RELATIONSHIPS BETWEEN MENTAL HEALTH, SOCIOECONOMIC STATUS AND SUBJECTIVE SOCIAL STATUS IN FIRST-YEAR STUDENTS AT FOUR SOUTH AFRICAN UNIVERSITIES

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COMPULSORY DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signed by candidate

Signature Removed

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ABSTRACT

Background and Objective: First-year university students face many challenges during the transition to university. Some of these relate to their background and sociodemographic characteristics and others have to do with the characteristics of the universities they attend. South African first-year students may face even more challenges adjusting to university, which are linked to the country's Apartheid history. This study aimed to explore relationships between mental health, socioeconomic status and subjective social status in first-year students at four South African universities. In particular, the aims were to explore the role of subjective social status and resilience in predicting the adjustment, mental health and general health of first year university students.

Method: Participants in the study (n=336) were South African first-year students who were enrolled in first year psychology courses at four universities. Two of the universities were historically advantaged, and two were historically disadvantaged. Data collection took the form an online survey as well as the distribution of printed questionnaires. A demographic questionnaire was used in addition to questionnaires, which measured students' quality of adjustment, mental health, general health, subjective social status, alcohol use and illicit substance use and resilience (Connor-Davidson Resiliency Scale).

Results: A series of hierarchical regression analyses indicated that place of residence was an significant predictor of the quality of their adjustment to university (R^2 =.11). Results of the multiple regression analyses also indicated that resilience was a significant predictor of mental health (R^2 = .22) and a significant predictor of general health (R^2 = .11) in the sample of first-year students.

Conclusion: These findings highlight the importance resilience can play in predicting students' mental and general health during the transition to university. It also highlights the fact that universities should take the opportunity to provide adequate support programmes and create social networks to make the transition to university easier for students who may be at risk for poor adjustment and poor mental health and general health. In particular university residences, which provide a living environment that encourages academic and social interaction and provide a supportive atmosphere, can make the transition to university smoother for first years.

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INTRODUCTION AND BACKGROUND

In February 2008, an incident at the University of the Free State shocked observers and left many questioning whether racial integration is in fact a reality in post-Apartheid South African higher education. The incident in question involved White male UFS students making a video in which they forced a group of elderly Black cleaning staff to eat food into which a student was said to have urinated. The intention of this video was apparently to protest against the newly introduced university policy to integrate student residences.

Although the South African public condemned the incident, the video and the furore surrounding its release highlighted the fact that while universities are no longer segregated by policy, there still remain deep-rooted racial divides on many campuses. Issues such as these, which have their origin in South Africa's political past, may make the already difficult transition to university all the more difficult for South African first-year undergraduate students.

This thesis aims to explore relationships between mental health, general health, socioeconomic status, subjective social status and adjustment in first-year students at two historically disadvantaged and two historically advantaged South African universities.

The Transition to University Life

Beginning a new period in one's life as a first-year undergraduate student is a transition, one that for some may encompass many stressful life changes (Baker, 2003, 2004; Jay & D'Augelli, 1991 ; Urani, Miller, Johnson & Petzel, 2003). During this time of change, students are expected to adapt to many interpersonal, academic, and social demands (Baker, 2003, 2004). Many studies have focused on discovering what some of the most common stressful experiences are for incoming first-years. These studies have found that common stressful events include moving to a new city, leaving home and the family environment and coping with the change from a generally structured home environment to an independent way of living, forming new relationships and facing problems within them, adjusting to a new social setting, dealing with examinations and public speaking, and finding employment.

Furthermore, there are often changes in sleeping patterns, disruptions caused by holidays and breaks, changes to eating habits, an increase in workload and new responsibilities, and the stress of searching for a life partner (see e.g. Andrews & Wilding, 2004; Damush, Hays & DiMatteo, 1997; Grace, 1997; Ross, Niebling & Hackett, 1999). One typical study investigating which factors were perceived as stressful for undergraduate students found that some of the reasons students had stress related to their courses included issues around course content, having insufficient time to study because of other commitments, fearing failure, lacking confidence and motivation, issues relating to their domestic situation, personal problems, lack of support from their significant others, inadequate prior education as well as difficulties with language (Monk, 2004). A summary report by the American College Health Association National College Health Assessment (2005, ACHA-NCHA) stated that the top five issues which hinder university students' academic performance were stress, having a cold/flu/sore throat, sleep difficulties, concern for a friend or family member(s), and having a depressive or anxiety disorder.

Mental Health, Physical Health, and Adjustment to University

The experience of stress related to the transition to university is associated with the appearance of physical and emotional problems, including fatigue, hypertension, headaches, and other common signs and symptoms of depression and anxiety (Grace, 1997).

In a study that measured students' psychological well-being at three different times of the academic year (at the beginning of the year, in the middle of the year and towards the end of the year), groups of students whose overall psychological wellbeing was considered to be normal, as well as those who are considered to be vulnerable, have both been shown to experience great amounts of strain placed upon their mental health throughout the first year (Cooke, Bewick, Barkham, Bradley, & Audin, 2006).

Furthermore, students who are homesick tend to have more psychological disturbances (e.g. depression, obsessionality) and cognitive failures. Those who have higher levels of stress that are related to family life as well as stresses that are related to the changes that take place during the transition to university, are also predicted to

have significantly higher levels of depressive symptoms during the first year (Dyson & Renk, 2006).

With regard to the specific relationship between the experience of stressors and the appearance of mental disorders in students, it seems that sleep difficulties, more frequent use of alcohol, depression, anxiety disorders, and seasonal affective disorder are associated with frequency of stressful experiences (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005). Unfortunately, being depressed and using alcohol have been shown to hinder student productivity and academic performance. Thus, students with mental health problems may not cope as well as their peers and are at increased risk for poor achievement, including poor examination performance and even failure (Andrews & Wilding, 2004; Svanum & Zody, 2001). On the other hand, students who have more issues relating to course problems have a greater tendency to have emotional problems than those who have fewer difficulties related to course work. On the more severe side, students who report that they have at some point felt suicidal or were currently suicidal, stated the main reasons for feeling this way related to social pressures, lacking finances, relationship problems, feeling depressed, unemployment issues, drastic lifestyle changes, their personal circumstances, anxiety attacks as well as physical stress and strain and emotional stress (Monk, 2004).

Adjustment for First-year University Students

In general, the successful adjustment of a particular individual to a particular environment can be viewed as a process with many dimensions; the process itself, though, basically refers to the manner in which the individual interacts with his/her environment in an effort to balance between the demands and needs of himself/herself and those of his/her environment (Baker & Siryk, 1984). In the university context, then, adjustment may therefore encompass academic performance, psychological wellbeing, social functioning, and institutional commitment or belonging (Sennett, Finchilescu, Gibson, & Strauss, 2003).

These aspects of adjustment are extremely important for students when they make the transition from high school to university. For example, adjustment has been shown to predict academic performance in a sample of students in the United Kingdom (Baker, 2003) and a study conducted with South African first-year students found positive

associations among their general adjustment, their social adjustment, their personal emotional adjustment, their institutional commitment, and their academic performance. Also, academic adjustment is significantly positively associated with academic performance (Baker & Siryk, 1984; Dahmus & Bernardin, 1992; Sennett et al., 2003). Personal-emotional adjustment may be significantly correlated with general adjustment (which includes academic adjustment, social and personal-emotional adjustment and institutional commitment) and with academic performance in students (Baker & Siryk, 1984).

The ways, in which students experience the many stressors and changes of university life, as well as how they respond to the transition, may differ across individuals (Urani et al., 2003). Given the implications of the quality of adjustment for university students, it is important to know which factors are associated with successful adjustment and which are associated with poorer adjustment for first-years.

Sex Differences in Adjustment and Mental Health

Studies have shown that male students are more likely to have better overall adjustment levels than their female peers. The latter tend to struggle more with adjustment and may have more psychological problems, more instances of cognitive failure, and more depression during the transition to university (Alfeld- Liro & Sigelman, 1998; Enochs & Roland, 2006; Fisher & Hood, 1987, 1988).

Similarly, higher levels of depression, physical symptoms, and separation anxiety, and lower levels of adaptability to change, have been found in females compared to male students during the transition to university life. Family relations as well as personality variables may predict adjustment in first year students, with female students showing higher levels of separation anxiety and lower adjustment. Whereas males who are disconnected from significant others may show poorer adjustment (Holmbeck & Wandrei, 1993).

Substance Use Amongst University Students

Problems related to alcohol and illicit substances are also issues first-year university students face. The widespread and negative implications of alcohol and drug use on adjustment and functioning for students are clear in the literature. For example, US

national rates of current illicit drug among university students are estimated to be 19.8% for full-time students between the ages of 18-22 years (Substance Abuse and Mental Health Service Administration SAMHSA, 2007). In terms of illicit drug use patterns, a study found that more than 98% of students who used marijuana and other illicit substances also used another substance. These students were also either smokers, were binge' drinkers and used an additional illicit substance (Mohler-Kuo, Lee & Wechsler, 2003).

With regard to alcohol use amongst university students, the SAMHSA survey of reported the past monthly alcohol use rate for full-time students aged 18-22 as 63.7%. The prevalence of binge drinking in this group was 43.6%, and heavy drinking was 17.2%. Other recent national surveys, also conducted in the US, report that a large majority of university undergraduates drink alcohol, and that almost half are frequent, heavy, or binge drinkers. The same reports indicate that two-thirds of students report using alcohol in the past month, and that of these students, more than half had drunk heavily or had been binge drinking in the previous 2 weeks (O'Malley & Johnston, 2002; Wechsler, Lee, Kuo & Lee, 2000).

Heavy drinking may have a range of negative effects. Student drinking has been shown to cause educational problems, physical harm in individuals (e.g. overdoses and high-risk sexual behaviours), impaired driving under the influence of alcohol as well as psychosocial problems (Hingson, Heeren, Zakocs, Kopstein & Wechsler, 2002; Pascarella et al., 2007; Perkins, 2002). Heavy drinking is also positively correlated with psychological disorders such as generalized anxiety disorder (Cranford, Eisenberg & Serras, 2009). A recent study on the effects of heavy drinking on academic achievement found that binge drinking two or more times in a period of two weeks was significantly associated with lower semester marks for first year students and also that adverse effects of heavy drinking on academic performance

[1] Binge drinking can be defined as a pattern of drinking alcohol that brings blood alcohol concentration to 0.08 gram-percent or higher. For a typical adult, this pattern corresponds to consuming 5 or more drinks (male), or 4 or more drinks (female), in about 2 hours (N1AA, 2007; Wechsler & Nelson, 2008).

could be noticed as early as the second semester of the first year of university (Pascarella et al., 2007).

(Please note that the studies and their findings referred to in the following paragraph and the one, which follows, were conducted in the United States or the United Kingdom).

In terms of students who may be likely to drink more than others, White students are more likely to begin binge drinking in university than students from other races (including African American and Asian students). Student who report that they binge drink, may be also more likely to give reasons for binge drinking that are related to the perception that everyone drinks and that they drink to fit in with their peers. The perception that drinking alcohol and abusing alcohol is common at one's university is associated with high drinking levels in students, and those who believe that their peers on campus drank alcohol and engaged in heavy drinking on a regular basis actually report the highest levels of alcohol consumption. Additionally, heavy alcohol consumption may be more likely to occur with students who live away from home, who come from wealthy backgrounds and have parents who are well-educated (Dantzer, Wardle, Fuller, Pamplona & Steptoe, 2006; Novak & Crawford, 2001; Weitzman, Nelson &Wechsler, 2003).

Some of the reasons students use alcohol and other recreational drugs may include using them during times when they are undergoing stressful experiences and as a mechanism for coping with current life stressors. Evidence shows that university student drinking may also have a social purpose, acting as a means of bonding and socializing with peers (Broman, 2005; Cooke et al., 2006; Kuther & Timoshin, 2003).

The Relationship Between Race and Adjustment

(It should be noted that the studies referred to below were conducted in the United States where White individuals are the majority of the population. In South Africa, White individuals are the minority of the country's population and Black individuals are the majority of the population. Technically speaking, however, White students would be the minority race group at some universities in South Africa and the majority at others).

Students who feel that they fit in with their institution do so because they bring with them a set of values, norms, beliefs, which are similar to others at their institution or they have developed these after they arrived (Bean, 1985).

Research suggests that Black students who attend historically White universities experience greater difficulties adjusting than Black students who attend Black universities because there is often incongruency between the experiences they have had in the past or their own norms and beliefs and those of the institutions they attend (e.g. Adan & Felner, 1995; Jay & D'Augelli, 1991; Sennett et al., 2003). Generally speaking, minority students are less likely to feel a sense of belonging to their university than White students (Johnson et al., 2007).

In addition to the general stressors of university, Black students at predominantly White universities may also experience racism, racial discrimination race related stress (e.g. insensitivity of White students towards Black students and insensitive attitude of the faculty toward Black students), which may influence their psychological and academic adjustment. Furthermore, Black students may feel alienated due to a lack of Black presence in the classroom and also by the lack of programmes geared toward Black students. Black students may also report having less social support available to them than their White peers (Jay & D' Augelli, 1999; Neville, Heppner, Ji & Thye, 2004; Von Robertson, Mitra & Van Derlinder, 2005).

However, having a positive perception of the racial climate at one's campus is significantly associated with students' sense of belonging to their institution and cross-racial interactions between students, such as dating and dining have also been shown to add worth to students' intellectual abilities, their social skills and even a level of interest in their community. Feeling that social support is available and adequate is associated with physical and emotional well-being for both White and Black students (Chang, Astin & Kim, 2004; Jay & D'Augelli, 1999; Johnson et al., 2007; Von Robertson et al., 2005).

Disadvantaged Students and Adjustment

Students who come from disadvantaged backgrounds are at risk for poor adjustment to university and attrition for a number of reasons. Students who come from lower

socioeconomic status (SES) backgrounds may be at risk for attrition, because these students are generally less academically prepared than their high SES peers. Students from disadvantaged backgrounds may also participate less in extracurricular activities than their high SES peers and are thus less connected to their university peers. They generally work more, study less and report lower academic results than students from high SES backgrounds (Braunstein, McGrath & Pescatrice, 2001; Braunstein et al., 2006; Walpole, 2003).

Other reasons students from lower socioeconomic backgrounds may be at risk for poor adjustment, include the fact that these students generally have parents who did not attend universities. Their parents thus cannot share their experiences or provide guidance as to what to expect from the university experience. These students also often have older siblings who have not completed high school, which does not set up good examples of perseverance in education. First generation students (i.e the first individuals in a family to attend university) (Grayson, 1997) are disadvantaged in the sense that their peers who have parents with university degrees, may have been familiarized at an early age with certain aspects of university life and what to expect when they get to university, whereas they have not been. Having parent(s) who attended university may also provide cultural and social capital and may affect the way students interact with their institution and thus the way they adjust to university (Bean, 2005; Cabrera & La Nasa, 2001; Martinez, Krull, Sher & Wood, 2009; Warburton, Bugarin, Nunez & Carroll, 2001). This suggests that there is greater congruency of experiences before coming to university with life at university for students whose parents attended university, which may allow them to fit in better than their first generation peers.

First generation students also generally have lower grade point averages, which further places them at high risk for attrition. Having a lack of funds as a first generation student also places the individual at higher risk for dropping out and lacking an academic scholarship is a better predictor of attrition than low parental education. However, disadvantaged students who receive needs-based financial aid and study grants may make them more likely to continue with their studies (Martinez et al., 2009; Warburton et al., 2001).

Living Environment and Adjustment

Research has shown that where students live plays an important role in predicting how they adjust to university life. For example, living in a university residence may have benefits and negative consequences for students. Students across racial and ethnic groups, who perceive that their residence hall is a socially supportive as well as academically supportive environment, are significantly more likely to have a sense of belonging to their institution than those who do not (Johnson et al., 2007).

Students who live in residence halls, which have programmes in place to encourage student social interactions, academic interactions well as offering mentoring, have been shown to be better socially adjusted than students who live in residence which do not offer such programmes. Social support from friends may also play a significant role in preventing loneliness in female resident hall students and parents may be important in preventing loneliness in male residence hall students who are making the transition from high school to university (Epochs & Roland, 2006; Eshbaugh, 2008). However, students who live in residential housing are also more likely to report binge drinking, which could have a range of negative consequences (Weitzman et al., 2003).

On the other hand, students who live in housing other than university owned properties, such as their own apartments or parents' homes during their first year at university may be more likely to dropout during the first year than those who live on campus. Reasons for this may include that living on campus allows for better connections and interactions with peers and with university staff and perhaps a better commitment to their tertiary education through these interactions (Bozick, 2007).

As the literature suggests, students making the transition to university face many challenges, which include those related to the personal, social, academic demands of adjusting to university life. An extreme consequence for students who cannot adjust to the demands of university life is that they may dropout. Student attrition causes great financial losses for tertiary education (Kiser & Price, 2008), and dropout has the potential to lead to a range of negative consequences for the individual who leaves. For example In South Africa, a student dropout rate of 20°/0 means that about R1.3 billion in government subsidies are spent every year on students who do not complete their study programmes, which are funds that are wasted but could instead be used to

address past inequalities of the South African higher education system (National Plan for Higher Education, 2001).

Dominant Theories of Student Dropout

There are two dominant theories, which provide a comprehensive framework within which to look at the reasons students leave university. One is Tinto's (1975) Student Integration Model and the other is Bean's (1985) Model of College Student Dropout Syndrome. These theories stress the importance of students integrating into the university environment as well the importance of their commitment to the university in determining university outcomes. University outcomes can include academic performance, persistence, and even psychological adjustment (Robbins et al., 2004).

In trying to understand more adequately some of the reasons students drop out of university, Tinto (1975) formulated a longitudinal theoretical model, the *Student Integration Model.* This model theorizes that the process of dropout from university can be seen as one, which takes places over an extended period of time and involves interactions between an individual and the academic and social systems of the college he/she attends. During this process, the individual's experiences in the academic and social systems (as measured by his/her normative and structural integration) continually adjust his/her goal commitment and commitments to the institution in ways, which may lead to either persistence and/or to forms of dropout. The model emphasizes the need for there to be congruency between the student's characteristics (e.g. his/her needs, his/her skills and interests) and those of the tertiary institution he/she attends.

