OVERCOMING ADVERSITY: AN INVESTIGATION OF THE ROLE OF RESILIENCE CONSTRUCTS IN THE RELATIONSHIP BETWEEN SOCIO-ECONOMIC AND DEMOGRAPHIC FACTORS AND ACADEMIC COPING

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Sense of coherence

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ABSTRACT

Many historically disadvantaged South Africans are entering into universities, where they are expected to perform academically not only to secure themselves a continued place at university, but also to secure themselves a place in the competitive job-market post university. Not only have these individuals been disadvantaged by an inferior schooling system, which is the legacy of apartheid, but they also struggle against the grasp of poverty, attempting to sustain themselves financially in order to afford the necessities for their survival, while still attempting to cope academically. Resilience has been presented as a process that helps individuals deal effectively with stressful events and adverse conditions. An attempt is therefore made to investigate whether resilience plays this role in the experience of disadvantaged students at university, where academic performance and adjustment represent the expected measures of coping. The aim of the study was therefore to explore the role of resilience constructs in the relationship between socio-economic and demographic variables and academic coping. The study is based within the broad framework of Psychofortology, which is the science of psychological strengths. The resilience constructs used included fortitude (measured by the Fortitude Questionnaire), hardiness (measured by the Personal Views Survey) and sense of coherence (measured by the Sense of Coherence Scale). Demographic variables included age, sex, language, town (urban/rural), with household income as an indicator of socio-economic status. Academic coping (outcome) was measured using students' academic performance (average grade) and their adjustment to university (measured by the Student Adaptation to College Questionnaire). Participants included 164 third year Psychology

students from the University of the Western Cape. Results indicate statistically significant relationships between various demographic and resilience variables; between various demographic and outcome variables; and between various resilience and outcome variables. Resilience variables were also found to play a role in the relationship between demographic and outcome variables, as various resilience variables emerged as significant predictors of outcome variables, or as having either direct, moderating, mediating or indirect effects on the relationship between demographic and outcome variables. Research suggesting the health-sustaining and stress-reducing (buffering) roles of resilience constructs, as well resilience constructs as influencing the perceptions of adverse conditions or stressors is therefore supported by these findings. Limitations of the study were also discussed, as well as recommendations for future research put forward.

DECLARATION

I declare that *Overcoming adversity: An investigation of the role of resilience constructs in the relationship between socio-economic and demographic factors and academic coping* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Mark Steven Barends December 2004

DEDICATION

Dedicated to my parents, and their belief in my ability to succeed - who not only nurtured the *fortitude* in me to do so, but who for me epitomize it.

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 General introduction

A popular prescriptive view in South Africa today is that education is the ideal tool for empowerment and determining factor of success for all South Africans, especially historically disadvantaged groupings. Van der Berg and Burger (2003, p. 1) note that the "education system is widely perceived to be the major tool to overcome human capital and labour market inequalities in South Africa." Yet, this seemingly simple prescription has become but a mere cliché in the eyes of many contemporary South Africans who continue to struggle against the grasp of poverty and see education as a prospect beyond their means. Many of these individuals fail even to experience a sense of optimism about their future.

According to Potgieter (1998), South Africa is experiencing an escalating situation of mass poverty. This is confirmed by the South African Institute for Race Relations (1994). The organization is of the opinion that poverty has reached proportions far worse than those experienced during the depression of the 1930s. In 1993 it was estimated that about 18 million people (47% of the population) were living below the poverty datum line and were struggling to survive, and that half of this group were completely destitute, while more than 4 million people were living in life-threatening conditions of malnutrition (SAIRR, 1994). More than two-thirds of the destitute group are African households, 21% Coloured, 7% Indian and 5% White. Booyens (1997) estimated that 7,5 million people

over the age of 15 were illiterate or severely undereducated in South Africa in 1994. Close to 3 million people never attended school and 4,5 million people had only had some form of primary school education that left them barely literate, all of which are attributed to the direct effects of poverty.

Yet not all who face the grips of poverty succumb to these negative consequences as many historically disadvantaged South Africans succeed in entering institutions of higher learning, overcoming most, if not all, of the hardships (especially financial) encountered in this pursuit. These individuals face unique challenges as they strive to achieve academically amidst the strain of sustaining themselves financially in order to afford the basic necessities for survival.

The following relates to a young man's determination to beat the odds, taken from an article in the Graduation Feature of the On Campus Bulletin, University of the Western Cape (2002, p. 6):

Vuyani's determination beats the odds

The determination of some people knows no bounds. Vuyani Sandile was so determined to study that he moved to Cape Town, built a shack in Philippi for shelter, worked in various low-paid menial jobs, and even sold fruit and vegetables from his shack – all to raise the money he needs to complete his studies.

When he finally got to attend classes at UWC he had no money for transport. So what did he do? He walked, trudging bag in hand from Philippi to campus, a 20 km plus journey, which took him more than two hours each way.

This week the graduate walks up to the podium to claim his BA degree.

Like many others, Sandile could not rely on his family for support. His mother is a pensioner and he lost his father while doing matric, and although he has siblings, they were not in a position to help him.

"They themselves didn't go to school," he says. "So they didn't understand why I wanted this so much." While in the Eastern Cape he met ex-president Mandela and asked his help. "I wrote to Madiba and asked him to help me with registration fees at UWC and he helped," he explains.

Registration fees, however, were the least of his worries. The determined student needed money to sustain himself. He has worked as a gardener, a packer and a workshop assistant, but these jobs took away valuable study time.

Sandile explains that several people have helped him achieve his goal. “Lecturers, classmates and friends have all come from the presence of God to help,” he says. “They gave me money, food, clothing and books.”

He had a simple message for those who are to follow him. “It is extremely hard,” he concedes, “but don’t give up. Here I stand as a Rasta. No matter my empty stomach, I give thanks and praises to the Elect Himself, the Conquering Lion of the tribe of Judah, Haile Selasie. I had no direction, God inspired me to study. I said I would be a graduate one day, and I did it.”

This year (2002) he has registered for his Postgraduate Diploma in Education.

At this point one is driven to ask the question: Given two people facing similar adverse conditions, what makes one succeed in overcoming the adversity he/she encounters, while the other does not? Stroebe and Stroebe (1987) argue that the extent to which individuals experience situations as stressful as well as their success in mastering the situation will depend on their coping resources. The individual who succeeds in overcoming adversity is therefore more resilient to the stresses he/she encounters as a consequence of the strength of his/her coping resources as opposed to that of the individual who surrenders to adversity.

In response to this question *where does this strength come from?*, Pretorius (1998, p. 23) proposes the construct of fortitude as the basis for this strength, and defines it as “the strength to manage stress and stay well”. This strength derives from a positive appraisal of oneself, one’s family, and one’s social support. The construct of fortitude rests within the broad area of psychofortology, which is the science of psychological strengths (Wissing & van Eeden, 1997) and the domain of psychology in which psychological

well-being is studied. Many constructs have been proposed to conceptualize aspects which typify resilience or coping in the face of stress. Strümpfer (1990) identified five of these, namely *sense of coherence, hardiness, stamina, potency,* and *learned resourcefulness*. These will be discussed later and in more detail in Chapter 2, under the heading *Constructs Within the Paradigm of Salutogenesis*.

The question which therefore follows from this is: *if resilience represents coping resources in the individual that help him/her manage adverse circumstances, do students, studying at university, who experience disempowering socio-economic and demographic factors (e.g., having a rural family background or having had a school education under a historically disadvantaged education department), experience higher levels on measures of resilience (as measured by resilience constructs) than students who experience more favourable socio-economic and demographic factors?*

1.2 The aim of the study

The present study focuses on investigating the role of resilience constructs in the relationship between socio-economic and demographic factors and academic coping.

1.3 The value of the study

Many historically disadvantaged South Africans are entering into universities, presenting for them unique challenges as they strive toward academic success, amidst the strain of disempowering socio-economic and demographic factors. With a focus on strengths and by investigating aspects of coping in the face of adversity, new avenues for

understanding how people manage stress and overcome adversity can be explored. A better understanding of coping in the context of education would open up new vistas for interventions geared toward development and capacity building to ensure academic success. This could, in this way, contribute to programme development and highlight points of intervention, geared toward building individual capacities for the purpose of academic success. This could further contribute immensely to a more complete understanding of factors influencing academic performance. It could, in this way, like dynamic assessment and learning potential measures, be used in conjunction with matriculation marks and conventional statistical assessment instruments for the purpose of screening in tertiary education settings.

1.4 Research questions

1. Do students from disadvantaged backgrounds experience higher levels of resilience (as measured by resilience constructs) than the more advantaged?
2. Do students from more advantaged backgrounds cope better academically than those from less advantaged backgrounds, given that students from more advantaged backgrounds experience better access to resources?
3. Do students experiencing higher levels of resilience cope better than students experiencing lower levels of resilience?
4. Does resilience play a role in the relationship between socio-economic and demographic factors and academic coping?

1.5 Overview of the manuscript

This manuscript comprises of five chapters, which further constitute two sections, namely the literature review, followed by the empirical investigation.

Chapter 2 presents a literature review of topics relevant to the study. It looks at the paradigm shifts in the fields of medicine and psychology from pathogenesis to salutogenesis to fortigenesis, also focusing on the various constructs that emerged from these paradigms. It also looks at education in the South African context, and specifically focuses on the disparities based on racial categorization. It then looks at economic disparities within the South African context. It furthermore looks at academic performance, its definition and factors influencing academic performance in general, as well as at factors specifically relating to the South African context.

Chapter 3 focuses on the method of conducting the research. Particular attention is paid here to the specific aims of the study, hypotheses, sample characteristics, measuring instruments, data collection and analysis procedures, as well as ethical considerations.

Chapter 4 presents the results of the study, following the analysis outlined in Chapter 3. Descriptive statistics and reliabilities of the various scales used in the study are presented. The interrelationship analyses between variables are then presented, followed by the presentation of the results of the regression analyses conducted.

Chapter 5 summarizes and discusses the salient results presented in Chapter 4, making specific reference to literature reviewed in Chapter 2, considering relevance and relatedness. Attention is further paid to limitations of the study, with recommendations for further study put forward.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter is divided into four parts. The first part discusses the paradigm shift in the fields of medicine and psychology from pathogenesis to salutogenesis to fortigenesis, also focusing on the various constructs that emerged from these paradigms. The second part looks at education in the South African context, specifically focusing on disparities within this context. The third part focuses on the economic disparities within the South African context. The fourth part deals with academic coping, specifically its definition and factors influencing academic coping in general, as well as to factors specifically relating to the South African context.

2.2 Salutogenesis: A shift in focus

When examining the literature on health, Ickovics (1998) found that medicine and the social and behavioural sciences have studied health by focusing on pathology. Psychology, like many other disciplines, has therefore been functioning within a type of thinking which has been classified as "pathogenic" (Strümpfer, 1990). Strümpfer (1990) believed that psychology has customarily followed the medical model's traditional way of thinking pathogenically by "emphasising the abnormal." The dominant pathological way of thinking focused mainly on finding out why people fall ill and factors which cause or contribute to the development of diseases. It is further argued that this pathogenic system of beliefs are so entrenched in psychology that psychologists have

often been at a loss to answer the question 'what is health?' without having to make reference to the absence of illness.

Antonovsky (1979) wrote that despite being besieged by multiple stressors in everyday living and undergoing severe traumatic experiences, there are individuals who are coping quite well and staying both mentally and physically healthy. In trying to answer the question of why people stay healthy (instead of why people become ill, as in the case of the dominant pathogenic orientation), Antonovsky (1979) coined the term 'salutogenesis' (in Latin meaning the origin of health) to best describe this new way of thinking, which emphasises the origins of health or wellness.

Strümpfer (1990) recognised a common trend in emerging literature, after reviewing a number of constructs that have been developed independently, but which appeared emphatically coherent with this new paradigm, all dealing with how people manage stress and stay well. These constructs included Antonovsky's (1979, 1987) 'sense of coherence', Kobasa's (1982) 'personality hardiness', Ben-Sira's (1985) 'potency', Thomas'(1981) and Colerick's (1985) 'stamina', and Rosenbaum's (1988) 'learned resourcefulness'(Strumpfer, 1990). Before turning to a discussion of these constructs, it would be apt at this point to look at how, in the literature, resilience has been conceived of.

2.2.1 Resilience

In research literature, resilience has been conceived of as a buffering process, one that may not eliminate risks or adverse conditions, but does help individuals deal with them effectively (Brooks & Goldstein, 2003). However, as Werner and Smith (2002) suggested, resilience may also reflect the concept of 'reserve capacity.' That is, a resilient mindset helps us prepare for future adversity and enables the potential for change and continued personal growth throughout our lives.

Dyer and McGuinness (1996) have also highlighted certain antecedents to and consequences of resilience. One antecedent to the development of resilience is adversity itself. Another antecedent can also be the presence of at least one caring, emotionally available person at some point in an individual's life. The example of a caring individual, and his/her mirroring of the individual's inherent worth, is crucial to the development of resilience. On the other hand, consequences of resilience appear to have a toughening effect on the individual and a sense of having overcome one situation, which may foster the possible anticipation of active mastery over other situations.

Brooks and Goldstein (2003) contend that although in some scientific circles the word resilient has been applied only to individuals who have overcome stress and hardship, it is a concept that should be expanded to become a primary focus of each person's life, whether or not that person has experienced great adversity. No one can predict which of us will at some point experience unimagined adversity. Resilient individuals are those who have a set of assumptions or attitudes about themselves that influence their

behaviours and the skills they develop. In turn, these behaviours and skills influence this set of assumptions so that a dynamic process is constantly operating. According to Brooks and Goldstein (2003), this set of assumptions is called a 'mindset.' Possessing a resilient mindset does not imply that one is free from stress, pressure and conflict, but rather that one can successfully cope with problems as they arise.

2.2.2 Constructs Within the Paradigm of Salutogenesis

Many constructs have been proposed to conceptualize aspects of psychological well-being, including processes involved in the coping of individuals and the enhancement of wellness. As already mentioned, Strümpfer (1990) identified five of these, which are described as the core of salutogenic functioning, namely *sense of coherence, stamina, hardiness, potency, and learned resourcefulness*. Research results indicate high intercorrelations between these (Kossuth, 1998; Viviers & Cilliers, 1999). Pretorius (1998) also proposed *fortitude* as a construct that could help explain how people maintain positive psychological well-being. For the purpose of this paper, sense of coherence, hardiness and fortitude will be discussed in more depth, linking relevant research literature on these constructs to the current topic, as opposed to the constructs stamina, potency and learned resourcefulness, which will be presented in less detail, due to the use of sense of coherence, hardiness and fortitude as resilience measures in the study.

2.2.2.1 Sense of Coherence (SOC)

According to Antonovsky (1979), SOC is a crucial concept in understanding how people manage stress and stay well. SOC is defined as a global construct 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 (Antonovsky, 1987). A person with a strong sense of coherence will be motivated to see a task as a challenge, to impose structure, and to search for appropriate resources.

According to Antonovsky (1984) SOC is characterized by three main components that interact to contribute to a person's psychological health. These include *comprehensibility, manageability* and *meaningfulness*.

Comprehensibility refers to the extent to which individuals perceive external stimuli as making cognitive sense, as information that is ordered, consistent, structured and clear. The individual will therefore perceive the stimuli from the external and internal environment as structured and predictable. A person who is high on comprehensibility has an expectation that stimuli he/she encounters in the future will be predictable or, at the very least, will be orderable and explicable when they do come as a surprise (Antonovsky, 1987).

Manageability refers to the extent to which a person perceives that resources are at his/her disposal to meet the demands posed by stimuli.

Meaningfulness refers to one's active participation in shaping one's destiny and daily experiences, and the extent to which one feels that these demands are challenges

worthwhile spending his/her energy on (Antonovsky, 1984). According to Kobasa (1979), such a person will view challenging events as meaningful and worthy of emotional investment and commitment.

Lewis, Sperry and Carlson (1993) found that people with a strong SOC are more likely to maintain or improve health than those with a weak SOC. This person would be more active in avoiding threat, and be more inclined to do the work needed to develop good coping mechanisms. According to Strümpfer (1995), SOC could be directly related to other aspects of successful living, like effective performance at work, effective marital, parental and other interpersonal relationships, as well as having effects on community involvement, religious expression, and economic and political functioning.

In South Africa, the SOC Scale, measuring SOC as well as its interrelated components (namely, manageability, meaningfulness and comprehensibility) has been used extensively in a variety of settings in relation to a number of variables. SOC has been used in relation to stress-resistance and coping (Bach, 2000; Strijdom, 2000; Cairns, 2002; Basson, 2003; Naidu, 2003), in relation to physiological illnesses and rehabilitation (Madhoo, 1999; Cairns, 2002), and in relation to personality variables (Nortier, 1999; Fourie, 2000; Fox, 2000; Kassen, 2002). Research using the SOC Scale has also been undertaken in organizational settings (Kossuth, 1999; Lockner, 2000; Jackson, 2002; Hobkirk, 2003), as well as in the South African Police Service (Strijdom, 2000; Kassen, 2002).

2.2.2.2 Hardiness

Kobasa (1979) used the concept of hardiness to describe those people who underwent stressful life events, but did not succumb to illness. Hardiness, as a construct, evolved out of the stress and coping literature to explain individual differences in stress resiliency (Kobasa, Maddi & Kahn, 1982). The concept of hardiness is considered a personality style consisting of three interrelated factors, namely an experience of a sense of commitment, control and challenge in the face of difficult situations (Roth, Wiebe, Fillingim & Shay, 1989).

The *commitment* disposition is expressed as a tendency to involve oneself in (rather than experience alienation from) whatever one is doing or encounters. Committed individuals' relationships to themselves and to the environment can be described as involving actions and approach rather than being passive and avoidant.

The *control* disposition is expressed as a tendency to feel and act as if they can influence the events shaping their lives.

The *challenge* disposition is expressed as the belief that change rather than stability is normal in life, and that the anticipation of changes are interesting incentives to growth rather than threats to security. Individuals high on the challenge disposition therefore consider change not only as a threat, but also as an opportunity for development.

According to Funck and Houston (1987), hardy individuals have a general sense of purpose, meaning and commitment. In general, there is extensive evidence suggesting that hardiness is positively related to physical and mental health, and that it mitigates negative health outcomes of stress (Kobasa, Maddi & Zola, 1983).

The Personal Views Survey (Kobasa, Maddi & Khan, 1982), as a measure of hardiness as well as the three interrelated factors of control, commitment and challenge, has been used substantively both internationally and locally. According to Maddi and Khoshaba (1996), previous theorizing and construct-validational research suggest that hardiness expresses physiological vitality and enhanced performance. Maddi and Khoshaba (1996) investigated the relationship between hardiness and the clinically relevant scales of the Minnesota Multiphasic Personality Inventory, using a sample of undergraduate students. Results of the study suggest that hardiness is a general measure of mental health and that it is not an artifact of negative affectivity, which was controlled for in the study.

With regard to research on coping, Dixon (1989) aimed to identify whether intra-personal support variables (strengths already within the individual) might serve to protect the person from the effects of stress, using a sample of students registered for their Masters of Business Administration. Results of the study showed that hardiness significantly moderated the relationship between work-related stress and the emotional exhaustion dimension of burnout, measured by the Maslach Burnout Inventory (Dixon, 1989).

In South Africa the Personal Views Survey has also been used substantively in research involving the physiological and psychological effects of stress (Sanders, 2003), research on stress and stress-resilience (Willey, 1998; De Wet, 1999; Mokgobi, 2000), as well as research in organizational coping (Mazlai, 1985; Breakell, 1990; Sergay, 1990; Best, 1995; Leon, 1996; Potgieter, 1996).

Of particular relevance to the present study, Mathis and Lecci (1999) examined whether hardiness could be used to identify students having difficulties with academic, social, emotional and attachment adjustment. A sample of 63 first semester freshmen completed the PVS, Student Adaptation to College Questionnaire (SACQ), the Positive Affect/Negative Affect Scale, and self-report summary forms that assess stress, and physical and mental health. The university's registrar's office provided grade point averages and the university health center provided total number of health visits at the end of the semester. Overall, hardiness emerged as a good predictor of mental health over the ten-week duration of the study. However, after statistically controlling for negative affectivity, a significant negative relationship between hardiness and health center visits emerged, suggesting a positive relationship between hardiness and physical and mental health.

2.2.2.3 Stamina

According to Strümpfer (1990) two authors used the concept of 'stamina' in a salutogenic context. Thomas (1981, p.41) defined stamina, using a dictionary definition of the word, as "the physical and moral strength to resist or withstand disease, fatigue or hardships

and endurance." According to her, human beings are born with "different potentialities and susceptibilities, which life experiences may mold into a protective shield undergirding future health (Tomas, 1981, cited in Strümpfer, 1990, p. 272).

In trying to explain what qualities distinguish older persons who demonstrate emotional resilience despite age-related losses and life changes, Colerick (1986, cited in Strümpfer, 1990, p. 272) assessed stamina in terms of capacity for growth, personal insight, life perspective, likelihood of functional breakdown and general competence. Strümpfer (1990) notes that one of Colerick's summary statements is strongly reminiscent of statements by Antonovsky of sense of coherence and by Kobasa on hardiness:

> "Elderly with high stamina for managing change have learned through the years that change is inevitable, challenging and manageable … triumph perceptions in later life flow from years of success in acting on the environment. In old age, these individuals look beyond age-related limitations for new ways to use energy – increasing understanding, extending skills, discovering more abilities."
>
> (Colerick, 1985, cited in Strumpfer, 1990, p. 273)

2.2.2.4 Potency

Ben-Sira (1985, p. 399) defines potency as "a person's enduring confidence in his own capacities, as well as confidence in and commitment to his/her social environment, which is perceived as being characterized by a basically meaningful and predictable order and by a reliable and just distribution of rewards."

