live. They are important organisations for health promotion as they unavoidably impact on the health, well-being and quality of life of their community (Dooris et al., 2017). Universities are places where students undergo life transitions and where citizenship is developed through the future shaping of students and staff, workplaces and businesses, and resources for influential partners within local, regional, national and international communities (Dooris et al., 2017). Universities can play a central part in enhancing or developing a construct such as SOC in both students and staff (Dooris et al., 2017) that can contribute to the health of this community.

### **3.2 HISTORY AND DEVELOPMENT OF SENSE OF COHERENCE**

Aaron Antonovsky, a sociologist in Israel, initiated a study among different ethnic groups of women in Israel in order to investigate their menopausal symptoms. The women were interviewed about their perceived health and various life events affecting them. These life events included loss of eyesight, the loss of a spouse, amputation of a limb, suffering a serious illness or experiencing years of economic deprivation (Eriksson, 2017; Nel et al., 2004). After analysing the data from the interviews he conducted with these women, Antonovsky noticed patterns that emerged for specific individuals who were more able to resist the ill effects of stress (Nel et al., 2004). Antonovsky found that 29% of the women reported good general and psychological health, even though they had survived the Holocaust (Edwards & Besseling, 2001; Eriksson, 2017). Based on this information, Antonovsky raised the salutogenic question of how it is possible that women can experience good health despite having endured a difficult trauma such as the Holocaust. This led Antonovsky to focus on a small number of respondents and search for their health resources (Eriksson, 2017).

The term “sense of coherence” was consequently coined by Antonovsky as the answer to his question: Why do some people, despite the multiple challenges and stressors associate with living, remain in good health? (Antonovsky, 1987). Antonovsky developed a theoretical model, namely the salutogenic model, which was designed to advance the understanding of the relationships between stressors, coping and health (Antonovsky, 1993).

#### **3.2.1 Salutogenesis**

According to Feldt et al. (2005), the salutogenic model focuses on health promotion as opposed to disease-inducing factors. Antonovsky (1987) believed that thinking salutogenically opens the way and compels individuals to devote their energies to the formation and advancement of a theory of coping. Instead of searching for the cause of the disease, salutogenesis asks what creates health (Eriksson, 2014).

The salutogenic model's name is derived from the Latin word *salus*, which means health, and the Greek word *genesis*, which refers to origins (Oosthuizen & Van Lill, 2008). Hence, salutogenesis is the origin of health (Coetzee & Cilliers, 2001; Eriksson, 2014). Through the lens of salutogenesis, individuals are no longer considered to be healthy or diseased. Instead, they are viewed and classified according to their location on a multidimensional health ease/dis-ease continuum (Antonovsky, 1987). There is constant movement on the continuum axis between total ill health (dis-ease) and total health (ease) (Eriksson, 2014). SOC is a major determinant of maintaining one's position on the health ease/dis-ease continuum and moving towards the healthy end (Antonovsky, 1987). SOC is a combination of an individual's ability to assess and understand the situation he or she is in, to find meaning to be able to move in a health-promoting direction, and having the capacity to do so. No one is characterised as healthy or diseased, but individuals are between the two imaginary poles of total wellness and total illness, with the vast majority of the population falling somewhere on the continuum between the two poles. According to Eriksson (2017), it is a continuous movement, meaning that even if individuals are affected by disease, they can to some extent still be healthy.

The salutogenic model of health was developed and formulated within the framework of the systems theory of thinking and derived from the assumption that everyday life is chaotic rather than ordered and predictable (Eriksson, 2014). The salutogenic approach accepts the fact that stressors are ever present and individuals have to cope with their ensuing stress in one way or another (Antonovsky, 1987; McComb & Viviers, 2012). A crucial element in salutogenesis is to view stimuli as challenges and to regard them as a natural part of everyday life. The stimuli should not be viewed as threats leading to breakdown (Eriksson, 2014).

Eriksson (2014) posited that the salutogenic model of health is based on two core concepts, namely SOC and generalised resistance resources (GRRs). Salutogenic theory hypothesises that people cope well because of GRRs. These include personal and environmental characteristics which provide an individual with

meaningful and coherent life experiences to facilitate effective stress management (Barnard, 2013).

### **3.2.2 Generalised resistance resources**

According to Antonovsky (1993), the core implications of salutogenesis have led to the idea that, if adaptive coping is the secret of movement towards the healthy end of the health ease/dis-ease continuum, then primary attention should be focused on GRRs. GRRs are a variety of coping mechanisms accumulated throughout an individual's life to form and formulate his or her SOC (Barnard, 2013; Cilliers, 2001). GRRs are said to be more than merely coping mechanisms or strategies – they are a belief system developed on the basis of stimuli. Nel et al. (2004) regarded them as responses and essential learnt behaviour styles. The factor common to all GRRs is that they facilitate making sense out of countless stressors with which the individual is constantly bombarded (Eriksson, 2014). They are any characteristic of an individual, a group or the environment that can facilitate effective tension management (Cilliers, 2001), and combat a wide variety of stressors (Antonovsky, 1987). According to Cilliers (2001), GRRs enhance the disposition to select appropriate strategies in dealing with and confronting stress and anxiety.

Antonovsky (1987) distinguished between GRRs and specific resistance resources. The former are psycho-social and genetic-constitutional resistance resources (ego identity, social support, intelligence and physic), while the latter are effective in dealing with a particular stressor (using one's social network in a way that is optimal for dealing with a particular stressor) (Hochwalder, 2015). Coping with stressors can be accomplished by mobilising GRRs and specific resistance resources to overcome or avoid the stressor and define stimuli as non-stressors (Hochwalder, 2015). In addition to GRRs, learned experiences or ways of dealing with stress may also be employed.

Cilliers (2001) asserted that GRRs are connected to the strength of an individual's SOC. They are deemed to not only predict later SOC by providing the individual with

a set of life experiences that are meaningful, understandable and in which tension is generally well managed (Feldt, Kivimäki, Rantala, & Tolvanen, 2004), but their availability is also essential for the development of a strong SOC (Eriksson, 2014; Rothmann, Jackson, & Kruger, 2003). According to Edwards and Besseling (2001), the stronger an individual's level of SOC, the more actively he or she utilises his or her GRRs. A strong SOC indicates a readiness and willingness to tap into those resources at an individual's potential disposal, leading to a cognitive and emotional appraisal of the world, effective coping, health enhancements and social adjustment (Cilliers, 2001). Rothmann et al. (2003) posited that GRRs promote the development of a strong SOC provided they allow repeated, consistent experiences; are present; there is balance between overload and underload; and the outcome can be influenced.

As a psychological construct, SOC was developed as a way of conceptualising the personal qualities in individuals who seem particularly effective at responding positively to life's demands (Edwards & Besseling, 2001). SOC is developed through the process of understanding one's life experiences and is rooted in an individual's particular history and sociocultural context across his or her life-span (Rothmann et al., 2003). SOC is presumed to be a result of particular life events and experiences (Antonovsky, 1987; Strümpfer & De Bruin, 2009). Antonovsky assumed that an individual's level of SOC would develop from experiences throughout his or her childhood, adolescence and youth and become relatively stable after the age of 30 (Albertsen et al., 2001). According to Barnard (2013), the stabilisation of SOC after the age of 30 is known as the age hypothesis. The development of an individual's SOC occurs in relation to his or her experience of the world as predictable and consistent, as well as his or her ability to shape life outcomes (Diraz et al., 2003). SOC has been hypothesised as a fairly stable dispositional personality orientation (Feldt et al., 2004) and not a fixed characteristic (Albertsen et al., 2001). Antonovsky (1987) emphasised the dynamic nature of SOC, and the fact that modifications in SOC may occur throughout the life course. Certain environments and far-reaching and significant life events can influence the strength of an individual's SOC (Barnard, 2013; Nel et al., 2004). However, the development of SOC over an individual's life-

span will make it difficult to greatly or permanently change his or her overall SOC (Nel et al., 2004).

Life imposes many and varied stressors that may have damaging, neutral or salutary effects on health, depending on an individual's SOC which may alleviate or aggregate his or her reaction to the stressor (Feldt et al., 2005; Rothmann et al., 2003; Van der Colff & Rothmann, 2009). To adopt one pattern of coping consistently is to fail to respond to the nature of stress and results in the decreased chance of successful coping (Van der Colff & Rothmann, 2009). According to Van Wijk (2008), SOC is not a specific coping strategy; instead, it provides a basis for successful coping with stressors (Van Wijk, 2008), and influences the manner in which individuals cope with the experiences the environment presents to them (Diraz et al., 2003) without their conscious awareness (Van der Colff & Rothmann, 2009). According to Antonovsky, a stressor can be any demand from the internal or external environment that disrupts the homeostasis, and restoration thereof depends on non-automatic and non-readily available energy-expending actions (Nosheen et al., 2014). Antonovsky (1987) classified stressors into the following three categories: (1) chronic stressors that are relatively permanent and stable life conditions and personal characteristics (e.g. disabilities); (2) life events and major life events that can be defined in space and time (e.g. bullying); and (3) daily hassles and minor incidents in everyday life (e.g. negative remarks) (Hochwalder, 2015).

### **3.3 DEFINITION AND DIMENSIONS OF SENSE OF COHERENCE**

Originally, SOC was defined by Antonovsky (1987, p. xiii) as

a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic, feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected.

At the core of the definition of SOC is comprehensibility (Antonovsky, 1987).

### **3.3.1 Comprehensibility**

As noted above, comprehensibility is the first component of SOC (Antonovsky, 1987) and is the cognitive component (Barnard, 2013). According to Antonovsky (1987, p. 17), comprehensibility is

the extent to which one perceives the stimuli confronting one, deriving from the internal and external environments, as making cognitive sense, as information that is ordered, consistent, structured, and clear, rather than as noise-chaotic, disordered, random, accidental, inexplicable.

Comprehensibility enables an individual to see his or her environment as structured, predictable (Barnard, 2013) and explicable (Feldt et al., 2004). It is the feeling that an individual has the capacity to recognise stress as understandable (Harry, 2015). Johnston et al. (2013) stated that throughout childhood and adolescence, consistency in life experiences contributes to comprehensibility.

Individuals high on the sense of comprehensibility expect that stimuli they will encounter in the future will be predictable and if/when they do come as surprises, that they can be ordered and will be explicit (Antonovsky, 1987; Eriksson, 2014). An individual high on comprehensibility does not necessarily mean that they believe they can manage well (Antonovsky, 1987).

After further study of the interview data that he collected, it became apparent to Antonovsky (1987) that there were additional components to SOC, namely manageability and meaningfulness (Antonovsky, 1993). According to Van der Colff and Rothmann (2009), the three dimensions of SOC are essential requirements for an individual to cope successfully. They help individuals understand their environment, manage challenges and attach meaning to their experiences (Johnston et al., 2013).

### **3.3.2 Manageability**

The second component, manageability, was realised through participants who had weak SOC scores. This was the theme that was most frequently noted in the interviews with the individuals who had been classified as having a weak SOC (Antonovsky, 1987). Antonovsky (1987) found that individuals with a weak SOC believed that unfortunate things had happened to them and would continue to happen to them throughout their lives. Antonovsky (1987, p. 17) described them as the “sad sack’ or ‘*schlimaz*’ (the one on whom the soup gets spilled)”.

Manageability is the instrumental or behavioural aspect (Barnard, 2013; Feldt et al., 2005). According to Antonovsky (1987, p. 17), it is “the extent to which an individual perceives that resources are at one’s disposal which are adequate to meet the demands posed by the stimuli that bombarded one”. The resources at individuals’ disposal may be under their control, or may be resources controlled by legitimate others who they feel they can count on and who they trust. They may include the individual’s spouse, friend, colleague, God, the party leader or a physician in the environmental context (Antonovsky, 1987; Coetzee & Oosthuizen, 2012). According to Muller and Rothmann (2009), manageability refers to the extent to which individuals experience events in life as situations that are endurable or manageable or even as new challenges. Throughout childhood and adolescence, the availability of resources with which to respond to demands contributes to manageability (Johnston et al., 2013). During childhood and adolescence, consistency in life balance improves manageability (Feldt et al., 2004).

Individuals with a high sense of manageability will not feel victimised by events or feel that life treats them unfairly. It is believed that things do happen in life, but when they do, the individual will be able to cope (Antonovsky, 1987).

### **3.3.3 Meaningfulness**

The third component which Antonovsky (1987) realised he had foreshadowed in the original definition was meaningfulness, which is the motivational component. The

significance of the motivational component became apparent after further examination of the interviews. Individuals with a strong SOC spoke of areas of life that were important to and made sense to them at an emotional level and which did not only have a cognitive meaning. These events were seen as challenges and worthy of emotional investment and commitment. Individuals with a weak SOC saw this as important, but only in that it imposed a wearisome burden and unwanted demands they could do without (Antonovsky, 1987).

Meaningfulness is the counterpart of comprehensibility (Coetzee & Oosthuizen, 2012). Meaningfulness is

the extent to which one feels that life make sense emotionally, that at least some of the problems and demands posed by living are worth investing energy in, are worthy of commitment and engagement, are challenges that are “welcome” rather than burdens that one would much rather do without (Antonovsky, 1987, p. 18).

Meaningfulness is the feeling that there is meaning to life (Harry, 2015) and the belief that life’s demands and struggles are challenges that are worthy and meaningful to engage with and spending effort on rather than being burdensome (Barnard, 2013; Feldt et al., 2004). The motivational component of meaningfulness is crucial because, without it, high comprehensibility scores or high manageability scores are likely to be temporary (Antonovsky, 1987). According to Muller and Rothmann (2009), meaningfulness is the extent to which one feels that life makes sense at an emotional level and not simply at a cognitive level. Throughout childhood and adolescence, participation in valued activities and socially valued decision making increases meaningfulness (Feldt et al., 2004; Johnston et al., 2013).

Coetzee and Oosthuizen (2012) posited that individuals experience meaningfulness when events are viewed as challenges worthy of emotional investment. Individuals high on meaningfulness are willing to take up challenges, are determined to seek meaning in the unhappy experiences and will do their best to overcome the experiences with dignity (Antonovsky, 1987).

After examining the interviews and not only focusing on the cognitive aspect of SOC, but including the two other components, Antonovsky (1987, p. 19) subsequently expanded the definition of SOC to

a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable [comprehensibility]; (2) the resources are available to one to meet the demands posed by these stimuli [manageability]; and (3) these demands are challenges, worthy of investment and engagement [meaningfulness].

Eriksson (2014) contended that the basic assumption of the definition of SOC is that things will go well. Individuals have the confidence and trust that they can manage whatever happens in everyday life, are able to learn from life experiences and manage either alone or by trusting others, and obtain the support needed from their environment. SOC can be regarded as a broad individual attribute that influences the way individuals perceive and interpret events. It stimulates motivation and positive coping behaviours such as acquiring resources (Johnston et al., 2013).