Academic and social integration lie at the core of this model (Pascarella & Terenzini, 1980). Being able to integrate into the university environment both socially and academically influences whether students are committed to their academic and career goals and to their tertiary institution; the more commitment on any of those levels, the less likely the student is to drop out. Students are able to experience and learn the values and requirements of their tertiary institution by their interacting with academics, other university staff, and their peers (Bean, 1985). More specifically, in this model Tinto postulates that features of individuals' family backgrounds (e.g. socioeconomic status, where they live, value systems), as well as their individual

qualities (e.g. demographic variables such as race, sex), the characteristics of their pre-university education (e.g. high school grades and achievements, the environment in which they were educated), their motivation for academic achievement, and what they expect to achieve influence the individual's educational expectations and commitments. These features of the individual, that have just been mentioned, together play a large role in influencing how they are academically and socially integrated into the university environment. The model argues that when given the student's personal characteristics, prior experiences, and commitments of the student, it is the individual's academic and social integration into the college system that most directly relates to whether he/she will continue at the institution. Social and academic integration lead to levels of commitment and the higher the degree of integration of the individual into the college systems, the greater his/her commitment will be to the institution and his/her goal of completing university. The interaction between the individual's commitment to the goal of completing university and his/her commitment to the institution that determines whether or not the individual decides to drop out from college. It is thus assumed that either low goal commitment or low institutional commitment can lead to dropout. In other words, the lower an individual's commitment to the institution, the more likely he/she is to drop out from that institution.

Bean (1985) postulated a *model of college student dropout syndrome.* In his opinion, dropout syndrome includes a combination of a student's intention to leave university, discussing leaving with someone, and the actual act of dropping out. Dropout is defined in this model as "the failure of a student to enroll at a campus during spring semester to enroll at the same campus during the next fall semester" (p. 36). The central argument of this model is that university grades, institutional fit and institutional commitment will predict dropout syndrome. In terms of the conceptual flow of the model, *academic* (these are academic performance before matriculation and academic integration); *social psychological* (these are goals, the utility of one's education, feelings of alienation, social life, contact with the faculty); *environmental factors* (these are finances, having an opportunity to transfer to another institution, having friends outside of the university one attends) are expected to influence three factors that are assumed to result from the socialization or selection processes of the individual and these three factors predict dropout syndrome. The three socialization/

selection factors which predict dropout syndrome include, (a) *university grades* (this indicates a positive external assessment of a student's past behavior; (b) *Institutional lit* (this indicates how the student subjectively feels regarding the extent to which he/she currently matches the norms and values of his/her university peers and mentors; (c) *institutional commitment* (this refers to a student's personal attachment to the institution he/she attends with regards to extending into the future (in other words, a student who has higher educational goals such as intending to graduate would have high levels of institutional commitment).

According to the model, the two academic factors, which should have the most impact on university grades are pre-matriculation academic performance and academic integration. There are also two social psychological factors, which are theorized to affect university grades and these are contact with the faculty and having a social life. In terms of institutional fit, the academic factors having high levels of academic integration is most likely to enhance institutional fit. The social psychological factors, which are mostly likely to enhance institutional fit, are perceiving that one's education is useful and having a social life, and also having contact with the faculty. However, feeling alienated is likely to reduce fit. The environmental factors which are likely to reduce institutional fit include a lack of finances, perceiving that there is an opportunity to transfer to another institution, and the desire to be with someone one is close to who does not attend the institution. In terms of institutional commitment, the same academic factor, which enhances institutional fit, should enhance institutional commitment (i.e having high levels of academic integration). The social psychological factors, which are mostly likely to enhance institutional commitment are perceiving that one's education is useful and having a social life and having contact with the faculty, whereas feeling alienated is likely to reduce fit.

The Student Integration and the Model of College Dropout Syndrome have much in common, including that they see students' perseverance at university resulting from a multitude of factors that interact over time. Both models also take into account and argue the influence of factors that were present in the individual or which the individual was exposed to before entering university in how they integrate on a social and academic level at university. The models both also stress that, ultimately, for students to persevere with their university careers it is imperative for there to be a

successful fit between the person and the tertiary institution he/she attends; adequate social and academic integration into the university environment may therefore be the most significant predictor of whether a student persists with his/her studies (Cabrera et al., 1992; Robbins et al., 2004).

The two models also differ in a number of respects, however. Bean (1985) points out that Tinto's (1975) model includes family background and individual attributes which in the Bean model are believed to manifests in 'social-psychological factors'. The models' definition of "dropout" also differs slightly: Tinto only included voluntary withdrawal in his measure of dropout, whereas Bean includes all forms of dropout and emphasizes students' intention to leave and openly talking about intentions to leave in his definition. Another difference is that what Tinto refers to as 'initial goal' and 'institutional' commitments is presumed to be presented later in Bean's model in the form of 'institutional' and 'goal' commitments. Additionally, in Tinto's model academic performance and intellectual development are assumed to lead to academic integration, whereas in Bean's model academic integration is seen as a precursor to, rather than a consequence of, good grades. Furthermore, Tinto's model assumes that goal commitment and institutional commitment have a direct effect on dropout, whereas Bean's model postulates that institutional commitment and institutional fit presumably directly affect dropout *syndrome* (i.e the intention to leave, discussing leaving and attrition).

The literature supports the aspects of the models which highlight the importance of successful academic integration for first year students, For example, making a smooth transition academically is correlated with students' having a better sense of belonging and being academically prepared has been shown to be associated with a greater likelihood to persist at university (Braunstein et al., 2006; Johnson et al., 2007). In addition, higher high school grades, performing well academically in the first year of university and specifically in the first semester has a significant impact on student retention, while students who do not perform very well academically are likely to drop out (Braunstein et al., 2000/2001). However, for some students, high school may not prepare them well enough for the numerous demands of university life; for instance, even the most academically strong individuals may find the level of work challenging (Tinto, 1985).

In terms of the importance of social integration in the models and the literature related to this, a smooth social transition to university significantly predicts a sense of belonging in students from across racial groups (Johnson et al., 2007). Research has shown that faculty members are important socializing agents in the university experience and faculty interactions can help students achieve academically, feel college satisfaction, help students personal and intellectual development, as well as encourage students to persist in their educational and career aspirations (e.g. see Lamport & Coll, 1993 for a review on the literature of student faculty interaction).

More specifically, students who interact with socializing agents such as the faculty and peers have been shown to develop general cognitive skills, which is associated with college persistence. Furthermore, students who are involved in their campus or learning community have a tendency to do better academically than those who are not (Pascarella & Terenzini, 1991; Zheng, Saunders, Shelley & Whalen, 2002).

On the other hand, students with psychological problems and who lack support and encouragement from friends or family may be at great risk for taking steps to drop out of university before even approaching someone to discuss leaving their institution. Students who (a) believe that lectures are a waste of time, (b) lack feelings of any connection with their institution, and (c) feel as though no-one wants to help them, are likely to have thoughts about leaving university and to talk to someone about leaving university. Additionally, factors which may place students at a greater risk for dropping out of university include perceiving that their university lacks diversity, when their social life does not meet the expectation they had, when they are not emotionally and academically prepared for life at university and when they do not feel their college experiences have been satisfactory (Braunstein et al., 2006; Freeman, Hall & Bresciani, 2007).

Taking into account the central argument of these models, a student should fit with the institution he/she attends, thus academic and social integration are crucial for students to persevere with their studies. It is clear from previous research that adjusting to university on many levels including social levels and academic levels

may be more difficult for certain individuals with regard to their sociodemographic qualities. These students may thus be at risk for dropping out of university.

South African First-year University Students

South Africa's system of higher education is still largely in transition (Ndebele, 2004). South African universities continue to show low graduation rates. According to the Department of Education's National Plan for Higher Education (2001), the total growth in graduates has lagged behind enrolment growth in higher education. The National Plan also reports that on average, in South Africa, about 20% of all undergraduates and postgraduates dropout of the tertiary education system every year. The Department of Education (2001) shows a drop in the average graduation rate to 15% between the years 2000-2005, from the higher 17% graduation rate which was reported by The National Plan for Higher Education between period 1993-1998 (Scott, Yeld & Hendry, 2007).

More distressing, the average dropout rate for students who are entering higher education for the first time is 25%. What this means in absolute terms is an annual loss to the education system of around 120 000 students who do not finish their studies. The National Plan (p. 18) states:

These poor graduation and retention rates and high drop-out rates are unacceptable and represent a huge waste of resources, both financial and human... Moreover, the cost to those who drop-out, in terms of the moral and psychological damage associated with "failure", is incalculable.

In light of the poor graduation output rates, it appears that first-year university students in South Africa may face even more challenges in adjusting to university life. The challenges, which South African university students face, are integrally linked to the country's political past. The broad set of social, economic and cultural backgrounds of students who are currently entering most of the universities in South Africa provide them with a range of different kinds of life experiences. When one combines this with the varied abilities individual attributes and motivations, the outcome is that South African students often have dramatically unequal levels of preparedness for their university careers (Fraser & Killen, 2005)

The Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions (2008) (formed in response to the racial attacks at UFS) found that some of the greatest challenges South African students faced included socioeconomic factors, and in particular issues of social class were raised many times by students. Students stated that social class acted as a factor, which inhibited their capacity to access higher education opportunities and also their ability to take full advantage of the variety of opportunities that were available.

Students who do not speak English as a first language may be amongst those who continue to face challenges at institutions. For example, students who are English second language speakers may struggle academically at university, but being a second language English speaker may worsen educational and cognitive problems rather than cause under-preparedness in students (Miller, Bradbury & Pedley, 1998).

To further highlight the issues South African students face, a study, which explored the nature of first year student experiences in South Africa, Bojuwoye (2002) investigated which particular aspects of the university environment students assessed as stressful during the first few weeks of university. Results indicated that students assessed not having sufficient financial support as the most stressful aspect of university life. This was followed by demands of the university environment as the second most stressful factor and thirdly by aspects related to the administrative processes of life at university. There were significant differences found between male and female respondents, with females reporting that they experienced more stress and also reporting more stress in more spheres of university life as presented in the questionnaire used to assess stress. There were, however no significant differences between respondents based on which institution they attended.

South African Students and Substance Use

Furthermore, problems related to alcohol use may also be an issue facing South African students. Similar to the high rates of drinking reported in US studies of student drinking, high drinking rates have also been found amongst South African

university students. Peltzer and Ramlagan (2009) report rates of 22% to 80% of current alcohol use, between 6% to 43% past month binge drinking, and rates of 17.1% to 58% of hazardous or harmful drinking in students. Furthermore, the South African Community Epidemiology Network on Drug Use (SACENDU) (2008) found that of those admitted to alcohol and drug use treatment centres across Cape Town during January to June, 12% were students/learners. In Gauteng, of those admitted to alcohol and drug abuse treatment centres, 15% were students/learners. This is a problem for students as risky drinking and substance use has been shown (amongst many other negative outcomes) to be associated with poor functioning and poor adjustment to university (e.g. NIAA, 2007; Pascarella et al., 2007).

Context of Education in South Africa

Many of the factors that appear to make adjustment difficult for South African students lie within the context of the country's Apartheid legacy. In this context, the South African educational system has led to many inequalities in the standard of education across the population. It has also lead to many disparities among White [2], Black African, Coloured and Indian student representation at South African universities (Kagee, Naidoo & Mahatey, 1997).

Specifically, during Apartheid, schools were controlled by four different education authorities according to race groups and thus had different levels of resources allotted to them (refer to endnote [1] for an explanation of the four education departments). Learners who attended schools, which fell under the Department of Education and Training (DET), were likely to be exposed to an inferior school system. Black schools were generally under resourced compared to White schools in terms of quality of teacher training, teacher-to-student ratio, and teaching essentials (e.g. books, paper, and other classroom equipment). Thus, students who attended historically 'black'

[2] The use of the terms 'White', 'Black African', `Coloured'and 'Indian', does not imply that we accept them as valid. These terms refer to the four population group categories that were used under the Apartheid racial classification system. More specifically, 'White' refers to people who originate from Europe, 'Black African' refers to people who are indigenous to Africa, 'Coloured' refers to people who are of mixed race descent, and 'Indian' refers to individuals who are descendents of indentured labourers who were brought to South Africa from the Indian subcontinent (Sennett et al., 2003). These terms are necessary in the current study as demographic markers in order to discuss the disproportionate allocation of economic and educational resources due to the legacy of Apartheid.

schools are considered to be at an educational disadvantage. (Fiske & Ladd, 2006; Gilmour & Soudien, 1994; Huysamen, 2000; Sennett et al., 2003).

Although South Africa is now a democratic country and the departments of education for different population groups integrated in 1995, and schools are no longer segregated with educational resources now in theory distributed more fairly, historically black schools may remain at an educational disadvantage. Learners who attend these schools still face under qualified teachers, facilities that are insufficient and shortages in teaching and learning materials (Fiske & Ladd, 2006; Huysamen, 2000; Sennett et al., 2003).

Furthermore, the majority of Black African learners still live in areas that were former homelands or townships where they can only access the schools, which were historically disadvantaged. Many Coloured and Black learners still live in urban townships that are located in areas a distance away from other parts of the urban area. Families in these areas outside of the former homelands remain poor, and faced with the financial problems of transportation and the cost of school fees they have no choice but to attend the very schools they were restricted to during Apartheid. Even in some instances where historically disadvantaged schools have had greater access to resources they have not necessarily delivered better educational outcomes (Fiske & Ladd, 2006; Van der Berg, 2001).

These educational disadvantages as well as socioeconomic disadvantages leave many Black students under-prepared, compared to White students, for what is required from them at tertiary education level. Consequently, a large number of Black students do not perform well academically or drop out before they have finished their degrees (Kagee et al., 1997; Huysamen, 2000). Woolacott and Henning (2004) define under-preparedness as the condition where there is incongruency between the knowledge and competencies of the student entering the educational programme and the assumed knowledge and competencies on which the academic programme is based. There is also the implication attached to under-preparedness that the student's inherent ability may be hidden by their lack of knowledge, skills and academic ability and they are likely to perform below their potential and many cases will fail, when under different circumstances may actually have the ability to pass.

Disadvantaged Students in South Africa

Students from educationally and economically disadvantaged backgrounds are at increased risk for facing difficulties during the adjustment process from high school to university (Sennett, et al., 2003). Students who come from educationally disadvantaged backgrounds may, however eventually overlap with their peers from more advantaged educational backgrounds in their academic performance as they start to adjust to the demands of life at university. This is possible for these under-prepared students or 'late bloomers' if there are sufficient support programmes available at universities, which can assist disadvantaged students. They can also catch up to their peers if they are exposed to university lecturers who are well qualified and have a good command of English (Huysamen, 2000). In the context of South Africa, a disadvantaged student may be viewed as someone who is in all likeliness Black, has been educated under the apartheid education system which has left them relatively educationally disadvantaged (Nunns & Ortlepp, 1994).

However, it should not be assumed that all Black students who enter university should be considered disadvantaged as many students have attended well-resourced independent schools and many have obtained their school leaving certificates under White education authorities (Shochet, 1994). In fact, what was seen as a predominantly White and elite, the independent school sector has undergone major demographic changes with there being greater racial equity in these schools. For example, a national South African survey found that Black African learners constituted 58.3% of total learners at independent schools and Indian and Coloured learners constituted 12.3%, whereas White learners only constituted 29.4% of the learners at independent schools. However, most of the White learners attended high-fee independent schools and most of the Black learners attended low-to average fee schools. Economic class may thus be a better determinant than race as to who attends which school in South Africa today (Du Toit, 2003; Hofmeyr & Lee, 2004).

In addition, in South African currently there is no clear dichotomy between schools, which are considered to be public and those, which fall into the independent category. Thus, schools that are considered to be public schools are often suburban ex-White schools that are self-governed and are characteristically more like well-resourced

independent schools than low-resourced public schools that serve disadvantaged Black learners. These ex-White schools generally charge high school fees in addition to getting subsidies from the government. On the other hand, poor independent schools which are located in rural areas or informal settlements may experience all the problems faced by poor public schools because their status as independent schools limit the subsidy amount they can receive from the government (Hofmeyr, 2003).

In South Africa, students who received needs based funding are also considered to be disadvantaged. For these students, appraising their academic workload as too heavy may make them more likely to be poorly adjusted to university and their perceived stress is a strong predictor of how they adjust to university. Additionally, students who perceive that the academic requirements of university are too challenging are likely to obtain poorer grades at the end of the year (Petersen, 2006; Louw, Petersen & Dumont, 2009).

Race and Adjustment for South African Students

First generation students may find the adjustment from high school to university particularly difficult and traumatic. In South Africa, first generation students are also most likely to be Black Africans who as a consequence of Apartheid come from disadvantaged socioeconomic and educational backgrounds, which may make them particularly vulnerable to the change from the high school environment to university life (Kagee et al., 1997). The lack of funds may hinder Black students' academic progress as they are often unable to afford the tuition fees or accommodation fees and even the most basic expenses they require such as books and stationary, and the cost of transport may be a financial problem (Huysamen, 2000). Those who do reach university do not perform well or worse than that, actually dropout before finishing their degree (Kagee et al., 1997; van Heerden, 1995). In fact, graduate output figures from a Cape Town university show great differences in graduate output numbers across population groups after five years for undergraduates who entered the university for the first time in 2003. A total of 59% of Black African students graduated, a total of 64% of Coloured students graduated, a total of 71% of Indian students graduated and a total of 78°/.9 of White students graduated. (UCT Institutional Planning Department, 2008). This suggests that Black and Coloured students may be facing many more challenges in the adjustment process than their White peers.

Black Students at Predominantly White Universities

In particular, the adjustment of Black students to White Universities holds its own set of social and economic challenges. Black students are not only faced with the pressures of adjusting to the physically new environment of the university campus, but also to adapting to a different set of belief and value systems as well as new social and cultural customs (Agar, 1990; Huysamen, 2000). Thus, the new environment may be incongruent with the environment they are familiar with, making adjustment very difficult. In an article written for the Institute for Democracy in South Africa on race, education and democracy in South Africa after ten years, Jansen (CHET, 2004) suggests that in his experience of having worked at various universities, undergraduate students who attend universities that were formerly for White students only are severely alienated from each other. This is an alienation may appear to be only on a surface level but runs much deeper.

Furthermore, Toni and Olivier (2004) found that many Black female students in their study reported feeling confused and discouraged about their studies. They also felt that their academic modules did not make sense and were not relevant and they found it difficult to adjust to the campus environment. Some even said that they still experienced racial discrimination and that their needs were not catered for, and that they experienced language difficulties.

Similarly, Sennett et al. (2003) investigated the way students of different races adjusted to life in an historically White South African university environment and found that White participants in the study scored significantly higher on a measure of social adjustment compared to their Black peers. This suggests that the Black students were not as socially integrated into the university environment as the White students were. However, Black students did not report that they were low on goal-commitment and attachment to their institution or that they were low on academic adjustment. Non-cognitive factors such as coping strategies and family environment may play an important role for Black students at a mostly White university when predicting how they will perform academically (Malefo, 2000).

