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**THE ROLE OF ACADEMIC SELF-CONCEPT IN THE RELATIONSHIP  
BETWEEN GRADE 12 PERFORMANCE AND ACADEMIC  
PERFORMANCE IN FIRST-YEAR PSYCHOLOGY STUDENTS**

by

**Lené Groenewald**

This dissertation is submitted in fulfilment of the requirements for the  
Master of Social Science degree with specialisation in Psychology

in the

Department of Psychology

in the Faculty of the Humanities

at the

University of the Free State, Bloemfontein

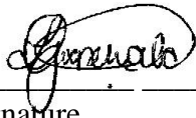
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TO WHOM IT MAY CONCERN


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## Abstract

The first year of university is an important transitional and developmental period. Students enter university with diverse pre-university experiences, which could affect how successfully they change over to the new university environment. In this study, the relationship between Grade 12 academic performance and first-year academic performance in psychology students at the University of the Free State (UFS) was investigated. Furthermore, the potential mediating and/or moderating roles of students' generational status and academic self-concept (ASC) in this relationship were examined. A non-experimental type, quantitative research approach with a correlational design was adopted. A sample of 203 first-year psychology students was recruited by using non-probability, convenience- sampling methods. Participants completed an online self-report survey consisting of questions on their demographic information and ASC. The moderating role of generational status was measured before conducting further statistical analyses. The Pearson product-moment correlation coefficient was used to measure the relationship between Grade 12 academic performance and psychology marks of the first year. A moderated hierarchical regression analysis was conducted to determine the moderating and/or mediating role of ASC in this relationship. In this study, generational status was not a moderator in the aforementioned relationship. Grade 12 academic performance explained a significant amount of variance in first-year psychology marks. ASC had a main effect on participants' psychology module marks, but was neither a mediator nor a moderator in the relationship between Grade 12 academic performance and first-year psychology marks. It can be concluded that academic performance at university is dependent on students' prior academic performance and their ASC.

*Keywords:* academic performance, academic self-concept, generational status, students, university

## Opsomming

Die eerste jaar by 'n universiteit is 'n belangrike oorgang- en ontwikkelingsperiode. Studente betree universiteit met verskillende pre-universiteit- ervarings wat beïnvloed hoe suksesvol hulle oorskakeling na die nuwe universiteitsomgewing is. In hierdie studie is die verband tussen die Graad 12 akademiese prestasie en akademiese prestasie in die eerste jaar onder eerstejaar-sielkunde studente aan die Universiteit van die Vrystaat (UV) ondersoek. Die potensiële modererende- en / of mediërende effekte van studente se generasie status en akademiese selfkonsep (ASC) in hierdie verhouding is ook ondersoek. 'n Nie-eksperimentele, kwantitatiewe navorsingsbenadering met 'n korrelasionele ontwerp is gebruik. 'n Steekproef van 203 eerstejaar-sielkunde studente is verkry deur middel van nie-waarskynlikheid, gerieflikheidsteekproefneming. Deelnemers het aanlyn 'n selfevalueringsvraelys voltooi wat vrae oor hul demografiese inligting en ASC ingesluit het. Die modererende rol van generasie status is gemeet voordat verdere statistiese analyses voltooi is. 'n Pearson-korrelasie koëffisiënt ( $r$ ) is gebruik om die verhouding tussen Graad 12-akademiese prestasie en eerstejaar-sielkunde modulepunte te meet. 'n Gemodereerde hiërargiese regressie-analise is uitgevoer om die modererende en / of mediërende rol van ASC in hierdie verhouding te bepaal. In hierdie studie was generasie status nie 'n moderator in die voorheen genoemde verhouding nie. Graad 12-akademiese prestasie het 'n betekenisvolle hoeveelheid variansie in punte van eerstejaar-sielkundestudente verklaar. ASC het 'n hoofuitwerking op die deelnemers se sielkunde-modulepunte gehad, maar was nie 'n mediator of moderator in die verhouding tussen Graad 12-akademiese prestasie en eerstejaar- sielkunde punte nie. Dit kan afgelei word dat akademiese prestasie op universiteit afhanklik is van studente se vorige akademiese prestasie en hul ASC.