Ben-Sira (1985) regards potency as a buffering variable, which operates in the restoration of homeostasis once it has already been disrupted. It is regarded as latent and fulfills a delayed homeostasis-stabilising function through its capacity to prevent tension, following occasional, inadequate coping, from turning into lasting stress.

In a situation where the resources at the disposal of a person are inadequate for meeting certain demands and this causes tension (a disturbance in homeostasis), potency will enable the individual to restore this homeostasis and thus prevent the tension from turning into lasting stress. This construct emphasizes that coping has to be considered as a product of interaction between the person and the environment. Ben-Sira (1985) further postulated that the same experience might be highly threatening to one person, but completely harmless to another. Miller (1996) asserted that the impact of an imbalance seems to be the result of a review of previous coping resources. The subjective perception of stimuli and previous coping successes therefore determines the degree to which emotional balance is maintained or disturbed.

2.2.2.5 Learned resourcefulness

Learned resourcefulness refers to a set of well-learned behaviours and skills by which individuals self-regulate or control their behaviours. It is seen as a personality repertoire that includes mainly three functions, namely regressive self-control, reformative self-control, and experiential self-control (Rosenbaum, 1990). Regressive self-control helps the individual to regulate internal responses, such as pain, emotions, and cognition that interfere with the smooth execution of an ongoing task. Reformative self-control enables individuals to change their current behaviour in the hope of achieving a greater reward in the future by using planning skills, problem-solving strategies, and the delay of immediate gratification. Experiential self-control enables individuals to experience and enjoy unknown and pleasurable activities to the fullest.

People low on learned resourcefulness see themselves as inefficacious in coping with emotional strain and difficult tasks. As a result, they tend to pay more attention to their deficiencies than to their tasks. On the other hand, people high on learned resourcefulness perceive themselves as more efficacious to deal with emotional and task demands and, as a result, are more likely to continue with self-regulation (Rosenbaum, 1988).

2.3 Fortigenesis: a more embracing concept

Some researchers believe that the pathogenic view and salutogenesis can be described in terms of a "health disease/ease continuum," implying that the individual will function between the two poles of terminal illness and total wellness (Strümpfer, 1990). It could be proposed that the criteria for psychological well-being and the criteria for psychopathology are to a great extent independent and that well-being and pathology are not just the endpoints of the same continuum. The absence of psychopathology does not necessarily indicate well-being or the presence of psychological strengths. In the same sense, low scores on measures of well-being or psychological strengths do not necessarily indicate pathology.

On the basis of Antonovsky's writings, Strümpfer (1995) argued that this is a much more encompassing problem than that of factors that influence physical health, and proposed that the paradigm be broadened to include sources of strength and proposed the name 'fortigenesis' (the origin of strengths). This term can be seen as more embracing and holistic than salutogenesis. Wissing and Van Eeden (1997) further argued that the focus

should not only be on origins of psychological strengths, as implied by the names salutogenesis and fortigenesis, but also on the nature, dynamics and enhancement of psychological well-being. They suggested that the term psychofortology (the science of psychological strengths) be used for the domain of psychology in which psychological well-being is studied. Within this new domain, a better understanding of psychological strengths will point to new directions for capacity building, the prevention and enhancement of the quality of life of individuals, in their private as well as work lives.

2.3.1 The Construct of Fortitude

In investigating the health-sustaining and stress-reducing effects of a range of individual and environmental factors, Pretorius (1998) proposed the construct of *fortitude* as the answer to the fundamental question of the fortigenic paradigm - *where does strength come from?* Factor analyses of variables included in his study (namely, self-esteem, self-denigration, self-worth, personal competence, personal efficacy, belief about support from others, perception of problem-solving skills, perceived number and availability of support, support from friends, support from family and family environment) identified three meaningful factors, which were labeled Self-Appraisal, Support Appraisals and Family Appraisals. A particular theory of fortitude was therefore suggested by the results, in which it is hypothesized that an individual with fortitude (one who copes successfully with stress and experiences low levels of depression) has positive appraisals of the self, the family, and of support from others. Pretorius (1998, p. 23) formally defines fortitude as "the strength to manage stress and stay well and this strength derives from a positive appraisal of the self, the family and support from others."

Pretorius (1998, p. 28) contends that fortitude is based within a theory of appraisal and is premised by the notion that "people's evaluations of themselves, their abilities, their support resources and their family and environment influence their emotions and behaviour during transactions with the environment," and that people who perceive these negatively "will have serious doubts about their ability to deal with a stressful encounter and consequently succumb to the effects of such a stressor." On the other hand, a positive appraisal of these by the individual will result in a greater belief in his/her ability to manage a stressful encounter. Fortitude can thus be regarded as a construct that could explain how people manage to maintain psychological well-being (or cope) in the face of adversity or stress.

The Fortitude Questionnaire (Pretorius, 1998), as a measure of fortitude and its interrelated factors of self-appraisal, family-appraisal and support-appraisal, has been used substantively in a number of studies in South Africa. All these studies, however, point in the direction that fortitude is associated with coping and positive psychological well-being.

In a study by Muller (1999), investigating differences in academic achievement in children of divorced parents, with a sample of 110 participants in grades five through seven, a negative relationship was indicated between depression (measured by the Children's Depression Inventory) and stress-resistance (measured by the FORQ).

In a study by Heyns, Venter, Esterhuyse, Bam and Odendal (2003), focusing on the relationship between psychofortigenic factors and psychological burnout amongst a sample of 226 nurses from 21 institutions caring for patients with Alzheimer's disease (among other conditions), significant negative correlations between burnout and psychofortigenic factors (Fortitude and Sense of Coherence) were indicated.

Julius (1999) investigated the influence of gender and fortitude on the types of problems students presented with at the Institute for Counselling at the University of the Western Cape, using a non-probability sample of 70 participants. Significant negative correlations were indicated between total functioning (as indicated by the 'Checklist of Problems and Concerns' used at the Institute for Counselling) and the FORQ overall (fortitude) scale as well as the three (self-appraisal, family-appraisal and support-appraisal) subscales, suggesting that participants measuring high on fortitude would present with less problems, thus supporting the premise that fortitude is associated with less stress and less presenting problems.

In a study investigating gender differences with regard to aspects of psychological well-being, using a multicultural availability sample consisting of 378 participants, Roothman, Kirsten and Wissing (2003) found that men scored significantly higher than females on fortitude and other psychological well-being constructs, namely, physical self-concept, positive automatic thoughts, constructive thinking, cognitive flexibility and total self-concept. These results suggest gender–related differences in perceptions of psychological well-being.

According to Wissing and van Eeden (1997), other constructs that conceptually resemble the constructs defined above and which relate to the maintenance and enhancement of psychological wellness include self-actualization, toughness, social support, satisfaction with life, dispositional optimism, and self-efficacy. Wissing and van Eeden (1997) assert that different theoretical traditions and empirical observations inspired these constructs and their consequent operationalisation, and further note that "although these constructs are operationalised, it has not been empirically determined to what degree these constructs refer to the same or different aspects of psychological well-being (p. 10). They also note that "it is furthermore unclear to what extent there is an overlap between these specific indices of psychological well-being and more general indices of well-being" (p. 10).

2.4 Education: An unequal state of affairs

In this section an attempt will be made to show how the legacy of inequality brought about by the system of apartheid still maintains its grasp on our education system, still impacting on the majority of those who have been disadvantaged by this system.

According to Rose and Turner (1975), Christian Nationalism grew out of the Afrikaner Nationalism of the 1930s and '40s, and was formalized for the first time in 1948 when the National Party came into power. Esterhuysen (2000) notes that the most basic tenet of Christian National policy was that there should be no mixing of languages, no mixing of cultures, no mixing of religions, and no mixing of races, which spelt out separate

education. Thus, over time, several different education acts were passed, namely the Bantu Education Act for Black schools (1953); the Coloured Persons Education Act (1963); the Indian Education Act (1965); and the National Education Policy for White schools (1967), each tightly controlled by the government (Rose & Turner, 1975).

Separate education also became a useful means of implementing unequal education (Esterhuysen, 2000). The fear that education would make black South Africans competitors in the job market, as well as in the political arena, posed a threat to the status of the white South African. It was out of this "fear of inter-racial competition that white South Africans conceded that the 'native', who was in a state of 'cultural infancy', should be guided by the whites, 'most especially those of the Boer nation as the senior trustees of the native' to a Christian way of life , but resisted providing an education that would allow the "native" to believe that he could become part of 'European community' and rise above the level of certain forms of labour" (Federasie van Afrikaanse Kultuurvereeniginge, 1948, cited in Esterhuysen, 2000, p. 266).

It was thus clear from the outset that white children would not only receive a separate education from African, 'Coloured' and Indian children, but that they would also receive a superior education designed to prepare them for an elevated position in South African social and economic life. African, 'Coloured' and Indian education, on the other hand, was designed to limit the learning process and restrict the development of these children. In the words of Malteno (1984, cited in Esterhuysen, 2000, p. 160), "they aimed to dwarf the minds of black children by conditioning them to servitude."

It should be highlighted that the problem with educational inequality in South Africa should not only be attributed to the education system, but that these are a reflection of the inequalities which arose from the structures, norms, and processes of a wider society tarnished by the system of apartheid. The dominant values, norms, and attitudes of South African society have interacted with the country's institutions and systems to generate structural inequalities, which marginalised certain groups such as Africans, women, and people living in rural areas (Simkins, 1990).

With understanding the inequality that existed in education in South Africa one would have to understand how resources and opportunities were distributed. According to Hofmeyr and McLellan (1992), South African education suffered from three main types of inequality, relating to race, region and gender.

2.4.1 Racial inequalities

This type of inequality is well known and understood in South Africa. In the schooling system there existed a hierarchy of unequal provision.

Du Plessis, du Pisani and Plekker (1990) noted that the 10 per cent of white learners (under the House of Assembly) at the apex of the pyramid were a privileged elite by comparison with the mass of African learners at the base. While the standard of Indian education (under the House of Delegates) was the closest to white education, so-called 'Coloured' education (under the House of Representatives) was somewhat in the middle

of the range, and the 7,02 million African learners (under the Department of Education and Training), who constituted 77,8 per cent of all the learners, were the most disadvantaged.

To indicate the inequality in expenditure on education, Moulder (1992) reported that in 1987 R6,6 billion was spent on schooling 6,7 million learners. The money was distributed very unequally, with R2,6 billion spent on less than a million white learners, and R2,5 billion spent on more than 4,7 million African learners. The amounts that were spent by the six homelands and by the Department of Education and Training (DET) were also very unequal. The DET spent R1,3 billion on 1.9 million learners, and the homelands spent R1,2 billion on 2,8 million learners.

If one divides the number of learners who were at school in 1987 (6 730 715) by the number of educators, one gets an educator-learner ration of 1:32. But all the segments of the education system had a ratio higher or lower than this average. For schools controlled by the House of Assembly the ratio was 1:18, for the DET schools it was 1:37, for schools in the homelands it was 1:44 (Moulder 1992).

Fedderke, Luiz and De Kadt (1994) also described some of the inequalities between the education systems of Whites and Africans in South Africa. Between 1991 and 1993, White public school educator-learner ratios remained steady at the mid-20 level, while the ratio 1:32 was the best educator-learner ratio obtained in the private schooling system for Africans in 1991. In addition, while the percentage of educators with tertiary

qualifications in White schools was 80 per cent, that in African schools was less than 5 per cent at the same time in 1982, and began improving only as of 1983, reaching 50 per cent by 1993.

2.4.2 Regional inequalities

Both the quality and quantity of education in the rural areas fall short of needs. Bot (1988) indicates that these inequalities are linked to poor employment conditions, inadequate health and social infrastructure, the land tenure system, and a lack of community involvement.

Hofmeyr and McLellan (1992) regard rural education as the 'Cinderella' of the South African education system, citing Gordon's (1991) findings that 24 per cent of the DET's learners were in farm schools in rural areas. The DET's (1986) investigation into the education of African learners in rural areas under its control revealed alarming inadequacies and inequalities in provision compared with urban schools. A mere 3 per cent of the 5 782 rural schools offered education beyond standard 5 (grade 7), and 21 per cent did not offer education higher than standard 2 (grade 4). Moreover, while 48 per cent of all African primary school learners were schooled in rural areas, rural learners accounted for only 15 per cent of secondary school learners.

2.4.3 Gender inequalities

According to Hofmeyr and McLellan (1992), in most countries the education system, together with other social institutions, is less favourable to girls and women than to boys

and men. In South Africa, however, there has been a countervailing trend. African women, who received less education than their male counterparts in the past, have reversed their previous disadvantage at the schooling level. In 1990 there were 138 341 African male learners in public schools compared with 159 639 females. Moreover, whereas in 1976 there were fewer African female learners than male learners in matric, by 1990 females were the definite majority – 103 969 compared with 83 930 males.

Notwithstanding these gains, at the tertiary level women were generally underrepresented in comparison with men. By 1990 there were 152 427 male students enrolled at all universities in South Africa, and only 134 483 females. The greatest gender differences in numbers occurred at the postgraduate level, where women were significantly underrepresented, with 29 900 males and 18 002 females.

These statistics serve as a baseline indication of the state of education before the emergence of a democratic South Africa in 1994. These are some of the inequalities that fueled the 'education crisis', with statistics of this kind often quoted to demand equal education for all (Moulder 1992). It was against this inferior education that the Black Consciousness Movement and youth would repeatedly take issue, boycott and riot (Esterhuysen, 2000).

2.4.4 Education post 1994

Since South Africa's transition to democracy in 1994, resources devoted to school education have increased considerably. According to van der Berg (2001), however,

although large resource shifts have taken place to poorer schools, there seems to be a poor conversion of inputs into educational outputs. Outputs of successful matriculants or of those matriculating with exemption appear to be stagnating or declining. Van der Berg (2001) gathered information from most schools in six of the provinces and linked school performance, as measured by matriculation pass rate, to socio-economic background, as measured by school fees, and to inputs of teaching resources. It was concluded from this work that the South African school system appears to still perform much as it did under apartheid.

Predominantly black schools, although now better resourced, have not improved their matriculation output in quantitative (and indeed also qualitative) terms, whilst predominantly white schools are still performing as well as in the past. Thus, differentials between schools are largely unchanged, although the racial edge to the inequality has been reduced through the opening up of formerly white schools (van der Berg, 2003).

Access to higher education in South Africa has also long been problematic (Bougey, 2002). During the apartheid era, the policy of 'separate development' not only ensured that the black majority were denied the sort of learning experiences which would prepare them for tertiary study, but also that access to well resourced institutions of higher education was largely available only to Whites. Boughey (2002) further contends that the election of a democratic government in 1994 has not resolved these problems. Divisions in the higher education system, created as a result of apartheid, have proved hard to

eradicate, as the school system continues to fail the majority of students in terms of the quality of learning experiences it makes available to them (Bougey, 2002).

2.5 Economic disparities within the South African context

Despite the changes initiated after South Africa's first democratic election in 1994, poverty still persists, still affecting the majority of South Africans who were previously disadvantaged. This further impacts on the accessibility of resources and the quality thereof – in this case quality education and the necessities, like proper nutrition and shelter, to ensure healthy bodies and minds.

Poverty has most often been defined in socio-economic terms, with personal and family income as a determinant, coupled with people's view of the poor based on stereotypical perceptions or value judgments, and is often classified as a problem of low income (Potgieter, 1998). According to Potgieter (1998), it is best understood as a lack of the necessary income for people to meet their needs for food, clothing, shelter, energy, transportation, and medical care.

Given this, it may be quite obvious to see the negative implications for education if these basic needs are not met, and how these relate to the socio-economic status of that particular individual. Succeeding in (or even entering into) higher education therefore represents a daunting task for individuals from the lower end of the socio-economic spectrum. Where financial resources to gain access to higher education are more than

often inaccessible, the stresses of academia, once access to higher education is achieved, are exacerbated by the pressing demands of their day-to-day living.

2.6 Coping in the university context

Studying at university represents a unique challenge for every student venturing the path of academia. According to Lindgren (1969), academic performance represents the individual's response to the complex and stressful experience that epitomizes studying at university, requiring from the student adaptation, learning, change and development.

Besides academic performance as a measure of coping, students at university are also faced with a range of demands requiring adaptation and the demand to cope. Baker and Siryk (1989) purport that the process of adjustment to college/university is multidimensional, requiring that students develop effective strategies for adapting to the host of demands, including those found in the academic, social and emotional spheres.

2.6.1 Factors impacting on students' coping in the university context in South Africa

Studying at university is in itself a stressful experience for any individual. It is argued that the university environment is not only competitive but also challenging, placing a high regard on academic achievement and competence (Baker & Siryk, 1984; Santiago-Rivera, Bernstein & Gard, 1995). Murphy and Archer (1995) further suggest that the levels of psychological distress experienced by students at college/university are higher than that of normal adolescents. University students, however, do not constitute a

homogeneous grouping, as varying resources (internal and external) are available to each student to aid in this pursuit. These students also vary with regard to barriers to their learning. These may be related to their home environments, financial resources, and other social and demographic factors.

Arellano and Padilla (1996) found that having supportive relationships is positively related to greater academic performance. Sack (1972) also found that family factors, such as having siblings at university as well as lodgings (namely, staying in parents' home as opposed to hostels or private lodgings) had a positive effect on academic achievement. Molefo (2000) found that having a family environment that has clearly defined and enforced limits and rules has a positive effect on academic performance.

Many studies have been conducted in South Africa, investigating variables impacting on academic performance. Nettles (1988) found a negative relationship between socio-economic status and academic performance. A literature survey by Maree (1995, p. 51) suggested that "impoverished socio-economic background, inadequate academic preparation/stimulation, lack of parental motivation, poor tuition, inadequate financial aid and lack of properly trained teachers" impacted negatively on the mathematics achievement of black learners.

Research findings also suggest that socio-cultural factors, such as poor conditions and teaching at schools, and inefficient learning styles all contribute to difficulties South African students experience when entering university (van Heerden, 1995). The poor

quality of black students' education under the former Department of Education and Training (DET) is cited as a contributor to the underachievement of these students in tertiary institutions (Luthuli, Masiea & Zuma, 1992). Honikman (1982) found that the lack of basic academic proficiency inherent in the academic transition from high school to university had a destructive effect on the confidence and intellectual performance of black (including, in this case, "Coloured") first year students at the University of Cape Town.

Agar (1990) asserts that the quality of black education in South Africa, which is historically inferior, leads to students experiencing difficulties adjusting to the academic demands placed on them by university life. Kagee, Naidoo and Mahatey (1997) suggested that many of the factors impacting negatively on academic performance at university are related to alienation, interpersonal difficulties, psychological complaints such as anxiety and depression, financial matters, housing issues, adjustment difficulties related to the move from school to university, and academic and language-related problems. Kagee et al. (1997) furthermore concluded that as a result of the gross historic inequality in resource provision that was the legacy of apartheid education, students from disadvantaged backgrounds are generally under-prepared for the demands of tertiary education when compared to white students.

Language has also been found to contribute to academic performance, as many students find that, on entering university, they now have to adjust to receiving instruction and completing academic tasks in either English or Afrikaans, which may not be their first

language (Agar, 1990). Kapp (1998) further reported that African students, who received their secondary education at elite, formerly white (ex-Model C) schools, experienced fewer difficulties adjusting to UCT's linguistic demands than did other DET-schooled students.

Age was also found to be significantly positively related to academic performance, with studies suggesting that older students are better achievers at university than younger students (Nettles, 1988; Molefo, 2000).

2.7 Conclusion

The system of apartheid has created large socio-economic and other disparities, based on racial categories, which condemned a large portion of the South African population to poverty. As a consequence of this, the education system suffered to the point that Black (including here 'Coloured' and Indian) South Africans received an inferior education to Whites, in that the system was designed to limit their learning process and restrict their development. After South Africa's first democratic elections in 1994, a move to equalize the playing fields through the process of reconstruction and development ceded the hope to eliminate the disparities, which was the legacy of apartheid. It has become apparent, however, that ten years later, the effects of apartheid are still experienced by a huge percentage of the South African population.

Many of these individuals have, however, succeeded in entering universities, enduring the financial and other difficulties, which hinder the process of learning. It therefore

becomes clear that university not only represents stressors in the form of academia, but that students also experience other life stressors in conjunction with this. It also outlines the fact that individual students face unique challenges, and furthermore suggests another dimension, which is internal to the individual, which helps to manage these stressors. The question remains now whether the resilience constructs mentioned play a role in influencing students' ability to cope, thus affecting their academic coping.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter focuses on the method of conducting the research. Particular attention is paid here to the specific aims of the study, hypotheses, sample characteristics, measuring instruments, data collection and analysis procedures, as well as ethical considerations.

3.2 Aim of the study

The present study investigates the role of resilience constructs in the relationship between socio-economic and demographic factors and academic coping. If resilience represents coping resources in the individual that help him/her manage adverse circumstances, do students, studying at university, who experience disempowering socio-economic and demographic factors (e.g., having received poor schooling at ill-equipped schools), experience higher levels of resilience (as measured by scales developed to measure various aspects of resilience) than students who experience more favourable socio-economic and demographic factors, given similar academic coping? Do students from more advantaged backgrounds cope better academically than those from less advantaged backgrounds, given that student from more advantaged backgrounds experience better access to resources? Do students experiencing higher levels of resilience cope better than students experiencing lower levels of resilience? Does resilience play a role in the relationship between socio-economic and demographic factors and academic coping?

3.3 Hypotheses

1. There is a significant relationship between demographic and resilience variables.
2. There is a significant relationship between demographic and outcome variables (namely, academic performance and adjustment to university, which will be discussed in more detail later in this chapter under the heading *Academic coping measures*).
3. There is a significant relationship between resilience and outcome variables.
4. Resilience variables play a role in the relationship between demographic and outcome variables.