Higher Education in South Africa

The South. African government — in its Education White Paper 3 — emphasized the importance of equity to access to higher education as well as equity regarding the opportunity to succeed within higher education. Many positive changes have taken place in the higher education system in the past few years with regard to Black student enrolment, and a demographic makeup of the student profile that is more representative of the way of South African society is made up demographically. This is reflected in the fact that between the years 2000 and 2007, there was an increase in Black enrolments from 70% to 76%, with White enrolment decreasing from 30% to 24% of headcount enrolments. Coloured students, however only increased from 5% to 6% and Indian student headcount enrollments remained stable at 7%. In addition, female student enrolments increased from 52% to 56% (Hendry, 1998).

However, the racist attacks at the University of the Free State in 2008, suggest that universities and their students still find issues of integration, racism and discrimination, challenging. These attacks led to the establishment of a 'Ministerial Committee on Progress Towards Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions' (2008). The Ministerial report suggests that transformation in higher education is a challenge that all South African tertiary institutions face irrespective of their historical origins, thus it is something, which all institutions, including the historically disadvantaged institutions, should be focusing on. The overall assessment of transformation in higher education in South Africa suggests that the feelings of being discriminated against either racially or in terms of gender is something that is endemic within tertiary institutions. The report also states that no South African institution can indicate with confidence that the principles of non-racialism have been achieved, even if all universities do have policies in place to address issues of equity and transformation.

It may thus not only be characteristics of the individual such as the background, race or socioeconomic status or academic capabilities, which affect the adjustment of first year South African students. It may be characteristics of the institutions in the context of the country's political history, which also play a role in the adjustment of these students. Like secondary schools, universities, which were historically disadvantaged also suffered inequality and were generally under resourced.

Under the Apartheid regime, the Extension of University Education Act (1959) was passed in order to stop Black students from attending White universities. With the passing of this Act, six 'tribal colleges' emerged in South Africa. These included the University of the Western Cape (for Coloured students), the University of Durban-Westville (for Indian students), the University of the North (Turfloop), Zululand (Ngoye), Medical University of South Africa (MEDUNSA) and Vista and Fort Hare University, which was the university of the "homeland" of Ciskei. If Black students wanted to study at White universities, such as the University of Cape Town (UCT) or the University of the Witwatersrand (WITS), they needed to obtain permission from the Minister of Education. In seeking such permission, they had to convince the relevant government authorities that there were no suitable alternative facilities available at 'tribal colleges' (Divided Campus: South African Universities, 1986).

Even today, students who attend these historically disadvantaged universities may still find that they face many challenges such as being at institutions, which have large student bodies but often insufficient resources, funding and facilities. They may also find that the numbers of administrative and lecturing staff are often not sufficient to meet the needs of the large numbers of students. These difficulties may impact adjustment (amongst other things) to tertiary education for these students, which may become all the more difficult and they may become alienated (Kagee et al., 1997).

Increased competition between tertiary institutions has led to greater divide and has even in some instances made the racial divide between these institutions more intense. Following 1994, the opening up of tertiary institutions, which allowed Black students access to higher education at all institutions, had a negative impact on student enrolments at historically Black institutions. Historically Black universities were badly affected by the opening up of tertiary institutions. More specifically, between the time period 1993 and 1999, African student enrolments showed a decrease from 49% to 33% in the historically Black institutions, but enrolments showed an increase from 13% to 39% in historically White institutions, not including UNISA and Technikon SA. The deteriorating sustainability of many historically Black universities has been the outcome of falling enrolments as well as a collection of factors including rising student debt, the failure of governance and managers and general instability at

some of these institutions (National Plan for Higher Education, 2001). Historically black institutions also face a shortage of residence accommodation, and at many of these institutions, the student residences are in poor conditions (Report of the Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions, 2008).

Thus the adjustment to the academic environment for Black students at historically Black universities may be just as difficult. Some studies, but not many have looked at how Black students have adjusted at predominantly Black institutions (e.g. Adan & Felner, 1995; Kagee et al., 1997).

There is appears to be a paucity in the literature regarding how Black South African university students experience life at universities that are historically disadvantaged. The current study aims to explore differences in aspects of adjustment to university for Black African, White, Coloured and Indian students at historically disadvantaged universities as well as historically advantaged universities in South Africa.

The Role of Resilience

The National Plan for Higher Education (2001) in South Africa suggests that there is a need for universities to re-look at the issues that determine the academic success and failure of students. It also stresses that the South African context should be taken into account when investigating what lies beneath the factors that influence retention and graduate output for South African students (Fraser & Killen, 2005).

As the literature has shown, South African university students face many challenges, yet despite those challenges and often difficult circumstances, they manage to adjust and successfully navigate through the demands of university life. This raises the question of what allows these students to succeed. A possible answer to this question may be that these individuals are resilient. A further aim of this study is thus to explore the concept of resilience and its role in the lives of students who, given certain circumstances, may be predicted to be at risk for poor adjustment to university life (e.g. students who have low SES backgrounds, have fewer resources, and who attend historically disadvantaged universities) yet are adjusting well to campus life.

One definition of resilience is that it is the embodiment of the personal qualities that allow an individual to thrive in the face of adverse circumstances. Resilience can also be regarded as a measure of the ability to successfully cope with stressors (Connor & Davidson, 2003). Furthermore, the notion of resilience in education refers to students who still manage to succeed despite the fact they face many cultural, economic and social barriers and challenges. Studies have focused on protective factors associated with resilient individuals. These protective factors may be personal resources such as motivation and self-esteem, but they can also be external resources such as support from family, members or supportive figures at university (Cabrera & Padilla, 2004). Some studies suggest that resilience is a personality trait and thus inherent, however, Rutter (2007) argues that individuals can only become resilient once they are faced with adversity and that this process can vary from one context to the next. Furthermore, resilience is a process that may be developed in individuals and is based on interactions between an individual, his/her environment and his /her experiences and can thus be seen as dynamic (Connor & Davidson, 2003; Gillespie, Chaboyer & Wallis, 2007).

In a South African study, Dass-Brailsford (2005) explored the role of resiliency in disadvantaged students who were coping well academically, and found that some of the factors that were associated with resilience in this group of disadvantaged students as measured by academic success, included individual factors such as being high achievers, motivated, goal-oriented, taking initiative and viewing themselves as possessing agency in the world. These resilient students also had families who strongly supported them, and their relationships with role models, teachers and members of the community were seen as factors, which protected them.

In addition, Clauss-Ehlers, Yang and Chen (2006) highlight cultural factors such as having a sense of ethnic identity in influencing coping ability and resilience in youth as well as university students who come from diverse cultural backgrounds.

In relation to mental health, resilience is positively correlated with extraversion and conscientiousness and negatively associated with neuroticism (or being prone to negative emotions, poor coping skills and finding it difficult to control impulses) in university students (Campbell-Sills, Cohan & Stein, 2006). The resilience attributes of

hope and optimism have been shown to be important in the recovery of individuals from mental illness (Atkinson, Martin & Rankin, 2009). Resilience has also been shown to be associated with better health outcomes in individuals (Chan, Lai & Wong, 2006).

In light of the mentioned literature, the concept of resilience may be an important factor in exploring the predictors of adjustment, mental health and general health in South African students. The notion that resilience can be built, and may act as a protective factor for individuals has important implications in the context of this study in light of the challenges South African students face.

The Role of Subjective Social Status in Students' Adjustment, Mental and General Health

The literature regarding the transition and challenges of students' adjustment to first year university has outlined many factors, which predict that adjusting to university life may be more difficult for some students. These factors include those, which have to do with the background of individuals (e.g. socioeconomic status or the type of education they received), their demographic characteristics (e.g. race, gender), personal characteristics such as their mental health or characteristics of the institution they attend. This being said, students who may be at risk for poor adjustment may in fact be well adjusted, and students who are at risk for poor mental health and poor general health may in fact report that they are be functioning well. The role of subjective social status thus is of interest in this study in exploring some of the reasons students could still be functioning and adjusting well during their first year despite some of challenges they face.

The link between SES and health is also well established in the literature. In particular, many studies showing that low SES is associated with poor health outcomes, mortality and even poor mental health (e.g. Adler et al., 1994; Goodman, 1999; Goodman, Slap & Huang, 2003) and even higher exposure to life stress (e.g. Brady & Matthews, 2002).

Wilkinson (1997a) argues that relative standing has a stronger impact on health than absolute levels of SES. Thus, there should be an even greater association between an individual's subjective social status and health than the traditional measures of SES and health (Adler, Epel, Catellazzo & Ickovics, 2000). The role of subjective social status is thus particularly interesting because previous research has shown a strong association between high subjective social status and psychological factors that possibly predispose individuals to better health outcomes. For example, high, perceived SES predicts positive psychological characteristics in adolescents (Chen & Paterson, 2006). A relationship also exists between subjective social status, an individual's current physiological functioning and the way they report their health. Low subjective socioeconomic status is associated with greater amounts of stress and it seems that it may directly increase stress or it may increase an individual's vulnerability to the negative consequences of stress. The way individuals perceive

their social status correlates significantly with indices of stress (for example, pessimism, perception of control, heart rate, sleep latency, the way one generally copes) and chronic stress (Adler et al., 2000).

Although most research in the association between mental health and SES has been focused in North America, Australia and Europe, a large study done in the developing country setting of South Africa was consistent with previous findings that having low SES and low social capital is associated with increased psychological distress. Having low SES as well as low social support is associated with a greater incidence of life events as well as traumatic life events (Myers, Stein, Grimsrud, Seedat & Williams, 2008).

In addition, race/ethnicity as well as SES may be risk markers for being exposed to stress. For example, Black students may have higher levels of stress than White students and students from low SES families and who have a low perception of their SES may have higher stress levels (Goodman, McEwen, Dolan, Schafer-Kolkhoz & Adler, 2005).

While the measurement of subjective social status is a fairly new concept, the idea of relative standing is not new and can be viewed within the framework of relative deprivation (RD) theory (Davis, 1959). Relative deprivation arose as a formal theory out of the sociology field. Relative deprivation arises when one becomes aware of there being a discrepancy between the real satisfaction level of one's needs and the desired satisfaction level of one's needs. Therefore, the actual level is less than the level that one expects. As postulated by RD theory, it is the subjective assessment of one's status and not only one's objective status within society that functions to evoke feelings of anger and resentment about one's social situation. RD theory also postulates that there must be certain preconditions present in order for perceptions of relative deprivation to arise (Bernstein & Crosby, 1980). The necessary preconditions to the experience of relative deprivation as suggested by Davis (1959) include that one (a) wants some desired good, X, (b) compares oneself to a group who has X, and (c) feels entitled to X, thus "when a deprived person compares [him/herself] with a nondeprived, the resulting state will be called 'relative deprivation' "(p.283).

Furthermore, theorists of relative deprivation have distinguished between personal or egoistic deprivation and fraternal deprivation. Egoistic relative deprivation develops when individuals compare themselves with other individuals in their own membership reference group and feel comparatively deprived. Fraternal deprivation arises when there is a comparison between one's own reference group with other social groups and the individual perceives his/her group to be comparatively deprived (Mummendey, Kessler, Klink & Mielke, 1999; Van Dyk & Nieuwoudt, 1990).

Individuals will react to what *they perceive* is reality and not necessarily to what the social reality is, and integral to the act of defining social reality are the psychological processes of social comparison and the emergence of feelings of relative deprivation and injustice (Appelgryn & Nieuwoudt, 1988). Reference groups can be seen as having a 'comparative' or 'nonnative' function. A 'comparative's reference group would be the group whose situation or qualities one would compare with one's own. A 'normative' reference group would be the group from which one would draw one's standards. A reference group does not even have to be a group, but could be a single person or an abstract idea (Runciman, 1966). A reference group could also be a group with whom one has an actual relation (i.e. a membership group), or a group can be one where an individual has no actual relation (non-membership group). The individuals or groups, which form the basis for the comparison could be of the same status as the individual or of a different status to the individual (Merton & Rossi, 1950).

Although relative deprivation will not be measured directly, when placed in the context of the present study, a state of relative deprivation may arise in individuals when they compare the resources their family has (such as access to money, education, jobs) with their university peers or with others in society and find that there is a discrepancy between what they have and what others have. Additionally, individuals within the university community may compare their own academic abilities and the amount of respect they perceive they are receiving from others with the academic performance and social regard received by their university peers. When the discrepancy between what they desire and what they believe they are entitled to is perceived as unfavourable, negative psychological functioning may arise such as depression and anxiety.

Furthermore, studies have shown that there is a relationship between relative deprivation and health outcomes. For example, higher relative deprivation is associated with poorer self- rated health, and relative income deprivation with lower self-rated health is associated with deprivation and may be the link between income inequality and population health. Thus, it may not be of one's absolute income, which impacts on health and mortality, but how one compares one's economic position with the rest of society (Aberg, Fritze, Lundberg, Diderichsen & Burstrom, 2003; Wilkinson, 1997a, 1997b).

Additionally, individuals with low relative income may be at a greater risk for experiencing a mental health disorder. For example, relative deprivation is associated with an increased probability of experiencing depression and anxiety or panic disorders. There is a possibility that even a 25% percent decrease in relative deprivation could decrease the chance of experiencing any mental health disorder by 9.5%. (Eibner, Sturm & Gresenz, 2004).

Wilkinson (2007) suggests that since ill health as well as a range of other social problems (e.g. mental illness, homicide, racism) associated with social status within societies are also more common in more unequal societies there is an implication that income inequality is at the core of the creation of deep-seated social problems that are associated with poverty, relative deprivation or low social status.

Although this study does not wish to measure or focus on relative deprivation it does wish to focus on subjective social status. The value of doing so may be seen in the South African context where many students are socioeconomically disadvantaged in absolute terms but may still perceive themselves favourably in terms of their relative social standing amongst peers. This implies that students who have low absolute SES but high perceived social standing within their university community may still become leaders within their university, which may have positive outcomes for their adjustment, mental health and physical health.

An important aim of this study is thus to explore the association between subjective social status, the adjustment and mental and general health functioning of first-year South African students.

Specific Aims and Hypotheses

Although there are many factors that may make the first year of university difficult for students. South African students may face more challenges adjusting to university in light of the country's Apartheid history and historically disadvantaged students may be especially at risk for poor adjustment to university.

Thus this study aims to explore the relationships between socioeconomic status, subjective social status and mental health in first-year students at four South African universities. A further aim is also to explore relationships between socioeconomic status, subjective social status and general health as well as adjustment to university. In addition, this study also explores the role of resilience, which has previously been shown to be associated with students' success at university in the face of often, difficult circumstances and despite some of the characteristics, which place them at risk for poor adjustment. It also explores the relationship between resilience and mental health problems and general health problems.

More specifically, in relation to exploring relationships between the variables outlined, my hypotheses are these:

Hypothesis 1: Subjective social status will be associated with and be a better predictor of mental health, adjustment and general health in first-year students than an estimated measure of actual socioeconomic status and other sociodemographic variables, which have previously been shown to predict mental health, general health and adjustment in first year students.

Hypothesis 2: Resilience will be associated with and be an important predictor of students' quality of adjustment to university, their mental health and their general health.

METHODOLOGY

Research Design

This study took the form of a relational research design in which I explored relationships between independent variables and the outcome variables in question.

Sampling Strategy

First-year undergraduate students from the departments of psychology of four South African universities were recruited to participate in the present study. It was assumed that all were proficient in English because the four universities from which they were recruited are English medium institutions. The universities were selected to participate based on the fact that two are historically disadvantaged institutions (HDIs) and two are historically advantaged institutions (HAIs).

The target population for this study was students who were in their first year of university studies in 2009 and who were taking a first-year psychology course at the participating universities. One reason for using first-year psychology students was that there are usually large numbers of students registered for this course, and thus there was the expectation of sampling from a large population. The target number of participants was 600-800, which appeared reasonable given the large numbers of students registered for first-year psychology courses at the participating universities.

The only exclusion criteria set out was with regard to the age of participants was that their data would not be used if they were 30 years and above. An explanation will follow in the results section.

Data collection was in the form of an online survey, which took approximately 40-45 minutes to complete. Data collection took place from the beginning of May 2009 and continued through November 2009.

Course conveners for the first-year courses were mailed an advert for the survey in order for them to distribute it to their students either via webserves or course administrative websites. The survey advert briefly described the intention of the survey, informed students of a prize-draw cash incentive, gave a link to the survey,

and invited students to contact the principal investigator should they require any additional information. Course lecturers were asked to announce the study during lecture periods. I announced the study during lectures at two universities based in the Western Cape. Once participants accessed the survey via the link they were given, they were taken to a page that briefly described the study and requested informed consent to participate. After the student consented to participate, he/she was taken to the survey page. Reminder emails were sent to the course conveners for the duration of the data collection period.

Because the response rate to the online survey was poor, data collection in the form of printed copies of the online questionnaires took place from September 2009 until November 2009 at one of the Western Cape HDIs. Lecturers at the participating university allowed me to announce and explain the study to students during specific first-year lecture periods. The questionnaires were handed out during these lecture periods and students were instructed to either complete them while I was present or to hand back the completed questionnaires to a designated lecturer or administrative official at their university. I then attended lectures to remind students to return their questionnaires, and lecturers were also asked to remind students to complete and return their questionnaires over the course of the collection period.

The target number of participants was, unfortunately not obtained. In particular, there were relatively few participants at HDIs. One reason for this may be that students at these universities do not always have access to the Internet because (a) their universities do not have enough public-use computers to meet the demand of the large number of students who need to make use of them, and (b) they do not have internet access in their places of residence.

Participant Characteristics

The final sample for the present study consisted of 336 students. They ranged in age from 17-28 years I decided that students who were aged 30 years and above would not be included in the analyses, thus nine of the original 445 who completed the survey were not included in the statistical analyses, leaving 336 as the final sample. The reason for this exclusion criterion was that I assumed students who were in their 30s would probably not face the same kinds of challenges in adjusting to university

that are common to students who begin undergraduate university in their late adolescence and in their 20s.