Antonovsky (1987) suggested that the dimensions of SOC are intertwined. The correlations between the dimensions have been shown to be extremely high but not perfect (Antonovsky, 1987). Individuals who score highly on all three dimensions are assumed to promote greater health and well-being (Feldt et al., 2005). These individuals view the world as highly coherent and are deemed to have a strong SOC (Feldt & Rasku, 1998; Feldt et al., 2005). By contrast, those who score low on all components view the world as incoherent (Feldt & Rasku, 1998). Individuals can have experiences where they are high on one component and low on another. This may be true in highly specific, temporary and in general life situations (Antonovsky, 1987).

The three dimensions of SOC are of unequal importance. According to Antonovsky (1987), meaningfulness, as the motivational component, is the most crucial and central component (Feldt & Rasku, 1998) because it provides an individual with the motivation to search for order in the world, to use the resources available and to seek out new resources for managing a demand (McComb & Viviers, 2012). Without meaningfulness, being high on comprehensibility or manageability may be temporary (Antonovsky, 1987). Antonovsky (1987) characterised the second most important dimension as comprehensibility. Individuals with high comprehensibility and low manageability experience a strong pressure to change. The direction of the change will be determined by the individual's sense of meaningfulness (Antonovsky, 1987).

### **3.4 OUTCOMES OF SENSE OF COHERENCE**

According to Harry (2015), SOC is a psychosocial resource that influences an individual's psychological and physiological responses to a particular stressor. SOC has been shown to affect individuals in various ways and is directly related to different aspects of successful living, effective performance at work and career effectiveness (Coetzee, Viviers, & Visser, 2006; Muller & Rothmann, 2009). It is essential for successful coping, and thus ensures maintenance of health (Harry, 2015). Feldt et al. (2005) suggested that individuals with a weak SOC are predicted to cope less effectively than individuals with strong SOC as they are likely to be located on the negative end of the health ease/dis-ease continuum; whereas individuals strong in SOC are located at the positive end of the health ease/dis-ease continuum and are assumed to be better in general health and experience greater well-being and less stress (Antonovsky, 1987). Individuals with a strong SOC are inclined to accept setbacks and failures as normal, and neither necessarily indicative of their incompetence nor a hostile world. Negative experiences are put into perspective, interpreted in the bigger picture and seen as having meaning beyond the present situation through comprehensibility and meaningfulness (Muller & Rothmann, 2009).

Antonovsky (1987) indicated that when a task is particularly ambiguous and complex, a strong SOC will be a contributing factor for the individual to view the task

as a challenge. Individuals with strong SOC have enduring comprehensibility, manageability and meaningfulness. However, they do not perceive their entire life as coherent and comprehensible, manageable and meaningful, and may exclude things that do not interest them (Antonovsky, 1987). Every individual sets boundaries, and what happens outside of the boundaries does not matter to him or her and does not have an effect on his or her SOC (Antonovsky, 1987; Edwards & Besseling, 2001). There are four domains in life that cannot be excluded if a strong SOC is to be maintained, that is (1) personal feelings, (2) immediate interpersonal relationships, (3) the major domain of activity, such as work, and (4) the existential issues of death, inevitable failures, shortcomings, conflict and resolution (Edwards & Besseling, 2001).

SOC is a cognitive and emotional appraisal style and refers to a disposition that stimulates, sustains and enhances health and healthy behaviour, effective coping and better social adjustment (Diraz et al., 2003; Edwards & Besseling, 2001). According to Harry (2015), SOC motivates individuals to find coping mechanisms in response to demanding, challenging and stressful situations. A strong SOC helps individuals perceive situations, social environments and their accompanying demands as less stressful, threatening or anxiety provoking (Johnston et al., 2013). A strong SOC is negatively related to measures of negative affectivity such as anxiety, neuroticism, job stress and work stress (Rothmann, 2001; Rothmann et al., 2003).

Individuals with a strong SOC perceives stimuli from their environment as non-stressors, irrelevant or benign, which make cognitive sense, are under his or her control or others' control, and are meaningful (Eriksson, 2014; Muller & Rothmann, 2009). According to Feldt et al. (2004), environmental stimuli are experienced in a structured manner to enable individuals to anticipate events and the resources required to meet the demands imposed upon them. Those with a strong SOC will have a better understanding of the nature and dimensions of stressors within their environment, the environment is regarded as manageable through the flexibility in and effectivity in choosing resources within the individual or other individuals' control

and by looking for meaning in life (Davidson et al., 2012; Muller & Rothmann, 2009; Rothmann et al., 2003). Individuals use more instrumental and fewer avoidant responses to cope with stressors (Muller & Rothmann, 2009), report fewer controllable negative life events (Hochwalder, 2015), and are more likely to view life events as having coherence (Muller & Rothmann, 2009). They are confident things will work out well for them in the end, perceive the world as a place with rhyme and reason and tackle life stressors (Diraz et al., 2003). A strong SOC is related to competence, life satisfaction, general well-being, emotional stability, successful coping with life stress (Rothmann et al., 2003), greater health and less work stress (Feldt et al., 2004). Mayer and Van Zyl's (2013) research suggested that high levels of SOC can also act as a buffer against the onset of physical illnesses such as influenza.

An individual's level of SOC may moderate the impact of occupational stressors on his or her effective outcome (Muller & Rothmann, 2009). A working individual with strong SOC will make cognitive sense of the workplace and will perceive stimuli as clear, ordered, structured, consistent and predictable information. Work will be perceived as holding challenges which he or she can meet by taking advantage of both personal resources and those under the control of others (e.g. managers, co-workers or supervisors) (Strumpfer & De Bruin, 2009). Work will also be perceived as comprising bearable experiences which the individual can cope with by making emotional and motivational sense of work demands and perceiving them as welcome challenges worthy of investing energy in (Mayer & Van Zyl, 2013; Strumpfer & De Bruin, 2009). An individual with strong SOC has better perceptions of the job characteristics (Johnston et al., 2013), will perform well, will experience productive performance, recognition, reward and promotion, and demonstrate positive behaviours (Coetzee et al., 2006; Harry, 2015).

Previous research has shown that SOC impacts an individual's perception; individuals with a strong SOC and those with a weak SOC perceive different factors in their work as helping or restraining them. The perceptual process is subtle and occurs without an individual's conscious awareness (Muller & Rothmann, 2009).

Cilliers, (2001) found a difference between individuals with low and high SOC. Individuals with high SOC reported more learning from the group relations training in terms of understanding group behaviour and dynamics, the employment of their existing resources and the finding of meaning in the nature of group dynamics, compared to individuals with low SOC.

Research such as that of Edwards and Besseling (2001) indicated that individuals with low SOC were more vulnerable to the negative effects of work stressors (Edwards & Besseling, 2001), perceived factors in the workplace as unpredictable, uncontrollable and uncertain, found it difficult to structure their world to be understandable, manageable and meaningful, and found it more difficult to make cognitive sense of the environmental stimuli (Muller & Rothmann, 2009).

### **3.5 PREVIOUS RESEARCH ON SENSE OF COHERENCE**

Although Antonovsky developed SOC in the 1970s, it did not become widespread until after the publication of the SOC scale in 1987 (Feldt et al., 2005). Since the publication of the scale, there has been a wealth of international research on SOC (Barnard, 2013; Nosheen et al., 2014).

#### **3.5.1 Demographic variable**

SOC cuts across gender, social class, religion and culture and can be applied cross-culturally. However, this does not mean that different groups will experience an equally strong SOC (Antonovsky, 1993; Nosheen et al., 2014). In his original work, Antonovsky did not focus on gender and SOC – he assumed that poor and working-class women run the greatest risk of a low SOC and their class differences are as significant as gender differences. According to Antonovsky, life can be managed and controlled and, therefore, comprehended and experienced as meaningful for both men and women (Mayer & Van Zyl, 2013).

Previous studies have explored the role of sociodemographic variables in SOC and there have been variable results, most of which have focused on the stability of SOC over the lifespan (Barnard, 2013). Previous research has mostly focused on describing SOC level differences in relation to a single demographic variable such as age, gender and race (Barnard, 2013).

South African studies (e.g. Barnard, 2013) explored sociodemographic differences with regard to SOC, but as part of a broader salutogenic study in mostly small and company-specific samples. There is a need for research to study the role of sociodemographic variables in SOC as well as the interactive role of sociodemographic variables distinguishing high and low SOC scores (Barnard, 2013).

#### *3.5.1.1 Age*

Antonovsky (1987) assumed that a person's SOC level would develop from experiences throughout childhood, adolescence and youth and reach a relatively stable level after the age of 30. There has been moderately strong support through empirical research confirming Antonovsky's suggestions that SOC remains stable around the age of 30 (Barnard, 2013; Davidson et al., 2012; Hochwalder, 2015). Harry (2011) found no overall difference between SOC and age. It has been shown that SOC remains more stable in adulthood for individuals with a strong SOC than those with a low SOC (Barnard, 2013). It has also been argued that stability in SOC is a generational phenomenon rather than a chronological age phenomenon. According to Barnard (2013), older adults have been found to have significantly higher SOC than young adults. Other research has found that the differences in stability of SOC between older (over 30) and younger (under 30) adults have not been confirmed (Feldt et al., 2005).

Studies have found that SOC is not stable over the adult life span (Barnard, 2013), and that it changes according to alterations in the work environment (Albertsen et al.,

2001). In the South African context, according to Barnard (2013), the stability of SOC from the age of 30 and beyond has not been confirmed.

### *3.5.1.2 Culture and race*

Various studies have indicated significant differences in the level of SOC among different cultures and race groups (Barnard, 2013). Mayer (2011, as cited in Barnard, 2013) found Black and Indian managers to have higher levels of SOC compared to White Afrikaans- and English-speaking South African and German managers. Another study reported significantly higher SOC scores among Black and mixed race employees of an insurance company compared to their White and Indian counterparts (Barnard, 2013). Based on significant differences that were evident in factor structures of SOC between Whites and other population groups, Barnard (2013) concluded that salutogenic functioning manifests differently between different cultural and language groups.

Research in South Africa has also indicated differences between the mean scores of various population groups (Van Wijk, 2008). Harry (2011) and Van Wijk (2008) found no significant difference between race and SOC score. However, Van Wijk (2008) was unable to say if there was a cultural bias in the study because the sample was too small.

### *3.5.1.3 Gender*

Studies have found that there are differences in SOC levels between genders but they are not significant (Barnard, 2013). Men have been found to have higher levels of SOC than women (Barnard, 2013; Mayer & Van Zyl, 2013). It has been reported that the impact on SOC is gender specific. Not having a partner or not being able to use one's skills at work threatens the SOC of men. According to Mayer and Van Zyl (2013), lack of social support threatens the SOC of women. According to the finding of the study by Nilsson, Holmgren, Stegmayr, and Westman (2003), there was a difference in SOC in men with blue-collar jobs and women with white-collar jobs.

There is also an assumption that poor and working-class women have a greater risk of a low SOC (Mayer & Van Zyl, 2013).

In the South African context, in male-dominated work environments, women score lower than men in SOC (Mayer & Van Zyl, 2013). A South African study that focused on parastatal organisations found significant differences in the average meaningfulness score between men and women. These scores indicated that female managers scored higher in meaningfulness, but lower in total SOC scores in a male-dominated environment (Mayer & Van Zyl, 2013).

Mayer and Van Zyl (2013) also found that women who had joined the organisation six to 12 months prior to the study scored lower in SOC than women who had been there for more than 12 months. In their study, Bezuidenhout and Cilliers (2010) reported that female academics with a stronger SOC were more likely to experience work engagement, which implies feelings of energy, resilience, persistence, enthusiasm and inspiration. In the study by Nilsson et al. (2003), which was conducted over a five-year period, it was found that among self-employed women there was a large decrease in SOC, while this was not the case among self-employed men. However, this could be explained by the fact that men are in established branches of employment and women are encouraged to start their own business during a period of economic downturn (Nilsson et al., 2003).

### **3.5.2 Sense of coherence and self-efficacy**

The relationship between self-efficacy and SOC is interesting, as self-efficacy is not primarily conceptualised in the fortogenic paradigm. According to Rothmann (2001), self-efficacy, like SOC, is concerned with an individual's experiences of forcefulness in his or her own work. Antonovsky discussed the relationship between SOC and self-efficacy (Eriksson, 2014) and realised that the dimensions of SOC showed similarities to the self-efficacy construct (Rothmann, 2001). The three dimensions of SOC have their equivalents in Bandura's beliefs regarding sense of control over thoughts, feelings and actions (Eriksson, 2014). Comprehensibility may be the

equivalent to the cognitive aspect of self-reflection; manageability matches the behavioural component in self-efficacy; and meaningfulness corresponds well with the emotional component of self-efficacy (Eriksson, 2014).

SOC has been found to activate conscious and unconscious mechanisms associated with sustainable changes in the experience of positive affect, higher levels of self-efficacy, stress tolerance and lower levels of burnout and disengagement (Mayer & Van Zyl, 2013). Rothmann (2001) reported that SOC negatively correlated to an external locus of control and positively correlated to an internal locus of control, autonomy and generalised self-efficacy. Rothmann (2001) found that employees who experienced stimuli from the environment as comprehensible, manageable and meaningful, attributed performance to forces within as opposed to forces outside of their control; they believed in their abilities; they acted independently with self-confidence; they decided to take action to solve problems; and they showed higher generalised self-efficacy.

### **3.5.3 Sense of coherence in undergraduate students**

The stability of SOC in undergraduate students has been reported as high. However, this research was conducted over a one-week period (Feldt et al., 2004). In the study by Davidson et al. (2012), students' SOC was increased through participation in a workshop. They found students to have higher SOC and self-efficacy scores after one month when compared to the initial score.

## **3.6 CONCLUSION**

SOC has become widely used in the field of occupational health research (Feldt et al., 2005) and shows promise in resiliency literature in describing and identifying individuals who are likely to excel and thrive (Van Wijk, 2008). Numerous studies have repeatedly shown that individuals with a high SOC enjoy greater well-being in their work and avoid stress and burnout more regularly than individuals with a low SOC (Feldt et al., 2005).

Previous research on SOC has mainly focused on SOC in the work environment. However, there is a paucity of research on individuals in the higher education environment. These individuals are experiencing both daunting and exciting changes in their lives, one being the transition from school to higher education. According to Nel et al. (2004), individuals may struggle to process the information required to cope with the change, which could result in distress. If one considers all the previous research that has been conducted, none has been conducted on SOC and career adaptability.

### **3.7 CHAPTER SUMMARY**

This chapter discussed the history and development of SOC, and the theoretical model of salutogenesis and GRRs. The evolution of the definition of SOC through the development of the different dimensions was then highlighted. The outcomes of SOC were explored and previous research on SOC was briefly discussed.

The next chapter focuses on the third construct in this study, namely CDMSE. An overview of CDMSE is provided, followed by a discussion of the dimensions, outcomes and definitions of the construct. Finally, previous research on this construct explored.

## **CHAPTER 4: CAREER DECISION-MAKING SELF-EFFICACY**

This chapter first provides an overview of CDMSE. The concept is defined and the dimensions thereof discussed. The outcomes of CDMSE are examined, and finally, previous research on the concept is explored.