*Sleutelwoorde:* akademiese prestasie, akademiese selfkonsep, generasie status, studente, universiteit



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**List of Acronyms**

AP	Admission point
ASC	Academic self-concept
ASCS-SF	Academic Self-Concept Scale – Short Form
BPS	British Psychological Society
CHE	Council of Higher Education
HE	Higher education
HEI	Higher education institution
NBT	National Benchmark Tests
NPC	National Planning Commission
NSSE	National Survey of Student Engagement
SASSE	South African Survey of Student Engagement
SIM	Student Integration Model
UCT	University of Cape Town
UFS	University of the Free State
UV	Universiteit van die Vrystaat

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## **Chapter 1 – Introduction to the Research Study**

Universities are regarded as pathways to personal and societal development. Academic performance at university has important implications for students' social and professional future. During the first year, students develop key skills and attitudes that influence future learning and development at university. However, students are not blank slates, and they have their own attributes, aptitudes, and other personal factors that influence this transitional process and academic performance. Aspects such as academic self-concept (ASC) and generational status could influence the way in which students approach academics. Many students do not proceed through the transitional period successfully and may drop out because they feel alienated, display poor academic performance, or have conflicting responsibilities. Students who leave universities represent lost potential and resources. Therefore, it is important to inquire into the factors that influence academic success in order to improve academic performance for all students.

In this chapter, the educational context of South Africa is reviewed briefly. The rationale and aims of the present study are discussed. Next, the research methodology employed is considered shortly. Lastly, the chapters of this study are delineated.

### **1.1 Theoretical Grounding, Rationale, and Aim of the Study**

Higher Education Institutions (HEIs) in South Africa have changed significantly since the advent of democracy in 1994. The most notable changes are restructured HEIs and increased enrolment of diverse students (Wilson-Strydom, 2012a). Furthermore, the government aims to increase student enrolment by 25% by 2030 (Council on Higher Education – CHE, 2016; MacGregor, 2012; National Planning Commission – NPC, 2011; Nkosi, 2015). However, many HEIs report low throughput rates, high attrition rates, and underprepared students (CHE, 2016; Jama, Mapasela, & Beylefeld, 2008; Moodley & Singh, 2015; Nkosi, 2015). These issues are especially salient during the first year at university, and studies have found that most students drop out during or directly after the first year of study (CHE, 2010, 2016; Moodley & Singh, 2015; Nkosi, 2015; Wilson-Strydom, 2012a).

To an extent, the issues HEIs encounter can be traced back to problems learners face in school (including teacher strikes and shortages, the closing of schools by parents, and non-delivery of learning materials) and the developments of the Fees Must Fall movement, which



could instil a sense of uncertainty in prospective and current students (Coopersmith, 2013; eNCA, 2014a, 2014b, 2016; Hollands, Fengu, & Nyanda, 2016; Makana, 2017). These unfavourable circumstances could affect learners' academic preparation adversely. Consequently, students' readiness for university attendance might be compromised (Wilson-Strydom, 2015a, 2015b), and the gap between what is expected at high school and university widens. Students show remarkable resilience and are able to rise above these difficulties. However, students still falter at university, and HEIs continue to see students leave despite efforts to promote student success. This is indicative of the fact that most students are eligible for university admission but are not ready to cope with HE demands (Conley, 2008; Wilson-Strydom, 2010, 2015b).

Academic performance is often measured by students' marks and thus refers to measurable learning outcomes of education (Yusuf, 2002). At most HEIs, Grade 12 performance is the standard used to determine admission to university and to predict academic performance at university (McKenzie & Schweitzer, 2001; York, Gibson, & Rankin, 2015). The assumption is that students who have achieved higher Grade 12 marks, will also achieve higher marks at university (Mills, Heyworth, Rosenwax, Carr, & Rosenberg, 2008; Naidoo, Motala, & Joubert, 2013). Academic performance during the first year at university is an important aspect in predicting future achievement and employment prospects (Mills et al., 2008; Reynolds, 1988). However, various studies have found mixed results regarding the predictive value of Grade 12 marks (Mashige, Rampersad, & Venkatas, 2014; McKenzie & Schweitzer, 2001; Naidoo et al., 2013). Since only top-achieving students are accepted into university, it raises the question why so many students drop out, especially during their first year of study (CHE, 2016; Moodley & Singh, 2015; Nkosi, 2015). Academic performance is a complex issue, and it is clear that previous academic performance is not the sole predictor of academic achievement at university. Other factors could play a predictive role, such as generational status, ASC, social support, employment status, and the degree programme (Hendrich & Schepers, 2004; Mashige et al., 2014; McKenzie & Schweitzer, 2001; Moodley & Singh, 2015; Reynolds, 1988).