3.4 Sample

A convenience sample of 164 third year Psychology students from the University of the Western Cape was used, since students at this level would have established a fairly stable pattern of 'coping'. Participation in the study was done on a voluntary basis. Table 3.4 describes the characteristics of the present sample.

Table 3.4 Description of sample characteristics

	N	%
Gender		
Male	49	29.9
Female	114	69.5
Language		
English	54	32.9
Afrikaans	22	13.4
African language-speaking	88	53,7
Race		
African	87	53
Coloured/Indian	77	47
Town		
Urban	109	66.5
Rural	55	33.5
Household income		
R0-R1000	46	28
R1000-R3000	37	22.6
R3001-R6000	37	22.6
R6001-R10000	19	11.6
R10000+	25	15.2

The sample is predominantly female (69,5%), African-language-speaking (48,8%), of an urban family background (66,5%), with a total family income of R3000 or less per month (50,6%). The mean age of the sample was 24,08 years, with a mean average grade of 61,28%.

3.5 Measuring instruments

3.5.1 Resilience measures

The following measuring instruments were used to measure resilience:

- The Fortitude Questionnaire (Pretorius, 1998)
- The Personal Views Survey (Kobasa, Maddi & Kahn, 1982)
- The Sense of Coherence Scale (Antonovsky, 1987)

3.5.1.1 The Fortitude Questionnaire (FORQ)

The FORQ (Pretorius, 1998) was used to measure fortitude (overall score), and various aspects of fortitude, namely self-appraisal, family-appraisal, and support-appraisal. The FORQ consists of 20 items, scored on a four-point Likert scale, ranging from 1 = "does not apply" to 4 = "applies strongly." Pretorius (1998) assessed the psychometric properties of the FORQ and yielded alpha coefficients of 0,74 for the 'self', 0,82 for the 'family', and 0,76 for the 'support' subscales. The total scale yielded an alpha coefficient of 0,85. Julius (1999) also yielded a reliability coefficient of 0,88. Pretorius (1998) also showed, through factor analytic procedures as well as the relationship of fortitude with other measures of well-being, satisfactory content, factorial, and predictive validity.

As previously mentioned in Chapter 2, the FORQ has been used substantively in a number of studies in South Africa, all of which point in the direction that fortitude is associated with coping and positive psychological well-being (Muller, 1999; Julius, 1999; Heyns et al., 2003; Roothman, Kirsten & Wissing, 2003)

3.5.1.2 The Personal Views Survey (PVS)

The PVS (Kobasa, Maddi & Kahn, 1982) consists of 50 items measuring the construct of hardiness (overall score), which works on a four-point Likert scale ranging from 0 = "not at all true" to 3 = "completely true." Hardiness is considered a personality style consisting of three interrelated factors, namely commitment, control and challenge, for which the PVS also provides separate estimates. Out of the 50 items of the hardiness scale, 39 are negatively keyed, while only 11 are positively keyed. This means that a high score is indicative of low hardiness.

Funk (1992) reported alpha coefficients greater than 0,70 on all the dimensions of hardiness (namely, commitment, control and challenge). Funk (1992) reported correlations between the three dimensions of hardiness as follows: 0,78 was obtained between commitment and control; 0,49 was obtained between commitment and challenge; and 0,50 was obtained between control and challenge. Hull, van Treuren and Virnelli (1987) reported good predictive validity of this scale, as it was established that hardiness significantly predicted depression.

As previously mentioned in Chapter 2, the PVS, as a measure of hardiness, has been used substantively internationally, with extensive evidence suggesting that hardiness is positively related to physical and mental health (Kobassa, Maddi & Khan, 1982; Dixon, 1989; Roth, Wiebe, Fillingim & Shay, 1989; Maddi & Khoshaba, 1996). In South Africa the PVS has also been used substantively in research involving the physiological and psychological effects of stress (Sanders, 2003), research on stress and stress-resilience

(Willey, 1998; De Wet, 1999; Mokgobi, 2000), as well as research in organizational coping (Mazlai, 1985; Breakell, 1990; Sergay, 1990; Best, 1995; Leon, 1996; Potgieter, 1996)

3.5.1.3 The Sense of Coherence (SOC) Scale

The SOC Scale (Antonovsky, 1987) consists of 29 items, measuring sense of coherence (or the individual's way of experiencing the world and his/her life in it) in general (total score), as well as its three core components, namely comprehensibility, manageability and meaningfulness. The SOC Scale is measured on a seven-point Likert scale ranging from 1 to 7, representing extremes at each end of the scale.

Antonovsky (1997) indicated that the SOC Scale yielded internal reliability indices of between 0,78 and 0,93, as reported in 26 different studies, and test-retest reliability indices of between 0,56 and 0,96. Antonovsky (1979) also reported good content and criterium validity. Wissing and van Eeden (1997, p. 31) also showed that the SOC construct "proved to have highly acceptable levels of convergent and discriminant validity," and comment that SOC seems to be a "universally applicable and valid construct across cultural, gender and age differences as hypothesized by Antonovsky."

As previously mentioned in Chapter 2, in South Africa the SOC Scale has been used extensively in a variety of settings in relation to a number of variables. SOC has been used in relation to stress-resistance and coping (Bach, 2000; Strijdom, 2000; Cairns, 2002; Basson, 2003; Naidu, 2003), in relation to physiological illnesses and rehabilitation

(Madhoo, 1999; Cairns, 2002), and in relation to personality variables (Nortier, 1999; Fourie, 2000; Fox, 2000; Kassen, 2002). Research using the SOC Scale has also been undertaken in organizational settings (Kossuth, 1999; Lockner, 2000; Jackson, 2002; Hobkirk, 2003), as well as in the South African Police Service (Strijdom, 2000; Kassen, 2002).

3.5.2 Academic coping measures

Academic coping was measured in two ways, namely students' ability to cope academically (academic performance) as well as their ability to adjust to the university environment.

3.5.2.1 Academic performance

Calculating the average of the marks obtained for the various modules registered for by the participants for the academic year was used to measure students' ability to cope with the academic demands placed on them. This calculated average, also known as the cumulated grade point average, has been described by Nettles (1988, p. 18) as "…the best available measure of student learning performance in a college curriculum." These marks were obtained from the university's academic records department, after the participants granted signed permission.

3.5.2.2 The Student Adaptation to College Questionnaire (SACQ)

The SACQ assesses and gives a measure of the effectiveness of students' adjustment in the academic, social, and personal-emotional spheres, and also provides a measure of the

quality of the relationship established between the student and the institution, which all make up the subscales of the questionnaire.

Academic Adjustment relates to the student's capacity to cope with the particular academic demands intrinsic to the university experience. Empirically-derived correlates of this subscale indicate that lower scores are associated with lower overall academic results in students' first year of study, feelings of lack of control over the outcome of students' academic efforts, unstable and age-inappropriate goals, and less realistic self-appraisal (Baker & Siryk, 1984).

Social adjustment relates to the student's capacity to cope with the interpersonal and societal demands characteristic of adjustment to university. Behavioural correlates of the subscale demonstrate that lower scores are associated with greater increased social distress and avoidance, increased sense of loneliness, less perceived social support, less social self-confidence and self-concept, and less participation in social activities within the university environment (Baker & Siryk, 1984).

Personal-Emotional Adjustment taps into the student's intrapsychic state during adjustment to university and relates to the degree to which he/she experiences general psychological distress and associated somatic complaints. Lower scores on this subscale have been associated with a greater likelihood of the use of campus psychological services, fewer coping resources, and a greater degree of emotional distress, anxiety and depression (Baker & Siryk, 1984).

Goal Commitment-Institutional Attachment relates to the student's degree of commitment to educational-institutional goals and the level of attachment or affiliation to their institution. It therefore addresses the quality of the relationship that is established between the student and the institution. Lower scores on this subscale have been associated with a greater likelihood of the student discontinuing enrolment and less overall satisfaction with the university experience (Baker & Siryk, 1984).

The primary application of the SACQ is counselling interventions, in which it is used as a tool to identify potential and real adjustment problems in students. It is also used in basic evaluation, as well as research relating to university life (Baker & Siryk, 1989). The SACQ has been used extensively in a number of studies over recent years (Sennet, 2000), and as Baker (1999, cited in Sennet, 2000, p. 23) noted, "it has been used in numerous and diverse cross-cultural settings, including the former Czechoslovakia, Belgium and South Korea." The SACQ has also been used extensively in relation to socio-cultural variables (Dewit-Parker, 2000; Klasner & Pistole, 2003) and to family variables (Feenstra, Banyard, Rines & Hopkins, 2001; Moore, 2003).

With specific use of the SACQ in South African context, using a sample of 339 black and white freshmen at the University of Cape Town, Sennet, Finchilescu, Gibson and Strauss (2003) attempted to explore the nature of adaptation of black students at an historically white university, using the SACQ. No significant differences were found between white and black participants on academic adjustment or institutional commitment. However,

black participants reported significantly poorer levels of social adjustment, and somewhat poorer levels of personal-emotional adjustment. Further investigation found relationships between academic performance, race and additional variables hypothesized to be associated with adjustment. Research exploring the relationship between resilience measures and student adaptation to college/university has indicated significant positive relationships between these variables (Kintner, 1999; Mathis & Lecci, 1999; Stuart, 2001; Montgomery, Haemmerlie & Ray, 2003; Fassig, 2004).

The SACQ (Baker & Siryk, 1984) was therefore used to assess the quality of students' adjustment to the university environment. The SACQ consists of a 67 items, scored on a nine-point Likert scale, ranging from "applies very closely to me" to "doesn't apply to me at all." An overall or Full Scale adjustment score is obtained by summing the scores on all 67 items. The questionnaire also yields further scores on four subscales, each measuring a broad facet of adjustment to the university environment, namely academic, social, personal-emotional and goal commitment-institutional attachment (Baker & Siryk, 1984).

Baker and Siryk (1989) reported good reliability coefficients for the Full Scale as well as the subscales of the SACQ. Normative data was collected, using a sample of first- and second-semester freshmen at two Massachusetts colleges in the United States of America between the academic years 1980 through 1984. Reported alpha coefficients for the Full Scale ranged from 0,92 to 0,95; for the Academic Adjustment subscale from 0,81 to 0,90;

for the Social Adjustment subscale from 0,83 to 0,91; for the Personal-Emotional subscale from 0,77 to 0,86; and for the Attachment subscale from 0,92 to 0,95.

3.5.3 Biographical questionnaire (demographic and household income variables)

A self-developed biographical questionnaire was used to obtain information regarding participants' family residence (urban or rural), education department under which they matriculated, as well as information regarding their age and sex. The biographical questionnaire was also used to gather information on students' household income. Lockheed, Fuller and Nyirongo (1985) contend that household income is a good indicator of socio-economic status.

3.6 Procedure

Permission to conduct the research was first sought from the head of the Psychology Department at the University of the Western Cape. After permission was granted, arrangements were made with the relevant third year Psychology lecturers to administer the questionnaires in the designated lecture theatres, during one of their one-and-a-half hour double lecture slots. Students were also notified of the research project and process in the beginning of the contact period, so as to inform them of the procedure ahead of time. They were required to fill in their student numbers on their respective questionnaires, and give signed consent to access their academic results so as to reconcile the data. Questionnaires averaged approximately 40 to 50 minutes to complete, with the participation of four Psychology classes.

3.7 Analysis of data

The Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner & Brent, 1975) was used to perform the statistical analysis of the data in the study.

This programme was used to, firstly, obtain descriptive statistics and reliability coefficients for the FORQ, PVS, SOC Scale and SACQ. Secondly, with regard to the one-way interrelationships between variables, correlation analyses were performed for continuous variables, t-tests for variables with two categories, and ANOVA for variables with more than two categories. Relationships explored in these analyses included the relationship between demographic and resilience variables, the relationship between demographic and outcome variables, and the relationship between resilience and outcome variables. Thirdly, regression analyses were further performed to determine the role of resilience in the relationship between demographic and outcome variables. Stepwise regression analyses were used where the demographic variables were categorical, and product-term regression analyses where demographic variables were continuous

3.8 Ethical considerations

Participants were informed of the study, its aims and the procedure, after which their informed consent was verified by their signing consent forms. The confidentiality and anonymity of participants were also respected throughout the research process. Participants were also informed of their right to withdraw from the study at any time during the research process.

CHAPTER 4

RESULTS

4.1 Introduction

In this chapter, the results, following the analyses outlined in chapter 3, is presented. Firstly, the descriptive statistics and reliabilities for the FORQ, PVS, SOC Scale and SACQ are presented. Secondly, the results of the one-way interrelationship analyses between demographic, resilience and outcome variables are presented. This is then followed by, thirdly, the presentation of the results of the regression analyses, determining the role of resilience variables in the relationship between demographic and outcome variables.

4.2 Descriptive statistics and reliabilities for scales

The following section looks at the descriptive statistics, as well as reports on the results of the internal consistency reliability analysis of the various scales, using Cronbach's alpha as the reliability coefficient. A reliability of 0,7 was used as an indicator for acceptable reliability. Nunnaly (1978) indicated 0,7 to be an acceptable reliability coefficient.

4.2.1 Descriptive statistics and reliabilities for the FORQ

Scale	N	Mean	SD	No. of items	Alpha
Fortitude	164	56.09	8.88	20	0.83
Self	164	20.93	3.55	7	0.69
Family	164	18.47	4.78	7	0.84
Support	164	16.7	3.58	6	0.71

In Pretorius's (1998) study in which he field-tested the FORQ, using 484 undergraduate psychology students at the University of the Western Cape, a mean score of 57,79 was obtained for fortitude; 21,33 for self-appraisal; 19,91 for family-appraisal and 16,61 for support-appraisal. The corresponding results from the present study indicate a mean of 56,09 for fortitude; 20,93 for self-appraisal; 18,47 for family appraisal; and 16,7 for support appraisal. The means of the fortitude scale and its various subscales therefore compare favourably with those obtained in Pretorius's (1998) study.

The reliability of the overall scales as well as the subscales of the FORQ compare favourably with that of the normative data reported by Pretorius (1998). The normative data reported by Pretorius (1998) yielded reliability coefficients of 0,85 for fortitude; 0,74 for self-appraisal; 0,82 for family-appraisal; and 0,76 for support-appraisal. Reliability coefficients yielded for the present study include 0,83 for fortitude; 0,69 for self-appraisal; 0,84 for family-appraisal; and 0,71 for support-appraisal. Although the reliability coefficient for self-appraisal (a=0,69) falls marginally short of the cut-off for acceptable reliability, it is sufficiently close to be considered as falling within the range of acceptable reliability. It should also be noted that a lower reliability coefficient (α=0,69) for the self-

appraisal subscale was also reported by Mokgobi (2000), also using a sample from the University of the Western Cape.

4.2.2 Descriptive statistics and reliabilities for the PVS

Scale	N	Mean	SD	No. of items	Alpha
Hardiness	156	70.13	16.58	50	0.84
Commitment	159	19.29	6.02	16	0.62
Control	161	23.55	6.79	17	0.68
Challenge	163	27.36	6.11	17	0.57

With regard to the reliability of the PVS, whereas the hardiness scale yielded adequate reliability (α=0,84) and compared favourably with that of previously reported studies, the subscales of the PVS yielded inadequate reliabilities and did not compare favourably with those of previously reported studies. Even after item analysis was conducted, no acceptable reliabilities for the subscales could be yielded for the subscales. Further analysis will thus be conducted with the exclusion of these subscales, and use will only be made of the overall hardiness scale.

4.2.3 Descriptive statistics and reliabilities for the SOC Scale

Scale	N	Mean	SD	No. of items	Alpha
SOC	163	132.31	22.00	29	0.85
Comprehensibility	163	43.34	10.36	11	0.74
Manageability	163	47.2	8.9	10	0.68
Meaningfulness	163	41.77	9.21	8	0.79

In a study by Wissing and van Eeden (1997), which included 550 participants from the Vaal Triangle, which they reported to be a "microcosm of the greater South Africa" (p. 11), a mean of 136,52 was obtained on the SOC scale. The corresponding results from the present study indicate a mean of 132,31. This indicates a favourable comparison and suggests that the sample in the present study experienced similar levels of SOC as that in the study by Wissing and van Eeden (1997). A comparison of the subscales in the present study indicates a more positive attribution of the respondents to the meaningfulness of events than to comprehensibility or manageability.

With regard to reliability, all except the manageability (α=0,68) subscale of the SOC Scale yielded acceptable reliabilities and compared favourably with reliabilities previously reported. However, item analysis revealed that with the deletion of item 9 in this subscale, an acceptable reliability coefficient of 0,70 is yielded. Further analysis will thus be conducted with the exclusion of this item.

4.2.4 Descriptive statistics and reliabilities for the SACQ

Scale	N	Mean	SD	No. of items	Alpha
Adaptation to college	49	393.41	65.93	67	0.91
Academic	136	138.06	26.22	24	0.85
Social	60	116.43	18.58	20	0.63
Emotional	150	74.35	18.27	15	0.75
Attachment	93	92.7	17.17	15	0.72

In Sennet's (2000) study, using a sample from the University of Cape Town (UCT), a mean score of 401, 4 was yielded for overall adjustment; 136,0 for academic adjustment; 124,3 for social adjustment; 81,7 for personal-emotional adjustment; and 106,7 for goal commitment/institutional attachment. This suggests that the present sample scored somewhat higher on academic adjustment than the UCT sample in Sennet's (2000) study. The present sample, however, scored lower on overall adjustment and the rest of the subscales on the SACQ than the UCT sample in Sennet's (2000) study.

With regard to reliability, the full-scale and academic adjustment subscale compared favourably to that of normative data and those yielded in Sennet's (2000) study. Sennet (2000) yielded a reliability coefficient of 0,92 for overall adjustment and 0,84 for academic adjustment. Although adequately reliable, the emotional adjustment and goal commitment/institutional attachment subscales yielded lower levels of reliability than those yielded by Sennet (2000), who recorded reliability coefficients of 0,81 for both these subscales.

The social adjustment subscale did not, however, yield adequate reliability, and did not compare well with normative data or that reported by Sennet (2000), who reported an alpha coefficient of 0,83 for this scale. Item analysis, however revealed that with the deletion of items 1, 8, 30 and 33 of the SACQ, a reliability of 0,76 is yielded for this subscale. Further analysis will therefore exclude items 1, 8, 30 and 33 of the SACQ for the social adjustment subscale.

4.3 Interrelationships between variables

The three different categories of variables used in the analyses included demographic, resilience and outcome variables. This section of the analysis concerns one-way interrelationships between variables and does not deal with the multi-way relationships between the three categories of variables. Three different types of analyses was performed, namely correlation for continuous variables, t-tests for variables with two categories, and ANOVA for variables with more than two categories. Relationships explored in the analyses included: firstly, the relationship between demographic and resilience variables; secondly, the relationship between demographic and outcome variables; and thirdly, the relationship between resilience and outcome variables.

4.3.1 Relationship between demographic and resilience variables

4.3.1.1 Relationship between age and resilience variables

The Pearson's Product-moment Correlation was applied to determine whether there is a correlation between age and scores on resilience measures. Table 4.3.1.1 reports on these results.

Table 4.3.1.1 Correlations between age and resilience measures

	N	r with age	Sign. (2-tailed)
Self-appraisal	163	0,21**	0,007
Family-appraisal	163	-0,06	0,45
Support-appraisal	163	-0,08	0,32
Fortitude	163	0,01	0,92
Hardiness	155	0,19*	0,017
Comprehensibility	162	0,02	0,78
Manageability	162	0,11	0,15
Meaningfulness	162	0,15	0,06
SOC	162	0,10	0,21

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The results presented in Table 4.3.1.1 indicate two significant correlations. A significant positive correlation is indicated between age and self-appraisal (r=0,21), as well as between age and hardiness (r=0,19). These findings suggest that, for the whole sample, as age increases, so too will scores on self-appraisal and hardiness accordingly.

4.3.1.2 Relationship between sex and resilience variables

A two-sample t-test was conducted to determine whether there is a difference between males and females in terms of their scores on resilience measures. Table 4.3.1.2 reports on these results.

Table 4.3.1.2 Relationship between sex and resilience variables

	Sex	Mean	SD	t	df	Sign. (2-tailed)
Self-appraisal	Males	18,65	3,30			
	Females	17,50	3,31	2,04*	161	0,04
Family-appraisal	Males	18,18	4,73			
	Females	18,65	4,79	-0,57	161	0,57
Support-appraisal	Males	16,41	3,48			
	Females	16,89	3,57	-0,80	161	0,42
Fortitude	Males	56,33	8,73			
	Females	56,15	8,88	0,12	161	0,91
Hardiness	Males	75,53	16,27			
	Females	67,86	16,14	2,75*	153	0,01
Comprehensibility	Males	45,98	7,95			
	Females	42,12	11,09	2,21*	160	0,03
Manageability	Males	42,94	7,97			
	Females	43,12	8,83	-0,13	160	0,90
Meaningfulness	Males	43,55	7,99			
	Females	40,96	9,65	1,65	160	0,10
SOC	Males	136,76	18,11			
	Females	130,22	24,66	1,67	160	0,10

** Significant at the 0.01 level (2-tailed).
* Significant at the 0.05 level (2-tailed).

The analysis in Table 4.3.1.2 indicates three significant relationships. It indicates that males scored significantly higher than females on measures of self-appraisal (t=2,04), hardiness (t=2,75) and comprehensibility (t=2,21).

4.3.1.3 Relationship between language and resilience variables

ANOVA was performed to determine whether there is a difference between the English, Afrikaans and African language-speaking groups in terms of their scores on resilience measures. Table 4.3.1.3 reports on these results. Post hoc analyses, using Scheffe's Multiple Comparisons, were also used to determine whether there are significant differences between the means of individual groups.