### **4.1 OVERVIEW OF CAREER DECISION-MAKING SELF-EFFICACY**

The career decision-making process is complex and can be highly creative (Rabie & Naidoo, 2016; Storme & Celik, 2017). It has been argued that career decisions begin in adolescence and conclude in late adolescence or early adulthood when individuals make occupational choices to enter the working world. Career decisions are revisited throughout life and at various career-related activities (Adachi, 2004).

According to Storme and Celik (2017), it is becoming increasingly difficult for individuals to make career decisions. There are more career choices, careers are less linear and individuals will probably change jobs several times in their lifetime. Individuals are also dealing with an increase in the number of competitors and changes in technology (Storme & Celik, 2017). The career environment today has resulted in individuals facing challenging new opportunities, and career exploration may require relatively high levels of confidence (Storme & Celik, 2017). Adachi (2004) suggested that a primary cognitive determinant in guiding career development is self-efficacy.

Self-efficacy refers to individuals' belief in their ability to control their performance in emotionally taxing or otherwise difficult situations and to control self-referent activities such as cognitive processes, emotions and self-regulatory behaviour (Bandura, 1977; Schunk, 1991). Self-efficacy is an individual's belief about his or her capabilities, which does not reflect his or her actual capabilities. According to Watson et al. (2004), self-efficacy determines what individuals can do with the skills they have. Individuals acquire information from their personal accomplishments, vicarious

experiences, forms of persuasion, and physiological indexes (Schunk, 1991) in order to form their perception of their self-efficacy.

Self-efficacy is not a trait concept but a cognitive appraisal or judgement of future performance capabilities and should therefore be measured against some type of behaviour (Betz & Hackett, 2006). Self-efficacy can be viewed from both a specific and a general angle (Rothmann, 2001). Self-efficacy viewed from a specific angle, or task-specific self-efficacy, is an expectation or judgement about the probability of successful task performance measured immediately before any effort has been exerted on the task. Task-specific self-efficacy is a powerful motivator of behaviour because the efficacy expectations at a given point in time determine the preliminary decision to perform a task, the effort that will be expended on the task and the level of persistence that arises to overcome challenges (Rothmann, 2001). However, from a general perspective, self-efficacy reflects the belief that the individual has the ability to perform tasks successfully in a variety of situations (Rothmann, 2001).

It is hypothesised that self-efficacy influences the choice and direction of an individual's behaviour (Schunk, 1991), and the concept has been used to explain, predict and change behaviour in many areas of life such as anxiety and fear, pain tolerance and control, immune system functioning, parenting sensitivity, coping with arthritis and achievement in sport (De Bruin & Bernard-Phera, 2002), to name but a few. According to Rollins and Valdez (2006), career and vocational psychology researchers have considered self-efficacy to be a central component of an individual's career choice, persistence, and educational and career performance. In this regard, self-efficacy has been found to be a predictor of academic and career-related choices and performance (Lent, Brown, & Hackett, 1994), as well as playing a key role in a variety of career-related behaviours such as career indecision, career decision making and career salience (Adachi, 2004).

Taylor and Betz (1983) emphasised the effectiveness of the self-efficacy construct in understanding career behaviour. These authors developed the construct of CDMSE

from Bandura's self-efficacy theory (De Bruin & Bernard-Phera, 2002; Huang, 2015). They believed that individuals who have more confidence in their ability to make applicable career decisions, will have more positive attitudes towards their career decision making and they will be more capable of making successful career decisions (De Bruin & Bernard-Phera, 2002). CDMSE has become one of the most popular domains of career self-efficacy (Betz, Klein, & Taylor, 1996). Taylor and Betz (1983) hypothesised that an individual's career indecisiveness reflects low self-efficacy expectations with respect to the tasks and behaviours required of them to make career decisions. According to Watson et al. (2001), the resultant avoidance of such tasks extends career indecisions.

In South Africa, CDMSE has been found to be a particularly useful construct for understanding the career behaviours of a multicultural population. Many South Africans have faced and continue to face many challenging circumstances in their career development. These challenges include the lack of opportunity to explore and commit to stable careers, unstable and unpredictable environmental factors, lack of role models and support systems, high unemployment levels and labour legislation (Watson et al., 2001). Huang (2015) posited that CDMSE has been recognised as a crucial factor in influencing the career development process of young adults.

#### **4.1.1 Foundational theories of self-efficacy**

##### *4.1.1.1 Social learning theory*

Self-efficacy was a fundamental component in Bandura's social learning theory (Feehan & Johnston, 1999; Kelly, 1993). Social learning theory conceptualises self-efficacy as "arising from diverse sources of information conveyed by direct and mediated experiences" (Bandura, 1977, p. 203). Social learning theory was later renamed as "social cognitive theory" (Feehan & Johnston, 1999), and it is in this context that self-efficacy is best understood (McComb & Viviers, 2012).

#### *4.1.1.2 Social cognitive theory*

Social cognitive theory proposes that individuals' belief and confidence in their ability to successfully perform a given task and behaviour (known as their self-efficacy expectations) determines whether or not a behaviour will commence, the amount of effort that will be exerted and the persistence or length of time the behaviour will be sustained in the face of obstacles and aversive experiences (Ebenehi et al., 2016; Feehan & Johnston, 1999; Taylor & Betz, 1983). In social cognitive theory, human functioning is explained in terms of triadic (cognitive, affective and biological) influences and reciprocal causation (Betz & Hackett, 2006; McComb & Viviers, 2012). According to McComb and Viviers (2012), in this transactional view of the self and society, personal factors, behavioural patterns and environmental events interact and influence one another bi-directionally.

In terms of social cognitive theory, self-efficacy involves judgements about one's personal capabilities. One's self-efficacy belief is not one's objectively assessed skills. Self-efficacy is a person's unique set of self-beliefs specific to a particular performance domain, which interacts complexly with other individuals, behaviour and contextual factors (Lent et al., 1994).

#### *4.1.1.3 Efficacy expectations*

Social cognitive theory differentiates between efficacy expectations and outcome expectations. Individuals who have the same abilities do not necessarily produce the same achievements (De Bruin & Bernard-Phera, 2002; Feehan & Johnston, 1999). This differentiation is necessary as individuals may believe that a particular behaviour will lead to certain outcomes (outcome expectancy), but if they entertain serious doubts about whether they can perform the necessary tasks, such information does not influence their behaviour (efficacy expectation) (Bandura, 1977). He believed self-efficacy expectation to be a major mediator of behaviour, behaviour change (Feehan & Johnston, 1999; Taylor & Betz, 1983) and how long the behaviour is maintained in the face of challenging circumstances, such as aversive experiences and obstacles (Watson et al., 2001). According to Bandura's theory, individuals who believe they have the ability to complete a specific task successfully,

tend to perform the task better than individuals who do not believe they have such ability (De Bruin & Bernard-Phera, 2002).

Bandura (1977) believed that efficacy expectations vary on several dimensions, with significant performance implications. Efficacy expectations differ in terms of magnitude, generality and strength. With regard to magnitude, the tasks are ordered according to level of difficulty and the efficacy expectation varies. Individuals may experience limited efficacy in simpler tasks. The individual's sense of efficacy may be moderate for more difficult tasks (Bandura, 1977). As far as generality is concerned, some experiences may result in a confined sense of efficacy to mastery expectations, while others introduce a more generalised sense of efficacy that extends beyond the specific task (Bandura, 1977). Betz and Klein (1996) suggested that by strengthening an individual's self-efficacy expectations relative to a specific domain, specifically through personal mastery, his or her efficacy expectations can be expanded to other behavioural domains and not only the targeted behavioural domain. Regarding strength, individuals with strong expectations of mastery will persist in their coping efforts despite what Bandura (1977) terms "disconfirming experiences". Individuals with weak expectations are easily deterred by disconfirming experiences (Bandura, 1977).

#### *4.1.1.4 Perceived self-efficacy*

Self-efficacy theory has been expanded from being individuals' perceived capabilities to control their performance in emotionally taxing or difficult situations to include perceived capabilities to control self-referent activities such as cognitive processes, emotions and self-regulatory behaviours (Schunk, 1991). A person's perceived self-efficacy has a direct influence on his or her choice of activities and behavioural settings as well as his or her coping effort once these are activated. Perceived self-efficacy influences an individual's choice of behavioural settings. If individuals believe that a situation exceeds their coping skills, they will fear and avoid the threatening situation. Where individuals judge themselves as being capable of handling a situation that would otherwise be intimidating, they will be involved in and behave assuredly in the situation (Bandura, 1977).

Bandura (1977) postulated that self-efficacy affects an individual's choice of activities, effort and persistence. Individuals with strong self-efficacy for a task will encourage approach behaviour towards the specific tasks and behaviours. These individuals are hypothesised to work harder and persist longer when facing difficulties, compared to those with weak self-efficacy. Individuals with weak self-efficacy for accomplishing a task may avoid the task (Schunk, 1991). Individuals with higher levels of perceived self-efficacy to complete a task will have a higher level of approach behaviour (Bandura, 1977).

Bandura's self-efficacy theory has led to the development of applied constructs, one of which is career self-efficacy. According to Feehan and Johnston (1999), career self-efficacy emerged from a number of empirical studies based on social cognitive theory.

#### **4.1.2 Career self-efficacy**

The application of Bandura's theory of self-efficacy to possible career-related domains of behaviours is known as career self-efficacy (Betz & Hackett, 2006; Betz & Klein, 1996; Mathieu, Sowa, & Niles, 1993). Career self-efficacy has been significant both theoretically and in terms of the amenability of the theory to the design of career counselling interventions (Betz & Hackett, 2006). Career self-efficacy is important for an individual's career choice and development (Kelly, 1993), and is becoming an area of increasing interest (Betz & Klein, 1996).

Self-efficacy was introduced into career literature and operationalised by Betz and Hackett (Betz & Hackett, 1981; Lent et al., 1994). Betz is a trait-factor psychologist and Hackett a cognitive behaviourist. By using and applying both developmental and social psychology to a vital area of counselling and vocational psychology (career choice and development), their collaboration created career self-efficacy (Betz & Hackett, 2006). Career self-efficacy is now a key concept in understanding career development in general, as well as career development within specific groups (Betz & Hackett, 2006).

Betz and Hackett believed that “college students’ beliefs about their educational and occupational capabilities were significantly related to the nature and range of the career options they considered” (Betz & Klein, 1996, p. 285). They observed women to have differential access to the sources of learning (Betz, 2007). Betz and Hackett (2006) applied Bandura’s self-efficacy theory and used it to focus on understanding women’s career development. They were attempting to understand the underrepresentation of women in careers in the sciences, mathematics, and engineering fields as well as other traditionally male-dominated career fields (Betz, 2007). Betz and Hackett (2006) realised the relevance of self-efficacy theory in understanding the career development of women in general, as well as the underrepresentation of women in the fields of scientific and technical careers.

In the translation of self-efficacy theory to career development, there is emphasis on the interlocking processes of interest development, choice and performance. The theory emphasises forethought, anticipation of outcomes and active construction of meaning in career development. Career self-efficacy refers to an individual’s belief in his or her ability to participate successfully in specific work-related tasks and activities (Feehan & Johnston, 1999). Career decision-making self-efficacy is a domain of career self-efficacy (Betz & Klein, 1996).

#### **4.2 DEFINITION OF CAREER DECISION-MAKING SELF-EFFICACY**

To create the definitions of career self-efficacy and CDMSE, the definition of self-efficacy has been applied to different contexts. In the career context, career self-efficacy is defined as “the strength of one’s expectations that one can prepare for and enter particular careers successfully” (Kelly, 1993, p. 59). In applying the definition of self-efficacy to the career and decision-making contexts, CDMSE can be defined as “an individual’s beliefs that he or she can successfully complete the tasks necessary for career decision making” (Huang, 2015, p. 311). Thus, CDMSE refers to an individual’s belief that he or she has the necessary capabilities to successfully make the correct career decisions.

### **4.3 DIMENSIONS SELF-EFFICACY**

Through social learning analysis, Bandura (1997) argued that personal efficacy expectations are based on the following four major sources of information: performance accomplishment, vicarious learning or modelling, verbal persuasion and emotional arousal. These four sources of information are also known as learning experiences and allow self-efficacy to be learned and modified (Bandura, 1977; Betz, 2007; Taylor & Betz, 1983). Information acquired from the sources of self-efficacy does not automatically influence efficacy, since it is cognitively appraised (Schunk, 1991). The dimensions lead to the development of self-efficacy for a given behaviour or domain of behaviours. This, in turn, influences three major outcomes of criterion behaviours, namely approach versus avoidance behaviour, level of performance and persistence (Betz, 2007).

#### **4.3.1 Performance accomplishment (enactive mastery of experience)**

Performance accomplishment is based on personal mastery of experience and is especially influential (Bandura, 1977). According to Luthans (2011), performance accomplishment has the potential to be the most powerful dimension for forming efficacy beliefs as it comprises direct information about the individual's success. An individual's own performance is the most reliable guide for assessing efficacy (Schunk, 1991), and performance accomplishments have been shown to have the strongest influence on career self-efficacy (Ebenehi et al., 2016).

Success will raise an individual's mastery expectations, whereas repeated failures will lower them (Schunk, 1991). Failures or mishaps that occur early in the course of the events in particular will lower mastery expectations (Bandura, 1977). Occasional failures that are later overcome by willpower and effort can strengthen self-motivated persistence if an individual finds that persistent effort will overcome difficult obstacles (Bandura, 1977). If an individual experiences repeated success, he or she will develop strong efficacy expectations. The negative impact felt by occasional failures is likely to be reduced (Bandura, 1977).

### **4.3.2 Vicarious learning (modelling)**

According to Bandura (1977), many expectations are the result of vicarious learning. An individual often acquires capability information from the knowledge of others (Schunk, 1991). It is well documented that cognitive processes play a prominent role in the acquisition and retention of new behavioural patterns (Bandura, 1977). The acquisition of response information is a major aspect of learning (Bandura, 1977). Bandura (1977) suggested that through the observation of others and by making social comparisons, an individual is able to conceptualise how new behavioural patterns are performed and later serve as a guide for action. When individuals observe others performing tasks successfully, their efficacy expectation can be raised as they believe that they too have the ability to accomplish the task successfully. However, the opposite is also true. An individual could observe someone fail despite that person's high efforts, and the individual's judgements of his or her own capabilities could be lowered (Bandura, 1977).

Vicarious experiences are not only gained through the observation of others, they are also acquired through hearing about the outcomes of others in the individual's environment (Rollins & Valdez, 2006). By observing similar peers perform a task, it is conveyed to the individual that he or she is also capable of accomplishing the task (Schunk, 1991). The more similar the characteristics of the model (e.g. demographic variables such as age, gender, physical characteristics, education, status and experience) and the more relevant the task being performed, the more effect the vicarious learning will have on the observer's efficacy processing (Luthans, 2011).

Modelling behaviour with clear outcomes will provide more efficacy information compared to when/if the effects are ambiguous. Bandura (1977) suggested that observing individuals who meet with success produces greater behavioural improvements than witnessing the same behaviour modelled without any evident consequences.