The final sample included 55 (16.4%) males and 281 (83.6%) females. Among this number there were 52 (15%) Black African students, 158 (47%) White students, 100 (30%) Coloured students, 16 (5%) Indian students and 10 (3%) students who did not report fitting into any of these racial groupings. A total of 258 (77%) students reported that they spoke English as a home language/first language, a total of 25 (7%) students reported that they speak Afrikaans as their home language , a total of 41 (12%) students reported that they speak an African language that is one of South Africa's 11 official languages as their home language, and a total of 12 (4%) students reported that they speak a language that was neither English nor one of the African languages that are one of the 11 official South African languages as their home language. The 11 official languages spoken in South Africa include: Afrikaans, English, IsiNdebele, IsiXhosa, IsiZulu, Sepedi, Sesotho, Setswana, SiSwati, Tshivenda, Xitsonga. In the sample, 247 (74%) students attend historically advantaged institutions (HAI) and 89 students attend historically disadvantaged institutions (HDI). Refer to Table 1 in results for a detailed description of the sample.

The one historically disadvantaged institution is situated in the Eastern Cape Province which is mostly rural and one of the poorest provinces. The racial makeup in terms of enrollments for this university in 2007 included 7, 844 Black African students, 170 Coloured students, 66 Indian/Asian students, and 498 White students.
Two of the universities, one historically advantaged and the other historically disadvantaged are situated in the Western Cape Province of South Africa. The Western Cape Province is mostly made up of Coloured people (50%) and about 20% of the population is White and 20% is Black African. The student body of HDI situated in the Western Cape was made up of 5,457 Black African students, 7,145 Coloured students, 1,229 Indian/Asian students and 668 White students. The HAI in the Western Cape has one of the most diverse campuses in South Africa. The student makeup as per headcount enrollments for 2007 included 6,045 Black African students, 3, 024 Coloured students, 1, 726 Indian/Asian students and 9, 143 White students. The other HAI is in the Gauteng Province and in 2007 was made up of 27,

714 Black African students, 1,187 Coloured students, 2, 092 Indian/Asian students and 10, 848 White students in terms of headcount enrollments.

Ethical Considerations

Ethical approval for this study was obtained from the University of Cape Town Department of Psychology Research Ethics Committee. Further ethical permission was obtained from the relevant research ethical authorities, as well as from the Heads of Department, at the four participating universities.

The informed consent page of the online survey (and the corresponding page of the hard-copy version of the survey) informed students of the purpose of the study, and noted that their participation was completely voluntary and that they could withdraw at any point. Students were invited to ask further questions about the survey and were also told that they could contact me if they wished to with regards to the study. Confidentiality was also ensured by informing participants that their demographic and contact information, and their responses to the survey, would be stored in limited-access computers and that only the principal investigator, the principal investigator's supervisor, and the relevant university examination and ethics authorities would have access to that information. Finally, participants were informed that if they completed the survey they would be entered into a prize-giving draw to win R1700 in cash. In the case of one of the universities, the Psychology Department at that institution had a Student Research Participation Programme (SRPP) in place and students who completed the survey were given 1 SRPP toward their semester requirement in addition to being entered into the prize-draw.

In order to maintain participant anonymity, the survey software allocated each participant a random number. Students were not asked for any specific identifying information besides their email address. Email addresses were used in order to enter participants into the prize-giving draw and to send reminders. In this way, only the randomly-assigned number was associated with participants' demographic information and their responses to the survey questionnaires. At the end of the data collection period, students were entered into the prize-giving draw. The winning student, and the departmental administrator at his/her institution, was contacted via

email. An email was also sent to each participating university to notify students that the prize had been awarded.

Measures

Demographics

A short questionnaire gathered information about major sociodemographic variables such as race, sex and home language. It was important to enquire about participants' race as historically racial groupings were used as a formal guide to allocate economic and political opportunity in South Africa, with White individuals (i.e. those with European ancestry) being favoured over Black Africans

The demographic questionnaire also enquired whether participants completed their education at a private or public school, and whether they had repeated any grades during their schooling years. Further, it asked whether participants grew up in an urban or rural area and what their current living situation was (i.e. where they currently lived and how they traveled to university).

It was important to enquire about and report on the latter variables because in South Africa these are likely to be strongly associated with socioeconomic position in society. In the South African context, individuals who live in rural areas have typically not had as much access to services and education or as much opportunity for employment and to engage in formal economic structures as those individuals who live in urban areas (Myers et al., 2008).

Objective Socioeconomic Status (SES)

Questions that allowed me to obtain a measure of participants' absolute SES were included as part of the demographic questionnaire. The current study's estimate of SES consisted of the following: two traditional markers of SES (estimated household income while growing up and the highest level of education of the primary caregiver in participants' households while growing up), as well as estimated current household income.

Additionally, I drew from the recommendations of Myers, Ehrlich and Susser (2004, as cited in Myers et al., 2008) who suggest that when conducting studies examining

SES in developing country settings, the traditional markers may not be adequate in capturing the variation in socioeconomic positions. The reasons for this, they suggest, include that there is a considerably large informal economy and the sharing of resources is common, particularly in rural areas where people may barter goods and services instead of using income-based wealth. Following Myers et al. (2008), then, I used an asset index based around 17 items that together reflect individual and household wealth. This index comprises household ownership of appliances (e.g. refrigerator/freezer; vacuum/floor cleaner; television; video cassette recorder; radio; microwave; washing machine), other household resources (e.g. telephone; running water in the home; kitchen sink; flush toilet; automobile; domestic worker; and stove/hot- plate), and financial activities (e.g. shopping at a supermarket; using financial services such as a bank account or credit card; having an account at a retail store). The authors report excellent reliability (Cronbach's alpha = 0.92) for the index. These measures of asset ownership were then used to create an aggregate asset score and then placed into categories of I = 0-5 assets; II = 6-12 assets; and III = 13-17 assets.

Participants' past estimated household income and education, present estimated household income, and asset index scores were reported individually. Then, like Myers et al. (2008), we standardized all of those values and added them together to create an aggregate measure of SES. For purposes of the final data analysis, this standardized measure was then divided into tertiles that corresponded to low, medium and high SES.

Subjective Social Status (SSS)

The McArthur Scale of Subjective Social Status (Adler, Epel, Castellazzo, & Ickovics, 2000) consists of a 10-point self-anchoring scale in the form of steps on a ladder. The scale was developed in order to attempt to capture an individual's sense of his/her position in a social ladder that takes into account relative standing on many dimensions of socioeconomic status as well as social position (Adler & Stewart, 2007).

There are two versions of the ladder: The first, the SES ladder, is associated with traditional indicators of socioeconomic status. Refer to Appendix **B** to see the two versions of the ladders.

Adler and Stewart (2007) suggest that the difference between the two ladders may be particularly interesting within the context of poorer communities in which individuals may not necessarily rate themselves high on the SES ladder with regard to income, occupation or even education, but may still have a high standing within their social group of reference. With regard to the well-established relationship between social standing and biological processes related to health, Adler and Stewart note that an individual's standing on the community ladder may be as important as his/her standing on the SES ladder. Furthermore, they recommend that when traditional SES is being investigated in a research study, it is particularly important to use the SES ladder in order to compare objective SES and subjective SES.

Numerous studies have shown SES ladder scores to be related to a range of health indicators including self-rated health, cardiovascular risk and depression (see, e.g. Operario, Goodman, McEwen, Dolan, Schafer-Kalkhoff & Adler, 2005; Singh-Manoux, Marmot & Adler, 2005). The SES ladder and community ladder have also been shown to be correlated; for example, Goldman, Cornman, and Chang (2006) reported a Pearson correlation of 0.78 between ratings on the two, although not many studies have used the two ladders together.

For the purposes of the present study, **I** decided to use the youth version of the scale (Goodman et al., 2001). This version was created in order to be applicable to adolescents: The developers suggest that the adult version may not be appropriate to adolescents because it requires the individual to place him or herself relative to others in society with regard to education, income, and occupation, where the vast majority of adolescents would still be in school, would not be financially independent, and would not be employed full-time. For these reasons, **I** also decided that the youth version would be more relevant than the adult version because, although first-year students in South Africa are generally 17 years or older and are thus legally adults, I assumed the vast majority of students taking part in the study would have finished high school a year or two before, would not be financially independent, and would not be employed full-time.

The youth version of the instrument also comprises two ladders. The first ladder, which is a measure of subjective SES, assesses family placement in society and is intended to compare with the adult ladder that assesses personal placement within society. The second ladder assesses personal placement within the school community. They also suggest that it is important to explore social status in a community of peers, considering the increase in importance of peers to the adolescent's self-concept as he or she matures.

The youth version of the second ladder is not consistent with the adult ladder in that the youth version specifies the school community as the reference group, whereas the adult version assesses one's personal placement within a community that is chosen by the respondent and that is meaningful to him/her (e.g. neighbourhood, work environment, a group of friends). For the current study, we specified university as the community for obvious reasons.

With regard to the psychometric properties of the youth version of the instrument, Goodman et al. (2001) report excellent reliability for this measure with an interclass correlation of 0.73 for the society ladder and 0.79 for the community ladder. The authors also suggest that some of the benefits of this scale over other measures of perceived SES are that previous measures use individual class identification as a proxy for social status; the problem with doing so may be two fold. Firstly, the categorical ways in which measures used to identify social class do not sufficiently tap into the wide ranges of the way socioeconomic status is layered. Secondly, some of the traditional measures may use socially charged language to describe the different social classes. Respondents may thus be influenced to choose a socially desirable class category instead of the class category to which they are most likely to belong.

Finally, although a number of studies have used the MacArthur Scale of Subjective Social Status (e.g. Goodman et al., 2003; Goodman et al., 2005; Singh-Manoux et al., 2005; Singh-Manoux, Adler & Marmot, 2003), this scale has not been used in any published South African studies.

Adjustment

The Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1989) is a self-report instrument used to measure the quality of student adjustment to university. In their review of the SACQ, Dahmus and Bernardin (1992) describe the test as superior to other similar instruments and also recommend that universities use the questionnaire as a tool in various programme evaluations that assess student services and student programmes.

The SACQ contains 67 statements enquiring as to whether the student fits in well at university, feels tense, manages time demands on academic work, makes friends, attends lectures, and is satisfied with the social aspect of student life. The respondent is required to respond to each statement by choosing one of nine options, ranging from 'Applies very closely to me' to 'Doesn't apply to me at all'. The rationale underlying the structure of the SACQ is that adjustment to university life is multidimensional; hence, the questionnaire contains four subscales, each reflecting a different dimension of that adjustment: Academic Adjustment (24 items; raw score range = 23-217), Social Adjustment (20 items; raw score range = 19-181), Personal-Emotional Adjustment (15 items; raw score range = 14-136), and Goal Commitment-Institutional Attachment (15 items; raw score range = 14-136). Raw scores for the full scale range between 66 and 604, with higher scores indicating better self-assessed adjustment to university, and lower scores indicating that the respondent is reporting difficulty adjusting to university. Refer to Appendix A for the items of the scale.

Dahmus and Bernardin (1992) report the following psychometric properties of the SACQ: In terms of the reliability of the questionnaire, coefficient alpha values range from 0.92 to 0.95 for the full scale, from 0.81 to 0.90 for the Academic Adjustment subscale, from 0.83 to 0.91 for the Social Adjustment subscale, from 0.77 to 0.86 for the Personal-Emotional subscale, and from 0.85 to 0.91 for the Attachment subscale. The SACQ showed good criterion-related or construct validity with significant positive correlations of 0.17 to 0.53 $(p < 0.01)$ found between the Academic Adjustment and grade point average. In addition, there were significant negative correlations of-0.23 to -0.34 $(p < 0.01)$ between the Personal Emotional Adjustment subscale and whether students had visited their psychological service centre on campus during their first year. The Goal-Commitment Institutional Attachment

subscale also showed significantly negative correlations with attrition of -0.27 to — 0.41 *(r)* < 0.01).

Finally, statistically significant relationships have also been found between the SACQ and scales measuring mental health characteristics, for example the Mental Health Inventory (Veit & Ware, 1983) and Center for Epidemiological Studies - Depression Scale (Radloff, 1977). In their South African study, Sennett et al. (2003) report alpha coefficients for the full scale questionnaire and the subscales of between 0.80 and 0.93.

Mental Health

The assessment of mental health in this study was comprised of four questionnaires assessing various aspects of mental health including depression, anxiety, and overall psychological wellbeing. Total scores on each of these questionnaires were converted to z-scores and the z-scores then averaged to obtain a single measure of mental health.

Anxiety

The State-Trait Anxiety Inventory Form Y-1 and Form Y-2 (STAI-Y; Spielberger, 1983) was originally developed for use in high school, university student, and adult populations. The original test form and test manual (Form X) was published in 1970 (Spielberger et al., 1970). It has since been adapted and translated in more than 30 languages, and is used in cross-cultural studies and clinical practice settings. For instance, it has been used in a South African study that explored emotional stress and coping strategies in South African clinical and counseling psychologists (Jordaan, Spangenberg, Watson, Fouche, & Paul, 2007).

The instrument is made up of two separate self-report scales, one measuring state anxiety and the other measuring trait anxiety. The state anxiety scale (Form Y-1) consists of 20 statements that assess how respondents feel "right now, at this moment." The trait anxiety scale (STAI Form Y-2) consists of 20 statements that evaluate how individuals feel in general. The essential qualities that the STAI-Y S-Anxiety and T-Anxiety evaluate include feelings of tension, apprehension, nervousness, and worry. Trait anxiety (T-Anxiety) can be seen as the relatively stable individual differences in being prone to anxiety, in other words the differences that

exist between people in their tendency to perceive stressful situations as threatening or dangerous and then to respond to these situations with increases in the intensity of their state anxiety (S-Anxiety) reactions. T —Anxiety can also be a reflection of the individual differences in how frequently and how intensely anxiety states have manifested in the past and also in the probability that S-Anxiety will be experienced in the future. Thus the stronger the anxiety trait, the greater the chance that an individual will experience more intense elevations in S-Anxiety in a situation that is threatening.

Each item in the questionnaire is given a weighted score of 1 to 4. A rating of 4 indicates a high level of anxiety for the ten S-Anxiety item and eleven T-Anxiety items. A high rating indicates the absence of anxiety for the remaining ten S-Anxiety items and nine T-Anxiety items. Scores for the S-Anxiety and T-Anxiety scale can be obtained by adding the weighted scores for the twenty items in each scale, taking into account any reverse scoring. Scores for the S-Anxiety and the T-Anxiety can range from 20 to a maximum score of 80. S-Anxiety means for male university students show that (M= 36.47) and for female university students show (M=38.76), and T-Anxiety means for males show that (M=34.79) and for females (M=38.30). T-Anxiety scale test-retest reliability correlation coefficients range from .73 to .86 in university student populations. Test-retest reliability correlation coefficients for the S-Anxiety scale range from 0.16 to 0.62 with a median coefficient of 0.33. The concurrent validity between the T-Anxiety scale and other measures of trait anxiety show high correlations. For example, correlations between the IPAT Anxiety Scale (Cattell & Scheier, 1963) and the Taylor Manifest Anxiety Scale (TMAS; 1953) range from 0.85 to 0.73.The Correlation between the S-Anxiety and T-Anxiety scales for male university students was .65 and for females was .59. Correlations between the S-Anxiety and T-Anxiety scales can be typically higher when there are conditions which threaten self-esteem, or in situations in which personal adequacy are evaluated. However, correlations are lower under circumstances, which are characterised by physical danger.

Depression

The Center for Epidemiologic Studies Depression Scale adult version (CES-D; Radloff, 1977) is a 20 item self-report questionnaire that was used to measure

participants' levels of depression in the present study. The scale was designed to measure current symptoms of depression with emphasis placed on the affective aspect of depressed mood. For each item on the questionnaire, respondents are asked to report how often during the past week they have experienced each described behaviour, perception, or mood. The response choices and their associated scores range from 'rarely or none of the time' (0); 'some or a little of the time' (1); `occasionally or a moderate amount of time' (2); 'most or all of the time' (3). Four of the items in the questionnaire are worded in a positive direction: 'I felt I was just as good as other people; I felt hopeful about the future; I was happy; and I enjoyed life'. The scores on these items are reversed and added to the scores of the other 16 items. The overall questionnaire is scored by summing the item weights; the highest possible total score for the questionnaire is 60. Total scores of 16 and higher on the questionnaire are considered to indicate clinical depression or the likelihood of clinical depression occurring.

Radloff (1977) reports high internal consistency of the scale using coefficient alpha and the Spearman-Brown split-halves within the general population of around 0.85 and in a patient sample of about 0.90.

Psychological Wellbeing

The General Population-Clinical Outcomes in Routine Evaluation questionnaire (GP-CORE; Sinclair, Barkham, Evans, Connel & Audin, 2005) was used as a measure of overall psychological well-being. The questionnaire was designed for use in the general population, as well as student samples.

The original version of this measure, the CORE-OM (Barkham et al., 2001,) was designed to be used in clinical settings and has been shown to have good psychometric properties (Evans et al., 2002). The aim of developing the GP-CORE was to create a more general version of the CORE-OM that would provide meaningful data but at the same time appear acceptable to students who are just beginning university life. Hence, the GP-CORE is made up of 14 items (all of which are taken from the CORE-OM) that enquire about the respondent's physical and psychological well-being (e.g. 'I have felt tense anxious or nervous', and 'I have had difficulty getting to sleep or staying asleep'). Respondents are asked to rate how often

over the last week they have experienced a particular event described. The events are rated on a five-point scale as follows: 0 'not at all', 1 'only occasionally', 2 `sometimes', 3 'often', or 4 'most or all of the time'.

The authors of the scale (Sinclair et al., 2005) indicate that the instrument has good psychometric properties. For example, based on data from a student non-clinical sample, the internal reliability coefficient alpha for all 14 items was .87. For the females who participated, alpha was .90 and for the males it was .85. Test-retest reliability was .91. Furthermore, the convergent validity of measure with other widely used measures of psychological state has been demonstrated. For example, the GP-CORE shows a Pearson correlation of .84 with the Beck Depression Inventory-II (BDI; Beck, Steer, & Brown, 1996), .75 with the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), and .71 with the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983).

The GP-CORE was recently used in a study monitoring the psychological well-being of first-year students at a university in the United Kingdom (Cooke et al., 2006). The scale does not appear to have been used in any studies published South African studies.

Substance Use

The measure of substance use in this study comprised an aggregate measure of two questionnaires. The first was the Alcohol Use Disorders Identification Test (AUDIT) and the other a substance use questionnaire that enquired about recent use of various illicit substances. Raw scores from the two questionnaires were converted into *z*-scores, and these were then averaged in order to obtain a single score of substance use for each participant.