Table 4.2.1.3 Relationship between language and resilience variables

	F	df	Sign. (2-tailed)
Self-appraisal	11,78**	2	0,00
Family-appraisal	7,84**	2	0,00
Support-appraisal	1,16	2	0,32
Fortitude	3,68*	2	0,03
Hardiness	19,64**	2	0,00
Comprehensibility	1,76	2	0,18
Manageability	3,17*	2	0,045
Meaningfulness	1,88	2	0,16
SOC	3,40*	2	0,04

** Significant at the 0.01 level (2-tailed).
* Significant at the 0.05 level (2-tailed).

The results presented Table 4.3.1.3 indicate that, with regard to their main effects, the three language groups differed significantly with regard to their scores on the measures

of self-appraisal (F=11,78), family-appraisal (F=7,84), fortitude (F=3,68), hardiness (F=19,64), manageability (F=3,17) and SOC (F=3,40). Table 4.3.1.3.1 reports on the post hoc analysis, which explored whether these groups differed significantly from each other with regard to their mean scores on the different resilience variables.

Table 4.3.1.3.1 Significant differences between groups (post hoc analysis)

Dependant variable	Language (I)	Language (J)	Mean Diff (I-J)	Std. Error	Sig.
Self-appraisal	English	Afrikaans	2,20*	0,80	.03
		African	-1,40*	0,56	.04
	Afrikaans	English	-2,20*	0,80	.03
		African	-3,59*	0,76	.000
	African	English	1,40*	0,56	.043
		Afrikaans	3,59*	0,76	.000
Family-appraisal	English	Afrikaans	-1,67	1,10	0,32
		African	-3,03*	0,77	0,00
	Afrikaans	English	1,667	1,10	0,32
		African	-1,37	1,05	0,42
	African	English	3,03*	0,77	0,00
		Afrikaans	1,37	1,05	0,43
Hardiness	English	Afrikaans	-4,47	3,85	0,51
		African	-16,38*	2,69	0,00
	Afrikaans	English	4,47	3,85	0,51
		African	-11,91*	3,68	0,01
	African	English	16,38*	2,69	0,00
		Afrikaans	11,91*	3,68	0,06
SOC	English	Afrikaans	7,64	5,78	0,42
		African	10,46*	4,03	0,04
	Afrikaans	English	-7,64	5,78	0,42
		African	2,82	5,51	0,88
	African	English	-10,46*	4,03	0,04
		Afrikaans	-2,82	5,51	0,88

* The mean difference is significant at the 0,05 level (2-tailed).

Post hoc analysis (Table 4.3.1.3.1) reveals that the African language-speaking group scored significantly higher than both the English (mean difference=1,39) and Afrikaans (mean difference=3,59) language-speaking groups on the measure of self-appraisal, when comparing their means. The English language-speaking group also scored significantly higher than the Afrikaans language-speaking group (mean difference=2,20) on this measure.

With regard to family-appraisal, the only significant difference between groups was that between the English and African language-speaking group. The African language-speaking group scored significantly higher than the English language-speaking group (mean difference=3,03) on the measure of family appraisal, when comparing their means.

With regard to hardiness, the African language-speaking group scored significantly higher on this measure compared to both the English (mean difference=16,38) and the Afrikaans (mean difference=11,91) language-speaking groups, when comparing their means. No significant difference was, however, indicated between the English and Afrikaans language-speaking groups.

With regard to SOC, the African language-speaking group scored significantly lower than the English language-speaking group (mean difference =10,46). No significant differences are, however, indicated between the African language-speaking group and Afrikaans language-speaking groups, or between the English language-speaking and Afrikaans language-speaking groups.

4.3.1.4 Relationship between race and resilience variables

A two-sample t-test was conducted to determine whether there is a difference between African and Coloured/Indian students in terms of their scores on resilience measures. Table 4.2.1.4 reports on these results.

Table 4.3.1.4 Relationship between race and resilience variables

	Race	Mean	SD	t	df	Sign. (2-tailed)
Self-appraisal	African	18,83	3,34			
	Col/Indian	17,00	3,05	3,55**	152	0,00
Family-appraisal	African	19,70	4,87			
	Col/Indian	17,34	4,23	3,09**	152	0,00
Support-appraisal	African	16,28	3,44			
	Col/Indian	17,34	3,69	-1,85	152	0,07
Fortitude	African	47,89	9,06			
	Col/Indian	54,76	7,88	2,24*	152	0,03
Hardiness	African	76,56	16,26			
	Col/Indian	63,33	14,43	5,12**	144	0,00
Comprehensibility	African	42,47	10,98			
	Col/Indian	44,22	9,57	-1,04	151	0,30
Manageability	African	42,01	7,46			
	Col/Indian	44,52	9,68	-1,81	151	0,07
Meaningfulness	African	40,85	9,60			
	Col/Indian	43,07	9,28	-1,44	151	0,15
SOC	African	129,37	21,44			
	Col/Indian	135,96	25,58	-1,73	151	0,09

** Significant at the 0.01 level (2-tailed).
* Significant at the 0.05 level (2-tailed).

The analysis in Table 4.3.1.4 indicates that the African scored significantly higher than the Coloured/Indian group on self-appraisal (t=3,55), family-appraisal (t=3,09), fortitude (t=2,24) and hardiness (t=5,12), when comparing their mean scores on these measures.

4.3.1.5 Relationship between the urban/rural divide and resilience variables

A two-sample t-test was conducted to determine whether there is a significant difference between urban and rural students in terms of their scores on resilience measures. Table 4.2.1.5 reports on these results.

Table 4.3.1.5 Relationship between the urban/rural divide and resilience variables

	Town	Mean	SD	t	df	Sign. (2-tailed)
Self-appraisal	Urban	17,66	3,28			
	Rural	18,18	3,45	-0,95	162	0,35
Family-appraisal	Urban	17,92	4,75			
	Rural	19,56	4,69	-2,10*	162	0,04
Support-appraisal	Urban	16,82	3,83			
	Rural	16,47	3,05	0,58	162	0,56
Fortitude	Urban	55,42	9,01			
	Rural	57,44	8,56	-1,37	162	0,17
Hardiness	Urban	66,35	14,22			
	Rural	77,26	18,42	-4,10**	154	0,00
Comprehensibility	Urban	43,48	9,87			
	Rural	43,07	11,49	0,23	161	0,82
Manageability	Urban	43,55	9,59			
	Rural	42,17	5,84	0,97	161	0,33
Meaningfulness	Urban	42,15	9,76			
	Rural	41,00	8,01	0,75	161	0,46
SOC	Urban	133,26	25,54			
	Rural	130,41	16,76	0,74	161	0,46

** Significant at the 0.01 level (2-tailed).
* Significant at the 0.05 level (2-tailed).

The results presented in Table 4.3.1.5 indicate that rural students scored significantly higher than urban students on family-appraisal (t=-2,10) and hardiness (t=-4,10), when comparing their mean scores on these measures.

4.3.1.6 Relationship between income and resilience variables

Pearson's Product-moment correlation was applied to determine whether there is a correlation between income and scores on resilience measures. Table 4.3.1.6 reports on these results.

Table 4.3.1.6 Correlations between household income and resilience measures

	N	r with income	Sign. (2-tailed)
Self-appraisal	164	-0,14	0,08
Family-appraisal	164	-0,02	0,79
Support-appraisal	164	0,20*	0,01
Fortitude	164	0,02	0,79
Hardiness	156	-0,53**	0,00
Comprehensibility	163	0,15	0,06
Manageability	163	0,20*	0,01
Meaningfulness	163	0,24**	0,00
SOC	163	0,24**	0,00

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The results presented in Table 4.3.1.6 indicate five significant correlations. A significant positive relationship is indicated between household income and support-appraisal (r=0,20), between household income and manageability (r=0,20), between household income and meaningfulness (r=0,24), and between household income and SOC (r=0,24). This suggests that, for this sample, as household income increases, so too do scores on the measures of support-appraisal, manageability, meaningfulness and SOC accordingly. A significant negative correlation is, however, indicated between household income and

hardiness (r=-0,53). This suggests that, for this sample, as household income increases, scores on the measure of hardiness decrease accordingly. Please note here that lower scores on the PVS indicate higher levels of hardiness.

4.3.2 Relationship between demographic and outcome variables

4.3.2.1 Relationship between age and outcome variables

The Pearson's Product-moment Correlation was applied to determine whether there is a correlation between age and scores on outcome measures. Table 4.3.2.1 reports on these results.

Table 4.3.2.1 Correlations between age and outcome variables

	N	r with age	Sign. (2-tailed)
Grade	163	0,08	0,31
Academic adjustment	135	0,21*	0,01
Social adjustment	94	-0,22*	0,03
Emotional adjustment	149	0,07	0,39
Attachment	93	-0,16	0,12
Adjustment	49	-0,23	0,12

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

The results presented in Table 4.3.2.1 indicate two significant correlations. A significant positive correlation is indicated between age and academic adjustment (r=0,21). This suggests that, for this sample, as age increases, so too do scores on the measure of academic adjustment accordingly. A significant negative relationship is, however,

indicated between age and social adjustment (r=-0,22). This suggests that, for this sample, as age increases, scores on the measure of social adjustment decrease accordingly.

4.3.2.2 Relationship between sex and outcome variables

A two-sample t-test was conducted to determine whether there is a difference between males and females in terms of their scores on outcome measures. Table 4.3.2.2 reports on these results.

Table 4.3.2.2 Relationship between sex and outcome variables

	Sex	Mean	SD	t	df	Sign. (2-tailed)
Grade	Male	57,70	10,03			
	Female	62,87	7,76	-3,58**	161	0,00
Academic	Male	132,40	29,49			
	Female	141,17	24,01	-1,87	133	0,06
Social	Male	92,59	16,19			
	Female	102,25	20,17	-2,39*	92	0,02
Emotional	Male	69,27	16,00			
	Female	76,70	18,94	-2,35*	147	0,02
Attachment	Male	89,29	15,19			
	Female	94,40	17,96	-1,36	91	0,18
Adjustment	Male	379,48	67,50			
	Female	403,86	63,94	-1,29	47	0,20

** Significant at the 0.01 level (2-tailed).
* Significant at the 0.05 level (2-tailed).

The analysis in Table 4.3.2.2 indicates that females scored significantly higher than males with regard to average grades (*t*=-3,58), scores on social adjustment (*t*=-2,39), as well as on scores on emotional adjustment (*t*=-2,35), when comparing their mean scores on these measures.

4.3.2.3 Relationship between language and outcome variables

ANOVA was performed to determine whether there is a difference between the English, Afrikaans and African language-speaking groups in terms of their scores on outcome measures. Table 4.3.2.3 reports on these results.

Table 4.3.2.3 Relationship between language and outcome variables

	F	df	Sign. (2-tailed)
Grade	2,92	2	0,06
Academic adjustment	0,26	2	0,77
Social adjustment	4,11*	2	0,02
Emotional adjustment	2,90	2	0,06
Attachment	9,80**	2	0,00
Adjustment	2,52	2	0,09

** Significant at the 0.01 level (2-tailed).
* Significant at the 0.05 level (2-tailed).

The results in Table 4.3.2.3 indicate that, with regard to their main effects, the three language groups differed significantly with regard to their scores on social adjustment (*F*=4,11) and goal commitment/institutional attachment (*F*=9,80). Table 4.3.2.3.1 reports on the post hoc analysis, which explored whether these groups differed significantly from each other with regard to their mean scores on the different outcome variables.

Table 4.3.2.3.1 Significant differences between groups (post hoc analysis)

Dependant variable	Language (I)	Language (J)	Mean Diff (I-J)	Std. Error	Sig.
Social adjustment	English	Afrikaans	-1,68	7,12	0,97
		African	11,37	4,72	0,06
	Afrikaans	English	1,68	7,12	0,97
		African	13,06	6,43	0,13
	African	English	-11,37	4,72	0,06
		Afrikaans	-13,06	6,43	0,13
Attachment	English	Afrikaans	-7,13	5,84	0,48
		African	12,52*	3,84	0,01
	Afrikaans	English	7,13	5,84	0,48
		African	19,65**	5,37	0,00
	African	English	-12,52*	3,84	0,01
		Afrikaans	-19,65**	5,37	0,00

** The mean difference is significant at the 0,01 level (2-tailed)
* The mean difference is significant at the 0,05 level (2-tailed).

Table 4.3.2.3.1 indicates no significant differences between the language groups with regard to social adjustment, when comparing their means. However, the African language-speaking group is indicated to have scored significantly lower than both the English (mean difference=-12,52) and Afrikaans language-speaking (mean difference=-19,65) groups on goal commitment/institutional attachment. No significant differences between the English and Afrikaans language-speaking groups are, however, indicated with regard to goal-commitment/institutional attachment, when comparing their means.

4.3.2.4 Relationship between race and outcome variables

A two-sample t-test was conducted to determine whether there is a difference between the African and Coloured/Indian groups in terms of their scores on outcome measures. Table 4.3.2.4 reports on these results.

Table 4.3.2.4 Relationship between race and outcome variables

	Race	Mean	SD	t	df	Sign. (2-tailed)
Grade	African	59,66	8,16	-3,40**	152	0,00
	Col/Indian	64,31	8,73			
Academic	African	136,96	23,84	-1,25	125	0,22
	Col/Indian	142,71	28,17			
Social	African	95,10	20,89	-2,91**	91	0,00
	Col/Indian	106,94	12,17			
Emotional	African	72,16	17,04	-2,20*	139	0,03
	Col/Indian	78,97	19,52			
Attachment	African	87,93	17,16	-3,78**	90	0,00
	Col/Indian	101,18	14,07			
Adjustment	African	379,28	65,25	-2,13*	47	0,04
	Col/Indian	420,00	60,33			

** Significant at the 0.01 level (2-tailed).
* Significant at the 0.05 level (2-tailed).

The results reported in Table 4.3.2.4 indicate that the Coloured/Indian group scored significantly higher than the African group with regard to average grade (t=-3,40), scores on social adjustment (t=-2,91), emotional adjustment (t=-2,20), goal commitment/institutional attachment (t=-3,78) and overall adjustment (t=-2,31), when comparing their mean scores on these measures.

4.3.2.5 Relationship between the urban/rural divide and outcome variables

A two-sample t-test was conducted to determine whether there is a difference between urban and rural students in terms of their scores on outcome measures. Table 4.3.2.5 reports on these results.

Table 4.3.2.5 Relationship between the urban/rural divide and outcome variables

	Race	Mean	SD	t	df	Sign. (2-tailed)
Grade	Urban	60,56	9,57			
	Rural	62,69	6,91	1,47	162	0,14
Academic	Urban	135,16	25,55			
	Rural	144,33	26,85	-1,91	134	0,06
Social	Urban	98,56	20,76			
	Rural	99,16	16,29	-0,14	92	0,89
Emotional	Urban	75,17	19,45			
	Rural	72,60	15,50	0,80	148	0,43
Attachment	Urban	93,81	16,41			
	Rural	90,48	18,69	0,88	91	0,38
Adjustment	Urban	385,94	66,84			
	Rural	407,47	63,73	-1,09	47	0,28

** Significant at the 0.01 level (2-tailed).
* Significant at the 0.05 level (2-tailed).

Table 4.3.2.5 indicates no significant difference between these groups, with regard to the outcome variables.

4.3.2.6 Relationship between income and outcome variables

Pearson's Product-moment correlation was applied to determine whether there is a correlation between income and scores on outcome measures. Table 4.3.2.6 reports on these results.

Table 4.3.2.6 Correlations between household income and outcome measures

	N	r with income	Sign. (2-tailed)
Grade	164	0,17*	0,03
Academic adjustment	136	0,18*	0,04
Social adjustment	94	0,32**	0,00
Emotional adjustment	150	0,41**	0,00
Attachment	93	0,37**	0,00
Adjustment	49	0,35*	0,02

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The results reported in Table 4.3.2.6 indicate significant positive correlations between household income and all the outcome measures used in the study. A positive correlation is indicated between household income and average grade (r=0,17), as well as between household income and all the measures on the SACQ, namely academic adjustment (r=0,18), social adjustment (r=0,32), emotional adjustment (r=0,41), goal commitment/institutional attachment (r=0,37) and overall adjustment (r=0,35). These results suggest that, for this sample, as household income increases, so too do students' scores on all the outcome measures increase accordingly.

4.3.3 Relationship between resilience and outcome variables

Pearson's Product-moment correlation was applied to determine whether there is a correlation between resilience and outcome measures. Table 4.3.3 reports on these results.

Table 4.3.3 Correlations between resilience and outcome measures

	Grade	Academic	Social	Emotion	Attach	Adjust
Self-appraisal	0,08	0,31**	0,03	0,26**	-0,06	0,02
Family-appraisal	-0,01	0,15	0,12	0,17*	0,02	0,12
Support-appraisal	0,15	0,28**	0,44**	0,24**	0,33**	0,29*
Fortitude	0,09	0,32**	0,29**	0,31**	0,16	0,25
Hardiness	-0,11	-0,19*	-0,37**	-0,43**	-0,39**	-0,43**
Comprehensibility	0,09	0,22*	0,23*	0,30**	0,12	0,25
Manageability	0,11	0,30**	0,35**	0,53**	0,31**	0,31*
Meaningfulness	0,20*	0,39**	0,31**	0,46**	0,32**	0,40**
SOC	0,16*	0,38**	0,36**	0,52**	0,30**	0,39**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The results reported in Table 4.3.3 indicate a number of significant correlations between resilience and outcome variables. A significant positive relationship is indicated between self-appraisal and academic adjustment (r=0,31), and between self-appraisal and emotional adjustment (r=0,26).

A significant positive correlation is indicated between family-appraisal and emotional adjustment (r=0,17).

A significant positive relationship is indicated between support-appraisal and all the measures included in the SACQ, including academic adjustment (r=0,28), social adjustment (r=0,44), emotional adjustment (r=0,24), goal commitment/institutional attachment (r=0,33) and overall adjustment (r=0,29).

Fortitude is indicated to have a significant positive correlation with academic adjustment (r=0,32), social adjustment (r=0,29) and emotional adjustment (r=0,31).

A significant negative relationship is indicated between hardiness and all the measures included in the SACQ, including academic adjustment (r=-0,19), social adjustment (r=-0,37), emotional adjustment (r=-0,43), goal commitment/institutional attachment (r=-0,39) and overall adjustment (r=0,43).

Comprehensibility is indicated to have a significant positive correlation with academic adjustment (r=0,22), social adjustment (r=0,23), and emotional adjustment (r=0,30).

A significant positive relationship is indicated between manageability and all the measures included in the SACQ, including academic adjustment (r=0,39), social adjustment (r=0,35), emotional adjustment (r=0,53), goal commitment/institutional attachment (r=0,31) and overall adjustment (r=0,31).

A significant positive relationship is indicated between meaningfulness and the entire outcome measures used in the study, including average grade (r=0,20), academic

adjustment (*r*=0,39), social adjustment (*r*=0,31), emotional adjustment (*r*=0,46), goal commitment/institutional attachment (*r*=0,32) and overall adjustment (*r*=0,40).

A significant positive relationship is also indicated between SOC and the entire outcome measures used in the study, including average grade (*r*=0,16), academic adjustment (*r*=0,38), social adjustment (*r*=0,36), emotional adjustment (*r*=0,52), goal commitment/institutional attachment (*r*=0,30) and overall adjustment (*r*=0,39).

4.4 Regression Analyses

Regression analyses were performed to determine the role of resilience variables in the relationship between demographic and outcome variables. Stepwise regression analyses were used where the demographic variables were categorical, and product-term regression analyses were used where the demographic variables were continuous.

4.4.1 Stepwise regression analyses

4.4.1.1 Resilience constructs and the relationship between gender and outcome measures

Table 4.4.1.1 reports on the significant predictors of outcome measures for males and females.

Table 4.4.1.1 Significant predictors of outcome measures for males and females

	Males				Females			
Outcome Measure	**Significant**	**Beta**	**t**	**R^2**	**Significant**	**Beta**	**t**	**R^2**

	Predictors				**Predictors**			
1. Grade					Meaningfulnes	0,38	4,37	0,15
2. Academic Adjustment	SOC	0,70	6,73	0,49	Fortitude	0,33	3,63	0,11
	Self	0,27	2,41	0,55				
3. Social Adjustment	SOC	0,34	2,47	0,12	Support	0,43	5,05	0,19
4. Emotional Adjustment	SOC	0,49	3,84	0,24	Manageability	0,56	7,14	0,31
					Fortitude	0,23	2,68	0,36
5. Attachment	SOC	0,47	3,63	0,22	Support	0,37	4,15	0,13
					Hardiness	-0,22	-2,29	0,17
					Self	-0,18	-2,10	0,20
6. Adjustment	Meaningfulne	0,48	0,73	0,23	Support	0,36	4,11	0,13
	s				Self	-0,25	-2,92	0,19
					Meaningfulnes	0,41	2,36	0,23
					Self			
					Fortitude	0,60	5,15	0,22
					Family	-0,34	-2,04	0,25

Table 4.4.1.1 indicates that there were no significant predictors of average grades for males, while for females, meaningfulness emerged as a significant predictor, accounting for 15% of the variance for average grades.

For males, SOC and the combined effect of SOC and self-appraisal emerged as significant predictors of academic adjustment, accounting for 49% and 55% respectively of the variance for academic adjustment. For females, academic adjustment appeared to be significantly predicted by fortitude, accounting for 11% of the variance.