Because vicarious learning relies on inferences from social comparisons, it is a less dependable source of information about an individual's capabilities compared to the direct evidence from personal accomplishments (Bandura, 1977). Bandura (1977) posited that the efficacy expectations created through vicarious learning alone are likely to be weaker and more vulnerable to change. Increases in efficacy due to vicarious learning can also be negated by subsequent failures (Schunk, 1991).

#### **4.3.3 Physiological and affective states (emotional arousal)**

Physiological arousal plays an informative function (Bandura, 1977). Individuals rely partly on their state of physiological arousal in judging their anxiety, vulnerability to stress and capabilities (Bandura, 1977, 1982). Emotional arousal is a fundamental source of information that can affect perceived self-efficacy in threatening situations (Bandura, 1977). Physiological indexes may include factors such as an increase in heart rate and sweating (Schunk, 1991).

According to Bandura (1977), physiologically arousing activities can produce avoidance behaviour. Stressful and taxing situations elicit emotional arousal that may contain information concerning personal competency (Bandura, 1977). If the individual's physiological and psychological arousal is negative, it will greatly distract from efficacy (Luthans, 2011).

According to Schunk (1991), the individual's bodily symptoms, which signal anxiety, may be interpreted as indicating a lack of skills. High emotional arousal reflects performance. Individuals are more likely to expect success when they are not overwhelmed by aversive arousal than if they are tense and viscerally agitated (Bandura, 1977).

#### **4.3.4 Verbal persuasion (encouragement)**

Bandura (1977) suggested that verbal persuasion is widely used in attempts to influence human behaviour due to its ease of use and the fact that it is readily

available. Individuals are socially persuaded, through suggestion, to believe that they have the capabilities to cope successfully with what has overwhelmed them in the past, and to master difficult situations. Individuals are provided with provisional aids for effective action and are likely to mobilise greater effort than those who receive only the performance aids (Bandura, 1977).

Luthans (2011) asserted that verbal persuasion is not as powerful a source of information as personal accomplishments and vicarious learning. Verbal persuasion is likely to result in weaker efficacy expectations compared to those arising from personal accomplishments as they do not provide an authentic experimental base (Bandura, 1977). The credibility, prestige, trustworthiness, expertise and assuredness of the persuader will have a substantial impact on the individual's self-efficacy. The more believable the sources of information, the more likely the individual's efficacy expectations will change (Bandura, 1977). Students are often influenced through verbal persuasion into believing that they have the capabilities to perform a task (Schunk, 1991).

#### **4.4 OUTCOMES OF CAREER DECISION-MAKING SELF-EFFICACY**

Kelly (1993) argued that the strength of an individual's self-efficacy will determine whether his or her behaviour will be initiated, the amount of effort that will be devoted to pursuing the goal, and the degree of persistence in obtaining the goal in the face of obstacles or barriers. Individuals with a strong self-efficacy will approach a task, perform effectively and persist through the challenges (McComb & Viviers, 2012), but if an individual is lacking the requisite skills, he or she will not produce a competent performance even though he or she has high self-efficacy (Schunk, 1991).

According to Rollins and Valdez (2006), individuals with high self-efficacy are not easily discouraged, and, in certain cases, their efforts to overcome obstacles may even increase. Individuals with stronger efficacy expectations increase the frequency of approach behaviour and are more likely to complete tasks (Bandura, 1977;

Watson et al., 2001). Rothmann (2001) argued that the main result of a strong specific self-efficacy perception is enhanced task performance. Higher levels of self-efficacy are associated with lower levels of stress, anxiety, perception of barriers, and an increase in problem-solving appraisal and slower withdrawal from activities (Coetzee & Oosthuizen, 2012). Studies such as that of Huang (2015) have found that higher levels of self-efficacy can lead to a successful school-to-work transition and better chances of gaining employment.

Individuals with low levels of self-efficacy doubt their capabilities, shy away from difficult situations and have low aspirations and weak commitment to the goals they choose to pursue (Rothmann, 2001). Individuals with low self-efficacy may avoid performing a task or activity they are uncertain about and they may give up easily when problems occur (Rollins & Valdez, 2006; Watson et al., 2001). Individuals with low self-efficacy may be prevented from performing a task even if they are fairly certain that performance of the task will lead to the desired outcome (Adachi, 2004).

If individuals believe they have the ability to complete a task successfully, they are said to have positive self-efficacy expectations with regard to the task. If individuals do not believe they have the ability to complete a task successfully, they are said to have negative self-efficacy with regard to the task. According to De Bruin and Bernard-Phera (2002), the more positive self-efficacy an individual has to make successful career decisions, the greater the chance he or she will display positive attitudes towards career decision-making in general.

Studies have identified self-efficacy as an important construct in career development (Adachi, 2004; Ebenehi et al., 2016). Self-efficacy has been used to explain the increasing diversity of career behaviours (Watson et al., 2001). Individuals with higher CDMSE experience higher vocational identity and greater career exploration engagement (Ebenehi et al., 2016). Previous research has found CDMSE to be positively related to career planning and exploration, career choice commitment, and vocational identity (Huang, 2015)

Huang (2015) found that CDMSE was negatively related to career indecision. Individuals with low levels of CDMSE beliefs are less likely to engage in career exploration because they fear they might not be able to come to a decision, unlike those with higher levels of CDMSE (Storme & Celik, 2017).

#### **4.5 PREVIOUS RESEARCH ON CAREER DECISION-MAKING SELF-EFFICACY**

There has been a wealth of research activity on self-efficacy (Betz & Hackett, 2006), as highlighted in the sections below.

##### **4.5.1 Career decision-making self-efficacy and sociodemographic variables**

Miles and Naidoo (2017) reported significant relationships have been reported between CDMSE and ethnic identity, nationality and gender. According to De Bruin and Bernard-Phera (2002), in South Africa, CDMSE retains its meaning for students in different social, political, economic and cultural contexts.

###### *4.5.1.1 Race and culture*

Cultural differences have been found to influence an individual's CDMSE (Huang, 2015). Career self-efficacy has been identified as a key factor in the career development of African American youth (Rollins & Valdez, 2006). Rollins and Valdez (2006) reported a positive correlation between African American high school students who perceived a degree of racism and their level of career self-efficacy. The individuals who perceived a higher degree of racism, had higher levels of career self-efficacy.

###### *4.5.1.2 Gender*

Self-efficacy has been shown to be significantly related to occupational choice. Gender has been reported to affect self-efficacy for traditionally male and female occupations (Kelly, 1993; Mathieu et al., 1993). Gender was found to influence self-efficacy for three of the six male occupations, that is, drafter, engineer and highway patrol officer. Kelly (1993) found that men had higher self-efficacy expectations than

women to complete the educational requirements necessary to pursue each of the occupations. The self-efficacy of females has been reported to be higher compared to that of males for elementary teacher, home economist and secretary in female occupations (Kelly, 1993). In his study, Kelly (1993) found that gender did not account for different self-efficacy levels in the following occupations: lawyer, physician, probation officer and any gender-balanced careers.

Females have been found to have higher efficacy expectations compared to males for traditionally female occupations and lower efficacy expectations for traditionally male occupations (Betz & Hackett, 1986; Mathieu et al., 1993). It has also been found that males have more positive self-efficacy expectations to become successful in traditionally female occupations. Females do not have as many positive self-efficacy expectations with regard to their ability to succeed in traditionally male occupations (Betz & Hackett, 1981; De Bruin & Bernard-Phera, 2002). It has been suggested that the differences in career self-efficacy between females in non-traditional and traditional career preferences may lessen as the females solidify their career choice (Mathieu et al., 1993).

Previous research reported no differences in the career self-efficacy of male and female university students (Kelly, 1993; Rollins & Valdez, 2006). Despite this, the study by Rollins and Valdez (2006) found female participants to have significantly higher CDMSE compared to their male counterparts.

#### **4.5.2 Career decision-making self-efficacy in higher education**

Career self-efficacy has been shown to be a predictor of academic performance, persistence, success and career decision-making intentions and behaviours (Betz & Klein, 1996; Kelly, 1993). Watson et al. (2001) reported strong empirical support for CDMSE to be a predictor of various career entry behaviours such as choice of major or academic performance in tertiary education students.

Students who are decided, cautiously decided and undecided about their careers have been found to have significantly different CDMSE scores. The CDMSE scores were not affected by students who were decided or cautiously decided about their careers. Srsic and Walsh (2001) reported that CDMSE scores were affected by students who were undecided about their careers. Students who are less confident in their ability to complete the required tasks and behaviours for effective decision-making have been found to be more career undecided (Taylor & Betz, 1983). In their research, Taylor and Betz (1983) found evidence of a moderately strong relationship between CDMSE and career indecision.

Taylor and Betz (1983) also reported that students in general have indicated considerable confidence in their ability to perform the necessary tasks for career decision making. In their research in South Africa, Miles and Naidoo (2017) found that career interventions are useful and effective in initiating positive change in CDMSE.

#### **4.5.3 Career decision-making self-efficacy and career adaptability**

Ebenehi et al. (2016) found that career self-efficacy and self-efficacy sources significantly predicted career adaptability skill among youth, students in higher education and existing workers. Ebenehi et al. (2016) also reported that career self-efficacy sources are the most statistically significant predictors of career adaptability skill. Self-efficacy sources in students in higher education have also been found to be able to enhance career adaptability skill (Ebenehi et al., 2016).

#### **4.5.4 Antecedents of career decision-making self-efficacy**

According to Rothmann (2001), repeated success at a specific task, the accumulation of successful experiences across a wide variety of tasks and feedback from the work environment that the individual is successful, are factors that are likely to lead to high generalised self-efficacy.

Previous research has found relationships between CDMSE and a variety of personality constructs that are antecedents of CDMSE. These include Goldberg's Big Five personality traits (extraversion, agreeableness, conscientiousness, neuroticism and openness to experience) (Goldberg, 1993), proactive personality, the healthy personality, personality hardiness and core self-evaluations (Huang, 2015).

Another antecedent of self-efficacy is perceived employability. A causality relationship between perceived employability and self-efficacy has been determined (Huang, 2015).

#### **4.6 CONCLUSION**

According to Adachi (2004), self-efficacy is a major mediator of behaviour and behavioural change. The CDMSE construct has been shown to be dynamic, and career interventions have been reported to improve an individual's efficacy for making career decisions successfully (Miles & Naidoo, 2017). Previous research on CDMSE has specifically focused on CDMSE beliefs and has found that CDMSE is associated with the extent to which individuals engage in career exploration (Storme & Celik, 2017). In addition, previous research has indicated that CDMSE has a positive relationship with a diverse range of relevant career-related behaviours (i.e. differential vocational identity, non-traditional career choices among female adolescence career planning and development and career decision-making attitudes and skills) (Miles & Naidoo, 2017).

According to Watson et al. (2001), CDMSE has been strongly endorsed in international career literature, and is deemed to merit greater attention by South African career researchers and practitioners.

#### **4.7 CHAPTER SUMMARY**

This chapter provided an overview of CDMSE. This overview discussed CDMSE from the time when Bandura created the self-efficacy theory through to Betz and Hackett applying self-efficacy theory to the career domain, creating career self-efficacy, and with the help of Taylor, creating CDMSE. The dimensions of self-efficacy were then explained. This was followed by an overview of the outcomes of CDMSE. In conclusion, previous research on CDMSE was explored.

The next chapter describes the research design adopted in this study. The research approach, research design, research method, measuring instruments, research procedure, ethical guidelines and the statistical analyses used in this study are discussed. In conclusion, the hypothesis is formulated.

## **CHAPTER 5: RESEARCH METHODOLOGY**

This chapter discusses the research approach and research design. The research method, which includes the population, sampling method and characteristics of the sample, is explained. Following the research method, the measuring instruments used in this study are evaluated. The research procedure and ethical guidelines are then addressed. The type of statistical analysis selected for this study is outlined. In conclusion, the hypothesis is formulated.

### **5.1 RESEARCH APPROACH**

A quantitative research approach was adopted in this study. The study was a non-experimental study, which allowed the researcher to explain the establishment of the relationship between the constructs of career adaptability, SOC and CDMSE and the demographic variables of students at a residential university. More specifically, descriptive research was used (Van Zyl, 2014).

### **5.2 RESEARCH DESIGN**

For the purposes of this study, a cross-sectional survey design was chosen. According to Levin (2006), cross-sectional studies examine several people at one point in time and are conducted to estimate the prevalence of the construct in the population. Cross-sectional studies can be used to examine differences as opposed to changes in individuals (Van Zyl, 2014).

The advantages of cross-sectional studies are as follows (Mann, 2003; Van Zyl, 2014):

- One group is used and data is collected once.
- The dropout rate is kept to a minimum.
- Such studies are relatively inexpensive.
- They take little time to conclude.
- Multiple outcomes can be studied from the data and many risk factors can be assessed.

The disadvantages of cross-sectional studies are as follows (Levin, 2006; Van Zyl, 2014):

- They are limited as they are carried out only at one point in time.
- Different results may occur if another time frame is chosen.
- There is a limit to the comparability of the results.
- There is no indication of the sequence of events, which makes it impossible to infer causality.
- No direction is provided of the change a group may take.
- Nothing is revealed about the continuity of development on an individual basis.

This study did not investigate the cause and effect of the constructs. It merely investigated whether there was a relationship between the constructs, which rendered the use of a cross-sectional study suitable.

## **5.3 RESEARCH METHOD**

### **5.3.1 Research population**

The population identified and used for the study comprised undergraduate students at a residential university in South Africa. The students in the population were all studying full time. They were also studying all the possible qualifications the university has to offer. The population consisted of 5 685 undergraduate students enrolled at the university.

### **5.3.2 Sampling**

To create the sample (N = 317), convenience sampling (also known as availability sampling) was used. Convenience sampling is a type of non-probability sampling that relies on data collection from members of the population who are willing and available to participate in the study. The whole population was invited to participate in the study, and no inclusion criteria were identified before the selection of the sample (Dudovsky, 2018). A total of 5 685 surveys were sent out and a total of 317 questionnaires were returned for analysis.

### 5.3.3 Characteristics of the sample

A total of 317 undergraduate students were included in the sample. The characteristics of the sample are provided in more detail in Table 5.1.

Table 5.1

*Characteristics of the sample (n = 317)*

Item	Category	Frequency	%
Gender	Male	105	33.1
	Female	201	63.4
	Missing	11	3.5
Race	Black	203	64.0
	White	68	28.5
	Indian	14	4.4
	Coloured	17	5.4
	Other	9	2.8
	Missing	6	1.9
Age	18	35	11.0
	19	61	19.2
	20	71	22.4
	21	63	19.9
	22	36	11.4
	23	20	6.3
	24	10	3.2
	25	4	1.3
	26	4	1.3
	27	2	0.6
	28	1	0.3
	30	1	0.3
	34	1	0.3
	35	1	0.3
	37	1	0.3
39	3	0.9	
42	1	0.3	

45	1	0.3
Missing	1	0.3

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## 5.4 MEASURING INSTRUMENTS

This section describes the instruments selected for this study. The total time to complete all the measuring instruments was 20 minutes.