Alcohol Use

The Alcohol Use Disorders Identification Test (AUDIT) (Saunders, Aasland, Babor, De La Fuente, & Grant, 1993) was used to assess the presence of problematic drinking. This instrument was developed as part of a World Health Organization (WHO) collaborative project conducted in Australia, Bulgaria, Kenya, Norway,

Mexico, and the USA (see Allen, Litten, Fertig, & Babor (1997) and Reinert & Allen (2007) for a full review of the measure).

The questionnaire screens for the hazardous and harmful alcohol consumption by individuals before the individual is permanently harmed or becomes dependent on alcohol. It was also developed to address the need for an instrument that detects problematic drinking at an earlier stage than alcoholism, which most of the existing instruments focus on. Well-known instruments such as the CAGE (Ewing, 1984) or the Michigan Alcoholism Screening Test (MAST) (Selzer, 1971) are valuable and sensitive in detecting more advanced drinking problems in individuals and those who have reached the stage of alcoholism, but may not be effective enough in detecting milder drinking problems (Saunders et al., 1993)

The AUDIT consists of 10 items covering areas of alcohol consumption, drinking behaviour, and alcohol-related problems. Respondents rate each question on a 0 to 4 scale; thus, the maximum possible score for the entire questionnaire is 40. Conigrave et al. (1995) suggest using a score of 8 as a cut-off, so that a score of 9 or above indicates a risk for an individual to develop problematic alcohol use or may be experiencing alcohol problems. Among individuals who drink, the areas of drinking behaviour and adverse psychological reactions show high intrascale reliability (internal consistency), with mean values of Cronbach's alpha coefficients of 0.93 and 0.81, respectively (Saunders et al., 1993). In addition, Bergman and Kallmen (2002) report high construct validity with a Cronbach's alpha coefficient of 0.69 and a test-retest reliability of 0.98 for the factor items dealing with consumption. The AUDIT has been used both internationally (e.g. Maisto, Conigliaro, McNeil, Kraemer, & Kelley, 2000) and in South Africa (e.g. Bekker & Van Velden, 2003; Simbayi et al., 2004).

Illicit Substance Use

A short questionnaire was used in order to gain an idea participants' illicit substance use. This questionnaire is part of a larger questionnaire that was constructed for use in a number of studies examining substance abuse in South Africa (see, e.g. Parry, Plûddemann, Louw, & Leggett, 2004). In deciding which items from the larger questionnaire to retain, I removed questions that were too detailed and thus not

relevant to the present study (for example, *'In the past 12 months, did you ever think your tik use was out of control?').* Questions enquiring about alcohol use were also omitted because the AUDIT covered the use of that substance. Examples of questions that were included are: *'Have you ever tried dagga?", `If yes, how old were you when you first tried dagga?', 'Have you used dagga in the past 6 months?', 'Have you used dagga in the past 30 days?', 'Have you used dagga in the past 7 days?'*

In terms of scoring and interpreting the questionnaire, I was given permission by the developers to do so in any manner necessary to meet the needs of the research design. Because the questionnaire was used here only as a screen to be able to obtain an idea of which students had only tried substances and which students had used substances more recently, a score of 0-4 was assigned to participants' use regarding each substance and the recent use of the substance. A score of 0 indicted that a participant had never tried a substance and a score of 4 indicated more recent use of a substance. Higher total scores therefore indicated more use, and more recent use, of more substances.

General Health

The scaled version of the General Health Questionnaire (GHQ; Goldberg & Blackwell, 1970) was used as a measure of current physical health. Goldberg and Hillier (1979) suggest that the GHQ can be thought of as comprising questions that form 'the lowest common multiple' of symptoms that will be encountered in various mental disorder syndromes. The questionnaire consists of statements that reflect symptoms, which best differentiate psychiatric patients from individuals who consider themselves to be well.

The questionnaire enquires whether a participant has experienced a particular symptom or behaviour recently. It comprises 28 items, which are divided into four scales: (A) somatic symptoms; (B) anxiety and insomnia; (C) social dysfunction; and (**D)** severe depression. The questionnaire is scored by rating each item using what is referred to as the 'GHQ scoring method' (0-0-1-1). The authors recommend that a cut off point of 4/5 should be used. In other words, a score of 5 or above indicates `caseness' when using the questionnaire as a screen. Intercorrelations between the four subscales and the total GHQ-28 have been demonstrated to be fairly high, with,

for example, a correlation coefficient of 0.79 between Scale A and the total scale (Goldberg & Hillier, 1979). In a validity study, Goldberg et al. (1997) found that (a) there was no tendency for the GHQ to work less efficiently in developing than in developed countries, and (b) factors such as age, gender and education level had no significant effects on the validity of the GHQ.

The developers also state that the GHQ-28 can be used in studies where researchers need more information than might be gained from only one severity score. For example, if a researcher wanted to select depressed individuals out of a population in which individuals scored very high on depressive symptoms, he/she could focus on only those individuals who scored high on that part of the scale assessing depression.

For the purposes of the present study, I decided to use scores taken from Scale A (somatic symptoms component) in order to get an idea of participants' general health. Since its development, the GHQ it has been widely used across different research settings and cultural contexts (see, e.g. Makowska, Merecz, Moscicka & Kolasa, 2002). In South Africa, the instrument was used in a study of critical incident exposure (Ward, Lombard & Gwebushe, 2006).

Resilience

The Connor-Davidson Resilience Scale (CD-RISC, Connor & Davidson, 2003) is a brief self-rated questionnaire used to quantify resilience (defined here as "the personal qualities that enables one to thrive in the face of adversity"; p. 76). The scale is made up of 25 items, each of which is rated on a 0-4 point scale. Higher scores indicate higher levels of resiliency. Refer to Appendix B for the items in the scale.

This instrument has good psychometric properties. For instance, Connor and Davidson (2003) found that, in a community-dwelling sample of 577 adults, internal consistency reliability (Cronbach's alpha = 0.89) and test-retest reliability (interclass correlation coefficient = 0.87) was good. Furthermore, validity studies indicate that that the CD-RISC is positively correlated with measures such as the Kobasa Hardiness Scale (Kobasa et al., 1979; Pearson $r = 0.83$) and negatively correlated with measures such as the Sheehan Stress Vulnerability Scale (SVS; Sheehan, Raj & Harnett Sheehan, 1990; Spearman $r = -0.32$). The CD-RISC has recently been used

in international studies (Benetti & Kombouropoulos, 2006; Campbell-Sills, Cohan & Stein, 2006). The questionnaire does not appear to have been used in any published South African studies.

Statistical Analyses

Statistical analyses were conducted on the sociodemographic independent variables in order to obtain frequencies and percentages of the variables.

Analyses were also conducted to determine the means, standard deviations, mode of the scores for the measurement variables.

A series of hierarchical multiple regression analyses were conducted in order to investigate which of the measures mentioned previously and which demographic variables predicted and were associated with the outcome variables adjustment, mental health and general health in first year students. Along with these multiple regression analyses, tests of multicollinearity and casewise diagnostic tests were conducted. Power calculations were also conducted as well as effect sizes.

RESULTS

The purpose of doing statistical analyses was to test relationships between socioeconomic status, socio-demographic variables (e.g. race, place of residence), resilience, subjective social status, mental health, substance use, general health and adjustment to university in first year university students. More specifically, statistical analyses were conducted to obtain descriptive statistics of the sample but also to test the following two hypotheses:

Hypothesis 1: Subjective social status will be associated with and be a better predictor of mental health, adjustment and general health in first-year students than an estimated measure of actual socioeconomic status and other sociodemographic variables, which have previously been shown to predict mental health, general health and adjustment in first year students.

Hypothesis 2: Resilience will be associated with and be an important predictor of students' quality of adjustment to university, their mental health and their general health.

Data Entry

Data were entered into a Microsoft Excel database. Some of the demographic questions were re-catogorised to allow for more meaningful analyses. The data were then entered into a SPSS 18 database in order for the various analyses to be conducted. Once this data were entered, categorical variables were assigned value label codes in order for the SPSS **18** programme to do statistical analyses on them. For example, the categorical variable *race*, which contained five categories was coded (l =Black African; 2=White; 3=Coloured; 4=Indian, 5=other). Other categorical variables which were coded included, participants' *sex;* the *type of high school students attended* (i.e. private or public); the *type of tertiary institution they attended* (i.e. **HAI** or **HDI);** their *place of residence;* their *parents' education;* whether their *parents' attended a university or not;* the *number of assets* in the household they grew up in.

Cleaning the Data

Missing Values

Missing values in all the questionnaires were dealt with by using the rule that if there were more than 5% (around 3 items in most of the questionnaires) left out in any particular questionnaire, the participant would be excluded in the analysis for that questionnaire. In questionnaires which had less than or equal to 3 missing values, the median score for that individual's responses was used in place of the missing value and then total scores were calculated with the median.

The STAI-Y 1 and STAI-Y2 was treated differently as the questionnaire manual (Spielberger, 1983) specifies how missing values should be dealt with. If there are 1 or 2 missing values then missing values can be calculated and replaced, however if there are more than two items missing for an individual then the validity of the questionnaire should be questioned. The procedure specified for calculating the full scale score for the STAI FormY-1 and STAI FormY-2 is to calculate the mean weighted items for the scale items an individual has responded to and then to multiply this value by 20 and then round the product to the next highest whole number.

It should also be noted that questionnaires that were used to measure adjustment, mental health, resilience, substance use, and general health were not used diagnostically but to gain a general understanding of how students were functioning with regards to these constructs. However, descriptive statistics will be presented and briefly described for these questionnaires.

Descriptive Statistics

First-year Student Characteristics

As can be seen in Table 1, the majority of participants were female *(n* = 281) (83.6%) and the rest were male *(n* = 55). The sample included 158 (47%) White students, there were 52 (15%) Black African students, 100 (30%) Coloured students, the sample included 16 (5%) Indian students and there were 10 (3%) students in the "other" category.

In terms of education, the majority of students in the sample attended public high schools *(n* = 221) (66%) and the rest attended private high schools *(n* = 115) (34%). With regard to the breakdown of students from the various race groups who attended private or public schools it appears that a large number of White students (n = 86) (25.6%) attended private high schools, while only a small number of Black Africans (n =12) (3.6%) attended private high schools. Similarly low, there were only 10 Coloured students who attended private schools.

The majority *(n* = 247) (73.5%) of students in this study attended historically advantaged universities while the rest *(n* = 89) (26.5%) attended historically disadvantaged universities.

Just over half of the students in the sample lived in their parents' home *(n* = 180) (53.6%), many lived in university residences (1/ = 92) (27.4%) and the rest lived in other accommodation such as "digs" or their own homes.

In terms of illicit substance use, 50.3% (n=169) students reported that they had never tried a substance, 16.4% (n=55) reported that they had tried at least one substance in their lifetime, 17.9% (n=60) reported that they had used one or more substances in the past 12 months, 8% (n=27) reported that they had used one or more substances in the past 30 days and 7.4% (n=25) reported that they had used a substance in the past 7 days. Refer to Table 1 for a detailed description of participants' demographic characteristics.

Table 1

First Year Student Characteristics: Demographics

Variable	Frequency	Percentage
Age (years)		
17-22	317	94.3
23-28	19	5.7
Participants' sex		
Male	55	83.6
Female	281	16.4
Race		
Black African	52	15
White	158	47
Coloured	100	30
Indian	16	5
Other	10	3
Home language		
English	258	76.8
Afrikaans	25	7.4
SA other	41	12.2
Other	12	3.6
Type of high school attended		
Attended a private high school	115	34
Attended a public high school	221	66
Type of tertiary institution individual attends		
Historically advantaged institution	247	73.5
Historically disadvantaged institution	89	26.5
Place of residence		
University residence	92	27.4
Parents' home	180	53.6
Other	64	19
Illicit substance use		
Never tried a substance	169	50.3
Tried at least one substance	55	16.4
Used one or more substances in the past 12 months	60	17.9
Used one more substances in the past 30 days	27	8
Used one or more substances in the past 7 days		7.4

In addition, a detailed description of participants' characteristics according to their race group is presented in Table 2.

Table 2

First Year Student Characteristics According to Race

Variable	Frequency	Percentage
Type of high school attended according to race		
Black African at private high school	12	3.6
Black African at public high school	40	12
White at private high school	86	25.6
White at public high school	72	21.4
Coloured at private high school	10	2.9
Coloured at public high school	90	26.8
Indian at private high school	5	1.5
Indian at public high school	11	3.3
Other at private high school	2	0.6
Other at public high school	8	2.3
Type of tertiary institution individual attends by race		
Black African at historically advantaged institution	28	8.3
Black African at historically disadvantaged institution	24	7.1
White at historically advantaged institution	157	46.7
White at historically disadvantaged institution	1	0.3
Coloured at historically advantaged institution	38	11.3
Coloured at historically disadvantaged institution	62	18.5
Indian at historically advantaged institution	15	4.5
Indian at historically disadvantaged institution	1	0.3
Other at historically advantaged institution	9	2.7
Other at historically disadvantaged institution	1	0.3
Individual's place of residence according to race		
Black African in parents' home	10	3
Black African in university residence	26	7.7
Black in other accommodation	16	4.8
White in parents' home	77	23
White in university residence	51	15.2
White in other accommodation	30	9
Coloured in parents' home	80	23.8
Coloured in university residence	9	2.7
Coloured in other accommodation	11	3
Indian in parents' home	9	2.7
Indian in university residence	3	0.9
Indian in other accommodation	4	1.2
Other in parents' home	4	1.2
Other in university residence	3	0.9
Other in other accommodation	3	0.9

Details of participants' illicit substance use are presented in Table 3.

Table 3

Participants' Illicit Substance Use According to Race Group

Variable	Frequency	Percentage
Illicit substance use according to race		
Black African never tried a substance	33	9.9
Black African tried at least one substance	12	3.6
Black African used one or more substances in past 12 months	3	0.9
Black African used one more substances in the past 30 days	2	0.6
Black African used one or more substances in the past 7 days	2	0.6
White never tried a substance	79	23.5
White tried at least one substance	16	4.8
White used one or more substances in past 12 months	33	9.9
White used one more substances in the past 30 days	14	4.2
White used one or more substances in the past 7 days	16	4.8
Coloured never tried a substance	41	12.2
Coloured tried at least one substance	25	7.4
Coloured used one or more substances in past 12 months	20	5.6
Coloured used one more substances in the past 30 days	8	2.4
Coloured used one or more substances in the past 7 days	6	1.8
Indian never tried a substance	10	3
Indian tried at least one substance	1	0.3
Indian used one or more substances in past 12 months	4	1.2
Indian used one more substances in the past 30 days	1	0.3
Indian used one or more substances in the past 7 days	0	0
Other never tried a substance	4	1.2
Other tried at least one substance	2	0.6
Other used one or more substances in past 12 months	0	0
Other used one more substances in the past 30 days	2	0.6
Other used one or more substances in the past 7 days	2	0.6

Measures of Socioeconomic Status

It can be seen in Table 4 that just over half of all participants in the sample were in the medium SES category ***(n = 184)*** (54.8%), and just over a third of participants fell into the high SES category *(n* = 122) (36.3%). There were only a small number of participants who fell into the low SES category *(n* = 30) (8.9%).

In terms of the students' parents' education, half attended a university *(n* = 171) (50.1%) and more specifically, about half of those parents who attended university *(n* = 87) (25.9%) obtained a university postgraduate degree. The other half did not attend a university ***(n = 165)*** (49.1%), a total of 56 (16.7%) finished high school with a matriculation certificate and a small number (n=11) (3.3%) did not finish primary school. More details of the measures of SES are presented in Table 4.

Table 4

Characteristics Making Up Participants' Socioeconomic Status

Variable	Frequency	Percentage
SES		
Low	30	8.9
Medium	184	54.8
High	122	36.3
Parent(s) attended a university		
Yes	171	50.1
No	165	49.1
Current Household income in Rands		
RO	17	5.1
R1 -R5000	110	33.4
R5001-R25000	105	32
R25,000-R100,000	81	24.6
R100,000 +	16	4.9
Household income while growing up		
RO	5	1.5
R1 -R5000	58	17.5
R5001-R25000	136	41
R25,000-R100,000	109	32.8
R100,000 +	24	7.2
Number of assets in household while growing up		
0-5 assets	11	3.3
6-12 assets	37	11
13-17 assets	288	85.7
Highest level of education of parent (s)		
Primary schooling only; did not finish	11	3.3
Primary schooling only; finished primary school	7	2.1
High school; did not finish grade 12 (Matric)	46	13.7
High school; finished Grade 12, with matriculation certificate	56	16.7
Post-high school technical or technikon training	52	15.5
Some university (did not finish undergraduate degree)	17	5.1
University undergraduate degree	60	17.9
University postgraduate degree	87	25.9

In addition to the measures presented in Table 4, some of the characteristics, which makeup socioeconomic status are also presented according race group in Table 5.

Table 5

Socioeconomic Indicators According to Race Group

Variable	Frequency	Percentage
SES according to race		
Black African with low SES	10	3
Black African with medium SES	30	9
Black African with high SES	12	3.6
White with low SES	3	0.9
White with medium SES	74	22
White with high SES	81	24
Coloured with low SES	14	4.2
Coloured with medium SES	69	20.5
Coloured with high SES	17	5
Indian with low SES	0	0
Indian with medium SES	7	2.1
Indian with high SES	9	2.7
Other with low SES	1	0.3
Other with medium SES	6	1.8
Other with high SES	3	0.9
Parent(s) attended university according to race		
Black African attended university	18	5.4
Black African did not attend university	34	10.2
White attended university	107	32
White did not attend university	51	15.2
Coloured attended university	31	9.2
Coloured did not attend university	68	20.2
Indian attended university	8	2.4
Indian did not attend university	8	2.4
Other attended university	4	1.2
Other did not attend university	6	1.8
Current Household income in Rands according to race		
Black African RO household income	5	1.5
Black African R1 -R5000 household income	30	9
Black African R5001-R25000 household income	11	3.3
Black African R25,000-R100,000 household income	2	0.6
Black African R100,000 + household income	2	0.6
Black African did not indicate household income	2	0.6
White RO household income	9	2.7
White R1 -R5000 household income	54	16.3
White R5001-R25000 household income	40	12
White R25,000-R100,000 household income	47	14.2
White R100,000 + household income	8	2.4
White did not indicate household income	0	0
Coloured RO household income	0	0
Coloured R1 -R5000 household income	19	5.7
Coloured R5001-R25000 household income	49	14.8
Coloured R25,000-R100,000 household income	24	7.2
Coloured R100,000 + household income	3	1
Coloured did not indicate household income	1	0.3
Indian RO household income	1	0.3
Indian R1 -R5000 household income	5	1.5

Indian R5001-R25000 household income	2	0.6
Indian R25,000-R100,000 household income	5	1.5
Indian R100,000 + household income	3	0.9
Indian did not indicate household income	0	0
Other RO household income	2	0.6
Other R1 -R5000 household income	2	0.6
Other R5001-R25000 household income	4	1.2
Other R25,000-R100,000 household income	2	0.6
Other R100,000 + household income	0	0
Other did not indicate household income	0	O

Psychometric Questionnaires

Adjustment

Students in this sample were on average fairly well adjusted to university as shown in the SACQ full scale score ***(M =*** 349.67, *SD* = 38.02). In terms of their academic adjustment, students were also on average moderately adjusted ***(M =138.61,*** *SD* =15.76). Students' social adjustment on average, was also fair ***(M =*** 96.27, *SD* =15.9). Students' personal emotional adjustment appeared to be quite good ***(M*** =77.18, *SD* = 18.99). Students' goal- commitment institutional attachment was moderate on average ***(M =*** 70.9, *SD* = 9.61). These values are presented in Table 6.