Generational status pertains to whether students' parents have attended an HEI and obtained a degree (or not). Attainment of a degree confers many economic and cultural benefits, which are transferred over generations (Lohfink & Paulsen, 2005). First-generation students (FGSs) tend to share common features that may affect academic performance and make them more vulnerable to attrition, such as being less prepared for HE challenges (Hertel, 2002;

Schultz, 2012). In turn, this might affect ASC. In contrast, continuing-generation students (CGSs) tend to fare better at university, possibly due to familial and friend support that makes them feel more prepared and instils confidence (Hertel, 2002; Horn & Nuñez, 2000; Klink, Byars-Winston, & Bakken, 2008). These differences have important implications for academic success.

Non-cognitive factors are important in the retention of students, and one must consider how the social issues faced at school may affect learners' ASC. It has been shown that ASC is an important predictor of academic performance (Choi, 2005); therefore, it is a principal factor to consider when predicting future academic performance (CHE, 2016; Jama et al., 2008). Success at university, and what it means for students' future, contributes to the importance of ASC for university students (Reynolds, 1988). Issues pertaining to academics that could cause any doubts may influence students' ASCs (Defreitas & Rinn, 2013). The possible influence of generational status on self-concept may prove to be important. FGSs were found to have lower academic performance, to be less prepared for university, and to drop out of university more than other students did (Defreitas & Rinn, 2013; Hertel, 2002; Schultz, 2012). Consequently, a positive ASC in this group could serve as a buffer against any uncertainties and underpreparedness (Defreitas & Rinn, 2013).

Investigation into the role of ASC in academic performance is lacking in the South African university context. Although cognitive and non-cognitive predictors may play a combined role in academic performance, cognitive factors are largely used to predict academic performance, while more attention is paid to non-cognitive factors (that are largely external to the individual) to explain attrition rates. As a non-cognitive factor, ASC offers a glimpse into students' beliefs about their academic potential and capabilities.

This study aimed to examine students' academic performance and specific factors that could influence it. Thus, it was important to review theoretical frameworks that describe academic success and the factors that affect it. Firstly, the student integration model (Tinto, 1975, 1993) was used to consider how students' integration into university would reflect in their academic performance. The student success framework (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007) offers a synthesis of the most important theoretical models on student success and aims to explain student success holistically. This model was reviewed to examine potential ties between student engagement and the academic performance of the sample. Lastly, the student readiness perspective (Wilson-Strydom, 2015b) acknowledges that the South African

schooling system does not prepare students for HE and aims to improve student success by developing the capabilities students do have. This perspective was used to interpret the students' academic performance in psychology against the general background of academic preparation in South Africa. These theoretical frameworks consider important student attitudes, behaviours, and competencies, and could place the results of the study in perspective in the South African context.

This study aimed to investigate the role of ASC in the relationship between Grade 12 academic performance and first-year academic performance in psychology, for both first- and continuing-generation students. The possible role of generational status in the relationship between Grade 12 academic performance and first-year academic performance in psychology was investigated first before the role of ASC was investigated in the aforementioned relationship.

The following two research questions were investigated:

- 1) Can Grade 12 academic performance explain a significant amount of variance in first-year academic performance in psychology?
- 2) Does ASC moderate/mediate the relationship between Grade 12 academic performance and first-year academic performance in psychology?

## **1.2 Overview of the Research Design and Methodology**

This study was conducted following a non-experimental type, quantitative research approach with a correlational design. Non-experimental type studies do not involve the manipulation of variables or participants, and questionnaires are used to measure variables (Maree & Pietersen, 2014a; Spector, 2013; Vanderstoep & Johnston, 2009). Quantitative research yields objective data that can be analysed statistically and interpreted (Babbie, 2007; Belli, 2009; Cresswell, 2003; Neuman, 2014; Stangor, 2015). Relationships between variables can be investigated clearly and systematically (Stangor, 2015). Correlational research designs enable researchers to investigate the relationships between variables (Howell, 2014). A correlational design was deemed suitable for this study because the aim was to investigate the nature and the strength of the relationship between Grade 12 academic performance and first-year students' psychology marks. Additionally, the potential moderating and/or mediating roles of generational status and ASC in this relationship were investigated.

The population of interest in this study was first-time, first-year psychology students at the University of the Free State. Non-probability, convenience sampling methods (Babbie, 2007; Stangor, 2015) were used to obtain the sample. After eliminating incomplete questionnaires (where less than 95% of the questionnaire was completed) and questionnaires of respondents who did not meet the inclusion criteria, the total sample comprised 203 participants. The study included participants from all race and gender groups, as well as first- and continuing-generation students.

An online self-report survey was administered via Blackboard (the University's online learning platform). The survey included questions on students' demographic information and the *Academic Self-Concept Scale-Short Form (ASCS-SF)* (Reynolds, Weseman, & Gilman, 2012). Furthermore, students' academic records were accessed to obtain students' Grade 12 academic marks (admission point – AP – score) and their average marks for the introductory psychology module.