SOC emerged as a significant predictor of social adjustment, emotional adjustment and goal commitment-institutional attachment for males, accounting for 12%, 24% and 22%

of the variance for their respective outcome measures. For females, support appraisal emerged as a significant predictor for social adjustment, accounting for 19% of the variance for social adjustment. For emotional adjustment in females, manageability and the combined effect of manageability and fortitude emerged as significant predictors, accounting for 31% and 36% of the variance for emotional adjustment. For goal commitment-institutional attachment in females, support-appraisal, the combined effect of support-appraisal and hardiness, and the combined effect of support-appraisal, hardiness and self-appraisal emerged as significant predictors, accounting for 13%, 17% and 20% of the variance for goal commitment/institutional attachment respectively.

Meaningfulness emerged as a significant predictor of overall adjustment for males. For females, support appraisal, the combined effect of support appraisal and family appraisal, and the combined effect of support appraisal, family appraisal and meaningfulness emerged as significant predictors of overall adjustment, accounting for 13%, 19% and 23% of the variance for overall adjustment respectively. The combined effect of self appraisal and fortitude, and the combined effect of self appraisal, fortitude and family appraisal also emerged as significant predictors of overall adjustment for females, accounting for 22% and 25% of the variance for overall adjustment.

4.4.1.2 Resilience constructs and the relationship between race and outcome measures

Table 4.4.12 reports on the significant predictors of outcome measures for Coloured/Indian and African groups.

Table 4.4.1.2 Significant predictors of outcome measures for Coloured/Indian and African groups

	Coloured/Indian				African			
Outcome Measure	**Significant Predictors**	**Beta**	**t**	**R^2**	**Significant Predictors**	**Beta**	**t**	**R^2**
1. Grade	Self	0,29	2,47	0,90				
2. Academic Adjustment	Fortitude	0,41	3,57	0,16	Meaningfulnes	0,40	3,96	0,16
	Family	-0,48	-2,66	0,25	s			
3. Social Adjustment					Support	0,47	4,85	0,22
					Manageability	0,38	4,19	0,35
					Hardiness	-0,22	-2,39	0,39
4. Emotional Adjustment	Manageability	0,62	6,33	0,38	Hardiness	-0,49	-5,21	0,24
	Fortitude	0,22	2,16	0,42	SOC	0,30	3,12	0,32
5. Attachment	Comprehens	0,28	2,32	0,76	Hardiness	-0,36	-3,57	0,13
					Support	0,23	2,33	0,18
6. Adjustment					Hardiness	-0,33	-3,20	0,11
					SOC	0,24	2,30	0,16

Table 4.4.1.2 indicates that while there were no significant predictors of average grades for Africans, self-appraisal emerged as a significant predictor of average grade for the Coloured/Indian group, accounting for 90% of the variance for average grade.

With regard to academic adjustment, for the Coloured/Indian group, fortitude and the combined effect of fortitude and family appraisal emerged as significant predictors, accounting for 16% and 25% of the variance for academic adjustment respectively. For the African group, meaningfulness emerged as a significant predictor of academic adjustment, accounting for 16%of the variance.

There were no significant predictors for social adjustment for the Coloured/Indian group. However for the African group, support-appraisal, the combined effect of support appraisal and manageability, and the combined effect of support-appraisal manageability and hardiness emerged as significant predictors. These accounted for 22%, 35% and 39% of the variance for social adjustment respectively.

Manageability and the combined effect of manageability and fortitude emerged as significant predictors of emotional adjustment for the Coloured/Indian group, accounting for 38% and 42% of the variance respectively. Hardiness and the combined effect of hardiness and SOC emerged as significant predictors of emotional adjustment, accounting for 24% and 32% of the variance for emotional adjustment respectively in the African group.

For the Coloured/Indian group, goal commitment/institutional attachment was significantly predicted by comprehensibility, accounting for 76% of variance for goal commitment/institutional attachment. For goal commitment/institutional attachment for the African group, hardiness and the combined effect of hardiness and support-appraisal emerged as significant predictors, accounting for 13% and 18% of the variance for goal commitment/institutional attachment respectively.

For overall adjustment in the African group, hardiness and the combined effect of hardiness and SOC emerged as significant predictors, accounting for 11% and 16% of the

variance for overall adjustment respectively. No significant predictors for overall adjustment emerged for the Coloured/Indian group.

4.4.1.3 Resilience constructs and the relationship between the urban/rural divide and outcome measures

Table 4.4.1.3 reports on the significant predictors of outcome measures for urban and rural students.

Table 4.4.1.3 Significant predictors of outcome measures for urban and rural groups

	Urban				Rural			
Outcome Measure	**Significant Predictors**	**Beta**	**t**	**R^2**	**Significant Predictors**	**Beta**	**t**	**R^2**
1. Grade	Support	0,21	2,18	0,04	Meaning	0,61	5,63	0,37
2. Academic Adjustment	Support	0,49	5,75	0,24	Meaning	0,37	2,92	0,14
	Self	0,29	3,51	0,32	Support	-0,34	-2,78	0,25
3. Social Adjustment	Support	0,43	4,98	0,19	Hardiness	-0,48	-4,02	0,23
	Comprehensibility	0,18	2,05	0,22				
4. Emotional Adjustment	SOC	0,62	8,10	0,38	Hardiness	-0,46	-3,76	0,21
					Self	0,27	2,28	0,28
5. Attachment	Support	0,36	4,03	0,13	Hardiness	-0,41	-3,30	0,17
6. Adjustment	Support	0,28	3,03	0,08	Hardiness	-0,50	-4,22	0,25

Table 4.4.1.3 indicates that for the urban group support appraisal emerged as a significant predictor of the average grade, accounting for 4% of the variance. For the rural group meaningfulness emerged as a significant predictor, accounting for 37% of the variance for average grade.

Academic adjustment for the urban group was significantly predicted by support-appraisal and the combined effect of support appraisal and self-appraisal, accounting for 24% and 32% of the variance. For the rural group, meaningfulness and the combined effect of meaningfulness and support appraisal emerged as significant predictors, accounting for 14% and 25% of the variance for academic adjustment respectively.

For the urban group, support-appraisal and the combined effect of support-appraisal and comprehensibility emerged as significant predictors of social adjustment, accounting for 19% and 22% of the variance respectively. For the rural group, however, hardiness emerged as a significant predictor of social adjustment, accounting for 23% of the variance for social adjustment.

SOC emerged as a significant predictor of emotional adjustment, accounting for 38% of the variance for emotional adjustment for the urban group. For the rural group, however, hardiness and the combined effect of hardiness and self-appraisal emerged as significant predictors, accounting for 21% and 28% of the variance for emotional adjustment respectively. For the rural group, support-appraisal emerged as a significant predictor of both goal commitment/institutional attachment and overall adjustment, accounting for 13% and 8% of the variance for the respective outcome measures. For the urban group, however, hardiness emerged as a significant predictor of both goal commitment/institutional attachment and overall adjustment, accounting for 17% and 25% of the variance for respective outcome measures.

4.4.1.4 Resilience constructs and the relationship between language and outcome measures

Table 4.4.1.4 reports on the significant predictors of outcome measures for the English, Afrikaans and African language-speaking groups.

Table 4.4.1.4 Significant predictors of outcome measures English, Afrikaans and African language-speaking groups

	English				Afrikaans				African Language			
Outcome Measure	**Sign. Pred.**	**Beta**	**t**	**R²**	**Sign. Pred.**	**Beta**	**t**	**R²**	**Sign. Pred.**	**Beta**	**t**	**R²**
1. Grade	Self	0,44	3,56	0,20	Famil	0,44	2,21	0,20				
	Supp	0,26	2,09	0,26								
2. Acad Adjust	Self	0,61	5,54	0,37	Supp	0,84	6,86	0,70	Mean	0,38	3,57	0,14
	Mean	-0,26	-2,07	0,42	Famil	0,29	2,35	0,77				
					Self	-0,33	-3,44	0,86				
					Comp	0,25	3,22	0,91				
					Hardi	-0,24	-3,17	0,95				
3. Social Adjust					Mean	0,45	2,22	0,20	Supp	0,47	4,65	0,22
					Mana	-0,79	-2,51	0,40	Mana	0,32	3,31	0,31
									Fortit	-0,32	-2,27	0,36
4. Emot Adjust	Mana	0,60	5,41	0,36	Supp	0,86	7,41	0,73	Hardi	-0,42	-4,05	0,17
	Self	0,36	3,05	0,46					Mean	0,29	2,81	0,25
5. Attach					Comp	0,61	3,42	0,37	Hardi	-0,31	-2,87	0,10
									Supp	0,23	2,18	0,15
6. Adjust	Self	0,47	3,81	0,22	Famil	0,48	2,48	0,24	Hardi	-0,33	-3,11	0,11
	SOC	-0,36	-2,59	0,31	Self	-0,43	-2,23	0,39	SOC	0,27	2,53	0,18
									Self	-0,25	-2,14	0,23
									Supp	0,23	2,14	0,27

Table 4.4.1.4 indicates that for the African language-speaking group there were no significant predictors of average grade. For the English language-speaking group, however, self-appraisal and the combined effect of self-appraisal and support-appraisal emerged as significant predictors, accounting 20% and 26% of the variance for average grade respectively. Family-appraisal, on the other hand, emerged as a significant predictor, accounting for 20% of the variance for average grade respectively for the Afrikaans language-speaking group.

For the English language-speaking group, academic adjustment was significantly predicted by self-appraisal and the combined effects of self-appraisal and meaningfulness, accounting for 37% and 42% of the variance for academic adjustment. For the Afrikaans language-speaking group, support-appraisal, the cumulative combined effects of support-appraisal, family-appraisal, self-appraisal, comprehensibility and hardiness emerged as significant predictors of academic adjustment. These accounted for 70%, 77%, 86%, 91% and 95% of the variance for academic adjustment respectively. Meaningfulness, however, emerged as a significant predictor of academic adjustment for the African language-speaking group, accounting for 14% of the variance for academic adjustment.

There were no significant predictors of social adjustment for the English language-speaking group. For the Afrikaans language-speaking group, meaningfulness and the combined effect of meaningfulness and manageability emerged as significant predictors, accounting for 20% and 40% of the variance for social adjustment respectively. Support-appraisal, and the cumulative combined effect of support-appraisal, manageability and fortitude emerged as significant predictors of social adjustment for the African language-speaking group. These accounted for 22%, 31% and 36% of the variance for social adjustment respectively.

Manageability and the combined effect of manageability and self-appraisal emerged as significant predictors of emotional adjustment for the English language-speaking group

accounting for 36% and 46% of the variance for emotional adjustment respectively. For the Afrikaans language-speaking group, support-appraisal emerged as a significant predictor, accounting for 73% of the variance for emotional adjustment. Hardiness and the combined effect of hardiness and meaningfulness emerged as significant predictors for emotional adjustment for the African language-speaking group. These accounted for the 17% and 25% of variance for emotional adjustment respectively.

There were no significant predictors of goal commitment/institutional attachment for English language-speaking group. For the Afrikaans language-speaking group comprehensibility emerged as a significant predictor, accounting for 37% of the variance for goal commitment/institutional attachment. Hardiness and the combined effect of hardiness and support-appraisal emerged as significantly predictors of goal commitment/institutional attachment for the African language-speaking group. These accounted for 10% and 15% of the variance for goal commitment/institutional attachment.

For overall adjustment, self-appraisal and combined effect of self-appraisal and SOC emerged as significant predictors, accounting for 23% and 31% of the variance for overall adjustment respectively for the English language-speaking group. Family-appraisal and the combined effect of family-appraisal and self-appraisal emerged as significant predictors of overall adjustment for the Afrikaans language-speaking group, accounting for 24% and 39% of the variance. For the African language-speaking group, the following emerged as significant predictors: hardiness, accounting for 11% of the variance; the combined effect

of hardiness and SOC, accounting for 18% of the variance; the combined effect of hardiness, SOC and self-appraisal, accounting for 23% of the variance; and hardiness, SOC, self-appraisal and support-appraisal, accounting for 27% of the variance for overall adjustment.

4.4.2 Product-term regression analyses with age and resilience variables as predictors

4.4.2.1 Resilience and the relationship between age and academic performance

Table 4.4.2.1 reports on the product-term analyses with age and resilience variables as predictors of academic performance.

Table 4.4.2.1 Product-term regression analyses with age and resilience variables as predictors of academic performance

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
1.Grade	Age	0,08	1,02	0,07	0,82		
	Self	0,08	1,04	0,07	0,84	0,63	0,80
	Age	0,08	1,02	0,08	1,01		
	Family	-0,02	-0,27	-0,02	-0,21	0,20	0,36
	Age	0,08	1,02	0,09	1,17		
	Support	0,14	1,76	0,15	1,85	-0,06	-0,11
	Age	0,08	1,02	-0,05	-0,11		
	Fortitude	0,08	0,96	0,08	0,95	0,19	0,27
	Age	0,08	1,02	0,11	1,33		
	Hardiness	-0,12	-1,49	-0,14	-1,71	-0,25	-0,38
	Age	0,08	1,02	0,08	1,00		
	Comprehens	0,09	1,15	0,09	1,13	0,67	1,22
	Age	0,08	1,02	0,07	0,87		
	Manageabil	0,12	1,50	0,11	1,39	0,41	0,51
	Age	0,80	1,02	0,05	0,67		
	Meaningful	0,20	2,62*	0,19	2,49*	0,23	0,29
	Age	0,80	1,02	0,07	0,84		
	SOC	0,16	2,07*	0,16	1,98*	0,68	0,93

Table 4.4.2.1 indicates two significant regressions. In the first step (of the alternative regression analysis) meaningfulness and SOC (individually) were significantly associated with average grade. This points to the direct effects of meaningfulness and of SOC on

average grade (academic performance), irrespective of age. This finding is further confirmed by the fact that neither meaningfulness nor SOC was significantly reduced in step two, and that no significant associations are indicated for age in both the first and second step of the analysis.

No direct, indirect or mediating effects are indicated for any of the other variables, as these were indicated to be non-significant in both the first and second steps of the regression analyses.

No moderating effects are also indicated for any of the resilience variables, as indicated by the fact that the product-terms for these variables are not significant.

4.4.2.2 Resilience and the relationship between age and academic adjustment

Table 4.4.2.2 reports on the product-term analyses with age and resilience variables as predictors of academic adjustment.

Table 4.4.2.2 Product-term regression analyses with age and resilience variables as predictors of academic adjustment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	T	Beta	t	Beta	t
2.Academic	Age	0,20	2,62*	0,15	1,96		
	Self	0,28	3,69**	0,25	3,23**	-0,76	-1,01
	Age	0,20	2,62*	0,21	2,74*		
	Family	0,13	1,63	0,14	1,82	-0,44	-0,83
	Age	0,20	2,62*	0,22	3,02**		
	Support	0,27	3,51**	0,28	3,83**	-1,08	-2,10*
	Age	0,20	2,62*	0,20	2,69**		
	Fortitude	0,29	3,80**	0,29	3,86**	-1,25	-1,88
	Age	0,20	2,62*	0,24	3,16**		
	Hardiness	-0,18	-2,28*	-0,22	-2,89**	-0,21	-0,33
	Age	0,20	2,62*	0,20	2,60*		
	Comprehens	0,19	2,46*	0,19	2,45*	0,25	0,48
	Age	0,20	2,62*	0,16	2,24*		
	Manageabil	0,36	4,92**	0,34	4,71**	1,09	1,49
	Age	0,20	2,62*	0,16	2,09*		
	Meaningful	0,35	4,69**	0,32	4,39**	1,31	1,76
	Age	0,20	2,62*	0,17	2,31*		
	SOC	0,36	4,91**	0,34	4,73**	1,15	1,69

Table 4.4.2.2 indicates that, with regard to age and self-appraisal, whereas the relationship between age and academic adjustment is significant in step one, it becomes statistically non-significant in step two, when self-appraisal is entered simultaneously

with age. This is indicative of a mediating effect for self-appraisal. In other words, the effect of age on academic adjustment is mediated by self-appraisal.

With regard to age and family-appraisal, in the first step of the regression analysis age was significantly associated with academic adjustment. This points to the direct effect of age on academic adjustment, irrespective of family-appraisal. This is further confirmed by the fact that age was not significantly reduced in step two of the analysis, and that no significant associations were indicated for family-appraisal in both the first and second steps of the analysis.

With regard to age and the resilience variables fortitude, hardiness, comprehensibility, manageability, meaningfulness and SOC, in the first step (of the alternative regression analyses) the resilience variables were all significantly associated with academic adjustment. This points to the direct effects of these resilience variables on academic adjustment. This finding is further confirmed by the fact that neither these resilience variables nor age was significantly reduced in step two of the analyses. Thus no mediating or indirect effects are present.

The product-term of support-appraisal and age is, however, significant. This points to a moderating effect of support-appraisal. No other product-terms are indicated to be significant, indicating no interaction/moderating effects for these variables.

4.4.2.3 Resilience and the relationship between age and social adjustment

Table 4.4.2.3 reports on the product-term regression analyses with age and resilience variables as predictors of social adjustment.

Table 4.4.2.3 Product-term regression analyses with age and resilience variables as predictors of social adjustment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
3.Social	Age	-0,14	-1,73	-0,15	-1,82		
	Self	0,02	0,25	0,05	0,63	-0,13	-0,17
	Age	-0,14	-1,73	-0,13	-1,67		
	Family	-0,08	1,05	0,08	0,96	-0,85	-1,58
	Age	-0,14	-1,73	-0,11	-1,47		
	Support	0,34	4,63**	0,33	4,52**	-1,21	-2,37*
	Age	-0,14	-1,73	-0,14	-1,79		
	Fortitude	0,21	2,74**	0,21	2,79**	-1,37	-2,01*
	Age	-0,14	-1,73	-0,08	-1,08		
	Hardiness	-0,30	-3,98**	-0,28	-3,72**	0,16	0,25
	Age	-0,14	-1,73	-0,14	-1,81		
	Comprehens	0,19	2,39*	0,19	2,44*	0,28	0,51
	Age	-0,14	-1,73	-0,17	-2,19*		
	Manageabil	0,26	3,42**	0,28	3,68**	0,96	1,26
	Age	-0,14	-1,73	-0,18	-2,31		
	Meaningful	0,25	3,32**	0,28	3,66**	1,21	1,58
	Age	-0,14	-1,73	-0,17	-2,20*		
	SOC	0,29	3,88**	0,31	4,12**	1,10	1,58

According to Table 4.4.2.3, with regard to age and the resilience variables support-appraisal, fortitude, hardiness, comprehensibility and meaningfulness, in the first step (of the alternative regression analyses) these resilience variables are significantly associated with social adjustment. This points to the direct effects of support-appraisal, fortitude, hardiness, comprehensibility and meaningfulness on social adjustment, irrespective of age. This finding is further confirmed by the fact that these variables are not significantly reduced in step two, and that no significant associations were indicated for age in both step one and step two of the analyses.

The product-term of support-appraisal and age, and fortitude and age are, however, significant. This points to a moderating effect for support-appraisal and fortitude. No significant moderating effects are indicated for the rest of the resilience variables, as indicated by the fact that the product-terms for these variables are not significant.

With regard to age and the resilience variables manageability and SOC, whereas the relationship between age and social adjustment is non-significant in step one, it becomes statistically significant in step two when age is entered simultaneously with manageability and SOC (in separate analyses). This is indicative of a mediating effect for manageability and for SOC.

No significant predictive interactions were indicated for age and the resilience variables self-appraisal and family-appraisal.

4.4.2.4 Resilience and the relationship between age and emotional adjustment

Table 4.4.2.4 reports on the product-term regression analyses with age and resilience variables as predictors of emotional adjustment.

Table 4.4.2.4 Product-term regression analyses with age and resilience variables as predictors of emotional adjustment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
4.Emotional	Age	0.07	0,87	0,02	0,23		
	Self	0,25	3,25**	0,24	3,12**	1,04	1,35
	Age	0,07	0,87	0,08	1,02		
	Family	0,17	2,13*	0,17	2,18*	0,72	1,34
	Age	0,07	0,87	0,09	1,14		
	Support	0,24	3,09**	0,24	3,17**	0,41	0,76
	Age	0,07	0,87	0,07	0,88		
	Fortitude	0,29	3,90**	0,29	3,89**	0,90	1,33
	Age	0,07	0,87	0,15	2,04*		
	Hardiness	-0,40	-5,61**	-0,43	-5,94**	-0,43	-0,71
	Age	0,07	0,87	0,06	0,83		
	Comprehens	0,28	3,74**	0,28	3,72**	0,08	0,14
	Age	0,07	0,87	0,01	0,17		
	Manageabil	0,52	7,63**	0,51	7,54**	0,07	0,10
	Age	0,07	0,87	0,00	0,04		
	Meaningful	0,45	6,41**	0,45	6,32**	0,48	0,67
	Age	0,07	0,87	0,02	0,30		
	SOC	0,50	7,36**	0,50	7,27**	0,52	0,81

According to Table 4.4.2.4, no moderating effects are indicated for any of the resilience variables, as indicated by the fact that the product-terms for these variables with age are not significant.

With regard to age and the resilience variables self-appraisal, family-appraisal, support-appraisal, fortitude, comprehensibility, manageability and SOC (separately), in the first step (of the alternative regression analyses) these variables are significantly associated with emotional adjustment. This points to the direct effects of these variables on emotional adjustment, irrespective of age. This finding is further confirmed by the fact that these variables are not significantly reduced in step two, and that no significant associations are indicated for age in both the first and the second steps of the analyses.

With regard to age and hardiness, whereas the association between age and emotional adjustment is non-significant in step one, it becomes statistically significant in step two, when age is entered simultaneously with hardiness. This is indicative of a mediating effect for hardiness.

4.4.2.5 Resilience and the relationship between age and goal-commitment/institutional attachment

Table 4.4.2.5 reports on the product-term regression analyses with age and resilience variables as predictors of goal-commitment/institutional attachment.