Subjective Social Status

On average students' reported their perceived socioeconomic status as depicted by scores on the MacArthur SES ladder around the middle of the scale *(M* = 4. 47, *SD* =1.82), thus they did not perceive their subjective socioeconomic status as particularly high or low. Students also reported their perceived social status as depicted by scores on the MacArthur community ladder as neither very high nor low *(M* = 4.91, *SD =19)* since high scores would be closer to 10 on the ladder.

Mental Health

On average students did not report that they were depressed as can be seen by a low average score ***(M = 17 .92,*** *SD* = 11.6) on the CES-D. The highest score that can be obtained on the questionnaire is 60.

Students also did not report high S-Anxiety scores ***(M =*** 43.40, *SD* = 12.7) or high T-Anxiety scores on average ***(M =*** 43.67, *SD* = 11.69), since the maximum score of the two scales can reach 80.

Average scores on the GP-CORE *(M* = 30, *SD = 5.16)* indicate that students' psychological wellbeing was fairly good as lower scores on the measure indicates better psychological wellbeing.

General Health

The average scores on GHQ-28 scale A were low *(M* = 2.52, *SD* = 2.16) on average, thus showing that students' had good general health. Scores of 5 and above are considered to be high scores and would show that students' were experiencing poor general health.

Alcohol Use

Participants' scores on the AUDIT were *(M = 5.57, SD* =5.76), which indicates that on average this group of students did not report to be engaging in problematic drinking. More specifically, 50% (n=158) of students reported that they did not drink at all, 41.7% (n=140) engaged in drinking that was not problematic (i.e. they had scores below or equal to the cut-off point score of 8) and 8.3% (n=28) students reported that they engaged in problematic drinking.

Resilience

Students did not score particularly high on the Connor-Davidson Resiliency Scale *(M* = 66.59, *SD* = 15.37). These results are also much lower than the normative sample in the general population *(M* = 80.4, *SD =12.8)*

All values for the psychometric questionnaires that were used are presented in Table 6.

Table 6

Descriptive Statistics for the Psychometric Questionnaires

Variable	N	Mean	Mode	*SD*	Minimum	Maximum
Adjustment						
SACQ Full Scale Score	336	349.67	326	38.02	220	508
SACQ Academic Adjustment	336	138.61	138	15.76	65	192
SACQ Social Adjustment	336	96.27	138	15.9	43	159
SACQ Personal-emotional	336	77.18	78	18.99	31	125
SACQ Goal-commitment Institutional attachment	336	70.9	66	9.61	41	113
Subjective Socioeconomic Status						
MacArthur SES ladder	332	4.47	4	1.82	1	10
MacArthur Community ladder	332	4.91	5	1.9	1	10
Mental Health						
CES-D	335	17.92	9	11.6	0	55
STAI State Anxiety	336	43.40	50	12.7	20	78
STAI Trait Anxiety	336	43.67	35	11.69	0	78
GP-CORE	335	30	30	5.16	16	44
General Health						
GHQ-28 subscale A	335	2.52	0	2.16	0	7
Alcohol use						
AUDIT	336	5.57	0	5.76	0	28
Resilience						
Connor-Davidson Resiliency Scale	335	66.59	60	15.37	0	100

Statistical Analyses Using Regression

The literature regarding the predictors of student adjustment, mental health, and general health informed decisions as to which independent variables would be entered into the regression models, which would test the hypotheses.

Ordinarily, linear regressions would be conducted with each of the preliminary predictor variables and the outcome variables. Predictor variables with significant *F*-values, and those, which account for most of the variance in the model R^2 would be selected while those, which do not meet these criteria would be excluded. However, for the purpose of this study, I decided to include predictor variables based on their theoretical value to the hypotheses.

For the purpose of the multiple regression analyses, raw scores for the SACQ full scale were used, raw scores for the General Health Questionnaire subscale A were used, raw scores for the Connor-Davidson Resiliency Scale were used, and raw scores for the MacArthur SES ladder and the MacArthur community ladder were used. As

explained in the previous chapter, the measure of *substance use* comprised the average z-score of the two measures of substance use (the AUDIT and substance use questionnaire), the measure of SES comprised an aggregate z-score of current household income, household income while growing up and parent(s) education, which was divided into tertiles. *Mental health* comprised scores for four questionnaires as mentioned earlier (CES-D, GP-CORE, STAI State Anxiety, STAI Trait Anxiety), which were converted into z-scores and then averaged to create one score for mental health. *Parents' education* was a categorical variable, thus in order to obtain a z-scores the categories were assigned weighted scores. I realized that doing so however would lose some variability in the categories; but this was necessary in order to create continuous data.

Dummy variables were created to be used in the multiple regression analyses in the case of predictor variables that had more than two categories. Four dummy variables were created for the predictor variable *race,* and two dummy variables were created for the predictor variable, *place of residence*.

First Multiple Regression

Tests of Normality

In order to determine whether the scores on the five chosen predictor variables of interest, which had continuous data were normally distributed I used the Kolmogorov-Smirnov (K-S) test of normality. It must, however be kept in mind that when doing statistical analyses with large sample sizes, it is easy to obtain a significant result from even small deviations from normality, thus the test may not actually tell us if any deviation from normality will bias our procedures. It may be important to look at displays of the data such as plots in addition to other tests of normality and to then make decisions on normality (Field, 2005). Results of the K-S tests are reported below.

The SES aggregate scores, $D(330) = 0.06$, $p < 0.05$, and the MacArthur SES ladder, $D(330) = 0.18$, $p < 0.05$, and the MacArthur community ladder, $D(330) = 0.19$, $p < 0.05$, and the substance use measure, $D(330) = 0.15$, $p < 0.05$, were all significantly non-normal.

Correlation Matrices

Bivariate correlations were conducted in order to make sure that each chosen predictor variable was not highly correlated (>.80) with any other predictor variable, but was correlated with the outcome variable (Field, 2005). Decisions as to which correlation test to use was based on whether the continuous predictor variables were normally distributed or not, and whether the categorical variables were true dichotomous variables, or categorical variables which had more than two categories. As a result, the non-parametric Spearman's Rho was used for the bivariate correlation of the continuous variables that were not normally distributed (see Appendix D, Table DO. The Pearson's correlation coefficient was used for the continuous variables that were normally distributed (see Appendix D, Table D2). The point-biserial correlation was used for the analysis of dichotomous categorical variables and continuous variables (see Appendix D, Table D3), multiple regressions were conducted for continuous variables and categorical variables with more than two categories (see Appendix D, Table D4), and chi-squares were conducted for dichotomous categorical variables and categorical variables with more than two categories. These tests indicated that the independent variables were not highly correlated with each other, but were correlated with the dependent variable. Although the chi-square tests showed some significant associations, the Cramer's *V* values did indicate that there should be concern about multicollinearity between predictors. All the variables were retained for the final multiple regression analysis because of their theoretical interest to the study.

*Multiple **Regression***

The first hierarchical multiple regression was conducted in order to test the hypothesis that subjective social status will be associated with and be a stronger predictor of students' quality of their adjustment to university than previously known predictors of adjustment in first year students. This multiple regression was also conducted to test the hypothesis that resilience would be a strong predictor of adjustment in first year students.

For this multiple regression, and using an alpha level of 0.05, eleven predictors, and assuming a small effect size (0.05), the current sample size (N=330) yields a post-hoc

statistical power of approximately (0.78) according to the G Power programme (Faul, Erdsfelder, Lang & Buchner, 2007).

The predictor variables were entered into the model using the hierarchical method of forced entry. I decided to use this method because all of the predictors chosen, except for subjective social status have been shown to be associated with adjustment in students. With the forced entry method all the predictors are entered into one model but in different blocks or steps of predictors.

The predictors were entered into the model in the following order of blocks or steps: *socioeconomic status;* the *MacArthur SES ladder; MacArthur community ladder; race* and *participants' sex; parents' education* and the *type of school participants attended; resilience; the type of tertiary institution participants attend; substance use.* In the final step of the model, *place of residence* was entered. This can be seen in Table 7.

As can be seen in Table 8, the F-ratio did not improve significantly at $p < 0.05$ for each step of entry of predictor(s) after the first step in the model when *SES* was entered. However, after the final step in the model, when *place of residence* was included, the F- ratio improved significantly at $p < 0.05$ (from 1.398 in the eighth step to 2.633 in the final step), thus indicating an improvement in the ability to predict adjustment due to the model. The Durbin-Watson statistic of 2.074 indicted that any errors in the regression were independent, thus this assumption of multiple regression has been met (Field, 2005).

In the final step, the predictor *place of residence* was added to the model. With this predictor included, the model accounted for 11% of the variance in SACQ Full Scale Score. This indicated that *place of residence* explains an additional 6% of the variance in adjustment, which is not very much, but it did explain the most amount of variance in adjustment.

For every one standard deviation change in the variable *place of residence (as represented by two dummy variables, Dummy] : university residence vs parents' home; Dummy2: university residence vs other)* there was a change of -.312 and -.171 standard deviations in the SACQ Full Scale Score (f3 = -.312; p < .05) and (13 = -.171;

$p < .05$). More specifically the change in SACQ Full Scale Scores decreased significantly for those students who lived in their parents' home compared to those who lived in university residences. The change in SACQ Full Scale Scores also decreased significantly for those who lived in accommodation other than parents' home or university residence compared to those who lived in university residences. The VIF values were less than 10 and the Tolerance statistics above 0.2 for all the cases, which indicated that there was no multicollinearity in the data.

I then analysed the residual statistics, which identified 18 cases (just over 5 % of the sample) as having absolute standard residual values outside the limits of 2. This percentage is roughly within what we would expect for the sample size (Field, 2005). Furthermore, 7 cases lie outside the broader limits of ±2.5, which is about 2% of the cases lying outside of the limits. Thus, the sample conforms to what we can expect of a fairly accurate model. On further examination of the Cooks' distances, Mahalanobi's distance, the Covariance ratios and the Centred Leverage values it appeared that the values were within the expected range for the 18 identified cases except for three cases, which have large Mahalanobi's distances (cases 258, 265, 277) and may be cause for concern. Table El presented in Appendix E shows the diagnostic statistics for the 18 identified extreme cases.

Table *7*

Results of the first multiple regression analysis

	B	*SE B*	/3
Step 1			
Constant	350.42	2.05	
Socioeconomic Status	-2.191	0.94	.13
Step 2			
Constant	343.14	5.77	
Socioeconomic Status	-1.75	0.99	-.10
MacArthur SES ladder	1.59	1.18	.08
Step 3			
Constant	344.244	6.8	
Socioeconomic Status	-1.78	1.00	-.10
MacArthur SES ladder	1.76	1.30	.09
MacArthur Community ladder	-0.37	1.21	-.02
Step4			
Constant	359.58	10.51	
Socioeconomic Status	-1.08	1.05	-.06
MacArthur SES ladder	1.03	1.36	.05
MacArthur Community ladder	-0.69	1.25	-.40
Race			
Dummyl: Black African vs White	-14.91	6.70	-.20
Dummy2: Black African vs Coloured	-9.60	6.47	-.12
Dummy3: Black African vs Indian	-26.1	10.85	-.15
Dummy4: Black African vs other	-13.22	12.81	-.06
Sex	0.97	5.56	.01
Step 5			
Constant	361.82	11.27	
Socioeconomic Status	-0.73	1.21	-.04
MacArthur SES ladder	0.99	1.38	.05
MacArthur Community ladder	-0.62	1.26	-.03
Race			
Dummyl: Black African vs White	-15.03	6.80	-.20
Dummy2: Black African vs Coloured	-9.74	6.52	-.12
Dummy3: Black African vs Indian	-26.43	10.89	-.15
Dummy4: Black African vs other	-13.22	12.85	-.06
Sex	0.76	5.60	.01
Parent's Education	-2.98	4.99	-.04
Type of Education of Participant	-1.1	4.76	-.01
Step 6			
Constant	363.17	15.00	
Socioeconomic Status	-0.72	1.22	-.04
MacArthur SES ladder	0.99	1.38	.05
MacArthur Community ladder	-0.66	1.29	-.03
Race			
Dummyl: Black African vs White	-14.97	6.82	-.20
Dummy2: Black African vs Coloured	-9.61	6.82	-.20
Dummy3: Black African vs Indian	-26.52	10.92	-.15
Dummy4: Black African vs other	-13.29	12.88	-.06
Sex	0.75	5.61	.01
Parents' Education	-2.98	5.00	-.40
Type of Education of Participant	-1.05	4.78	-.01

Resilience	-0.02	0.14	-.01
Step 7			
Constant	363.87	15.04	
Socioeconomic Status	-0.42	1.28	-.03
MacArthur SES ladder	1.08	1.38	.05
MacArthur Community ladder	-1.05	1.39	-.05
Race			
Dummyl: Black African vs White	-13.60	7.06	-.18
Dummy2: Black African vs Coloured	-10.24	6.64	-.13
Dummy3: Black African vs Indian	-25.30	11.05	-.15
Dummy4: Black African vs other	-12.00	13.00	-.05
Sex	1.28	5.66	.01
Parents' Education	-3.27	5.02	-.04
Type of Education of Participant	-1.49	4.82	-.02
Resilience	-0.04	1.14	-.02
Type of Tertiary Institution Student Attends	5.26	6.86	.06
Step 8			
Constant	363.31	15.01	
Socioeconomic Status	-0.50	1.28	-.29
MacArthur SES ladder	1.32	1.39	.07
MacArthur Community ladder	-1.11	1.39	-.06
Race			
Dummyl : Black African vs White	-15.03	7.1	-.20
Dummy2: Black African vs Coloured	-11.10	6.65	-.01
Dummy3: Black African vs Indian	-26.40	11.04	-.15
Dummy4: Black African vs other	-15.21	13.12	-.07
Sex	1.72	5.65	-.02
Parents' Education	-2.77	5.02	-.04
Type of Education of Participant	1.42	4.81	-.02
Resilience	-0.03	0.14	-.01
Type of Tertiary Institution Student Attends	4.87	6.85	.06
Substance use	4.39	2.78	.09
Step 9			
Constant	371.27	14.71	
Socioeconomic Status	0.72	1.28	.04
MacArthur SES ladder	1.52	1.35	.08
MacArthur Community ladder	1.42	1.35	-.07
Race			
Dummyl: Black African vs White	-9.07	7.09	-.12
Dummy2: Black African vs Coloured	-1.74	6.90	-.02
Dummy3: Black African vs Indian	-18.97	10.87	-.11
Dummy4: Black African vs other	-9.86	12.82	-.05
Sex	3.77	5.55	.04
Parents' Education	-6.26	4.94	-.09
Type of Education of Participant	0.30	4.70	.00
Resilience	-0.04	0.14	-.02
Type of Tertiary Institution Student Attends	8.99	6.79	.11
Substance Use	3.40	2.74	.07
Place of Residence			
Dummyl : University Residence vs Parents' Home	-23.08	5.18	-.31
Dummy2: University Residence vs Other	-16.05	5.94	-.17

*$p < 0.05$

Table 8

Multiple regression analysis: Model summaty

	Model Summary			ANOVA	
Step	R2	Adjusted R^2		*F*	*p*
1	.02	.01	0.02	5.42	< 0.05
2	.02	.02	0.03	3.63	< 0.05
3	.02	.01	0.06	2.44	< 0.05
4	.04	.02	0.07	1.84	< 0.05
5	.05	.02	0.14	1.51	< 0.05
6	.05	.01	0.19	1.37	< 0.05
7	.05	.01	0.22	1.3	< 0.05
8	.05	.02	0.16	1.40	< 0.05
9	.11	.07	0.00	2.63	< 0.05

Second Multiple Regression

The second hierarchical multiple regression was conducted in order to test the hypothesis that subjective social status will be associated with and a stronger predictor of students' mental health than previously known predictors of mental health in first-year students. This multiple regression was also conducted to test the hypothesis that resilience would be a strong predictor of mental health in students.

Tests of Normality

Once again, I used the Kolmogorov- Smirnov (K-S) test of normality in order to determine whether the scores on the five chosen predictor variables of interest, which had continuous data were normally distributed. Results of the K-S tests are reported below.

The SES aggregate scores, D(330) = 0.06, p < 0.00, and the MacArthur SES ladder, D(330) = 0.18, p < 0.00, and the MacArthur community ladder, D(330) = 0.19, p < 0.00 and the substance use measure, D(330) = 0.15, p < 0.00, were all significantly non-normal.

Correlation Matrices

Bivariate correlations were once again conducted in order to make sure that each chosen predictor variable was not highly correlated (>.80) with any other predictor variable, but was correlated with the outcome variable (Field, 2005). As mentioned previously, the non-parametric Spearman's Rho was used for the bivariate

correlations of the continuous variables that were not normally distributed (see Appendix F, Table Fl). The point-biserial correlation was used for the analysis of dichotomous categorical variables and continuous variables (see Appendix F, Table F2), multiple regressions were conducted for continuous variables and categorical variables with more than two categories (see Appendix F, Table F3), and chi-squares were conducted for dichotomous categorical variables and categorical variable with more than two categories (see Appendix F, Table F4). These tests indicated that the independent variables were not highly correlated with each other. All the variables were retained for the final multiple regression analysis because of their theoretical interest to the study.

Multiple Regression

The second hierarchical multiple regression analysis was conducted in order to test the hypothesis that subjective social status will be associated with and be a stronger predictor of students' mental health than previously known predictors of mental health in first-year students. This multiple regression was also conducted to test the hypothesis that resilience would be a strong predictor of mental health in first-year students.