The reliability of the *ASCS-SF* was determined by using Cronbach's alpha coefficient (Salkind, 2011; Stangor, 2015). Descriptive statistics were determined to illustrate the tendencies in the obtained data (Stangor, 2015). Demographic information was summarised in a frequency distribution table. Furthermore, the means and standard deviations were calculated to describe the continuous variables. The moderating role of generational status was investigated. A Pearson product moment correlation coefficient ( $r$ ) was calculated to determine the relationship between Grade 12 academic performance and first-year psychology marks. A moderated hierarchical regression analysis was conducted to examine the potential mediating/moderating role of ASC in the aforementioned relationship.

Ethical clearance to conduct the present study was obtained from the Research Ethics Committee of the Faculty of the Humanities and the Research Desk of Student Affairs at the University of the Free State. Participants' informed consent was obtained before they could complete the survey. No risks were anticipated from participating in the study. However, participants were provided with the contact information of the researcher and the supervisor. If participants experienced distress because of participating in the study, they would be referred to the Student Counselling and Development Centre. Participants' information was handled confidentially and reported anonymously. Data were stored on password-protected laptops with restricted access. Incentives (in the form of two lucky draws) were used in this study. The

incentives offered were not excessive in relation to what was expected of participants. Participants were informed clearly of what was expected of them.

### **1.3 Delineation of Chapters**

In Chapter 1, the context of the study and the rationale for the study are discussed. Furthermore, the research methodology employed in the present study is explained.

The focus of Chapter 2 is on the definitions of academic success and performance from institutional and student viewpoints. Academic performance for the present study is defined. The theoretical perspectives identified as most salient to the transition process and academic success are introduced. The main arguments of the theories, criticism raised against them, and the relevance of the theories to the South African context and the present study are considered.

A discussion of the predictors of academic performance are presented in Chapter 3. The main variables of interest are discussed in detail. The chapter concludes with a section relating the theoretical perspectives to the main predictors of the study.

In Chapter 4, the research methodology is considered in greater depth. The sampling procedures and the final sample are described. The data-collection methods are explained. The data-analysis procedures are elaborated on. Lastly, ethical considerations are examined.

The aim of Chapter 5 is to present and discuss the results of the study. The descriptive results provide contextual information and describe the sample. Inferential statistics are presented to answer the research questions posed. The results are discussed in relation to previous literature in the field.

The focus of Chapter 6 is to summarise the key findings of the study, discuss the limitations of the study, and make recommendations for future studies.

### **1.4 Chapter Summary**

In this chapter, the theoretical grounding, rationale, and aims of the study were reviewed. The South African educational context was discussed briefly. The research approach and methodology were expanded on. Lastly, the chapters of the research paper were delineated.

## **Chapter 2 – Conceptualising Academic Success and Performance**

In this chapter, the discussion centres around academic success/performance and its definitions, as well as the theoretical models used to form the foundation of this study. Academic performance is a broad concept that is difficult to delineate. Academic performance and its related concepts are considered first, while the definitions of the constructs are outlined. Secondly, various theories of student success, with their limitations and their applicability to the South African context, are discussed.

### **2.1 Definitions of Academic Success and Performance**

In the literature, academic success is conceptualised from institutional and individual viewpoints. This section differentiates between these viewpoints and how they are operationalised and measured. However, before doing so, it is important to elaborate on the concepts of academic success and academic performance.

**2.1.1 Differentiating academic performance from academic success.** Student success is a broad concept and can be defined as “academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational objectives, and postcollege performance” (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006, p. 7). After an extensive review of the literature, York et al. (2015) observe that the terms “student success” and “academic success” are often used interchangeably. Academic success focuses more on educational outcomes, while student success is a blanket term covering many student outcomes. York et al. (2015) refine the definition of academic success as “academic achievement, attainment of learning objectives, acquisition of desired skills and competencies, satisfaction, persistence, and post-college performance” (p. 5).

The perception of academic success as an all-encompassing construct that points to success in various domains is supported by Leibowitz, Van der Merwe, and Van Schalkwyk (2009), who argue that success is characterised by a combination of a student’s attitudes, strengths, skills, and will to learn. This ultimately leads students to “learn how to learn”, and to become balanced individuals responsible for their own development and well-being, while being open to others and their society (Leibowitz et al., 2009, pp. 4-5). Animasahun (2010)

concludes that academic success is the cumulative effect of satisfactory academic performance over a period.