Table 4.4.2.5 Product-term regression analyses with age and resilience variables as predictors of goal-commitment/institutional attachment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
5.Attachment	Age	-0,10	-1,27	-0,10	-1,18		
	Self	-0,04	-0,53	-0,02	-0,27	0,01	0,02
	Age	-0,10	-1,27	-0,10	-1,26		
	Family	0,01	0,15	0,01	0,07	-0,77	-1,42
	Age	-0,10	-1,27	-0,08	-1,04		
	Support	0,26	3,39**	0,25	3,29**	-0,90	-1,69
	Age	-0,10	-1,27	-0,10	-1,28		
	Fortitude	0,11	1,45	0,11	1,46	-1,13	-1,61
	Age	-0,10	-1,27	-0,04	-0,57		
	Hardiness	-0,31	-4,15**	-0,30	-3,96**	0,27	0,43
	Age	-0,10	-1,27	-0,10	-1,30		
	Comprehens	0,10	1,21	0,10	1,24	0,65	1,20
	Age	-0,10	-1,27	-0,13	-1,65		
	Manageabil	0,23	3,00**	0,24	3,18**	0,49	0,64
	Age	-0,10	-1,27	-0,14	-1,85		
	Meaningful	0,26	3,47**	0,29	3,73**	1,44	1,88
	Age	-0,10	-1,27	-0,12	-1,63		
	SOC	0,25	3,23**	0,26	3,39**	1,20	1,68

According to Table 4.4.2.5, no moderating effects are indicated for any of the resilience variables, as indicated by the fact that none of these variables yielded significant product-terms in combination with age.

No mediating or indirect effects are indicated for the resilience variables self-appraisal, family-appraisal, fortitude or comprehensibility. This is indicated by the fact that none of these variables, including also age, was significant in either the first or the second steps of the analyses.

With regard to age and the resilience variables support-appraisal, hardiness, manageability, meaningfulness and SOC, in the first step (of the alternative regression analyses) these variables are indicated to be significantly associated with goal commitment/institutional attachment. These findings point to the direct effects of these resilience variables on goal commitment/institutional attachment, irrespective of age. This finding is further confirmed by the fact that these resilience variables are not significantly reduced in step two, and that age is non-significant in both the first and second steps of the analyses.

4.4.2.6 Resilience and the relationship between age and overall adjustment

Table 4.4.2.6 reports on the product-term regression analyses with age and resilience variables as predictors of overall adjustment.

Table 4.4.2.6 Product-term regression analyses with age and resilience variables as predictors of overall adjustment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
6.Adjustment	Age	-0,10	-1,30	-0,11	-1,35		
	Self	0,01	0,10	0,03	0,38	0,29	0,36
	Age	-0,10	-1,30	-0,10	-1,25		
	Family	0,06	0,82	0,06	0,75	-0,87	-1,61
	Age	-0,10	-0,30	-0,09	-1,13		
	Support	0,19	2,38*	0,18	2,29*	-0,58	-1,07
	Age	-0,10	-1,30	-0,10	-1,32		
	Fortitude	0,13	1,67	0,13	1,68	-1,00	-1,42
	Age	-0,10	-1,30	-0,05	-0,70		
	Hardiness	-0,27	-3,54**	-0,26	-3,34**	-0,11	-0,18
	Age	-0,10	-1,30	-0,11	-1,35		
	Comprehens	0,14	1,77	0,14	1,80	0,76	1,41
	Age	-0,10	-1,30	-0,12	-1,58		
	Manageabil	0,18	2,26*	0,19	2,43*	1,23	1,58
	Age	-0,10	-1,30	-0,14	-1,82		
	Meaningful	0,24	3,15**	0,26	3,41**	2,11	2,77**
	Age	-0,10	-1,30	-0,13	-1,63		
	SOC	0,23	3,00**	0,24	3,16**	1,82	2,58*

According to Table 4.4.2.6, no mediating or indirect effects are indicated for the resilience variables self-appraisal, family-appraisal, fortitude and comprehensibility. This

is indicated by the fact that none of these variables, including also age, was significant in either the first or the second steps of the analyses.

In the first step (of the alternative regression analyses) support-appraisal, hardiness, manageability, meaningfulness and SOC were significantly associated with overall adjustment. This finding points to the direct effects of these resilience variables on overall adjustment, irrespective of age. This finding is further confirmed by the fact that these resilience variables are not significantly reduced in step one, and that no significant associations are indicated for age in both step one and two of the analyses.

The product-terms of age and meaningfulness, and of age and SOC are, however, significant. This points to a moderating effect of meaningfulness and SOC. No moderating effects are indicated for any of the other resilience variables, as indicated by the fact that none of these variables indicate significant product-terms.

4.4.3 Product-term regression analyses with household income and resilience variables as predictors

4.4.3.1 Resilience and the relationship between household income and academic performance

Table 4.4.3.1 reports on the product-term regression analyses with household income and resilience variables as predictors of academic performance.

Table 4.4.3.1 Product-term regression analyses with household income and resilience variables as predictors of academic performance

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
1.Grade	Income	0,17	2,24*	0,19	2,42*		
	Self	0,84	1,08	0,11	1,42	0,29	0,60
	Income	0,17	2,24*	0,17	2,23*		
	Family	-0,01	-0,17	-0,01	-0,13	0,21	0,54
	Income	0,17	2,24*	0,15	1,91		
	Support	0,15	1,90	0,12	1,50	1,09	2,53*
	Income	0,17	2,24*	0,17	2,22*		
	Fortitude	0,09	1,09	0,08	0,05	1,14	1,88
	Income	0,17	2,24*	0,16	1,77		
	Hardiness	-0,11	-1,37	-0,02	-0,26	-0,48	-1,58
	Income	0,17	2,48*	0,16	2,09*		
	Comprehens	0,09	1,08	0,06	0,77	0,78	1,71
	Income	0,17	2,24*	0,16	1,99*		
	Manageabil	0,11	1,46	0,08	1,05	-0,03	-0,04
	Income	0,17	2,24*	0,13	1,69		
	Meaningful	0,20	2,59*	0,17	2,13*	0,50	0,88
	Income	0,17	2,24*	0,14	1,82		
	SOC	0,16	2,01*	0,12	1,53	0,66	0,88

According to Table 4.4.3.1, income is indicated to have a direct effect on academic performance (grade), irrespective of self-appraisal, family-appraisal, fortitude and comprehensibility, as no mediating or indirect effects for these variables are indicated.

This finding is confirmed by the fact that income is not significantly reduced in step two, when combined with these resilience variables (individually), and that no significant associations are indicated for these resilience variables in both steps one and two of the analyses.

Whereas the relationship between income and average grade is significant in step one, it becomes statistically non-significant in step two, when income is entered simultaneously with the resilience constructs support-appraisal, hardiness, meaningfulness and SOC (individually). This is indicative of a mediating effect for support-appraisal, hardiness, meaningfulness and SOC. In other words, the effect of income on average grade is mediated by support-appraisal, hardiness, meaningfulness and SOC (individually).

The product-term of support-appraisal and income is significant, pointing to a moderating effect for support-appraisal. No moderating effects are indicated for any of the other resilience variables, as indicated by the fact that none of these variables indicate significant product-terms.

4.4.3.2 Resilience and the relationship between household income and academic adjustment

Table 4.4.3.2 reports on the product-term regression analyses with household income and resilience variables as predictors of academic adjustment.

Table 4.4.3.2 Product-term regression analyses with household income and resilience variables as predictors of academic adjustment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
2.Academic	Income	0,17	2,15*	0,21	2,80**		
	Self	0,28	3,70**	0,31	4,12**	0,76	1,64
	Income	0,17	2,15*	0,17	2,19*		
	Family	0,13	1,62	0,13	1,69	0,56	1,40
	Income	0,17	2,15*	0,12	1,55		
	Support	0,26	3,46**	0,24	3,10**	0,57	1,34
	Income	0,17	2,15*	0,16	2,15*		
	Fortitude	0,28	3,76**	0,28	3,76**	1,52	2,63**
	Income	0,17	2,15*	0,10	1,13		
	Hardiness	-0,18	-2,28*	-0,12	-1,36	-0,09	-0,29
	Income	0,17	2,15*	0,14	1,82		
	Comprehens	0,19	2,47*	0,17	2,18*	1,34	3,06**
	Income	0,17	2,15*	0,10	1,32		
	Manageabil	0,36	4,94**	0,34	4,59**	0,19	0,31
	Income	0,17	2,15*	0,09	1,18		
	Meaningful	0,35	4,71**	0,33	4,30**	0,46	0,85
	Income	0,17	2,15*	0,09	1,13		
	SOC	0,36	4,91**	0,34	4,51**	1,06	1,50

According to Table 4.4.3.2, in the first step (of the alternative regression analyses) self-appraisal and fortitude are significantly associated with academic adjustment. This points to the direct effects of self-appraisal and fortitude on academic adjustment. This finding

is further confirmed by the fact that neither income nor the resilience variables (self-appraisal and fortitude) are significantly reduced, when entered simultaneously in step two. Thus no mediating or indirect effects are present for these variables.

Family-appraisal is also indicated to have no mediating or indirect effects on the relationship between income and academic adjustment. Income was not significantly reduced in step two, when entered simultaneously with family-appraisal, with no significant associations indicated in step one and two between family-appraisal and academic adjustment. A direct effect is therefore indicated for income, irrespective of family-appraisal.

With regard to income and the resilience variables support-appraisal, hardiness, comprehensibility, manageability, meaningfulness and SOC, whereas the relationship between income and academic adjustment is significant in step one, it becomes statistically non-significant in step two, when entered simultaneously with each of these resilience variables. This is indicative of a mediating effect for support-appraisal, hardiness, comprehensibility, manageability, meaningfulness and SOC. In other words, the effect of income on average grade is mediated by support-appraisal, hardiness, comprehensibility, manageability, meaningfulness and SOC.

The product-terms of income and fortitude, and of income and comprehensibility are significant, pointing to a moderating effect of fortitude and comprehensibility. None of

the other resilience variable indicated significant product-terms, indicating no moderating effects for these variables.

4.4.3.3 Resilience and the relationship between household income and social adjustment

Table 4.4.6.3 reports on the product-term regression analyses with household income and resilience variables as predictors of social adjustment.

Table 4.4.3.3 Product-term regression analyses with household income and resilience variables as predictors of social adjustment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
3.Social	Income	0,26	3,40**	0,27	3,46**		
	Self	0,02	0,25	0,06	0,74	-0,13	-0,26
	Income	0,26	3,40**	0,26	3,42**		
	Family	0,08	1,05	0,09	1,15	0,55	1,42
	Income	0,26	3,40**	0,20	2,69**		
	Support	0,34	4,57**	0,30	4,04**	0,08	0,18
	Income	0,26	3,40**	0,25	3,41**		
	Fortitude	0,21	2,73**	0,21	2,75**	0,66	1,12
	Income	0,26	3,40**	0,14	1,62		
	Hardiness	-0,30	-3,96**	-0,22	-2,56*	-0,06	-0,19
	Income	0,26	3,40**	0,24	3,09**		
	Comprehens	0,18	2,39*	0,15	1,96	1,13	2,61*
	Income	0,26	3,40**	0,22	2,83**		
	Manageabil	0,26	3,42**	0,22	2,87**	1,08	1,79
	Income	0,26	3,40**	0,21	2,73**		
	Meaningful	0,25	3,33**	0,20	2,65**	1,91	3,58**
	Income	0,26	3,40**	0,20	2,63**		
	SOC	0,29	3,88**	0,24	3,21**	2,13	3,05**

According to Table 4.4.3.3, self-appraisal and family-appraisal are indicated to have no mediating or indirect effects on the relationship between income and social adjustment. Income was not significantly reduced in step two, when entered simultaneously with self-

appraisal and with family-appraisal. No significant associations are also indicated in step one and two between self-appraisal and social adjustment, and family-appraisal and social adjustment. A direct effect is therefore indicated for income, irrespective of self-appraisal and family-appraisal.

With regard to income and hardiness, whereas the relationship between income and social adjustment is significant in step one, it becomes statistically non-significant in step two, when entered simultaneously with hardiness. This is indicative of a mediating effect for hardiness. In other words, the effect of income and social adjustment is mediated by hardiness.

With regard to income and comprehensibility, in step one comprehensibility is significantly associated with social adjustment, but is not significant in step two, when entered together with income. The relationship between comprehensibility and social adjustment is significant when considered on its own. However, when comprehensibility and income are considered together (step two of the regression analysis) the relationship between comprehensibility and social adjustment becomes non-significant. This indicates an indirect effect for comprehensibility on social adjustment.

With regard to income and the resilience variables support-appraisal, fortitude, manageability, meaningfulness and SOC, in step one (of the alternative regression analyses) these resilience variables are significantly associated with social adjustment. This points to the direct effects of these resilience variables on social adjustment. This

finding is further confirmed by the fact that neither these resilience variables nor income was significantly reduced in step two. Thus, no mediating or indirect effects are present for these variables.

The product-terms of income and the resilience variables comprehensibility, meaningfulness and SOC are, however, significant. This points to the moderating effects of comprehensibility, meaningfulness and SOC in the relationship between income and social adjustment.

4.4.3.4 Resilience and the relationship between household income and emotional adjustment

Table 4.4.3.4 reports on the product-term regression analyses with household income and resilience variables as predictors of emotional adjustment.

Table 4.4.3.4 Product-term regression analyses with household income and resilience variables as predictors of emotional adjustment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
4.Emotional	Income	0,40	5,54**	0,44	6,41**		
	Self	0,25	3,24**	0,31	4,47**	0,57	1,33
	Income	0,40	5,54**	0,40	5,67**		
	Family	0,16	2,09*	0,17	2,40*	-0,01	-0,04
	Income	0,40	5,54**	0,37	5,07**		
	Support	0,23	2,99**	0,16	2,15*	0,53	1,32
	Income	0,40	5,54**	0,39	5,71**		
	Fortitude	0,29	3,80**	0,28	4,03**	0,91	1,69
	Income	0,40	5,54**	0,26	3,16**		
	Hardiness	-0,40	-5,63**	-0,27	-3,30**	-0,04	-0,15
	Income	0,40	5,54**	0,37	5,15**		
	Comprehens	0,28	3,77**	0,23	3,24**	1,48	3,74**
	Income	0,40	5,54**	0,31	4,79**		
	Manageabil	0,52	7,66**	0,45	7,05**	1,39	2,74**
	Income	0,40	5,54**	0,31	4,54**		
	Meaningful	0,45	6,44**	0,38	5,55**	0,46	0,94
	Income	0,40	5,54**	0,30	4,47**		
	SOC	0,50	7,39**	0,43	6,52**	1,48	2,42*

According to Table 4.4.3.4, in step one (of the alternative hypotheses) the resilience variables are all significantly associated with emotional adjustment. This points to the direct effects of these resilience variables on emotional adjustment. This finding is

further confirmed by the fact that neither these resilience variables nor income are significantly reduced in step two of the analyses. Thus no mediating or indirect effects are present for self-appraisal, family-appraisal, support appraisal, fortitude, hardiness, comprehensibility, manageability, meaningfulness and SOC in the relationship between income and emotional adjustment.

However, the product-terms of income and the resilience variables comprehensibility, manageability and SOC are significant. This points to moderating effects for comprehensibility, manageability and SOC in the relationship between income and emotional adjustment. No moderating effects were indicated for any of the other resilience variables in this regard.

4.4.3.5 Resilience and the relationship between household income and goal commitment/institutional attachment

Table 4.4.3.5 reports on the product-term regression analyses with household income and resilience variables as predictors of goal commitment/institutional attachment.

Table 4.4.3.5 Product-term regression analyses with household income and resilience variables as predictors of goal commitment/institutional attachment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
5.Attachment	Income	0,29	3,92**	0,29	3,87**		
	Self	-0,04	-0,53	-0,00	-0,01	0,79	1,67
	Income	0,29	3,92**	0,30	3,91**		
	Family	0,01	0,15	0,02	0,24	0,31	0,80
	Income	0,29	3,92**	0,25	3,38**		
	Support	0,25	3,34**	0,20	2,71**	0,06	0,13
	Income	0,29	3,92**	0,29	3,90**		
	Fortitude	0,11	1,43	0,11	1,41	0,79	1,34
	Income	0,29	3,92**	0,18	2,12*		
	Hardiness	-0,31	-4,13**	-0,21	-2,46*	0,11	0,37
	Income	0,29	3,92**	0,29	3,77**		
	Comprehens	0,10	1,21	0,05	0,68	0,67	1,53
	Income	0,29	3,92**	0,26	3,43**		
	Manageabil	0,23	3,01**	0,18	2,37*	1,30	2,17
	Income	0,29	3,92**	0,25	3,24**		
	Meaningful	0,26	3,48**	0,21	2,71**	0,96	1,76
	Income	0,29	3,92**	0,25	3,28**		
	SOC	0,25	3,23**	0,19	2,45*	1,46	2,06*

According to Table 4.4.3.5, with regard to self-appraisal, family-appraisal, fortitude and comprehensibility, these resilience variables are indicated to have no mediating or indirect effects on the relationship between income and goal commitment/institutional

attachment. Income was not significantly reduced in step two, when entered simultaneously with self-appraisal, family-appraisal, fortitude and comprehensibility. No significant associations are also indicated in step one and two between self-appraisal and goal commitment/institutional attachment, family-appraisal and goal commitment/institutional attachment, fortitude and goal commitment/institutional attachment, and comprehensibility and goal commitment/institutional attachment. A direct effect is therefore indicated for income, irrespective of these resilience variables.

With regard to income and the resilience variables support-appraisal, hardiness, manageability, meaningfulness and SOC, in step one (of the alternative hypotheses) these resilience variables are significantly associated with goal commitment/institutional attachment. This points to the direct effects of these resilience variables on goal commitment/institutional attachment. This finding is further confirmed by the fact that neither these resilience variables nor income are significantly reduced in step two of the analyses. Thus no mediating or indirect effects are present for support-appraisal, hardiness, manageability, meaningfulness and SOC in the relationship between income and goal commitment/institutional attachment.

However, the product-term of income and SOC is significant. This points to moderating effects for SOC in the relationship between income and goal commitment/institutional attachment. No moderating effects were indicated for any of the other resilience variables in this regard.

4.4.3.6 Resilience and the relationship between household income and overall adjustment

Table 4.4.3.6 reports on the product-term regression analyses with household income and resilience variables as predictors of overall adjustment.

Table 4.4.3.6 Product-term regression analyses with household income and resilience variables as predictors of overall adjustment

Depend. Variable	Predictors	Step 1 of regression df 1/161		Step 2 of regression df 1/160		Step 3 of regression df 1/159	
		Beta	t	Beta	t	Beta	t
6.Adjustment	Income	0,20	2,59*	0,20	2,62*		
	Self	0,01	0,10	0,04	0,46	0,47	1,17
	Income	0,20	2,59*	0,20	2,61*		
	Family	0,06	0,82	0,07	0,89	0,55	1,40
	Income	0,20	2,59*	0,17	2,18*		
	Support	0,18	2,36*	0,15	1,91	-0,07	-0,16
	Income	0,20	2,59*	0,20	2,57*		
	Fortitude	0,13	1,65	0,13	1,63	0,92	1,53
	Income	0,20	2,59*	0,08	0,94		
	Hardiness	-0,27	-3,52**	-0,22	-2,52*	-0,16	-0,52
	Income	0,20	2,59*	0,18	2,36*		
	Comprehens	0,14	1,77	0,11	1,42	-0,18	-0,39
	Income	0,20	2,59*	0,17	2,20*		
	Manageabil	0,18	2,27*	0,14	1,81	-0,24	-0,39
	Income	0,20	2,59*	0,15	1,94		
	Meaningful	0,24	3,16**	0,21	2,64**	0,79	1,41
	Income	0,20	2,59*	0,15	1,96		
	SOC	0,23	3,00**	0,19	2,47*	-0,32	-0,43

According to Table 4.4.3.6, income is indicated to have a direct effect on overall adjustment, irrespective of self-appraisal, family-appraisal, fortitude and comprehensibility, as no mediating or indirect effects for these variables are indicated.

This finding is confirmed by the fact that income is not significantly reduced in step two, when combined with these resilience variables (individually), and that no significant associations are indicated for these resilience variables in both steps one and two of the analyses.

With regard to income and the resilience variables support-appraisal and manageability, in step one, each of these resilience variables is a significant predictor of social adjustment, but is not significant in step two, when entered together with income. The relationship between each of these resilience variables (support-appraisal and manageability) and overall adjustment is significant when considered on its own. However, when each resilience variable and income are considered together (step two of the regression analysis) the relationship between support-appraisal and overall adjustment, and between manageability and overall adjustment becomes non-significant. This indicates an indirect effect for support-appraisal and manageability in the relationship between income and overall adjustment.

With regard to income and the resilience variables hardiness, meaningfulness and SOC, whereas the relationship between income and overall adjustment is significant in step one, it becomes statistically non-significant in step two, when entered simultaneously with each of these resilience variables (hardiness, meaningfulness and SOC). This is indicative of mediating effect for hardiness, meaningfulness and SOC. In other words, the effect of income and social adjustment is mediated by hardiness, meaningfulness and SOC.

No significant moderating effects are indicated by the fact that none of the product-terms is significant.

CHAPTER 5

DISCUSSION

5.1 Introduction

This chapter presents a discussion of the results, as presented in Chapter 4, and is discussed in light of the central hypotheses of the study, outlined in Chapter 3. A summary and conclusion is presented, with the inclusion of limitations of the present study as well as recommendations for future research.

5.2 The relationship between demographic and resilience variables

The first hypothesis of the present study is that there is a positive relationship between demographic and resilience variables. The results of the study yielded support for this and are discussed in relation to previous findings in this regard.