### 5.4.1 Career Adapt-Abilities Scale (CAAS)

The CAAS was chosen to measure career adaptability in the sample. The rationale and development, description, administration, scoring and interpretation, reliability and validity, as well as the motivation for use of the scale, are discussed below.

#### 5.4.1.1 Rationale and development

The CAAS was developed by a team of collaborators from 13 countries, one of which was South Africa. It is an international measure of career adaptability (Savickas & Porfeli, 2012). Maree (2012), in turn, developed the Career Adapt-Abilities Scale – South African Form (CAAS-South Africa).

#### 5.4.1.2 Description

CAAS-South Africa is a measure consisting of 24 items. There are four subscales, each with six items that measure concern, control, curiosity and confidence as psychosocial resources for managing occupational transitions, developmental tasks and work traumas. Participants respond in English to each item on the scale and choose from 1 (not strong) to 5 (strongest). The scores are combined to yield a total score indicating the career adaptability of each participant (Maree, 2012). Questions such as “I think about what my future will look like” (concern), “I like being left to make decisions alone” (control), “I enjoy experiencing new opportunities” (curiosity), and “I can perform tasks effectively” (confidence), are included in the scale.

#### *5.4.1.3 Administration and scoring*

The CAAS-South Africa is administered in English. Participants read the instructions and questions themselves, and are required to respond to each and every question. The scores for each subscale are summed and then divided by six to obtain the average score for each subscale. Once the average of each subscale is obtained, the results are plotted on a graph to allow interpretation. The higher the score, the higher the individual's career adaptability will be.

#### *5.4.1.4 Interpretation*

Career adaptability provides an indication of how an individual deals with current developmental tasks and job crises or career transitions. The subscales are able to give separate indications of the respondent's concern, control, curiosity and confidence. The total scores of the subscales provide an indication of the individual's total career adaptability.

#### *5.4.1.5 Reliability and validity*

The internal consistency for the CAAS was found to have an alpha value of 0.92. This is higher than the subscale scores for concern (0.83), control (0.74), curiosity (0.79), and confidence (0.85) (Savickas & Porfeli, 2012). The CAAS-South Africa has been shown by Maree (2012) to perform in a similar way to the CAAS-International in terms of psychometric characteristics and factor structure.

The CAAS-USA has been shown to perform in more or less the same way as the CAAS-International in terms of factor structure and psychometric properties. The CAAS-USA has been shown to demonstrate good to excellent internal consistency for both the total score and the subscale scores, and strong concurrent validity (Porfeli & Savickas, 2012). By applying these results to the CAAS-International, this instrument can be said to also demonstrate good to excellent internal consistency, and strong concurrent validity. The internal consistency for the four subscales and the total scores ranged from good to excellent for the CAAS-South Africa (Maree, 2012).

#### *5.4.1.6 Motivation for choice*

The CAAS is the most appropriate and valid choice with which to measure career adaptability. It has been internationally recognised, and the interpretation of the scale for South Africa has been found to be valid and reliable. Maree (2012) described the CAAS-South Africa as the ideal instrument that can be used by counsellors to assess their clients and help them acquire the skills to become more capable of adapting to changing learning, studying and work contexts. Researchers have also used the CAAS-South Africa to measure adaptability resources among students (Maree, 2012).

### **5.4.2 Orientation to Life Questionnaire (OLQ)**

The OLQ was used to measure SOC. The rationale and development, description, administration and scoring, interpretation, the reliability and validity, and motivation for use of the scale are discussed below.

#### *5.4.2.1 Rationale and development*

OLQ, also known as the Sense of Coherence Scale, was developed by Anton Antonovsky to measure SOC (Antonovsky, 1993). The OLQ was designed to be culturally free and was developed after extensive interviews with individuals who had suffered severe trauma; the trauma had inexplicable major consequences for the individuals' lives, yet they were perceived to function remarkably well (Feldt & Rasku, 1998). The OLQ has been completed in 14 different languages, including English, Afrikaans and Tswana (Antonovsky, 1993). The OLQ has also been administered to adults of all ages, to males, females and different classes (Antonovsky, 1993). The scale exists in two formats, the original 29-item scale and the shorter 13-item scale (Feldt & Rasku, 1998).

#### *5.4.2.2 Description*

The 13-item scale, which was used in this study, contains five items for comprehensibility, four items for meaningfulness and four items for manageability. Owing to the fact that the scale was developed to measure a global orientation,

SOC, the three measures should not be measured as distinct constructs (Antonovsky, 1993). Respondents are asked to select a response on a seven-point ordinal scale with two anchoring phrases (Harry, 2015). An example of a question for comprehensibility would be “Do you feel you always know what to do in making your decisions?” The answer options range from 1 (seldom) to 7 (always). An example of a question for manageability would be “Unpleasant behaviour causes you to”. The answer will range from 1 (hide away from the problem) to 7 (face the problem and move on). An example of a question for meaningfulness would be “You anticipate your future studies at university to be”. The answer will range from 1 (meaningless and of no purpose) to 7 (meaningful and purposeful). According to Antonovsky (1993), strong SOC is always reflected in a high score.

#### *5.4.2.3 Administration and scoring*

The OLQ-13 is a self-rating scale, and can be completed through both interview and self-completion (Antonovsky, 1993). In this study, the OLQ-13 was self-completed. Individuals read the instructions themselves and select the most appropriate response. The answers of the OLQ-13 are summed to obtain a total score. The items that are formulated “negatively” are reversed scored. According to Antonovsky (1993), this allows for a high score to always express a strong SOC.

#### *5.4.2.4 Interpretation*

The OLQ was created to measure SOC as a global construct and not to measure the three distinct components of SOC. The higher the total score, the stronger an individual’s SOC is.

#### *5.4.2.5 Reliability and validity*

The internal consistency of the OLQ-13 has been reported to be somewhat lower but still acceptable, with a Cronbach alpha coefficient of 0.79 (Diraz et al., 2003). In five published studies, the internal consistency of the OLQ-13 had an average Cronbach alpha coefficient for unweighted sample size of 0.82; in four theses/dissertations, 0.81; and in seven unpublished studies, 0.78 (Antonovsky, 1993). On the basis of

the high internal consistency of the scale in various populations it can be said that the scale is reliable with respect to the given populations. OLQ has been shown to have content, face and consensual validity. There is no data on the discriminant validity of the scale. The scale has criterion validity (Antonovsky, 1993). Strümpfer and De Bruin (2009) found that, in the South African context, the OLQ-13 may be used without losing much information or accuracy instead of using the long form.

#### *5.4.2.6 Motivation for choice*

The use of the OLQ in previous research studies has proven that the scale is valid, reliable and feasible (Antonovsky, 1993). The OLQ scale is also the most appropriate scale to measure SOC. The OLQ-13 was chosen for this study because it shortens the time necessary to complete the battery.

### **5.4.3 Career Decision Self-Efficacy (CDSE) Scale**

The CDSE Scale was chosen to measure CDMSE in this study. The rationale and development, description, administration and scoring, interpretation, reliability and validity, as well as the motivation for use of the scale are discussed here.

#### *5.4.3.1 Rationale and development*

The CDSE scale, created by Taylor and Betz (1983), assesses domain behaviours relevant to career choice competencies, namely accurate self-appraisal, gathering occupational information, goal selection, making plans for the future and problem solving (Taylor & Betz, 1983).

#### *5.4.3.2 Description*

The CDSE Scale has a 25-item short form known as the Career Decision Self-Efficacy Short Form (CDSE-SF) scale. This scale was created by Betz et al. (1996). The rational structure of the original instrument was retained. The best five items from each of the five subscales of the CDSE Scale are used. Responses are obtained using a 10-level confidence continuum, ranging from 1 (*no confidence*) to

10 (*complete confidence*).

Questions such as “I strive to achieve well academically” (goal setting), “I look for jobs from multiple sources” (gathering occupational information), “I persistently work at attaining my degree despite frustrations” (problem solving), “I know what steps to take to successfully complete my degree” (planning for the future), and “I know what my ideal job is” (accurate self-appraisal), are put to participants.

#### *5.4.3.3 Administration and scoring*

The CDSE-SF Scale is administered as a self-response scale. The respondents read the instructions independently and respond with the most appropriate choice. To score the scale, the 25 items are distributed among five subscales. Each subscale’s score is the sum of the responses given to the five items in the subscale. The sum is then divided by five to return the score of the subscale. To obtain the total score, the sum of the 25 responses is obtained and the score is then divided by 25.

#### *5.4.3.4 Interpretation*

The score of each of the subscales allows one to determine the individual’s goal setting, gathering of occupational information, problem solving, planning for the future and accurate self-appraisal. The higher the score for the subscale, the higher the individual’s level of the subscale will be. The individual’s total CDMSE is determined by summing all the responses. The higher the total score, the higher the individual’s CDMSE will be.

#### *5.4.3.5 Reliability and validity*

The findings of the study by Betz et al. (1996) suggested that the CDSE-SF possesses psychometric characteristics comparable to or better than the long form with only half the length. The CDSE-SF Scale was shown to have coefficient alpha values ranging from 0.73 (self-appraisal) to 0.83 (goal selection), which indicate that the subscales are sufficiently reliable, at least for research purposes. The total scale alpha value is 0.94, which is nearly as high as the 50-item version (0.97) (Betz et al.,

1996). Betz et al. (1996) reported no significant gender differences in scores.

The concurrent validity coefficients for the CDSE-SF were shown to be statistically significant and of moderate size. Concurrent validity coefficients are as high if not higher for the short form compared to the long form (Betz et al., 1996).

The short form should be deemed a measure of general CDMSE until further psychometric evaluations have been done. Watson et al. (2001) conducted confirmatory factor analysis on CDMSE on South African university students, with a Cronbach alpha coefficient of 0.91 for the full scale.

#### *5.4.3.6 Motivation for choice*

The CDSE-SF was chosen for the study because it is the most suitable scale available to measure CDMSE. It has also been shown to be valid and reliable for use in South Africa with university students.

## **5.5 RESEARCH PROCEDURE AND ETHICAL CONSIDERATIONS**

Ethical clearance for the study was granted by the University of South Africa (Unisa). A South African residential university also granted permission to conduct the study on the university's undergraduate students. An invitation to participate in the study, as well as a link to the questionnaire, was e-mailed to the undergraduate students at the university. The data was collected through the electronic distribution of the questionnaire. The data was captured and arranged for statistical analysis.

Throughout the study, strict ethical guidelines were adhered to. The participants were informed that their participation was voluntary and they had the option to opt out of the study any time they chose, as long as it was before they submitted their completed questionnaire. The participants were protected from harm and they all remained anonymous. The identity of the researcher was known to all participants. Informed consent was obtained from each participant before he or she completed the study. The participants were not deceived about the study and their role in it. Each participant was given a description of the study as well as the objectives and potential benefits thereof. The results of the study will be kept securely on a

password protected computer. The availability of the results to participants will be at the participant's request.

## **5.6 STATISTICAL ANALYSIS**

Descriptive and inferential statistics were used to describe the results. Descriptive statistics, in terms of mean and standard deviation, were used to describe the variables. The reliability of the measuring instruments was determined by calculating the Cronbach alpha coefficient. Because the research was non-experimental, namely to determine the correlation between the variables, the Pearson product-moment correlation was used. Multiple regression analysis was utilised to determine whether SOC and CDMSE predicted career adaptability. Analysis of variance (ANOVA) was applied to investigate the demographic variances of the three constructs (Van Zyl, 2014).

## **5.7 FORMULATION OF THE HYPOTHESES**

Combined with the specific aims of the research, the following research hypotheses were formulated:

- H1: SOC and CDMSE have a statistically and practically significant positive relationship with the career adaptability of students at a residential university
- H2: SOC and CDMSE statistically significantly predict the career adaptability of students at a residential university;
- H3: Students at a residential university from different demographic backgrounds, namely age, gender and race, differ significantly with regard to their career adaptability, SOC and CDMSE.

## **5.8 SUMMARY**

This chapter described the research approach adopted in this study. The research design was described in detail, including the population, the sampling method and the characteristics of the sample. The measuring instruments were then evaluated. Included in the evaluation of each measuring instrument was the rationale for and

development of the instrument, a description of the instrument, the administration and scoring of the instrument, the interpretation of the instrument, the reliability and validity of the instrument and the motivation for selecting the instrument. The research procedure and ethical guidelines that were followed were explained and this was followed by a description of the statistical analysis. Finally, the hypotheses were formulated. The next chapter discusses the results of the study.

## **CHAPTER 6: RESULTS**

This chapter focuses on the results of the study. The reliability of the scales is discussed, followed by an explanation of the descriptive and inferential statistics. In conclusion, the results of the data are interpreted and discussed.

### **6.1 RESULTS**

The reliability of each scale and the subscales is reported on by means of the Cronbach alpha coefficient. The relationships between the CAAS, SOC and CDMSE, as well as the subscales, are reported by means of descriptive statistics and Pearson's product correlation analysis. Next, the predictive relationship between SOC, CDMSE and the CDMSE subscales on CAAS and the CAAS subscales is presented by means of regression analysis. Finally, the demographic differences are indicated by means of an independent t-test.

#### **6.1.1 Reliability of the measuring instruments**

The Cronbach alpha coefficients are indicated in Table 6.1, and discussed below.

Table 6.1

*Cronbach alpha coefficients*

Scale	Item		$\alpha$
SOC	13	SOC	0.75
CDSE-SF	5	Self-appraisal	0.75
	5	Occupational Information	0.75
	5	Goal selection	0.77
	5	Planning	0.78
	5	Problem solving	0.72
	25	Career decision making self-efficacy total	0.93
CAAS-South African	6	Concern	0.81
	6	Control	0.78
	6	Curiosity	0.82
	6	Confidence	0.89
	24	Career adaptability total	0.93

As indicated in Table 6.1, all the scales and subscales show acceptable reliability ranging from 0.72 (for problem solving) to 0.93 (for the career decision-making self-efficacy and career adaptability total scales). According to Moerdyk (2015), Cronbach alpha scores above 0.70 are deemed acceptable for reliability. Because the scales' Cronbach alpha values were greater than 0.7, they had an acceptable level of reliability.

### 6.1.2 Descriptive statistics and relationship between variables

The descriptive statistics and Pearson correlations for SOC, CDMSE and CAAS are reported in Table 6.2.