For this multiple regression, and using an alpha level of 0.05, seven predictors, and assuming a small effect size (0.02), the current sample size (N=330) yields a statistical power of approximately 0.40 according to the G Power programme (Faul et al., 2007)

The predictor variables were once again entered into the model using the hierarchical method of forced entry. As mentioned previously, all the predictors are entered into one model but in different blocks or steps of predictors.

The predictors were entered into the model in the following order of blocks or steps: *socioeconomic status;* the *MacArthur SES ladder; MacArthur community ladder;* and *substance use; place of residence; participants' sex*. In the final step in the model, *resilience was* entered. This can be seen in Table 9.

As can be seen in Table 10, at every step of the model building the F-ratio improved significantly at $p < 0.05$ (from .534 in the first step to 11.604 in the seventh step when resilience was added to the model), thus indicating an improvement in the ability of the model to predict mental health. The Durbin-Watson statistic of 1.926 indicated that any errors in the regression were independent, thus this assumption of multiple regression has been met.

In the final step, the predictor *resilience* was added to the model. With this predictor included, the model accounted for 22% of the variance in the mental health scores. This indicated that *resilience* explained an additional 19% of the variance in mental health when it was included in the model. For every one standard deviation change in the variable *resilience* there was a decrease of .45 standard deviations in the mental health scores (f3 = -.453 p < .05). In this analysis, The VIF values were less than 10 and the Tolerance statistics above 0.2 for all the cases, which indicated that there was no multicollinearity in the data.

I then analysed the residual statistics, which identified 13 cases (3.9 % of the sample) as having absolute standard residual values outside the limits of 2. This percentage is well within what we would expect for the sample size (Field, 2005). Furthermore, 4 cases lie outside the broader limits of ±2.5, which is 1% lying outside of the limits and the sample thus conforms to what we expect of a fairly accurate model. On further examination of the Cooks' distances, Mahalanobi's distance, the Covariance ratios and the Centred Leverage values it appeared that the values were within the expected range for the 13 identified cases Table G1 presented in Appendix G shows the diagnostic statistics for the 3 identified extreme cases.

Table 9

Results of the second multiple regression analysis

	B	*SE B*	*β*
Step 1			
Constant	0.01	0.04	
Socioeconomic Status	-0.01	0.02	-.04
Step 2			
Constant	-0.06	0.11	
Socioeconomic Status	-0.01	0.02	-.03
MacArthur SES ladder	0.15	0.22	.39
Step 3			
Constant	-0.12	0.13	
Socioeconomic Status	-0.01	0.02	-.02
MacArthur SES ladder	0.01	0.02	.02
MacArthur Community ladder	0.02	0.23	.51
Step4			
Constant	-0.06	0.14	
Socioeconomic Status	-0.01	0.02	-.03
MacArthur SES ladder	0.01	0.25	.24
MacArthur Community ladder	0.19	0.23	.05
Substance use	0.02	0.05	.02
Step 5			
Constant	0.06	0.14	
Socioeconomic Status	-0.80	0.02	-.25
MacArthur SES ladder	0.01	0.03	.02
MacArthur Community ladder	0.02	0.02	.05
Substance use	0.03	0.05	.03
Place of Residence			
Dummyl :University Residence vs Parents' Home	-0.07	0.09	-.05
Dummy2:University Residence vs Other	-0.18	0.12	-.10
Step 6			
Constant	-0.26	0.16	
Socioeconomic Status	-0.01	0.02	-.02
MacArthur SES ladder	0.01	0.03	.03
MacArthur Community ladder	0.02	0.02	.04
Substance use			
Place of Residence	-0.09	0.09	-.06
Dummyl :University Residence vs Parents' Home	-0.17	0.11	-.10
Dummy2:University Residence vs Other			
Sex	0.25	0.10	.31
Step 7			
Constant	1.22	0.22	
Socioeconomic Status	0.00	0.02	.00
MacArthur SES ladder	0.03	0.02	.07
MacArthur Community ladder	-0.02	0.02	-.06
Substance use	0.02	0.05	.02
Place of Residence			
Dummyl :University Residence vs Parents' Home	-0.05	0.08	-.04
Dummy2:University Residence vs Other	-0.09	0.10	-.05
Sex	0.23	0.09	.12
Resilience	-0.02	0.00	-.45

*$p < 0.05$

DISCUSSION

Multiple Regression Analysis: Summary and Discussion

- The results of the first multiple regression analysis indicated that place of residence was the strongest predictor of adjustment in the sample of first-year students. Thus, the hypothesis that subjective social status would be the strongest predictor of adjustment in the sample of first year students was not met.

Multiple regression analyses were conducted in order to investigate the main hypothesis that subjective social status would be a stronger predictor of adjustment, mental health and general health in first year students than variables previously shown to be predictors of adjustment in students (e.g. race, absolute SES). The purpose of the multiple regression analyses was also to investigate the hypothesis that resilience would be a strong predictor of adjustment, mental health and general health in first - year students.

Results of the three multiple regression analyses investigating subjective social status as a stronger predictor of adjustment, mental health and physical health indicated that the main hypothesis was not met. The investigation of subjective social status as a predictor of adjustment in students was exploratory in the sense that there has not been any previous research conducted to investigate this relationship in students. Results indicating that subjective social status was not a strong predictor of mental health and general health are in contradiction to previous research (e.g. Adler et al., 2000), which has shown strong positive relationships between subjective social status mental and physical health in individuals.

Even though subjective social status was not a strong predictor of adjustment, mental health and general health in this group of university students, the notion of perceived versus actual social standing deserves further investigation for its potential as a protective factor in students who are at poor risk for adjustment, mental and general health. Thus, South African students who come from disadvantaged backgrounds

could still have a high sense of social standing amongst their peers by excelling academically. Students who may not excel academically could still have a high sense of perceived social status by taking on roles of leadership within their universities and thus gaining the respect of their peers. Furthermore, if tertiary institutions can encourage students who are at poor risk for adjustment to engage in activities where they can gain a sense of social standing (e.g. becoming involved in their university's student representative council, or participating in university sports and community activities) within their student community, these students may be able to transcend the challenges related to their backgrounds or those related to the tertiary institutions they attend.

Results of correlations conducted between the predictors in the regression statistical analyses did not indicate that any of the predictors were statistically related. However, it is interesting to note that most of the students in the sample were in the medium SES category and on average they also reported that they perceived their social status on both of the MacArthur ladders to be fairly moderate (halfway between high perceived social status and low perceived social status). This may reflect the context of South African society where race, socioeconomic status, standing in society and the perception of standing in society may be in integrally linked due to the legacy of Apartheid. The MacArthur SES ladder is linked to objective traditional measures of SES (Adler & Stewart, 2007).

The MacArthur Scale of Subjective Social Status and the concept of perceived social status, viewed within the relative deprivation theory framework, deserves further investigation in light of the fact that South Africa is such an unequal society in its distribution of resources. Relative deprivation (and for that matter subjective social status) may be the link between societal and income inequality and outcomes such as mental health as well as a range of societal problems (Aberg et al., 2003; Wilkinson, 1997a, 1997b; Wilkinson, 2007).

This sample of first year students were mostly White and the vast majority of students were in the medium and high SES category and most of the students in the sample attended historically advantaged institutions. This sample thus did not reflect the majority of students in South Africa nor does it reflect the majority of the population

in the country. It is important to obtain a more representative sample of South African students for future research and it to take into account the specific nature and history of South African when researching socioeconomic status and interpreting the results of research.

Place of Residence as a Predictor of Adjustment

Although the main hypothesis was not met, results of the first multiple regression analysis indicated that students' place of residence was the strongest predictor of adjustment in the sample of first-year students. This result highlights the fact that living environment plays an important role in the often, challenging transition to university life for first-year students in South Africa. Thus, this carries the implication that where students live and the experiences they have there during the course of their studies can either facilitate better adjustment to the multifaceted demands of the university environment or hamper their adjustment. The finding that students' place of residence predicted students' adjustment is supported in the literature. For example, Enochs and Roland (2006) found that students who live in residence halls, which create an environment that fosters academic interactions as well as social interactions with their peers, were better adjusted than students who lived in residences that did not create an adequate space within which to learn and create social networks.

The university residence environment can act as a significant setting for moulding students' feelings of connection and belonging to their institution, which may be due to some of the experiences they have and also to the intimacy as well as the intensity of the relationships they form while living in residence. Living in residences may be even more important for disadvantaged students due to these reasons (Enochs & Roland, 2006; Bozick, 2007; Johnson et al., 2007). Living on campus may also be an important way to expose students to other individuals from different racial or ethnic groups as well as to interact with students from various socioeconomic backgrounds. The experiences students have of living on campus may also build essential life skills such as time management and may also enhance their overall experience of university life (Bozick, 2007).

However, when we take into account the context of South African universities issues such as the political climate, racial divides, the sometimes disadvantaged state of

university residences, or impoverished communities many students live in, the living environment may play an even more important role in their adjustment to university. For example, Black African students face the challenge of living in university residences that are situated in White residential areas where there is not much entertainment and which are far from Black townships and finding transport to other areas is difficult (Sennett et al., 2003). Additionally, university residences in formerly White universities, particularly Afrikaans universities are places where there may be high hostilities between students. Reasons for this may include that White students may be from communities, or may have attended all white schools in urban areas where they have never encountered Black people in a situation where they are on equal level with them. Black students who come from rural areas and have attended all-Black schools can feel that the environment is alienating and possibly hostile. These students find the aggressive reception from White students to be confrontational, alienating and something they are not used to, if they come from high schools where they have interacted socially with White students (Jansen, 2004).

On the other hand, students who live at home have been found to be more at risk for poor adjustment and for dropping out than students who live in university residences because these students may not have as many opportunities to interact with university staff members and other students and may thus not be as connected to their tertiary institution (Bozick, 2007). Many South African students, in particular Black African students may come from disadvantaged communities or neighbourhoods where there is a lot of violence and crime, trauma (Sennett, 2003), thus living at home during the course of their studies may prove to be challenging for these students.

The finding that place of residence was an important predictor for adjustment to university for the sample of first-year students has important implications for university student support and wellness programmes. It is important for both historically advantaged and historically disadvantaged universities to be aware that students come to university with a range of different experiences and backgrounds. These institutions should thus have sufficient support networks in place to monitor and provide support for students who may be at risk for poor adjustment.
One way to provide support in university residences may be to create learning communities (RLCs). Learning communities may be seen as a type of co-registration,

which allows students to take courses together instead of apart. Learning communities may function by linking students by way of joining two courses together or another way may be for students in the community to share the same semester curriculum or study the same course material over a semester. In addition, students may attend large classes but then form smaller discussion groups, which could be led by a graduate student. In residence hall learning communities, first-year students may enroll in courses, which are linked and they may live together in part of the residence hall that is reserved for these communities. Most learning communities share the commonality of 'shared knowledge', which is created, for example by requiring students to take courses together. The purpose of this is to construct a shared, cohesive curricular experience and in this way, higher levels of cognitive complexity can be promoted. They also share the commonality of 'shared knowing', which is created by enrolling many students in the same classes so they get to know each other and through connecting students in social and intellectual ways, their cognitive development is promoted. Learning communities also have the commonality of 'shared responsibility', which takes the form of each student in the community having to take responsibility for the process of acquiring knowledge and the members depending on each other in order to advance the group's academic progress (Tinto, 2003).

The purpose of learning communities in student residences is to create a climate that encourages support amongst peers, student involvement and interactions between students and the faculty. In fact, students of different races who live in residences which have learning communities may have better intellectual development, may be better integrated and have more interactions with their university and peers than students who live in more traditional residence halls (Pike, 1999).

In addition, peer mentoring may be important to assist the adjustment process for first year students whether they live on or off campus. For example, a peer mentoring programme implemented at a South African university proved to be important for both the mentor and for those being mentored in providing these first years with information, guidance and assistance in adjusting to their living situation. They also provided academic, social, psychological support and support regarding career and personal directions. A large number of students reported that the programme

benefited them immensely especially with regard to their academic development (Kagee et al., 1997).

Resilience as a Predictor of Mental Health and General Health

- The results of the second multiple regression analysis indicated that resilience was a significant predictor of mental health functioning in the sample of first-year students.

- The results of the third multiple regression analysis indicated that resilience was a significant predictor of general health functioning in the sample of first-year students.

- The results of the second and third multiple regression analyses indicated that resilience was not a strong predictor of adjustment in the sample of first-year students.

The results of the second and third multiple regression analyses indicated that resilience was a significant predictor of mental health and of general health in the sample of first year university students. This is line with the hypothesis that resilience would be a strong predictor of mental health and general health for the group of first-year university students. Resilience was not shown to be a strong predictor of adjustment in the sample of students.

These findings are supported in the literature. In relation to personality, coping and mental health symptoms, resilience was shown to be positively associated with personality dimensions such as extraversion and conscientiousness and negatively associated with neuroticism (or being prone to negative emotions, poor coping skills and finding it difficult to control impulses) in university students.

Furthermore, the results indicated that resilience was negatively correlated with mental health scores and also negatively correlated with general health scores. Thus, students who scored low on the resilience measure scored high on the mental health

measures, in other words they reported more mental health problems. Similarly, students who scored low on the resilience measure, scored high on the general health measure, which indicated that these students reported more general health problems.

The literature suggests a positive association between resilience and better mental health outcomes. For example, individuals who are high in measures of resilience generally show lower levels of psychiatric symptoms such as depression even if they have suffered adversity such as emotional neglect during childhood (Campbell-Sills, Cohan & Stein, 2006). In addition, the resilience attributes of hope and optimism amongst others have been shown to be important in the recovery of individuals from mental illness (Atkinson, Martin & Rankin, 2009; Connor & Davidson, 2003). Resilience has also been shown to be associated with better health outcomes in individuals (Chan, Lai & Wong, 2006).

The sample of students in this study was mostly in the high SES and medium SES categories and on average had a moderate score on the Connor-Davidson Resiliency Scale. This moderate average score may be a reflection of the notion that resilience can only be built through experiencing adversity (Rutter, 2007). For these students, their socioeconomic status have afforded them fewer hardships (e.g. adversity related to socioeconomic disadvantage) and they may be less resilient than those students who come from more adverse backgrounds and have experienced more hardships. This is merely an assumption, though and would have to be investigated in future research studies with South African students.

Furthermore, the literature has highlighted protective factors, which are associated with individuals who are resilient. These may include personal resources such individual motivation and self-esteem, but they can also include external resources such as having supportive family members, or forming connections with supportive figures at the university they attend (Cabrera & Padilla, 2004; Dass-Brailsford, 2005). In one study, students who were shown to be high in resilience also had a strong sense of cultural identity and ethnic identity may allow them to be better adjusted to university life (Clauss-Ehlers et al., 2006).

These findings have important implications for South African students who may be at poor risk for poor adjustment as well as mental health problems and general health problems. The notion that resilience may be a protective factor for individuals and can be built through supportive networks such as family members or connections with university figures once again suggests the need for universities to have student support programmes in place, which can tend to the needs of students.

It may be equally important for university lecturers and administrators to be mindful and respectful of cultural identities, especially in South Africa where individuals from diverse cultures and ethnic groups interact and live alongside each other. Another important way for universities to enhance external support for students could be to have programmes and societies in place, which enhance cultural identity in students and to encourage social activities, which could create family-like circles of support especially for students whose families live far away. It may also be important for university lecturers and authorities to be seen as available to students.

General Summary and Conclusion

The literature on students' experiences suggests that first year student face many challenges during the transition form high school to university. South African students may face more challenges in light of the legacy of Apartheid, which has left many groups of people educationally and financially disadvantaged.

The aim of this study was to investigate hypothesized relationships between absolute socioeconomic status, subjective social status, mental health, general health and adjustment as well as various sociodemographic variables and measures of resilience and substance use.

In general, the sample of students in this study was fairly well adjusted on all levels of adjustment presented in the SACQ subscales as well as the full scale. On average, students scored moderately on all the measures used in this study and contrary to the high drinking statistics reported in the South African and international literature, did not report to face problems with alcohol or substance use. On average, students were moderately high in resilience and showed good general health.

Students in the sample were also mostly White and the majority of students attended historically advantaged institutions. Most of the students were in the medium to high socioeconomic status category with only a small number falling into the low SES category. Thus the students in this sample were not representative of the majority of students attending universities across South Africa. They were also not representative of the majority of individuals in the general population of South Africa.

Hierarchical regression analyses were conducted to investigate which variables best predicted of quality of adjustment in first-year South African students. The results of the multiple regression analyses indicated that where students live is very important for their overall adjustment and their social and academic adjustment during the transition to university.

The results indicated that contrary to my hypothesis, subjective social status was not a very strong predictor of adjustment, mental health or general health in students. However, place of residence was the strongest predictor of adjustment in students. The results also indicated that resilience was the strongest predictor of mental health and of general health in students.

These findings highlight the importance for universities to provide support networks and programmes for students who may be at risk for poor adjustment and poor mental health outcomes. It also highlights the fact that students who live in residences can benefit from programmes, which create academic and social interactions within their residences so that they can feel socially and academically integrated.

The findings that resilience plays an important role in mental health outcomes and general health and that resilience may be fostered through having social support and a sense of cultural identity have important implications for university authorities. These findings should encourage universities to provide adequate counselling services and to make sure that there are adequate extramural activities offered social societies and clubs which can assist students to become socially and academically integrated in their tertiary institutions. University student representative councils may also have an important role to play as forming a link between students and their needs and university staff and administration.

Limitations and Directions for Future Research

One of the major limitations of this study was the fact that there were vastly unequal responses from the historically disadvantaged universities and the historically advantaged universities. The reason I did not obtain large enough numbers of students from the historically disadvantaged universities may be due to their lack of access to computers or to the Internet to enable them to fill out the online survey. This may be due to the large numbers of students at these institutions and the limited resources available to them even in post Apartheid South Africa. In future, when doing research with students at historically disadvantaged institutions, it may be better to use printed copies of questionnaires, which students can take home to complete in their own time.

Another limitation of this study was that students from historically disadvantaged institutions were under represented and thus the findings are not really generalizable to other students at historically disadvantaged institutions. There were also a large number of White students in the sample and only a small number of Black African students, thus in order to do future research on perceived socioeconomic status it is important to get a more equal distribution of race groups.

Students in this sample were largely in the medium and high socioeconomic categories and were thus not representative of university students across the country, or of individuals in the South. African population as a whole, which is largely impoverished who would fall into the low SES category.

It would thus be of interest to repeat this study using a more representative sample of first year students at many universities across the country. In future studies I could also measure actual academic outcomes and whether subjective social status predicts adjustment and academic success.