5.2.1 Age and resilience variables

A significant positive correlation was found between age and self-appraisal, as well as between age and hardiness. This suggests that on an age continuum, older students indicated more positive self-appraisal than younger students. According to Pretorius (1998, p. 31) self-appraisal is related to individuals' "problem-solving efficacy and mastery or competence," which, in this case, could highlight that the life-experiences accumulated by older students may have contributed to a more positive appraisal of problem-solving efficacy, and may also be a reflection of progression in their life stages

in which mastery over certain tasks and challenges may have contributed to older students' appraisal of their own abilities requiring mastery.

Hardiness, on the other hand, is negatively scored, meaning that higher scores indicate less 'hardiness'. What this means in relation to the results is that younger students' experience more hardiness, according to their self-reports, than older individuals. Kobasa (1979) used the concept of hardiness to describe people who underwent stressful life-events without succumbing to illness. The results therefore indicate that, according to their self-reports, younger students are less likely to succumb to illness than older students when encountering stressful experiences.

5.2.2 Gender and resilience variables

Males were found to have scored significantly higher than females on measures of self-appraisal, hardiness and comprehensibility. These results indicate that males appraise their problem-solving efficacy and belief in their abilities (or competency) to master tasks and situations more positively than females. With regard to their differences in scores on hardiness, the results indicate that, according to their self-reports on the PVS, male students are more prone to succumb to the negative effects of stress, than female students.

With comprehensibility suggesting the extent to which individuals perceive external situations as making cognitive sense, with the perception of information as being ordered, consistent structured and clear, males also reported higher levels on this measure than

females. This makes sense with regard to their higher scores on self-appraisal, in that individuals, who experience more positive self-appraisal, may perceive information from the environment as ordered and predictable, thus believing in their ability to control the external environment, which may further initialize a dynamic process of dual influence. These results are also in line with that of Roothman, Kirsten and Wissing (2003), who found that males scored higher than females on physical self–concept, automatic thoughts (positive), constructive thinking, cognitive flexibility, total self-concept, and fortitude. The results are also in line with gender stereotypes and traditional socialization practices, which furthermore possibly reflect the impact of longstanding social inequity between men and women.

5.2.3 Language and resilience variables

The African language–speaking groups scored significantly higher than both the English- and Afrikaans-speaking groups on the measure of self-appraisal. The University of the Western Cape requires that students receive instructions and complete academic tasks in English, which for many African language-speaking students is their second or third language. Belief in their ability to master stressful situations or positive appraisals of their problem-solving efficacy (or positive self-appraisal), may therefore be required from African language-speaking students to assist them in meeting the demands of academia at university.

With regard to family appraisal, the African language-speaking group scored significantly higher than the English-speaking group. According to Pretorius (1998, p.

31), family-appraisal relates to the individual's "evaluative awareness of the family environment, for example support from family, level of conflict and cohesiveness in the family and family values." The differences may be a reflection of differences in cultural socialization practices as they relate to the evaluative awareness of the family environment. This may therefore suggest a cultural difference in that the African language-speaking group appraises family support, family cohesiveness and family values to a greater extent than English of Afrikaans language-speaking groups.

The African language-speaking group also scored significantly higher on the measure of hardiness than both the English and Afrikaans-speaking groups. This suggests that African language-speaking students, according to their self–reports on the PVS, are more prone to succumb to illness with encounters of stressful life events, which may relate to cultural factors relating to the physical expression of psychological distress.

5.2.4 Race and resilience variables

With regard to the relationship between race and resilience variables, African students scored significantly higher than Coloured/Indian students on self-appraisal, family–appraisal, fortitude and hardiness. As students from the African language-speaking group, largely comprise the African racial group, their results in relation to self-appraisal, family- appraisal and hardiness relate well to each other. In addition, the African students significantly higher scores on fortitude in comparison to Coloured/Indian students, indicates that African students experience higher levels of the 'strength to manage stress and stay well' (Pretorius, 1998, p. 23) than Coloured/Indian

students. According to Brooks and Goldstein (2003), resilient individuals can be perceived as those who have overcome stress and hardship. In the South African context, Africans have not only endured economic hardship, but also had to endure an education system designed to limit their learning process and restrict their development (Esterhuysen, 2000). The findings suggesting that African students experience higher levels of fortitude than Coloured/Indian students, which may be due to the hardships they endured and had to overcome at the hand of the system of apartheid.

5.2.5 The urban/rural divide and resilience variables

With regards to the relationship between town and resilience variables, rural students scored significantly higher than urban students on family-appraisal and hardiness. Their higher scores on family-appraisal may be linked to their socialization in smaller communities in which their evaluative awareness of the family environment may differ from that of urban students. Rural students reported higher scores on the measure of hardiness indicate that they are more prone to succumbing to the negative effects of stressful life events than urban students. This may be related to their alienation from their families and customs when pursuing tertiary education, which are often long distances from their hometowns. Kagee, Naidoo and Mahatey (1997) have identified alienation from one's family and customs as impacting negatively on academic performance.

5.2.6 Income and resilience variables

With regard to the relationship between income and resilience variables, a significant positive relationship is indicated between household income and support–appraisal,

between household income and manageability, between household income and meaningfulness, and between household income and sense of coherence. According to Pretorius (1998), support-appraisal relates to an evaluative appraisal of support from other, which would include both quantitative (i.e. perceived levels of support) dimensions of support. The results suggest a significant positive relationship between student's level of household income and their appraisal of support from others. According to Antonovsky (1984), manageability refers to the extent to which a person perceives that resources are at his/her disposal to meet the demands posed by stimuli. The results suggest a significant positive relationship between student's reported household income and their perception that resources are at their disposal to meet the demands passed by stimuli. Meaningfulness, according to Antonovsky (1984), refers to one's active participation in shaping one's destiny and daily experiences, and the extent to which one feels these demands are challenges worthwhile spending one's energy on. The findings suggest a significant, positive relationship between student's reported household income and their appraisal of events as challenging and meaningful, and worthy of emotional investment and commitment.

5.3 The relationship between demographic and outcome variables

The second hypothesis of the present study is that there is a relationship between demographic and outcome variables. The results of the study yielded support for this and are discussed in relation to previous findings in this regard.

5.3.1 Age and outcome variables

With regard to the relationship between age and outcome variables, a significant positive relationship was indicated between age and academic adjustment. This supports studies by Nettles (1988) and Molefo (2000), who found age to be significantly positively related to academic performance. This could be understood in terms of older student's maturity, self-discipline and goal directedness with regard to pursuing tertiary education goals.

A significant negative relationship is indicated between age and social adjustment. This indicates that younger students experience higher self-reported levels of social adjustment, compared to older students. As discussed earlier, higher scores on social adjustment reflect a capacity for involvement in social activities and functioning, relationships with other people on campus, the ability to cope with being away from home and significant persons there, and general satisfaction with the social aspects of the university environment. Older students may be less involved in social activities at university than younger students due to their goal-directedness in pursuing tertiary education goals.

5.3.2 Gender and outcome variables

Female students scored significantly higher than males with regard to average grades, social adjustment, as well as on emotional adjustment. This may be due to differences in socialization practices, as well as the competitive trend in which women have to prove themselves for a place in patriarchal society. The finding that female students scored significantly higher on personal-emotional adjustment is, however, not consistent with

the results yielded in the normative sample (Baker & Siryk, 1998) and that yielded by Sennet (2000), which indicated that males scored significantly higher than female students on personal-emotional adjustment.

5.3.3 Race and outcome variables

With regard to race, Coloured/Indian students scored significantly higher than African students with regard to average grade, and on all the measures except academic adjustment, of the SACQ. These findings are in keeping with literature suggesting that the gross historic inequality in resource provision that was the legacy of Apartheid (Kagee, Naidoo & Mahatey, 1997) and the quality of black education in South Africa (Agar, 1990) negatively impacts on African student's adjustments to the overall academic demands placed on them by university life.

5.3.4 Household income and outcome variables

Students' self-reports of their household income were significantly positively related to their average grades, as well as all the measures of the SACQ. This result, however, does not support the findings of Nettles (1998), which indicates a negative relationship between socio-economic status and academic performance. These findings are, however, also in keeping with literature suggesting that the gross historic inequality in resource provision that was the legacy of Apartheid (Kagee, Naidoo & Mahatey, 1997) and the quality of black education in South Africa (Agar, 1990) negatively impacts on African student's adjustments to the overall academic demands placed on them by university life. In South African context, where family income determines access to resources and basic

necessities of food, clothing, shelter, etc. (Potgieter, 1998), and where the majority of impoverished South Africans are African (Booyens, 1997), coupled with the gross inequality which was the legacy of apartheid and the poor conditions and teaching at black schools (Agar, 1990), the impact of family income on academic performance becomes quite obvious.

5.4 The relationship between resilience and outcome variables

The third hypothesis of the present study is that there is a relationship between resilience and outcome variables. The results of the study yielded support for this and are discussed in relation to previous findings in this regard.

5.4.1 The FORQ and outcome variables

All the scales of the FORQ were found to be related to different aspects of the outcome measures used. A significant positive relationship is indicated between self-appraisal and academic adjustment, and between self-appraisal and emotional adjustment. This suggests that students' general self-appraisals, as well as more specific appraisals such as problem-solving efficacy and belief in their ability to master given tasks or situations, is related to their appraisal of their capacity to cope with the particular academic demands intrinsic to the university experience, as well as their appraisal of the degree to which they experience psychological distress and associated somatic complaints.

A significant positive correlation is indicated between family-appraisal and emotional adjustment. Students' evaluative awareness of their family environment (e.g., family

support, level of conflict and cohesiveness in the family, and family values) is related to the degree to which students experience general psychological distress. This highlights the role of the family in contributing to the overall psychological well-being of the individual, and supports research findings indicating positive relationships between family variables and adjustment to college (Feenstra, Banyard, Rines & Hopkins, 2001; Moore, 2003), and studies indicating positive relationships between supportive relationships (Arellano & Padilla, 1996), as well as family factors (Sack, 1972; Molefo, 2000) and academic performance.

A significant positive relationship is indicated between support-appraisal and all the measures included in the SACQ, including academic adjustment, social adjustment, emotional adjustment, goal commitment/institutional attachment and overall adjustment. This suggests that students' evaluative awareness of the support from others (including both quantitative and qualitative dimensions) is related to their overall adjustment to university, including their appraisal of the effectiveness of their adjustment in the academic, social and personal-emotional spheres, as well as their appraisal of the quality of the relationship between them and the institution. This also lends support to research indicating a positive relationship between supportive relationships and academic performance (Arellano & Padilla, 1996).

Fortitude is indicated to have a significant positive correlation with academic adjustment, social adjustment and emotional adjustment. Pretorius (1998, p. 31) formally defines fortitude as the "strength to manage stress and stay well," with this strength deriving from

an "appraisal of the self, the family and support from others." The results of this study therefore suggest that fortitude, which represents the strength of students to manage stress and stay well, is significantly positively related to students' overall adjustment to university, including their appraisal of the effectiveness of their adjustment in the academic, social and personal-emotional spheres, as well as their appraisal of the quality of the relationship between them and the institution.

5.4.2 The PVS and outcome measures

A significant negative relationship is indicated between hardiness and all the measures included in the SACQ, including academic adjustment, social adjustment, emotional adjustment, goal commitment/institutional attachment and overall adjustment. As mentioned previously, Kobasa used the concept of hardiness to describe those individuals who underwent stressful experiences, but did not succumb to illness, which is related to their sense of control over experienced events, feeling of commitment to various life areas, and a view of life's changes as challenges. The results suggest that this 'ability' is positively related to students' capacity to cope academically, as well as adjust to the overall demands associated with adjusting to university, including academic, social and personal-emotional adjustment, as well as their appraisal of the quality of the relationship between them and the institution. These results lend support to research suggesting a relationship between hardiness and stress-resistance (Willey, 1998; De Wet, 1999; Mokgobi, 2000), as well as the study by Mathis and Lecci (1999), which indicated a significant negative relationship between hardiness and health center visits at university, which may be an indication of poor adjustment.

5.4.3 The SOC Scale and outcome measures

Results of the study suggest that all the components of the SOC Scale are positively correlated to different aspect of outcome measures used in the study.

The individual components of the SOC Scale, namely comprehensibility, manageability and meaningfulness, are indicated to have significant positive correlations with academic adjustment, social adjustment, and emotional adjustment. According to Antonovsky (1987), comprehensibility refers to the extent to which individuals perceive external stimuli as making cognitive sense, as information that is ordered, consistent, structured and clear; manageability refers to the extent to which individuals perceive that resources are at their disposal to meet the demands posed by stimuli; and meaningfulness refers to individuals' active participation in shaping their destiny and daily experiences, and the extent to which they feel that these demands are challenges worthwhile spending their energy on. According to the results, more positive self-reports by students in terms of comprehensibility, manageability and meaningfulness may positively influence their perceptions relating to their capacity to cope with the particular academic demands intrinsic to the university experience, may increase their capacity to cope with the interpersonal and societal demands characteristic of adjustment to university, and may also decrease the degree to which they experience general psychological distress.

In addition to this, significant positive relationships are indicated between the subscales manageability and meaningfulness, and goal commitment/institutional attachment. This

suggests that perceptions related to manageability and meaningfulness are significantly positively related to students' degree of commitment to educational-institutional goals and the level of attachment or affiliations to their institution.

A significant positive relationship is indicated between meaningfulness and average grade. Students' perceptions related to meaningfulness are therefore suggested to be positively related to their ability to cope with the academic demands of university.

A significant positive relationship is also indicated between overall SOC and the entire outcome measures used in the study, including average grade, academic adjustment, social adjustment, emotional adjustment, goal commitment/institutional attachment and overall adjustment. According to Antonovsky (1979), SOC is a global construct 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 be reasonably expected. The results of the study therefore suggest that increased SOC, as defined above, may increase students' perceptions of their capacity to cope with the particular academic demands intrinsic to the university experience, as well as their actual ability to cope academically. It may also increase their capacity to cope with the interpersonal and societal demands characteristic of adjustment to university, and may also decrease the degree to which they experience general psychological distress. Increased SOC may also increase students' degree of commitment to educational-institutional goals and the level of attachment or affiliations they feel toward their institution.

The results discussed above all support findings that resilience measures are significantly positively related to students' adaptation to college/university (Kinter, 1999; Mathis & Lecci, 1999; Stuart, 2001; Haemmerlie & Ray, 2003; Fassig, 2004).

5.5 The role of resilience variables in the relationship between demographic and outcome variables

The fourth (and central) hypothesis of the present study is that resilience variables play a role in the relationship between demographic and outcome variables. The results of the study yielded support for this and are discussed in relation to the interaction of resilience variables in the relationship between demographic and outcome variables.

5.5.1 Resilience and the relationship between gender and outcome variables

No significant predictors of average grades emerged for males, while for females meaningfulness emerged as a significant predictor.

For males, SOC and the combined effect of SOC and self-appraisal emerged as significant predictors for academic adjustment. For females, academic adjustment appeared to be significantly predicted by fortitude.

SOC emerged as a significant predictor of social adjustment, emotional adjustment and goal commitment-institutional attachment for males. For females, support-appraisal emerged as a significant predictor for social adjustment. For emotional adjustment in

females, manageability and the combined effect of manageability and fortitude emerged as significant predictors. For goal commitment-institutional attachment in females, support-appraisal, the combined effect of support-appraisal and hardiness, and the combined effect of support-appraisal, hardiness and self-appraisal emerged as significant predictors.

Meaningfulness emerged as a significant predictor of overall adjustment for males. For females, support-appraisal, the combined effect of support-appraisal and family-appraisal, and the combined effect of support-appraisal, family-appraisal and meaningfulness emerged as significant predictors of overall adjustment. The combined effect of self-appraisal and fortitude, and the combined effect of self-appraisal, fortitude and family-appraisal also emerged as significant predictors of overall adjustment for females.

It appears that SOC emerged as the predominant predictor of outcome variables for males, whereas support-appraisal emerged as the predominant predictor for females. Therefore, for males, overall academic coping is largely associated with to extent to which they have a pervasive feeling of confidence that their 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 (SOC). For females, on the other hand, their overall academic coping is largely associated with their perceptions/evaluations of their support resources (support-appraisal). It can be hypothesized that these differences may be due to gender stereotypes and traditional socialization practices, dictating possible

self-reliance and self-confidence for men and possible dependence on external resources for women. This may furthermore reflect the impact of longstanding practices of social inequality between men and women.

5.5.2 Resilience and the relationship between race and outcome variables

No significant predictors of average grades emerged for Africans, while self-appraisal emerged as a significant predictor of average grade for the Coloured/Indian group.

With regard to academic adjustment for the Coloured/Indian group, fortitude and the combined effect of fortitude and family-appraisal emerged as significant. For the African group meaningfulness emerged as a significant predictor of academic adjustment.

There were no significant predictors for social adjustment for the Coloured/Indian group. However for the African group, support-appraisal, the combined effect of support-appraisal and manageability, and the combined effect of support-appraisal manageability and hardiness emerged as significant predictors.

Manageability and the combined effect of manageability and fortitude emerged as significant predictors of emotional adjustment for the coloured/Indian group. Hardiness and the combined effect of hardiness and SOC emerged as significant predictors of emotional adjustment in the African group.

Goal commitment/institutional attachment was significantly predicted by comprehensibility for the Coloured/Indian group, while for the African group, hardiness and the combined effect of hardiness and support-appraisal emerged as significant predictors for goal commitment/institutional attachment.

No significant predictors for overall adjustment emerged for the Coloured/Indian group, while for the African group, hardiness and the combined effect of hardiness and SOC emerged as significant predictors.

It appears that no specific resilience variable emerged as a predominant predictor of outcome variables for the Coloured/Indian group. Hardiness, however, appeared as the predominant predictor of outcome variables for the African group. Hardiness is considered a personality style, used to describe those people who undergo stressful life events, but who manage to stay physically and psychologically well. The emergence of hardiness as the predominant predictor of outcome variables for the African group may be an indication of cultural influences that impact on individuals' interactions with the environment and their understanding thereof. The differences between the African and Coloured/Indian groups with regard to their different predominant predictors of outcome variables, may therefore be related to differences in cultural socialization that give rise to differences in individual interactions with the environment and their different understanding thereof.

5.5.3 Resilience and the relationship between the urban/rural divide and outcome variables

For the urban group support-appraisal emerged as a significant predictor of the average grade. For the rural group meaningfulness emerged as a significant predictor.

Academic adjustment for the urban group was significantly predicted by support-appraisal and the combined effect of support-appraisal and self-appraisal. For the rural group meaningfulness and the combined effect of meaningfulness and support-appraisal emerged as significant predictors.

For the urban group, support-appraisal and the combined effect of support-appraisal and comprehensibility emerged as significant predictors of social adjustment. For the rural group, however, hardiness emerged as a significant predictor of social adjustment.

SOC emerged as a significant predictor of emotional adjustment. For the rural group, however, hardiness and the combined effect of hardiness and self-appraisal emerged as significant predictors. For the rural group, support-appraisal emerged as a significant predictor of both goal commitment/institutional attachment and overall adjustment. For the urban group, however, hardiness emerged as a significant predictor of both goal commitment/institutional attachment and overall adjustment.

It appears that support-appraisal emerged as the predominant predictor of outcome variables for urban students, whereas hardiness and meaningfulness emerged as

predominant predictors of outcome variables for rural students. Therefore, for urban students, their overall academic coping appears to be largely associated with their perceptions/evaluations of their support resources (support-appraisal). For rural students, on the other hand, their overall academic coping appears to be largely associated with their ability to undergo stressful life events, while still managing to stay physically and psychologically well (hardiness), as well as their active participation in shaping their own destinies (and daily experiences) and the extent to which they feel that these demands are challenges worth spending their energy on (meaningfulness). These differences may be due to the differences in socialization between urban and rural individuals that may give rise to differences in individuals' interactions with the environment and their understandings thereof.

5.5.4 Resilience and the relationship between language and outcome variables

For the African language-speaking group there were no significant predictors of average grade. For the English language-speaking group, however, self-appraisal and the combined effect of self-appraisal and support-appraisal emerged as significant predictors. Family-appraisal, on the other hand, emerged as a significant predictor of average grades for the Afrikaans language-speaking group.

For the English language-speaking group, self-appraisal and the combined effects of self-appraisal and meaningfulness significantly predicted academic adjustment. For the Afrikaans language-speaking group, support-appraisal, the cumulative combined effects of support-appraisal, family-appraisal, self-appraisal, comprehensibility and hardiness

emerged as significant predictors of academic adjustment. Meaningfulness, however, emerged as a significant predictor of academic adjustment for the African language-speaking group.

There were no significant predictors of social adjustment for the English language-speaking group. For the Afrikaans language-speaking group, meaningfulness and the combined effect of meaningfulness and manageability emerged as significant predictors. Support-appraisal, and the cumulative combined effect of support-appraisal, manageability and fortitude emerged as significant predictors of social adjustment for the African language-speaking group.

Manageability and the combined effect of manageability and the self-appraisal emerged as significant predictors of emotional adjustment for the English language-speaking group. For the Afrikaans language-speaking group, support-appraisal emerged as a significant predictor of emotional adjustment, whereas hardiness and the combined effect of hardiness and meaningfulness emerged as significant predictors for emotional adjustment for the African language-speaking group.

There were no significant predictors of goal commitment/institutional attachment for English language-speaking group. For the Afrikaans language-speaking group comprehensibility emerged as a significant predictor. Hardiness and the combined effect of hardiness and support-appraisal emerged as significantly predictors of goal commitment/institutional attachment for the African language-speaking group.