Table 6.2

*Descriptive statistics and Pearson correlations*

Item	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1 SOC	3.76	0.83	1	-	-	-	-	-	-	-	-	-	-	-
2 Self-appraisal	3.75	0.71	0.38*+	-	-	-	-	-	-	-	-	-	-	-
3 Occupational information	3.62	0.78	0.39*+	0.64*++	-	-	-	-	-	-	-	-	-	-
4 Goal selection	3.65	0.76	0.43*+	0.77*++	0.68*++	-	-	-	-	-	-	-	-	-
5 Planning	3.67	0.76	0.42*+	0.70*++	0.73*++	0.77*++	-	-	-	-	-	-	-	-
6 Problem solving	3.47	0.77	0.33*+	0.68*++	0.55*++	0.71*++	0.72*++	-	-	-	-	-	-	-
7 CDMSE	3.64	0.66	0.45*+	0.86*++	0.83*++	0.90*++	0.90*++	0.85*++	-	-	-	-	-	-
8 Concern	3.65	0.82	0.38*+	0.48*+	0.49*+	0.49*+	0.51*++	0.37*+	0.54*++	-	-	-	-	-
9 Control	3.77	0.74	0.32*+	0.52*++	0.48*+	0.52*++	0.49*+	0.46*+	0.57*++	0.63*++	-	-	-	-
10 Curiosity	3.59	0.83	0.19*	0.39*+	0.46*+	0.39*+	0.42*+	0.41*+	0.48*+	0.55*++	0.65*++	-	-	-
11 Confidence	3.71	0.86	0.28*	0.45*+	0.52*++	0.51*++	0.53*++	0.41*+	0.56*++	0.59*++	0.69*++	0.70*++	-	-
12 CAAS	3.68	0.69	0.34*+	0.54*++	0.57*++	0.57*++	0.57*++	0.49*+	0.64*++	0.81*++	0.86*++	0.85*++	0.88*++	-

\*Correlation is significant at the 0.01 level (2-tailed) ( $p < 0.01$ ).

Practical significance: small/weak correlation:  $0.1 > r < 0.3$ ; +medium/moderate correlation:  $> 0.3 r < 0.5$ ; ++large/strong correlation:  $r > 0.5$

All the variables were found to be statistically significantly related. Practically significant correlations of strong effect were evident between CAAS and self-appraisal, occupational information, goal selection, planning and CDMSE. Concern was found to be practically significantly related (strong effect) to planning and CDMSE. Control was practically significantly related (strong effect) to self-appraisal, goal selection, CDMSE and concern. There were practically significantly strong correlations between confidence and occupational information, goal selection, planning and CDSMSE.

Practical significant correlations of moderate effect were evident between CAAS and SOC and problem solving. Moderate correlations were also found between concern and SOC, self-appraisal, occupational information, goal selection and problem solving. Control and SOC, occupational information, planning and problem solving were also practically significantly related (moderate effect). Other moderate correlations were evident between curiosity and self-appraisal, occupational information, goal selection, planning, problem solving and CDMSE. Lastly, there were moderate correlations between confidence and self-appraisal and problem solving.

Practical significant weak correlations were evident between curiosity and SOC and confidence and SOC.

### **6.1.3 Regression analyses**

Multiple regression analyses were performed next. This allows one to examine the predictive relationship between two or more variables. The influence of SOC, CDMSE and CDMSE subscales (independent variables) on CAAS and CAAS subscales (dependent variables) was examined. The results are reported in Tables 6.3 to 6.8.

Table 6.3

*Multiple regression analysis with concern as the dependent variable and SOC and the subscales of CDMSE as the independent variables*

Model	Unstandardised		Standardised		t	Sig.	F	R <sup>2</sup>
	Coefficients		coefficients					
	B	Std. error	Beta					
1.							24.58	0.33
Constant	0.83	0.25		3.35	0.00			
SOC	0.16	0.05	0.16	2.94	0.00*			
Self-appraisal	0.23	0.10	0.20	2.43	0.02*			
Occupational information	0.20	0.08	0.19	2.52	0.01*			
Goal selection	0.12	0.10	0.11	1.16	0.25			
Planning	0.19	0.10	0.17	1.90	0.06			
Problem solving	-0.14	0.08	-0.13	1.69	0.09			

\* $p < 0.05$  – statistically significant

As indicated in Table 6.3, the entry of SOC and the subscales of CDMSE self-appraisal and occupational information produced a statistically significant model ( $F = 24.58$ ;  $p < 0.00$ ) accounting for approximately 33% of the variance in concern. SOC ( $\beta = 0.16$ ;  $t = 2.94$ ;  $p < 0.00$ ), self-appraisal ( $\beta = 0.20$ ;  $t = 2.43$ ;  $p < 0.02$ ) and occupational information ( $\beta = 0.19$ ;  $t = 2.52$ ;  $p < 0.01$ ) acted as significant predictors of concern.

Table 6.4

*Multiple regression analysis with control as the dependent variable and SOC and the subscales of CDMSE as the independent variables*

Model	Unstandardised coefficients		Standardised coefficients		t	Sig.	F	R <sup>2</sup>
	B	Std. error	Beta					
1.							27.19	0.35
Constant	1.17	0.22			5.43	0.00		
SOC	0.07	0.05	0.08		1.41	0.16		
Self-appraisal	0.23	0.08	0.22		2.77	0.01*		
Occupational information	0.16	0.07	0.17		2.29	0.02*		
Goal selection	0.10	0.09	0.11		1.16	0.25		
Planning	0.01	0.09	0.01		0.11	0.91		
Problem solving	0.14	0.07	0.15		1.94	0.05		

\* $p < 0.05$  – statistically significant

As indicated in Table 6.4, the entry of the subscale of CDMSE self-appraisal and occupational information produced a statistically significant model ( $F = 27.19$ ;  $p < 0.00$ ) accounting for approximately 35% of the variance in concern. Self-appraisal ( $\beta = 0.22$ ;  $t = 2.77$ ;  $p < 0.01$ ) and occupational information ( $\beta = 0.17$ ;  $t = 2.29$ ;  $p < 0.02$ ) acted as significant predictors of concern.

Table 2.5

*Multiple regression analysis with curiosity as the dependent variable and SOC and the subscales of CDMSE as the independent variables*

Model	Unstandardised coefficients		Standardised coefficients		t	Sig.	F	R <sup>2</sup>
	B	Std. error	Beta					
1.							17.11	0.25
Constant	1.32	0.26			5.02	0.00		
SOC	-0.02	0.06	-0.02		-	0.74		
					0.33			
Self-appraisal	0.06	0.10	0.05		0.54	0.59		
Occupational information	0.32	0.08	0.30		3.86	0.00*		
Goal selection	-0.04	0.11	-0.04		-	0.70		
					0.38			
Planning	0.06	0.11	0.05		0.55	0.58		
Problem solving	0.26	0.09	0.24		2.94	0.00*		

\* $p < 0.05$  – statistically significant

As indicated in Table 6.5, the entry of the subscales of CDMSE occupational information and problem solving produced a statistically significant model ( $F = 17.11$ ;  $p < 0.00$ ) accounting for approximately 25% of the variance in curiosity. Occupational information ( $\beta = 0.30$ ;  $t = 3.86$ ;  $p < 0.00$ ) and problem solving ( $\beta = 0.24$ ;  $t = 2.94$ ;  $p < 0.00$ ) acted as significant predictors of curiosity.

Table 6.6

*Multiple regression analysis with confidence as the dependent variable and SOC and the subscales of CDMSE as the independent variables*

Model	Unstandardised coefficients		Standardised coefficients		t	Sig.	F	R <sup>2</sup>
	B	Std. error	Beta					
1.							25.70	0.34
Constant	0.90	0.26			3.52	0.00		
SOC	0.04	0.06	0.04		0.72	0.48		
Self-appraisal	0.06	0.10	0.05		0.62	0.53		
Occupational information	0.26	0.08	0.23		3.19	0.00*		
Goal selection	0.12	0.11	0.11		1.15	0.25		
Planning	0.28	0.10	0.25		2.74	0.01*		
Problem solving	0.01	0.09	0.01		0.09	0.93		

\* $p < 0.05$  – statistically significant

As indicated in Table 6.6, the entry of the subscale of CDMSE occupational information and planning produced a statistically significant model ( $F = 25.70$ ;  $p < 0.00$ ) accounting for approximately 34% of the variance in confidence. Occupational information ( $\beta = 0.23$ ;  $t = 3.19$ ;  $p < 0.00$ ) and planning ( $\beta = 0.25$ ;  $t = 2.74$ ;  $p < 0.01$ ) acted as significant predictors of confidence.

Table 6.7

*Multiple regression analysis with CAAS as the dependent variable and SOC and the subscales of CDMSE as the independent variables*

Model	Unstandardised coefficients		Standardised coefficients		t	Sig.	F	R <sup>2</sup>
	B	Std. error	Beta					
1.							36.33	0.43
Constant	1.00	0.20			5.12	0.00		
SOC	0.05	0.04	0.06		1.09	0.28		
Self-appraisal	0.17	0.08	0.17		2.21	0.03*		
Occupational information	0.23	0.06	0.26		3.76	0.00*		
Goal selection	0.06	0.08	0.07		0.76	0.45		
Planning	0.16	0.08	0.17		2.03	0.04*		
Problem solving	0.07	0.07	0.07		1.03	0.31		

\* $p < 0.05$  – statistically significant

As indicated in Table 6.7, the entry of the subscales of CDMSE self-appraisal, occupational information and planning produced a statistically significant model ( $F = 36.33$ ;  $p < 0.00$ ) accounting for approximately 43% of the variance in CAAS. Self-appraisal ( $\beta = 0.17$ ;  $t = 2.21$ ;  $p < 0.03$ ), occupational information ( $\beta = 0.26$ ;  $t = 3.76$ ;  $p < 0.00$ ) and planning ( $\beta = 0.17$ ;  $t = 2.03$ ;  $p < 0.04$ ) acted as significant predictors of confidence.

Table 6.8

*Multiple regression analysis with career adaptability as the dependent variable and SOC and CDMSE as the independent variables*

Model	Unstandardised coefficients		Standardised coefficients		Sig.	F	R <sup>2</sup>
	B	Std. error	Beta	T			
1.	Constant	1.04	0.19		5.44	0.00	
	SOC	0.05	0.04	0.06	1.16	0.25	
	CDMSE	0.67	0.06	0.63	12.24	0.00*	106.36 0.43

\* $p < 0.05$  – statistically significant

As indicated in Table 6.8, the entry of CDMSE produced a statistically significant model ( $F = 106.36$ ;  $p < 0.00$ ) accounting for approximately 43% of the variance in career adaptability. CDMSE ( $\beta = 0.63$ ;  $t = 12.24$ ;  $p < 0.00$ ) acted as a significant predictor of career adaptability. It would seem that SOC does not contribute significantly to career adaptability when CDMSE is also taken into account.

#### **6.1.4 Demographic differences**

One of the secondary aims of the investigation was to determine demographic differences with regard to different age, gender and race groups on SOC, CDMSE and CAAS. The sample showed a highly restricted range in terms of age, as most of the sample were between the ages of 19 and 22. Furthermore, the sample did not yield large enough groups for the various race groups to allow for meaningful comparison. Therefore, it was not possible to test for demographic differences for age and race in this particular sample group. The gender differences were determined through the use of an independent t-test, and are reported in Table 6.9.

Table 6.9

*Independent t-test of the mean difference scores of the gender groups on SOC, CDMSE and CAAS*

<b>Group statistics</b>					
	GENDER	N	Mean	SD	Std. error mean
SOC	Male	103	3.69	0.77	0.07
	Female	197	3.80	0.84	0.06
Self- appraisal	Male	103	3.77	0.72	0.07
	Female	198	3.74	0.70	0.05
Occupational information	Male	104	3.57	0.80	0.08
	Female	196	3.64	0.74	0.05
Goal selection	Male	104	3.62	0.73	0.07
	Female	194	3.68	0.76	0.05
Planning	Male	103	3.66	0.76	0.08
	Female	196	3.67	0.73	0.05
Problem solving	Male	103	3.46	0.80	0.08
	Female	195	3.48	0.74	0.05
CDMSE	Male	98	3.64	0.67	0.07
	Female	188	3.65	0.63	0.04
Concern	Male	104	3.58	0.88	0.09
	Female	198	3.70	0.76	0.05
Control	Male	104	3.71	0.76	0.07
	Female	199	3.81	0.73	0.05
Curiosity	Male	103	3.64	0.79	0.08
	Female	195	3.57	0.84	0.06
Confidence	Male	103	3.73	0.82	0.08

CAAS	Female	198	3.69	0.86	0.06
	Male	99	3.66	0.68	0.07
	Female	189	3.70	0.69	0.05

		Levene's test for equality of variances		t-test for equality of means			
		F	Sig.	t	Df	Sig. (2-tailed)	Mean difference
SOC	Equal variances assumed	0.51	0.48	-1.10	298	0.27	-1.11
	Equal variances not assumed			-1.13	224.23	0.26	-0.11
Self-appraisal	Equal variances assumed	0.20	0.66	0.46	299	0.65	0.04
	Equal variances not assumed			0.46	202.52	0.65	0.04
Occupational information	Equal variances assumed	0.21	0.65	-0.78	298	0.44	-0.07
	Equal variances not assumed			-0.76	195.85	0.45	-0.07
Goal selection	Equal variances assumed	0.28	0.60	-0.63	296	0.53	-0.06
	Equal variances not assumed			-0.63	217.32	0.53	-0.06

	variances not assumed						
Planning	Equal	0.16	0.69	-0.16	297	0.88	-0.01
	variances assumed						
	Equal			-0.16	200.02	0.88	-0.01
	variances not assumed						
Problem solving	Equal	1.15	0.29	-0.21	296	0.83	-0.02
	variances assumed						
	Equal			-0.21	194.15	0.84	-0.02
	variances not assumed						
CDMSE	Equal	0.60	0.44	-0.19	284	0.85	-0.02
	variances assumed						
	Equal			-0.19	187.78	0.85	-0.02
	variances not assumed						
Concern	Equal	3.36	0.07	-1.23	300	0.22	-0.12
	variances assumed						
	Equal			-1.17	183.91	0.24	-0.12
	variances not assumed						
Control	Equal	0.52	0.47	-1.10	301	0.27	-0.10
	variances						

	assumed						
	Equal			-1.08	201.54	0.28	-0.10
	variances						
	not						
	assumed						
Curiosity	Equal	0.88	0.35	0.74	296	0.46	0.07
	variances						
	assumed						
	Equal			0.76	217.82	0.45	0.07
	variances						
	not						
	assumed						
Confidence	Equal	0.41	0.52	0.39	299	0.70	0.04
	variances						
	assumed						
	Equal			0.40	216.76	0.69	0.04
	variances						
	not						
	assumed						
CAAS	Equal	0.05	0.83	-0.52	286	0.60	-0.04
	variances						
	assumed						
	Equal			-0.52	200.06	0.60	-0.44
	variances						
	not						
	assumed						

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The results in Table 6.9 indicate that there was no statistically significant difference in respect of the mean difference scores of gender on SOC, CDMSE, the CDMSE subscales, CAAS and the CAAS subscales.

## 6.2 DISCUSSION

As stated earlier, the aim of this study was to determine the relationship between career adaptability, SOC and CDMSE, whether SOC and CDMSE can be used to predict career adaptability, and whether there were any demographic differences between age, gender and race.