Finally, future studies should also be conducted to establish norms for students in the South African population with regard to the Student Adaptation to College Questionnaire, the Connor-Davidson Resiliency Scale, and the MacArthur Scale of Subjective Social Status.

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Appendix A

Item Composition of the SACQ Sub-Scales

Item Number	Item
	Academic Adjustment (24 items)
3	I have been keeping up to date with my academic work.
5	I know why I'm at university and what I want out of it.
6	I am finding academic work at university difficult.
10	I have not been coping well with exams.
13	I am satisfied with the level at which I am performing academically.
17	I'm not working as hard as I should at my course work.
19	My academic goals are well defined.
21	I'm not really clever enough for academic work I am expected to be doing now
23	Getting a university degree is very important to be.
25	I haven't been very efficient in the use of study time lately.
27	I enjoy writing essays or papers for courses.
29	I really haven't had much motivation for studying lately.
32	Lately I have been having doubts regarding the value of university education.
36	I am satisfied with the number and variety of courses available at university.
39	Recently I have had trouble concentrating in lectures or when I try to study.
41	I'm not doing well enough academically for the amount of work I put in.
43	I am satisfied with the quality of courses available at university.
44	I attend lectures regularly.
50	I am enjoying my academic work at university.
52	I am having a lot of trouble getting started in university assignments.
54	I am satisfied with my programme of courses for this semester.
58	Most of the things I'm interested in are not related to any of my course work at university.
62	I am very satisfied with the lecturers I have now in my courses.
66	I'm quite satisfied with my academic situation at university.
	Social Adjustment (20 items)
1	I feel that I fit in well as part of the university environment.
4	I am meeting as many people, and making as many friends as I would like at university.
8	I feel very involved with social activities at university.
9	I am adjusting well to university.
14	I have had information, personal contacts with university lecturers.
16	I am pleased now about my decision to attend this university in particular.
18	I have several people I feel close to at university.
22	Homesickness or missing home is a source of difficulty for me now.
26	I enjoy living in a university residence. (Please leave this out if you do not live in a residence; any university housing should be regarded as a residence.)
30	I am satisfied with extracurricular activities available at university.
33	I am getting along very well with my roommate(s)/housemate(s) at university. (Please leave this out if you do not have a roommate.)
37	I feel that I have enough social skills to get along well in the university setting.
42	I am having difficulty feeling at ease with other people at university.
46	I am satisfied with the extent to which I am participating in social activities at university.
48	I haven't been mixing too well with the opposite sex lately.
51	**I** have been feeling lonely a lot at university lately.
56	I feel I am very different from other students at university in ways that I don't like.
57	On balance, I would rather be home than here.
63	I have some good friends or acquaintances at university with whom I can talk about any problems I may have.
65	I am quite satisfied with my social life at university.

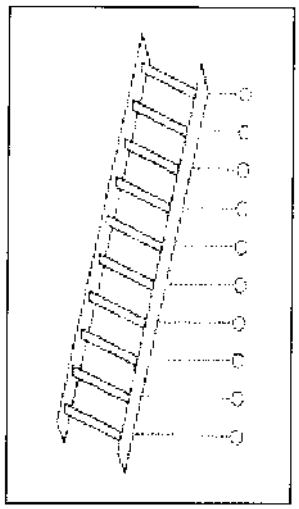
Item Composition of the SACQ Sub-Scales

Item Number	Item
	Personal-Emotional Adjustment (15 items)
2	I have been feeling tense or nervous lately.
7	Lately I have been feeling down and moody a lot.
11	I have felt tired much of the time lately.
12	Standing on my own feet, taking responsibility for myself, has not been easy.
20	I haven't been able to control my emotions very well lately.
24	My appetite has been good lately.
28	I have been having a lot of headaches lately.
31	I haven't given a lot of through lately to whether I should ask for help from the Psychologist/Counselling Services at Student Health or from a psychologist outside university.
35	I've put on (or lost) too much weight recently.
38	I have been getting angry too easily lately.
40	I haven't been sleeping well.
45	Sometimes my thinking gets muddles up too easily.
49	I worry a lot about my university expenses.
55	I have been feeling in good health lately.
64	I am experiencing a lot of difficulty coping with the stresses imposed on me at university.
	Goal-Commitment Institutional Attachment (15 items)
1	I feel that I fit in well as part of the university environment.
4	I am meeting as many people, and making as many friends as I would like at university.
15	I am pleased now about my decision to go to university.
16	I am pleased now about my decision to attend this university in particular.
26	I enjoy living in a university residence. (Please leave this out if you do not live in a residence; any university housing should also be regarded as a residence.)
34	I wish I were at another university.
36	I am satisfied with the number and variety of courses available at university.
42	I am having difficulty feeling at ease with other people at university.
47	I expect to stay at this university for a bachelor's degree.
56	I feel I am very different from other students at university in ways that I don't like.
57	On balance, I would rather be home than here.
59	Lately I have been thinking about transferring to another university or technicon.
60	Lately I find myself thinking about dropping out of university altogether and for good.
61	I find myself giving considerable thought to taking time off from university and finishing later.
65	I am quite satisfied with my social life at university.

Appendix B

MacArthur Scale of Subjective Social Status

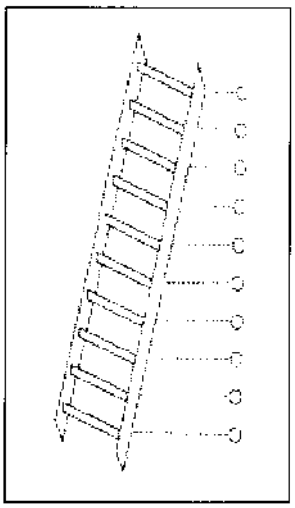
1 a. Imagine that the ladder (right) pictures how South African society is set up.



- At the top of the ladder are the people who are the best off— they have the most money, the highest amount of schooling, and the jobs that bring the most respect.
- At the bottom are people who are the worst off— they have the least money, little or no education, no job or jobs that no one wants or respects.

Now think about your family. Please tell us where you think your family would be on this ladder. **Fill in the circle that best represents where your family would be on this ladder.**

lb. Now assume that the ladder (right) below is a way of picturing your university.



- At the top of the ladder are the people in your university with the most respect, the highest grades, and the highest standing.
- At the bottom are the people who no one respects, no one wants to hang around with, and have the worst grades.

Where would you place yourself on this ladder? **Fill in the circle that best represents where you would be on this ladder.**

Appendix C

Content of the Connor-Davidson Resilience Scale

For each statement below please tick or X an answer which best describes your personality in relation to the statement.

Answer options are: (0) not true at all (1)rarely true (2)sometimes true (3) often true (4) true nearly all of the time

Description	Answer				
1. Able to adapt to change	(0) not true at all	1)rarely true	(2)sometimes true	(3) often true	(4) true nearly all of the time
2.Close and secure relationships	"	"	"	"	"
3. Sometimes fate and God can help	"	"	"	"	"
4.Can deal with whatever comes	"	"	"	"	"
5. Past success gives confidence for new challenges	"	"	"	"	"
6. See the humorous side of things	"	"	"	"	"
7.Coping with stress strengthens	"	"	"	"	"
8.Tend to bounce back after illness or hardship	"	"	"	"	"
9. Things happen for a reason	"	"	"	"	"
10.Best effort no matter what	"	"	"	"	"
11. You can achieve your goals	"	"	"	"	"
12.When things look hopeless, I don't give up	(0) not true at all	1)rarely true	(2)sometimes true	(3) often true	(4) true nearly all of the time
13.Know where to turn for help	"	"	"	"	"
14. Under pressure, focus and think clearly	"	"	"	"	"
15. Prefer to take the lead in problem solving	"	"	"	"	"
16. Not easily discouraged by failure	"	"	"	"	"
17. Think of self as strong person	"	"	"	"	"
18.Make unpopular or difficult decisions	"	"	"	"	"
19. Can handle unpleasant feelings	"	"	"	"	"
20. Have to act on a hunch	"	"	"	"	"
21. Strong sense of purpose	"	"	"	"	"
22. In control of your life	"	"	"	"	"
23.I like challenges	"	"	"	"	"
24.You work to attain your goals	"	"	"	"	"
25. Pride in your achievements	"	"	"	"	"

Appendix D

Bivariate Correlations of Predictor Variables and Dependent Variable

Table D1

Bivariate Correlation Matrix: Continuous Predictors and Dependent Variable

Variable	1	2	3	4	5
Predictor variables					
1. SES	----	-.34**	-.27**	.11*	-.11*
2.MacArthur SES ladder		----	.43**	-.14**	.11*
3.MacArthur community ladder			----	-.06	.07
4.Substance use				----	.10*
Dependent variable					
5. SACQ Full Scale Score					----

Statistic presented is Spearman's Rho correlation coefficient.

*p < .05 (1 tailed); ** p <.01 (1-tailed)

Table D2

Bivariate Correlation Matrix: Continuous Predictor and Dependent Variable

Variable	1	2
Predictor variables		
1. Resilience	----	-0.02
Dependent variable		
5. SACQ Full Scale Score		----

Statistic presented is the Pearson's correlation coefficient.

Table D3

Bivariate Correlation Matrix: Dichotomous Categorical Predictor Variables, other Predictor Variables

Variable	1	2	3	4
Dichotomous categorical variable				
1. Participant's sex	----	----	----	----
2. Type of education	----	----	----	----
3. Institution type	----	----	----	----
4. Parents' education	----	----	----	----
Continuous predictor variables				
5. SES	-.01	-.20	-.46	.57
6.MacArthur SES ladder	-.02	.30**	.36**	-.28**
7.MacArthur community ladder	.04	.29**	.52**	-.16**
8.Resilience	-.02	.03	.04	.04
9.Substance use	-.03	-.05	-.06	.01
Dependent variable				
10.SACQ Full Scale Score	-.01	.04	.11*	-.01*

Statistic presented is the point-biserial correlation coefficient.

*$p < .05$ (1 tailed); ** $p < .01$ (1-tailed)

Table D4

Multiple regression analysis: Summary of model

Model Summary			ANOVA		
Step	R^2	Adjusted R^2	*P*	*F*	*p*
1	.13	.01	0.02	5.42	< 0.05
2	.15	.02	0.03	3.63	< 0.05
3	.15	.01	0.06	2.44	< 0.05
4	.15	.10	0.12	1.83	< 0.05
5	.17	.01	0.11	1.81	< 0.05
6	.23	.30	0.05	1.95	< 0.05
7	.32	.07	0.00	3.29	< 0.05

Table D5

Chi- Square Tests between Dichotomous Categorical Predictors and other categorical variables with more than two categories

Variables	χ^2	df	Exact Sig. (1-sided)
Sex*Education	1.92	1	.21
Sex*Parents' education	0.3	1	.35
Sex*Institution	2.59	1	.08
Type of school*Parents' education	14.78	1	.00
Type of school*Institution	45.52	1	.00
Sex*Race	8.56	4	.07
Sex*Place of residence	5.97	2	.051
Institution*Race	133.28	4	.06
Institution*Place of residence	10.51	2	.00
Type of school*Race	58.91	4	.00
Type of school*Place of residence	8.79	2	0.12
Parents' education*Race	38.48	4	.00
Parents' education*Place of residence	5.41	2	.07

Appendix E

Evaluations of Extreme Cases Identified by Residual Statistics Analysis

Table E1

Diagnostic Statistics for Extreme Cases

Case Number	Standardized Residual Value	Mahalanobi's Distance	Cook's Distance	Centred Leverage Value	Covariance Ratio
7	2.33	7.57	0.01	0.02	0.81
31	-2.34	13.44	0.02	0.04	0.82
83	2.07	4.84	0.00	0.01	0.86
108	-0.296	16.99	0.03	0.05	0.69
126	-2.18	24.54	0.03	0.07	0.88
205	2.99	19.40	0.04	0.06	0.68
208	2.20	13.27	0.01	0.04	0.85
216	-2.46	23.53	0.03	0.07	0.81
227	2.47	16.80	0.02	0.05	0.80
241	2.16	9.91	0.01	0.03	0.85
255	-2.31	8.10	0.01	0.02	0.82
258	-2.74	27.85	0.05	0.08	0.75
265	2.82	33.31	0.06	0.10	0.74
277	-2.58	33.31	0.06	0.10	0.74
285	-2.19	9.06	0.01	0.03	0.84
294	2.54	14.59	0.02	0.04	0.78
295	2.30	18.13	0.02	0.06	0.84
310	3.89	18.90	0.06	0.06	0.48

Appendix F

Bivariate Correlations of Predictor Variables and Dependent Variable

Table F1

Bivariate Correlation Matrix: Continuous Predictors and Dependent Variable

Variable	1	2	3	4	5	6
Predictor variables						
1. SES	----	-.34**	.27**	.77	-.11*	-.78
2.MacArthur SES ladder		----	.43**	-.06	.14**	.06
3.MacArthur community ladder			----	-.25**	-.06	.10*
4. Resilience				----	-.01	-.45**
5.Substance use					----	.02
Dependent variable						
6. Mental Health						----

Statistic presented is Spearman's Rho correlation coefficient.

*$p < .05$ (1 tailed); ** $p < .01$ (1-tailed)

Table F2

Bivariate Correlation Matrix: Dichotomous Categorical Predictor Variable, other Predictor Variables

Variable	1
Dichotomous categorical variable	
1. Participant's sex	----
Continuous predictor variable	
5. SES	-.03
6.MacArthur SES ladder	-.13
7.MacArthur community ladder	.04
8.Resilience	-.01
9.Substance use	-.03
Dependent variable	
10.Mental Health	.14**

Statistic presented is the point-biserial correlation coefficient.

** $p < .01$ (1-tailed)

Table F3

Multiple regression analysis: Summary of model

Model Summary				ANOVA	
Step	R^2	Adjusted R^2	*P*	*F*	*p*
1	0	-.00	0.47	0.53	< 0.05
2	0.1	-.00	0.61	0.48	< 0.05
3	0	-.00	0.65	0.55	< 0.05
4	0.2	.19	0.00	21.21	< 0.05
5	0.2	.19	0.00	16.93	< 0.05
6	0.2	.19	0.00	12.17	< 0.05

Table F4

Chi- Square Test between Dichotomous Categorical Predictors and other categorical variables with more than two categories

Variables	χ^2	df	Exact Sig. (1-sided)
Sex*Place of residence	5.28	2	.07

Appendix G

Evaluations of Extreme Cases Identified by Residual Statistics Analysis

Table G1

Diagnostic Statistics for Extreme Cases

Case Number	Standardized Residual Value	Mahalanobi's Distance	Cook's Distance	Centred Leverage Value	Covariance Ratio
7	2.14	6.23	0.01	0.02	0.88
12	2.56	12.06	0.02	0.04	0.81
20	2.26	9.71	0.01	0.03	0.87
51	3.29	7.37	0.02	0.02	0.68
84	2.12	3.38	0.00	0.01	0.88
183	3.63	14.36	0.05	0.04	0.61
253	-2.38	4.42	0.01	0.01	0.84
262	2.38	20.12	0.03	0.06	0.87
281	-2.74	10.56	0.02	0.03	0.77
301	2.30	14.56	0.02	0.04	0.87
318	2.65	4.42	0.01	0.01	0.84
319	2.26	20.12	0.03	0.06	0.87
326	2.12	10.56	0.02	0.03	0.77

Appendix H

Bivariate Correlations of Predictor Variables and Dependent Variable

Table H1

Bivariate Correlation Matrix: Continuous Predictors and Dependent Variable

Variable	1	2	3	4	5	6
Predictor variables						
1. SES	----	-.33**	.27**	.78	-.11*	-.62
2.MacArthur SES ladder		----	.42	-.49	-.15	-.03
3.MacArthur community ladder			----	-.25**	-.06	-.00
4. Resilience				----	-.02	-.28**
5.Substance use					----	-.31
Dependent variable						----
6. General Health						

Statistic presented is Spearman's Rho correlation coefficient.

*$p < .05$ (1 tailed): ** $p < .01$ (1-tailed)

Table H2

Bivariate Correlation Matrix: Dichotomous Categorical Predictor Variable, other Predictor Variables

Variable	1
Dichotomous categorical variable	
1. Participant's sex	----
Continuous predictor variable	
5. SES	-.003
6.MacArthur SES ladder	-0.13
7.MacArthur community ladder	0.04
8.Resilience	-0.01
9.Substance use	-0.03
Dependent variable	
10.General Health	0.01

Statistic presented is the point-biserial correlation coefficient.

Table H3

Multiple regression analysis: Summary of model

Model Summary			ANOVA		
Step	R^2	Adjusted R^2	*P*	*F*	*p*
1	0	.00	0.20	1.62	< 0.05
2	0	.00	0.30	1.21	< 0.05
3	0	-.00	0.42	0.94	< 0.05
4	.08	.07	0.00	6.97	< 0.05
5	.81	.07	0.00	5.73	< 0.05
6	0.2	.75	0.00	3.97	< 0.05
7	.102	.07	0.00	3.30	< 0.05

Table H4

Chi- Square Test between Dichotomous Categorical Predictor and other categorical variable with more than two categories

Variables	χ^2	df	Exact Sig. (1-sided)
Sex*Place of residence	7.80	4	0.10

Appendix I

Evaluations of Extreme Cases Identified by Residual Statistics Analysis

Table I1

Diagnostic Statistics for Extreme Cases

Case Number	Standardized Residual Value	Cook's Distance	Mahalanobi's Distance	Centred Leverage Value	Covariance Ratio
11	2.18	0.07	43.89	0.13	0.96
12	2.14	0.02	12.06	0.04	0.89
148	2.11	0.02	12.41	0.04	0.90
183	2.30	0.02	14.36	0.04	0.87
228	2.23	0.01	10.97	0.03	0.87
241	2.13	0.01	5.04	0.02	0.88
280	2.04	0.01	6.19	0.02	0.89
312	2.09	0.02	17.26	0.05	0.91
318	2.05	0.01	12.50	0.04	0.91

End Note

The four education departments in South Africa under Apartheid (as mentioned in the introduction) included:

- Department of Education and Culture, House of Assembly (who reported to the White Own Affairs Minister)

- Department of Education and Training (DET) (who reported to the Black General Affairs Minister)

- Department of Education and Culture, House of Representatives (who reported to the Coloured Own Affairs Minister); Department of Education and Culture, House of Delegates (who reported to the Indian Own Affairs Minister)

- An Education Department, which operated in the homelands and functioned independently from the South African government.

(Petersen, 2006)