For overall adjustment, self-appraisal and combined effect of self-appraisal and SOC emerged as significant predictors for the English language-speaking group. Family-appraisal and the combined effect of family-appraisal and self-appraisal emerged as significant predictors of overall adjustment for the Afrikaans language-speaking group. For the African language-speaking group, the following emerged as significant predictors: hardiness; the combined effect of hardiness and SOC; the combined effect of hardiness, SOC and self-appraisal; and the combined effects of hardiness, SOC, self-appraisal and support-appraisal.

It appears that for the English language-speaking groups, self-appraisal emerged as a significant predictor for outcome measures, family-appraisal for the Afrikaans language-speaking group, and hardiness for the African language-speaking group. Therefore, for the English language-speaking group, it appears that their overall academic coping is largely associated with their evaluations of themselves and their abilities (self-appraisal). However, for the Afrikaans language-speaking group, it appears that their overall academic coping is largely associated with their evaluative awareness of their family environment (e.g., family support, level of conflict and cohesiveness in the family, and family values) (family-appraisal). Furthermore, for the African language-speaking group, it appears that their overall academic coping is largely associated with their ability to undergo stressful life events, while still managing to stay physically and psychologically well (hardiness). The differences between the different language groupings with regard to their different predominant predictors of outcome variables may be related to differences

in language as a medium of through which the world is conceptualized and understood, as well as differences in cultural socialization that give rise to differences in individual interactions with the environment and their different understandings thereof.

5.5.5 Resilience and the relationship between age and outcome measures

With regard to age and academic performance, meaningfulness and SOC were found to have direct effects on academic performance. This suggests that, irrespective of age, students' active participation in shaping their own destinies (and daily experiences) and the extent to which they feel that these demands are challenges worthwhile spending their energy on (meaningfulness), as well as the extent to which students have an enduring feeling of confidence and optimism about their future and abilities (SOC), have a positive effect on their academic performance.

With regard to age and academic adjustment, it was found that self-appraisal mediates the relationship between age and academic adjustment. A mediational role of self-appraisal implies that self-appraisal is the mechanism through which age impacts on academic adjustment. In other words, students' age may indirectly impact on their capacity to cope with the academic demands of university, depending on their appraisals/evaluations of themselves and their abilities (self-appraisal).

Fortitude, hardiness, comprehensibility, manageability, meaningfulness and SOC were found to have direct effects on academic adjustment. This suggests that an increase in the

levels of these resilience variables may result in an increase in academic adjustment, irrespective of age.

Support-appraisal was found to have a moderating effect on the relationship between age and academic adjustment. This suggests that at low levels of support-appraisal the relationship between age and academic adjustment would be strong and direct (that is, an increase in age is associated with lower levels of academic adjustment), and as support-appraisal increases this relationship should weaken. Under conditions of maximum support-appraisal the relationship between household income and academic adjustment should be non-existent.

With regard to age and social adjustment, support-appraisal, fortitude, hardiness, comprehensibility and meaningfulness were found to have direct effects on social adjustment. This suggests that an increase in the levels of these resilience variables may result in an increase in social adjustment, irrespective of age.

Support-appraisal and fortitude were found to have moderating effects on social adjustment. This suggests that at low levels of support-appraisal and fortitude the relationship between age and social adjustment would be strong and direct (that is, an increase in age is associated with lower levels of social adjustment), and as support-appraisal and fortitude increase this relationship should weaken. Under conditions of maximum support-appraisal and fortitude the relationship between household income and social adjustment should be non-existent.

Manageability and SOC were found to mediate the relationship between age and social adjustment. A mediational role of manageability and SOC implies that these variables are the mechanisms through which age impacts on social adjustment. In other words, students' age may indirectly impact on their capacity to cope with the interpersonal and societal demands of adjustment to university, depending on their perception of the extent to which they perceive that resources are at their disposal to meet the demands posed by stimuli (manageability), and the extent to which students have an enduring feeling of confidence and optimism about their future and abilities (SOC).

With regard to age and emotional adjustment, self-appraisal, family-appraisal, support-appraisal, fortitude, comprehensibility, manageability, meaningfulness and SOC were found to have direct effects on emotional adjustment. This suggests that an increase in the levels of these resilience variables may result in an increase in emotional adjustment, irrespective of age.

Hardiness was found to mediate the relationship between age and emotional adjustment. A mediational role of hardiness suggests that hardiness is the mechanism through which age impacts on academic performance. In other words, students' age may indirectly impact on the degree to which they experience general psychological distress and associated somatic complaints, depending on their abilities to undergo stressful experiences without succumbing to illness (hardiness), which is related to their sense of

control over experienced events, feeling of commitment to various life areas, and a view of life's changes as challenges.

With regard to age and goal commitment/institutional attachment, support-appraisal, hardiness, manageability, meaningfulness and SOC were found to have direct effects on goal commitment/institutional attachment, irrespective of age. This suggests that an increase in the levels of these resilience variables may result in an increase in goal commitment/institutional attachment, irrespective of age.

With regard to age and overall adjustment, support appraisal, hardiness, manageability, meaningfulness and SOC were found to have direct effects on overall adjustment. This suggests that an increase in the levels of these resilience variables may result in an increase in overall adjustment, irrespective of age.

Meaningfulness and SOC were found to have a moderating effect on the relationship between age and overall adjustment. This suggests that at low levels of meaningfulness and SOC the relationship between age and overall adjustment would be strong and direct (that is, an increase in age is associated with lower levels of overall adjustment), and as meaningfulness and SOC increase this relationship should weaken. Under conditions of maximum meaningfulness and SOC the relationship between household income and overall adjustment should be non-existent.

5.5.6 Resilience and the relationship between household income and outcome measures

Support-appraisal, hardiness, meaningfulness and SOC were found to mediate the relationship between household income and academic performance. A mediational role of support-appraisal, hardiness, meaningfulness and SOC implies that these variables are the mechanisms through which household income impacts on academic performance. In other words, students' household income may indirectly impact on their academic performance, depending on: students' perceptions/evaluations of their support resources (support-appraisal); students' abilities to undergo stressful experiences without succumbing to illness (hardiness), which is related to their sense of control over experienced events, feeling of commitment to various life areas, and a view of life's changes as a challenges; students' active participation in shaping their own destinies (and daily experiences) and the extent to which they feel that these demands are challenges worthwhile spending their energy on (meaningfulness); and the extent to which students have an enduring feeling of confidence and optimism about their future and abilities (SOC).

Support-appraisal was found to have a moderating effect on the relationship between household income and academic performance. This suggests that at low levels of support-appraisal the relationship between household income and academic performance would be strong and direct (that is, higher levels of household income is associated with higher levels of academic performance), and as support-appraisal increases this relationship

should weaken. Under conditions of maximum support-appraisal the relationship between household income and academic performance should be non-existent.

With regard to household income and academic adjustment, self-appraisal and fortitude were found to have direct effects on academic adjustment. This suggests that an increase in the levels of these resilience variables may result in an increase in academic adjustment, irrespective of household income.

Support-appraisal, hardiness, comprehensibility, manageability, meaningfulness and SOC were found to mediate the relationship between household income and academic adjustment. A mediational role of support-appraisal, hardiness, comprehensibility, manageability, meaningfulness and SOC implies that these variables are the mechanism through which household income impacts on academic adjustment. In other words, students' household income may indirectly impact on their academic adjustment, depending on: their perceptions/evaluations of their support resources (support-appraisal); their abilities to undergo stressful experiences without succumbing to illness (hardiness), which is related to their sense of control over experienced events, feeling of commitment to various life areas, and a view of life's changes as a challenges; their perceptions of the extent to which external stimuli make cognitive sense (comprehensibility); their perceptions of the extent to which resources are at their disposal to meet the demands posed by stimuli (manageability); their active participation in shaping their own destinies (and daily experiences) and the extent to which they feel that these demands are challenges worthwhile spending their energy on

(meaningfulness); and the extent to which they have an enduring feeling of confidence and optimism about their future and abilities (SOC).

Fortitude and comprehensibility were found to have moderating effects on the relationship between household income and academic adjustment. This suggests that at low levels of fortitude and comprehensibility the relationship between household income and academic adjustment would be strong and direct (that is, higher levels of household income is associated with higher levels of academic adjustment), and as fortitude and comprehensibility increase this relationship should weaken. Under conditions of maximum fortitude and comprehensibility the relationship between household income and academic adjustment should be non-existent.

With regard to household income and social adjustment, hardiness was found to mediate the relationship between household income and social adjustment. A mediational role of hardiness suggests that hardiness is the mechanism through which household income impacts on social adjustment. In other words, students' household income may indirectly impact on their capacity to cope with the interpersonal and societal demands of adjustment to university, depending on their abilities to undergo stressful experiences without succumbing to illness (hardiness), which is related to their sense of control over experienced events, feeling of commitment to various life areas, and a view of life's changes as a challenges.

Support-appraisal, fortitude, manageability, meaningfulness and SOC were found to have direct effects on social adjustment. This suggests that an increase in the levels of these resilience variables may result in an increase in social adjustment, irrespective of household income.

Comprehensibility was found to have an indirect effect on social adjustment by influencing perceptions of family income. Here comprehensibility is causally antecedent to family income. In other words, the extent to which students make cognitive sense of external stimuli influences their perception of their family income, which then influences their capacity to cope with the interpersonal and societal demands of university. Thus, one can hypothesize that students with low household incomes and who are low on comprehensibility may be likely to show low social adjustment. In other words, students low on comprehensibility may negatively perceive their low household income, which would in turn impact negatively on their social adjustment at university. On the other hand, students with low household incomes, but who are high on comprehensibility, may be likely to show more social adjustment than those low on comprehensibility. In other words, students high on comprehensibility may perceive their low household income not so much as an obstacle as students low on comprehensibility, which would in turn impact less negatively on their social adjustment at university. This may be an indication of societal influences that place values on individuals' internalized worth, based on their financial status.

Comprehensibility, meaningfulness and SOC were found to have moderating effects on the relationship between household income and social adjustment. This suggests that at low levels of comprehensibility, meaningfulness and SOC the relationship between household income and social adjustment would be strong and direct (that is, higher levels of household income is associated with higher levels of social adjustment), and as comprehensibility, meaningfulness and SOC increase this relationship should weaken. Under conditions of maximum comprehensibility, meaningfulness and SOC the relationship between household income and social adjustment should be non-existent.

With regard to household income and emotional adjustment, all resilience variables were found to have direct effects on emotional adjustment. This suggests that an increase in the levels of these resilience variables may result in an increase in emotional adjustment, irrespective of household income.

Comprehensibility, manageability and SOC were found to have moderating effects on the relationship between household income and emotional adjustment. This suggests that at low levels of comprehensibility, manageability and SOC the relationship between household income and emotional adjustment would be strong and direct (that is, higher levels of household income is associated with higher levels of emotional adjustment), and as comprehensibility, manageability and SOC increase this relationship should weaken. Under conditions of maximum comprehensibility, manageability and SOC, the relationship between household income and emotional adjustment should be non-existent.

Support-appraisal, hardiness, manageability, meaningfulness and SOC were found to have direct effects on goal commitment/institutional attachment. This suggests that an increase in the levels of these resilience variables may result in an increase in goal commitment/institutional attachment, irrespective of household income.

SOC was found to have a moderating effect on the relationship between household income and goal commitment/institutional attachment. This suggests that at low levels of SOC the relationship between household income and goal commitment/institutional attachment would be strong and direct (that is, higher levels of household income is associated with higher levels of goal commitment/institutional attachment), and as SOC increases this relationship should weaken. Under conditions of maximum SOC, the relationship between household income and goal commitment/institutional attachment should be non-existent.

Support-appraisal and manageability were found to have indirect effects on overall adjustment by influencing perceptions of their family income situation. Here support-appraisal and manageability are causally antecedent to family income. This suggests that students' perceptions/evaluations of their support resources (support-appraisal) and their perceptions of the extent to which resources are at their disposal to meet the demands caused by stimuli (manageability), influence their perceptions of their family income (as limitations or as dependable resources), which then in turn influence the extent of students' overall adjustment. Thus, one can hypothesize that students with low household

incomes and who are low on support-appraisal (or on manageability) may be likely to show low social adjustment. On the other hand, students with low household incomes, but who are high on support-appraisal (or on manageability), may be likely to show more social adjustment than those low on comprehensibility.

Hardiness, meaningfulness and SOC were found to mediate the relationship between household income and overall adjustment. A mediational role of hardiness, meaningfulness and SOC implies that these variables are the mechanism through which household income impacts on overall adjustment. In other words, students' household income may indirectly impact on their overall adjustment, depending on: their abilities to undergo stressful experiences without succumbing to illness (hardiness), which is related to their sense of control over experienced events, feeling of commitment to various life areas, and a view of life's changes as a challenges; their active participation in shaping their own destinies (and daily experiences) and the extent to which they feel that these demands are challenges worthwhile spending their energy on (meaningfulness); and the extent to which they have an enduring feeling of confidence and optimism about their future and abilities (SOC).

According to Pretorius (Date unknown), variables that are presumed to play a role in protecting the individual from negative conditions have a direct relationship with physical/psychological outcomes. These variables therefore play a health-sustaining role. According to Shumaker and Brownell (1984, cited in Pretorius, Date unknown), in stress research moderator variables are said to have a stress-reducing (buffering) function in the

sense that it reduces the impact of stress on physical/psychological functioning. Mediator variables (as the third variable), according to Pretorius (Date unknown), is the mechanism through which the adverse environmental influences the physical/psychological outcome. An indirect effect of the third variable, on the other hand, influences perceptions of the environmental/stressor, thus affecting the outcome (Pretorius, Date unknown).

The results of the product-term analyses therefore indicate health-sustaining and stress-reducing effects for different resilience variables used in the study. Results also indicate how different resilience variables used influence perceptions of the adverse environmental conditions or stressors, thus affecting outcomes in this way.

5.6 Summary and conclusion

Many historically disadvantaged South Africans are entering into universities, where they are expected to perform academically not only to secure themselves a continued place at university, but also to secure themselves a place in the competitive job-market post university. Not only have these individuals been disadvantaged by an inferior schooling system, which is the legacy of apartheid, but they also struggle against the perpetual grasp of poverty, attempting to sustain themselves financially in order to afford the necessities for their survival, while still attempting to perform academically. Research has suggested relationships between socio-economic and demographic factors and academic performance (Nettles, 1988; Maree, 1995; Luthuli, Masiea & Zuma, 1992; Honikman, 1982). Resilience has been presented as a buffering process, which helps

individuals deal effectively with stressful events and adverse conditions. An attempt is therefore made to investigate whether resilience plays this role in the experience of students at university, taking into consideration their socio-economic and demographic situations, where academic performance and adjustment represent the expected measure of coping.

Various constructs have been proposed to conceptualize aspects which typify resilience or coping in the face of adverse conditions. These constructs have further been operationalised and used in various studies as measures of resilience. The constructs used in the study included fortitude (Pretorius, 1998), hardiness (Kobasa, 1982) and sense of coherence (Antonovsky, 1979).

Academic performance has been presented by Lindgren (1969) as presenting the individual's response to the complex and stressful experience that epitomize studying at university, requiring from the student adaptation, learning, change and development. Baker and Siryk (1989) further purport that the process of adjustment to college/university is multidimensional, which requires that students develop effective strategies for adapting to a host of demands, including those found in the academic, social and emotional spheres. They therefore operationalised the SACQ, which has been used extensively in relation to a variety of socio-demographic and socio-cultural variables, among others. Both academic performance (average grades) and the SACQ were used in the study as measures of academic coping.

The aim of the study was therefore to investigate the role of resilience constructs in the relationship between socio-economic and demographic factors and academic coping, using the operationalised variables mentioned above. Specific research questions included: firstly, do students from disadvantaged backgrounds (as measured by socio-economic and demographic variables) experience higher levels of resilience (as measured by resilience constructs) than the more advantaged? Secondly, do students from more advantaged backgrounds cope better academically (as measured by average grades and measures of the SACQ) than less advantaged students, given that students from more advantaged backgrounds enjoy better access to resources? Thirdly, do students experiencing higher levels of resilience cope better academically than students experiencing lower levels of resilience? Fourthly, does resilience play a role in the relationship between socio-economic and demographic variables and academic coping?

Analysis of the data, collected from a sample 164 third year Psychology students at the University of the Western Cape, yielded support for all the hypotheses put forward in the research. Results therefore suggested that:

1. There are significant relationships between demographic and resilience variables.
2. There are significant relationships between demographic and outcome variables.
3. There are significant relationships between resilience and outcome variables.
4. Resilience variables play a role in the relationship between demographic and outcome variables, as various resilience variables emerged as significant predictors of outcome

variables, or as having either direct, moderating, mediating or indirect effects on the relationship between demographic and outcome variables.

5.6.1 Limitations of the present study

Despite that the study yielded a number of significant results, certain methodological problems, however, limit the value of the study in the broader context,

1. The length of the questionnaires administered to the participants may have had a negative bearing on the accuracy of the information reported. The number of questions participants had to respond to included: for the biographical questionnaire, 8 items; for the FORQ, 20 items; for the PVS, 50 items; for the SOC Scale, 29 items; and for the SACQ, 67 items, in the order mentioned. It is highly likely that fatigue or loss of interest due to the length of the instrument may have impacted on the accuracy of their responses. This may further be evident in the poor response rate of the participants on the SACQ, which was positioned last in the questionnaire. After discussion with a number of the participants after completing the questionnaire they commented on becoming 'despondent at the sight of the length of the questionnaires that followed'.

2. The present study is also restricted in its use of standardized measures of resilience and university coping and adaptation. The use of only general measures limits further expansion and exploration of the nature of perceived variables of resilience and academic coping and adaptation, and the perceived relationships

between these variables that participants share among their social networks, which may differ across contexts.

3. Even though significant results were yielded with the variable 'household income', it should be borne in mind that data regarding this variable was collected in the form of categories (i.e., R0-R1000, R1001-R3000, etc). The problem with this method of categorization is that a difference of R1 holds the implication of distinguishing one category from the next. It is flawed in this sense in that if the category 'R3001 to R6000' were to be considered the 'average income', the difference of R1 would mean that the category then shifts to 'R6001-R10000'. Would this then qualify the category 'above average' income? The realization of this methodological concern developed only after data was collected. This variable was then treated as 'continuous' in the conduction of analyses, which raises questions around its validity.

4. Furthermore, the study was conducted using a convenience sample with 164 participants from a population of third year psychology students. Related to this is the composition of the sample, which appears to be predominantly African (53%), female (69,5%), of urban home residence (66,5%), with a total household income of R3000 or less per month. The implication of this is that the generalizability of the results outside of this third year psychology population at the University of the Western Cape is questioned. It is even questionable that the results can be generalized to the broader university population. Because of the relatively small

sample size and the consequent questionable generalizability, this study should be considered a preliminary investigation into the relationships between the variables explored.

5.6.2 Recommendations for future research

Based on the above-mentioned limitations of the study, the following is recommended for future research:

1. With regard to the length of the questionnaire, it is recommended that a derivation of these questionnaires, using salient variables (subscales) of the questionnaires be used, or that one or two of the entire questionnaires be omitted, depending on the aim of the investigation. It could also be possible to allow for breaks for participants to control for possible fatigue and loss of interest. The chronology of the various questionnaires in the instrument could also be arranged from highest number to lowest number of items to prevent that participants become despondent at the sight of longer questionnaires close to the end.

2. With regard to the limitations discussed with regard to the use of only standardized measures, it is recommended that further exploration involve open-ended questions, which could qualitatively add insights into participants' perceptions of variables typifying and impacting on resilience and academic coping. This could add valuable insights regarding perceptions as well as the validity of measuring instrument use across contexts.

3. With regard to the categorization of the 'household income' variable, it is recommended that this variable, in future research, be included as a continuous variable to control for the above-mentioned methodological concerns.

4. Given the questionable generalizability of the findings of the present study, for future research with the aim of exploring similar research for specific generalization to a designated university population, it is recommended that a sample more representative of all the faculties and years of study be used. Randomized sampling techniques, with the use of a larger sample for adequate generalization is recommended. Also, for similar research with the aim of exploring similar research with the aim of generalizing the findings to the greater population of students in South Africa, randomized sampling techniques, in conjunction with using various samples from various universities, representative of the student population in South Africa is recommended. Comparative studies, investigating differences in resilience and university coping between different universities, racial groups, between and across faculties at universities, etc., is recommended, given the historical and contextual issues in South Africa. Even broader, differences in this regard could also be explored across countries and continents.

5. In addition, it is also recommended that other measures (e.g., cognitive measures like intelligence), which have been found to significantly impact on academic

performance be include in further investigations (Jensen, 1980; Zigarelli, 1996), which could add valuable insights into the relationships between and combined effects of these variables with resilience, socio-economic and demographic variables, and their relation to academic coping and adjustment.

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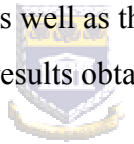
APPENDIX A

RESEARCH QUESTIONNAIRE

Dear Student

A number of questionnaires are enclosed in this booklet. The questions contained herein are geared toward exploring different facets of your personal experience across life situations.

All information submitted in these questionnaires will remain confidential. It should also be borne in mind that the request for your student number is for reconciliation of data purposes only, and that your anonymity will be retained throughout the research process and in the reporting of results. You are also strongly urged to answer all questions as accurately as possible. Please also be informed that you reserve the right to withdraw from the research process at any time, as well as the right to access any information regarding the research process and the results obtained from the research.



Consent

I understand that by supplying my student number I grant permission to Mark Barends to access my academic results for the purpose of reconciling this data with data obtained from the questionnaire only. I fully understand the research aims, my rights and my role as participant in the study, as well as the issues related to confidentiality, as explained by the researcher and as outlined above.

_____ _____

Student's Signature **Date**

Signature Not Verified

Library

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