With regard to career adaptability, the CAAS-South Africa was used. The Cronbach alpha coefficient for CAAS-South Africa was found to be 0.93. This is in line with previous results such as the study by Savickas and Porfeli (2012), where the Cronbach alpha coefficient was found to be 0.92. The CAAS-International has a Cronbach alpha coefficient of 0.92 (Maree, 2012; Savickas & Porfeli, 2012). The Cronbach alpha coefficients for the subscales concern (0.81), control (0.78), curiosity (0.82) and confidence (0.89) in the current study were similar to the results in Savickas and Porfeli's (2012) study, where the Cronbach alpha coefficients were found to be 0.83 for concern, 0.74 for control, 0.79 for curiosity and 0.85 for confidence.

The CDSE-SF scale was used to measure CDMSE. The Cronbach alpha coefficient for the CDSE-SF was 0.93, which is strikingly similar to the Cronbach alpha coefficient for CDSE-SF found by Watson et al. (2001), namely 0.91. Betz et al. (1996) reported a Cronbach alpha coefficient of 0.97. In this study, the Cronbach alpha coefficients for the subscales self-appraisal (0.75), occupational information (0.75), goal selection (0.77), planning (0.78) and problem solving (0.72) were similar to the following Cronbach alpha coefficients reported by Watson et al. (2001): self-appraisal 0.64; occupational information 0.74; goal selection 0.75; planning 0.73; and problem solving 0.73. In Watson et al.'s (2001) study, all the Cronbach alpha coefficients were above 0.7 with the exception of self-appraisal. In the current study, self-appraisal was found to be above 0.70. Betz et al. (1996) reported Cronbach alpha coefficients of 0.88 for self-appraisal, 0.89 for occupational information, 0.89 for goal selection, 0.89 for planning, and 0.86 for problem solving.

The OLQ-13 was used for SOC. In the current study, the Cronbach alpha coefficient for OLQ-13 was found to be 0.75. This is in line with previous research reported by Antonovsky (1993), where the Cronbach alpha coefficients for the OLQ-29 ranged from 0.86 to 0.95. Antonovsky (1993) reported Cronbach alpha coefficients for the OLQ-13 to be lower, but still acceptable. The Cronbach alpha of the OLQ-13 has been shown to be 0.79 (Diraz et al., 2003), 0.84 (Rothmann et al., 2003), 0.90 and 0.91 (Van Wijk, 2008) in previous South African studies, which is higher than the Cronbach alpha value for this study.

When examining the relationship between CDMSE and SOC, CDMSE was found to be moderately positively related to SOC. Antonovsky postulated that the dimensions of SOC show similarities to self-efficacy (Rothmann, 2001). This suggests that if students believe that the demands in their environments are worthy of commitment, persistence and effort, their lives will make sense at both an emotional and cognitive level. All the CDMSE subscales, namely self-appraisal, occupational information, goal selection, planning and problem solving were found to be moderately positively related to SOC. This suggests that as students have more accurate self-appraisals of themselves, gather more occupational information, select the correct goals, make plans for the future and improve their problem-solving abilities, their inner and outer environments are also likely to make more cognitive and emotional sense.

The relationship between career adaptability and SOC, career adaptability was found to be moderately positively related to SOC. The career adaptability subscales of concern and control were found to be moderately positively related to SOC, while the career adaptability subscales of curiosity and confidence were found to be weakly positively related to SOC. No previous research could be found that investigated this relationship.

Regarding the relationship between career adaptability and CDMSE, career adaptability was strongly positively related to CDMSE. Career adaptability was also found to be strongly positively related to the CDMSE subscales of self-appraisal,

occupational information, goal selection and planning, and moderately positively related to the CDMSE subscale of problem solving. The results of this study also revealed relationships between CDMSE and the dimensions of career adaptability. Concern was found to be strongly positively related to planning, and moderately positively related to self-appraisal, occupational information, goal selection and the total CDMSE scale. Control was strongly positively related to self-appraisal, goal selection and the total CDMSE scale, and moderately positively related to occupational information, planning and problem solving. Curiosity was moderately positively related to self-appraisal, occupational information, goal selection, planning, problem solving and the total CDMSE scale. Confidence was strongly positively related to occupational information, goal selection, planning and CDMSE, and moderately positively related to self-appraisal and problem solving. This is in line with the results reported by Ebenehi et al. (2016), where self-efficacy sources were found to significantly predict career adaptability among higher education students. In another study by Bocciardi et al. (2017), self-efficacy at work, education and proactive career planning were reported to predict concern and curiosity.

The regression analysis conducted showed that SOC, self-appraisal and occupational information were significant predictors of concern (explaining a variance of 33%). This suggests that students with a higher SOC and positive self-appraisal, and who gather occupational information, will be more aware of and prepared for what may occur in their internal and external environments as well as better able to handle stressful situations. These individuals will also explore more circumstances and seek more information about potential opportunities.

The regression analysis furthermore showed that self-appraisal and occupational information were statistically significant predictors of control (explaining a variance of 33%). This suggests students who have higher self-appraisal and occupational information will take more responsibility for the influence they have in shaping themselves, and their development and environment to face what may occur next. These individuals will use self-discipline, effort and persistence to prepare for what happens next.

The third regression analysis conducted showed that occupational information and problem solving were significant predictors of curiosity (explaining a variance of 25%). This suggests that students who gather occupational information and are better equipped to solve problems, will explore more circumstances and seek more information about potential opportunities. These individuals will investigate how different work rules and environments may affect their possible future selves and opportunities.

The fourth regression analysis showed that occupational information and planning were significant predictors of confidence (explaining a variance of 34%). This suggests that by gathering more occupational information and through the use of better planning strategies, students may have the ability to better face and solve vocational and career problems and possess the necessary abilities needed to overcome obstacles.

The fifth regression analysis showed that self-appraisal, occupational information and planning were significant predictors of career adaptability (explaining a variance of 43%). This suggests that by having positive self-appraisal, gathering more occupational information and creating better planning strategies, students will be more adaptable in their careers and be better able to acquire the necessary skills and behaviours to help them cope with and prepare for their university career.

The last regression analysis showed that CDMSE was a significant predictor of career adaptability (explaining a variance of 43%). The results of the study are in line with previous research where it was reported that career self-efficacy and self-efficacy sources significantly predicted career adaptability in students (Ebenehi et al., 2016). Bocciardi et al. (2017) found that CDMSE had the greatest impact on predicting career adaptability. Individuals who are better able to judge their future performance capabilities and believe they possess the necessary capabilities to successfully make the correct career decisions, will be more adaptable in their careers. Self-efficacy and CDMSE were found to be predictors of academic

performance and choices, persistence, success and career decision-making intentions and behaviours (Betz & Klein, 1996; Kelly, 1993; Lent et al., 1994).

From the results it would seem that SOC does not contribute significantly to career adaptability if CDMSE is also taken into account. Previous studies reported positive psychological traits to predict career adaptability (Buyukgoze-Kavas, 2016). However, in this study, when CDMSE was taken into consideration, SOC did not contribute significantly to career adaptability.

The results in Table 6.9 indicated that there is no difference in career adaptability, SOC and CDMSE when it comes to gender. According to Coetzee and Harry (2015), research on gender and career adaptability tends to be limited. A study by Coetzee and Harry (2015) found that gender significantly predicted career adaptability, and females were found to have higher levels of career adaptability compared to males. Previous studies reported differences between SOC and gender, but the differences were not found to be statistically significant (Barnard, 2013). Studies by Mayer and Van Zyl (2013) and Nilsson et al. (2003) indicated that women have a lower level of SOC. However, these lower levels were explained through other external factors such as legislation and male-dominated work environments. Previous research also found no differences in the level of CDMSE of university students and their gender (Kelly, 1993; Rollins & Valdez, 2006). However, Rollins and Valdez's (2006) study indicated that female participants have higher levels of CDMSE. The differences between age and race were unable to be concluded because of the small sample size for each group and a range restriction in terms of age.

### **6.3 CONCLUSION**

In this chapter, the results of the research study were reported and discussed. The next chapter draws conclusions based on the findings of the study, highlights the limitations of the study and formulates recommendations for possible future research.

## **CHAPTER 7: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS**

The research is concluded in this chapter. Firstly, the theoretical and empirical conclusions of the research are explained. The limitations of the study are then discussed and recommendations made for residential universities and possible future research.

### **7.1 CONCLUSIONS**

The aim of the dissertation was to investigate the relationship between career adaptability, SOC and CDMSE, whether SOC and CDMSE can be used to predict career adaptability and whether there are any demographic differences between age, gender and race groups with regard to career adaptability, SOC and CDMSE.

#### **7.1.1 Theoretical conclusions**

The specific literature aims were to conceptualise each of the constructs, namely career adaptability, SOC and CDMSE, and investigate any relationships between the constructs and any demographic differences in age, gender and race, based on previous research. The research focused primarily on the literature to define each construct and review the origins, history and development of each. The primary literature was integrated with current literature to describe how each construct may manifest in students at a residential university. The theoretical relationship between career adaptability, SOC and CDMSE and demographic differences was investigated.

University students are in a transition from school to work, which is a period when critical decisions are made about their future career success and their professional outcomes are influenced (Buyukgoze-Kavas, 2016; Ismail et al., 2016). Many first-year students in South Africa are underprepared for the demands of higher education, lack the necessary resources or motivation and feel disconnected

(Mokgele & Rothmann, 2014). According to Maree (2012), in South Africa, 40% of university students fail in their first year. One of the reasons for this is a lack of career counselling, especially for disadvantaged students. It has also been found that students have inadequate knowledge about their chosen field of study (Maree, 2012). Students can use their career adaptability to handle their school-to-work transition (Buyukgoze-Kavas, 2015).

Career adaptability refers to individuals' resources for coping and dealing with change, as well as their social integration with current and anticipated tasks, transitions, traumas and adjustments (Chong & Leong, 2017; Coetzee & Roythorne-Jacobs, 2014; Coetzee et al., 2015; Savickas & Porfeli, 2012). Students with higher levels of career adaptability are more enthralled by their studies, more energetic and dedicated to their university career (Paradnikė & Bandzevičienė, 2016).

Career adaptability comprises four dimensions, namely concern, control, curiosity and confidence. Concern is the extent to which an individual is future oriented and explores circumstances and seeks information about opportunities to prepare for upcoming tasks or challenges (Bocciardi et al., 2017; Savickas & Porfeli, 2012). Career concern refers to the individual's capacity to be aware of and positively oriented to and plan for his or her vocational future (Coetzee & Harry, 2015). Through the development of concern, students will be better prepared for the demands of their university career. They will explore a variety of circumstances, gather the necessary information and develop a plan for their future career and the career opportunities available to them.

Control is the self-discipline, persistence and effort individuals apply to take personal responsibility for shaping themselves, their development and their environment in order to meet future challenges (Bocciardi et al., 2017; Savickas & Porfeli, 2012). Career control refers to individuals' capacity to take personal responsibility for their career and work experiences, having feelings of self-governance, persistence and decisiveness concerning their vocational future (Coetzee & Harry, 2015). Through

the development of control, students become more disciplined in shaping their futures, take personal responsibility for their experiences at university and persevere through obstacles and become more decisive in their career choices.

Curiosity is individuals' exploration of their possible selves and their environment, and their ability to gain knowledge and competencies by seeking information about opportunities (Coetzee & Harry, 2015; Ginevra et al., 2016; Savickas & Porfeli, 2012). Career curiosity is the tendency for an individual to explore his or her environment and acquire new knowledge and competencies (Coetzee & Harry, 2015). Through the development of curiosity, students increase their exploration of their possible selves and their environment. They also gain knowledge and competencies by searching for information about potential opportunities at university and in their future careers. By increasing their curiosity, students find a better fit between themselves and the university environment.

Confidence refers to individuals' belief in themselves and their ability to face challenges and achieve their goals (Bimrose & Brown, 2015; Savickas & Porfeli, 2012; Tladinyane & Van der Merwe, 2016). Career confidence is demonstrated through the way in which individuals deal with the numerous stressors they may encounter throughout their career journey (Coetzee et al., 2015). Through the development of confidence, students should be able to deal with stressors more effectively. Their belief in themselves and their ability to face the challenges associated with university are heightened. Students also have a positive perception of their problem-solving skills across a variety of situations resulting in positive emotions and resilience during their school-to-work transition.

It can be concluded that it is imperative to develop career adaptability as a student in order to cope with the transition from school to work, as well as the demands and stressors associated with higher education. According to Paradnikė and Bandzevičienė (2016), students with higher levels of career adaptability will experience more academic satisfaction and career optimism. The higher the

student's career adaptability, the less likely he or she will drop out of university (Bocciardi et al., 2017).

Mokgele and Rothmann (2014) suggested that students who have not acquired the necessary coping skills and are academically and socially underprepared for university, may experience physical ill health. SOC is essential for successful coping and ensuring the maintenance of health (Harry, 2015). SOC stimulates, sustains and enhances health and healthy behaviour, effective coping and better social adjustment (Diraz et al., 2003; Edwards & Besseling, 2001). SOC was created by Antonovsky (1987) in response to his salutogenic question – Why do some people remain in good health despite multiple challenges and stressors associated with living? It is a vital positive psychological trait that assists in the explanation of how individuals cope in stressful situations (Antonovsky, 1993). SOC is an individual's belief that situations make sense at both a cognitive and emotional level (Antonovsky, 1987). It is the extent to which individuals believe that the stimuli from their internal and external environment are comprehensible, manageable and meaningful (Antonovsky, 1987). Comprehensibility is the cognitive component to SOC and enables individuals to view their environment as structured, predictable and explicable (Barnard, 2013; Feldt et al., 2004). Manageability is the behavioural aspect of SOC (Barnard, 2013; Feldt et al., 2005), and is the extent to which individuals believe that they have the necessary resources at their disposal to cope with the demands of the stimuli (Antonovsky, 1987). Meaningfulness is the motivational component (Antonovsky, 1987) and is an individual's belief that there is meaning to life and that life's demands and struggles are challenges worthy and meaningful to invest effort in (Barnard, 2013; Feldt et al., 2004; Harry, 2015).

Through the development of their SOC, students will become better prepared for the demands of higher education. They will be able to cope better and remain healthy despite the multitude of stimuli in the university environment to which they are exposed as they will believe they have the necessary resources to cope with the new and challenging demands of university life. They will view their university environment as structured, predictable and explicable, and will be able to make

sense of it, at both a cognitive level and emotional level. Students will also believe that university demands and struggles are meaningful and worth investing time in in order to complete their university career and graduate. They will perform more effectively in their academic work and welcome the challenges they face at university. The university environment will be perceived as less stressful, threatening and anxiety provoking. Students with a stronger SOC will use fewer avoidance responses to cope with the stressors, and the option of avoiding their academic work and failing or even dropping out of university will be diminished.

Fenning and May (2013) reported that university students who are undecided and feel less confident in their ability to complete tasks that would allow them to make career decisions have lower levels of CDMSE. CDMSE refers to an individual's measure of self-efficacy expectation regarding the tasks required in career decision-making (Taylor & Betz, 1983). CDMSE is individuals' belief that they possess the necessary capabilities to successfully make the correct career decision. CDMSE comprises four major sources of efficacy information, namely performance accomplishment or mastery of experience, vicarious learning or modelling, verbal persuasion and emotional arousal. Performance accomplishment relies on direct information from the individual and is based on personal experiences (Bandura, 1977; Luthans, 2011). Performance accomplishment has the potential to be the most powerful dimension in forming an individual's self-efficacy belief (Luthans, 2011). As students experience success in their task, their mastery expectations will increase. Repeated success will result in students developing strong efficacy expectations in the university setting.

Vicarious learning or modelling occurs when an individual obtains capability information, and the acquisition and retention of new behavioural patterns from the knowledge and observation of others (Bandura, 1977; Schunk, 1991). If students see that other students, similar to them, are able to accomplish a task, then they will start to believe that they too can accomplish the task.

According to Bandura (1977), verbal persuasion refers to the social persuasion of others through suggestions that the individual has the capabilities to cope successfully previous overwhelming stressor and the ability to master difficult situations. If students are encouraged by another individual, be it a family member, fellow student or lecturer, they will start to believe that they do have the capabilities to cope with the demands and make the necessary decisions pertaining to the success of their university career. Through verbal persuasion, students can be encouraged to continue with their studies and succeed, instead of failing or dropping out of university.

Emotional arousal is the physiological arousal individuals have in judging their anxiety, vulnerability to stress and capabilities (Bandura, 1977). Increases in negative emotional arousal such as anxiety could result in the student avoiding the task or behaviour. The avoidance of a task or behaviour could result in the student avoiding academic work and failing or dropping out of university.

According to Guenther and Laudi (2017), self-appraisal refers to individuals' evaluation of their traits, abilities, attitudes, behavioural tendencies and outcomes. Students will develop specific ideas about their potential, abilities and skills through self-appraisals (Van Praag, Demanet, Stevens, & Van Houtte, 2017). Individuals can evaluate their abilities by comparing themselves to a reference group or meaningful others, or their self-appraisal can be based upon judgements about their own previous successes. Self-appraisal is the evaluation students will use to determine the extent to which they will achieve their goals successfully (Van Praag et al., 2017).

In South Africa, individuals face many challenges in their career development. These include the lack of opportunities to explore and commit to stable careers, unstable and unpredictable environmental factors, the lack of role models and support systems, the high unemployment rate and labour legislation (Watson et al., 2001). According to Huang (2015), CDMSE is a crucial factor in influencing the career

development of young adults. CDMSE is a predictor of various career-entry behaviours such as the choice of major and academic performance in university students (Watson et al., 2001), as well as the student's persistence, success and career decision-making intentions and behaviours while at university (Betz & Klein, 1996; Kelly, 1993). Taylor and Betz (1983) reported that students with lower CDMSE experience career indecision. Through the development of CDMSE, students will experience greater academic success, be more persistent in the face of challenges, and have better career decision-making intentions and behaviours. This could diminish the possibility of students making bad decisions about their careers and failing or dropping out of university.

The literature review found strong support for the relationship between career adaptability and self-efficacy (Bocciardi et al., 2017), and career adaptability and career self-efficacy (Ebenehi et al., 2016). Strong support was also found for the predictability of career adaptability through self-efficacy and career self-efficacy (Ebenehi et al., 2016). The literature review revealed a paucity of research on the correlation between career adaptability and SOC, but SOC was found to positively correlate to self-efficacy (Rothmann, 2001).

The literature review indicated mixed results for the relationship between the demographic variables of age, gender and race and career adaptability. In their study, Coetzee et al. (2015) reported that age, gender and race do not influence career adaptability, but Coetzee and Harry (2015) found gender to statistically significantly predict career adaptability. In Ismail's (2015) study, males did score significantly higher on control, curiosity and confidence, but no gender differences were evident in the concern score of career adaptability. Gender was found to affect self-efficacy, but a possible reason for this could be the perception of traditionally male and female occupations. In other studies (e.g. Betz & Hackett, 1981; Mathieu et al., 1993), females were found to have lower efficacy expectations for traditionally male occupations and higher efficacy expectations for traditionally female occupations. Some studies reported no differences between gender and the career self-efficacy of university students (Kelly, 1993; Rollins & Valdez, 2006). Rollins and

Valdez (2006) found female participants to have significantly higher CDMSE compared to males. Antonovsky (1987) believed that SOC cuts across gender, social class, religion and culture, and that it stabilises after the age of 30. In the literature, it was found that there was no overall difference between SOC and age (Harry, 2015). SOC was found to change according to the work environment and thus not to be stable over the adult lifespan (Albertsen et al., 2001; Barnard, 2013). The literature review revealed that the differences between race and SOC that were evident in previous studies were in fact inconclusive (Barnard, 2013; Harry, 2011; Van Wijk, 2008). Although the literature revealed differences between SOC and gender, these were not statistically significant in a study conducted by Barnard (2013), while males were found to have a stronger SOC compared to females in a study by Mayer and Van Zyl (2013).

### **7.1.2 Empirical conclusions**

The specific aim of the empirical study was to determine the relationship between career adaptability, SOC and CDMSE, whether SOC and CDMSE can be used to predict career adaptability and whether there were any demographic differences between age, gender and race among students at a residential university.

CDMSE was found to be moderately positively related to SOC. Students who believe that they have the necessary capabilities and resources to make the correct decisions about their career and during the school-to-work transition, may find their internal and external environment as comprehensible, manageable and meaningful. The students who more accurately evaluate themselves and their abilities, gather the necessary information on their university career, future career and occupation, set accurate and achievable goals, and plan for their future careers and achievements, will make sense of the demands of university life at an emotional and cognitive level. Students will perceive the stimuli from the university environment as manageable and worthy of the effort they expend. They will be better able to handle stress and stressful situations. Student avoidance of the tasks, challenges and demands they face at university will decrease. This decrease in avoidance behaviour has the potential to prevent students from failing or dropping out of university.

Career adaptability was found to be moderately positively related to SOC. As students' belief in themselves that they have the necessary resources for coping with the current and anticipated tasks, and adjustments they will face during university and the transition from school to work, the more comprehensible, manageable and meaningful they will find their internal and external environment. They will believe they possess the necessary resources to cope with the current and anticipated demands of university, experience less stress and cope better with their university career.

Career adaptability was found to be strongly positively related to CDMSE. The more students believe that they possess the necessary resources to cope with current and anticipated tasks and social changes, the more they will feel that they have the necessary resources to make the correct decisions about their future career. Self-appraisal, occupational information gathering, goal selection, planning and CDMSE overall were found to have the strongest relationship with career adaptability. Planning and CDMSE overall appeared to have a strong association with concern. The results indicated that self-appraisal, goal selection and CDMSE overall had a strong relationship with control. Occupational information gathering, goal selection, planning and CDMSE overall were found to have a strong association with confidence.

The results indicated that SOC and problem solving had a moderate relationship with career adaptability. SOC, self-appraisal, occupational information gathering, goal selection and problem solving were found to have a moderate relationship with concern. SOC, occupational information gathering, planning and problem solving had a moderate relationship with control. Self-appraisal, occupational information gathering, goal selection, planning, problem solving and CDMSE overall had a moderate association with curiosity, while self-appraisal and problem solving had a moderate relationship with confidence. The results indicated that SOC had a weak relationship with curiosity and confidence.

SOC, self-appraisal and occupational information were found to be significant predictors of concern. Students' SOC, self-appraisal and the occupational information they have gathered, can be used to determine whether they have the ability to be future oriented, to explore a variety of circumstances, to seek additional information about potential opportunities and to prepare for the challenges, demands and tasks they will face throughout their university career. If students are able to view the university environment as comprehensible, meaningful and manageable, they will have a higher level of concern. The more accurately students evaluate themselves and their abilities, and/or the more information they gather about their university career as well as their future career and occupation, the more prepared they will be for what lies ahead.

Self-appraisal and occupational information were found to be significant predictors of control. Students' self-appraisal and gathering of occupational information can be evaluated to determine the level of discipline and persistence they possess and the amount of effort they will exert, as well as the amount of personal responsibility they accept for shaping themselves, their development and their environment in order to meet the challenges they face at university. Students who accurately evaluate themselves and their abilities and/or gather the necessary amount of information about their university careers, future career and occupation, will have greater control over their future career options.

Occupational information and problem solving were found to be significant predictors of curiosity. Students' occupational information gathering and problem-solving abilities can be evaluated to determine the extent to which they explore their possible selves and the environment, and acquire knowledge and competencies through information searching for opportunities. The more information students collect about their potential career and occupation and/or the better their ability to solve problems, the more curious they tend to be about exploring themselves and their future careers.

Occupational information and planning were found to be significant predictors of confidence. Students gathering of occupational information and planning ability can be evaluated to determine whether they believe in themselves and their ability to face the challenges and demands of university and achieve their goal of graduating. The more information students collect about their university, future career and occupation and/or the clearer and the more precise their plans for their future are, the more confident they will be about their future careers.

Self-appraisal, occupational information and planning were found to be significant predictors of career adaptability overall. Students' self-appraisal, occupational information gathering and planning can be evaluated to determine whether they possess the necessary resources for coping and dealing with the changes associated with their school-to-work transition and the changes they face at university, and whether they will be able to handle current and anticipated tasks and adjustment at university. The more accurately students evaluate their abilities, the more information they gather about their university career, future career and occupation and/or the clearer and more precise their plans for their future are, the more career adaptability they will experience.

Lastly, CDMSE was found to be a significant predictor of career adaptability. If students believe that they possess the necessary capabilities to make the correct career decisions to graduate and follow the careers they desire successfully, they will also possess the necessary resources to successfully cope and deal with the current and anticipated tasks, demands and adjustments they will face at university. SOC did not contribute significantly to predicting career adaptability when CDMSE was also taken into account.

Occupational information was the only CDMSE subscale that was found to predict all of the CAAS subscales. The more information students gather about their university career, future career and occupation, the more prepared they will be for the tasks, challenges and demands required of them to graduate. Students will be more future

oriented because of increased awareness of what is required of them during the school-to-work transition and in their future careers. Through the gathering of occupational information, students will take personal responsibility and become disciplined and persistent and exert the necessary effort to meet the challenges they face during their university career and school-to-work transition. The more information students collect about their university career and future occupation, the greater the likelihood that they will explore their possible selves and their environment in order to achieve person-environment fit. By gathering occupational information students are able to reinforce the belief they have in themselves and their ability to face the challenges of university, and ultimately obtain their university degree in order to graduate.

In the empirical study, no differences were evident between career adaptability, CDMSE and SOC with regard to gender. The differences pertaining to the demographic variables of age and race were not explored owing to the small sample size for various race groups and a range restriction in terms of age.

The support for or rejection of the hypotheses for the study was as follows:

- H1: The SOC and CDMSE of undergraduate students at a residential university have a statistically and practically significant relationship with the career adaptability of undergraduate students at a residential university. This hypothesis was supported.
- H2: The SOC and CDMSE of undergraduate students at a residential university statistically significantly predict career adaptability. This hypothesis was partially supported. CDMSE was found to statistically predict career adaptability. However, SOC was not found to be a significant predictor of career adaptability when CDMSE was taken into account.
- H3: Undergraduate students at a residential university from different age, gender and race groups, differ significantly in their career adaptability, SOC and CDMSE. This hypothesis was not supported. The sample size for age

was restricted, while the sample size for different race groups was too small. No differences were evident between gender and career adaptability, SOC or CDMSE.

## **7.2 LIMITATIONS**

It is always important to note the limitations of a research study. The first limitation in the current study was the paucity of previous research on the relationship between career adaptability and SOC. There was also limited information on the demographic differences between age, gender and race in the three constructs. The second limitation was the relatively small sample size. Because availability sampling was used, it will not be possible to generalise the results. Use of availability sampling meant it was not possible to ensure that the sample was representative of various age, gender and race groups. The sample comprised undergraduate students from only one residential university in South Africa. Hence the results of this study cannot be accepted for students at other residential universities. The third limitation was the use of a cross-sectional design. This did not allow for an explanation of causality between the variables. In addition, since the survey was conducted at one point in time, the results might have been different if the researcher had chosen a different time frame.

## **7.3 RECOMMENDATIONS**

### **7.3.1 Recommendations for the residential university**

Based on the findings from the research, it appears that universities would benefit from creating a career-adaptable environment for their students. Increasing students' self-efficacy in their career decision making, would improve their career adaptability. The higher students' self-efficacy in career decision making, the less likely they will avoid the tasks and behaviours required to obtain their degrees. Students will also be less likely to withdraw from university as their problem-solving abilities improve. These would result in students continuing their studies until they graduate. If students are able to improve their self-efficacy in career decision making, they should experience a smoother school-to-work transition.

The more information students can collect on their university career, future career and occupation, the more adaptable they will be in their careers. By obtaining as much information as possible about their university career, future career and occupation, they will be more knowledgeable about the requirements from them to obtain their university degree and graduate, as well as the requirements in their future careers. If all students could receive the necessary career counselling during school, the more knowledgeable they would be about gathering occupational information, and the more prepared they would be to cope with the current and anticipated demands and tasks of their university and future careers.

Students' career adaptability can also be improved through programmes or workshops to help them appraise themselves and their abilities more accurately, select realistic goals, formulate plans for their future and improve their problem-solving abilities. Students might then be more concerned, feel more in control and be more curious and confident in their decision making about their careers. This could result in more students adapting to university life and choosing a career they are interested in. This, in turn, could also result in students decreasing their level of avoidance behaviour and continuing their studies until they graduate.

An increase in students' career adaptability, SOC and CDMSE might result in a decline in the dropout rate of university students. This is because students do not avoid tasks and challenges. As students' SOC and CDMSE increase, their anxiety and avoidance behaviour decrease. Hence this reduces the chance of students dropping out to avoid the difficulties they face at university. Students will be better able to handle the changes, as well as the current and anticipated tasks and adjustments they face at university and in the school-to-work transition. By increasing a students' career adaptability, they will be more prepared for the demands associated with university and the transition from school to work. They will be better able to face the unfamiliar territory they find themselves in and to handle the demands associated with higher education. Students may become more motivated and feel they possess the necessary resources to achieve their goals and complete their degree.

### **7.3.2 Recommendations for future research**

It is recommended that further research should include a larger sample size and a sample from more than one university in South Africa. Also, it would be beneficial for research to be conducted on students from residential as well as non-residential universities. This would allow for the results to be generalised. A larger sample size would allow for the demographic differences of age, gender and race to be better explored to determine whether they influence on the three constructs. Further research could also investigate whether there are differences in each construct for different academic years. Interventions aimed at increasing CDMSE (specifically occupational information) could also be evaluated. Further research could investigate how CDMSE and career adaptability develop over time. Another topic for future research would be to investigate the relationship between career adaptability and SOC in other samples as well. This would add to the current limited knowledge on this topic.

### **7.4 SUMMARY**

This chapter provided a summary of the theoretical and empirical conclusions of the study. The limitations of the study were discussed, and recommendations made for residential universities and possible future research based on the findings.

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