Thus, academic success comprises various facets, of which academic achievement is the most-used measure. Academic achievement depicts students' academic performance (York et al., 2015), which specifically refers to grades/test performance. The terms *achievement* and *performance* can be viewed as synonymous; nevertheless, subtle distinctions can be drawn between them. Academic achievement is cumulative, entails how well programme goals are accomplished, and can be measured in terms of standardised tests. Academic performance refers to measurable learning outcomes of education and is often measured by students' marks (particularly in tests and exams – that is, non-standardised indices) (Yusuf, 2002). Therefore, academic performance builds on academic achievement, which in turn builds on academic success.

Despite the overlap between academic achievement and the attainment of learning objectives and acquisition of skills, conceptual differences warrant the separation of these concepts. Hence, to perform well academically, students should attain learning objectives and desired skills. However, academic achievement conveys only a measure of students' performance ability and not necessarily of learning. Therefore, academic performance acts as a proxy measurement of learning (and directly measures performance ability) and is usually measured in the form of an aggregate (York et al., 2015).

Academic performance is a multidimensional construct (Keeve, Naudé, & Esterhuyse, 2012) and entails cognitive and other related abilities that enable students to master module outcomes according to a specific standard, and by so doing progress to the next year of study (Naudé, Jansen, Greyling, & Esterhuyse, 2011). In accordance with this, academic performance can be conceptualised as the degree of success attained after students have mastered learning tasks or objectives, as reflected in examination marks (Van der Westhuizen, 2008). Mbatha (2015) and Keeve et al. (2012) define academic performance in terms of the average marks students obtain in their main modules.

Therefore, academic success is an all-encompassing term and a general outcome of university and includes performing well academically, developing academic and other skills, goal achievement, applying theoretical knowledge, and persistence (or retention). Academic success in general and academic performance specifically were the focal point of this study.

While academic success (as the cumulative effect of satisfactory academic performance) was considered in this study, academic performance was used and operationalised as students' marks in a specific module (namely average marks in the students' psychology module after completing all assessment tasks and the examination).

In the following subsections, academic success and performance, and how they are perceived from various viewpoints, are examined in greater depth.

**2.1.2 Student success from an institutional viewpoint.** From an institutional viewpoint, commonly used measures of academic/student success include graduation, retention, attrition and persistence rates, as well as integration with the university community (Cuseo, 2007; Kuh et al., 2006; Strang, 2015; Tinto, 1975, 1987; Yorke & Longden, 2004). Retention and graduation rates are often used in conjunction as indicators of student success (Voigt & Hundrieser, 2008). These definitions and measures of academic success encapsulate different facets; therefore, it is useful to distinguish these terms from each other.

Retention rates refer to the number of students who enrol, continue as expected, and graduate (Hagedorn, 2012; Van Stolk, Tiessen, Clift, & Levitt, 2007; United States Department of Education, n.d.). Retention can be classified into categories that are increasingly more inclusive. Four types of retention have been described, namely institutional retention (the proportion of students that re-enrol at the same institution); system retention (which acknowledges various pathways students take, such as transferring and re-enrolling at other institutions); retention within a major, discipline, department, or degree; and retention in a module (which measures students' successful completion of a specific module) (Hagedorn, 2012).

Attrition or dropout rates are the exact opposite of retention rates and depict the number of students who drop out before completing their degrees (Hagedorn, 2012; Van Stolk et al., 2007). Dropout is often defined as students who leave HE before attaining degrees (Hagedorn, 2012; Vossensteyn et al., 2015). With this term, various complexities must be acknowledged. For example, although students might drop out of a module, degree, or institution, they might have changed the direction of their studies. Thus, these students might still be successful and obtain a degree in a different discipline or institution, but will still be counted as a dropout at a specific department/programme. Therefore, it is important to understand student intent and goals to explain possible disparities in dropout rates (Hagedorn, 2012).



Throughput and graduation rates are also used as measures of student success. These terms are often viewed as analogous (Jeynes, 2016; Van Broekhuizen, Van der Berg, & Hofmeyr, 2017). Throughput refers to a calculation conducted with a specific student cohort to determine the number of students that graduated within the stipulated time, took longer to graduate, or dropped out (Scott, Yeld, & Hendry, 2007). Graduation (or completion) rates refer to the percentage of students who have completed their degree programme on time (United States Department of Education, n.d.; Van Stolk et al., 2007; Voigt & Hundrieser, 2008; Vossensteyn et al., 2015). However, this measure has its limitation because it does not consider variation in the time it takes to complete degrees, as well as the different paths students might take in HE (CHE, 2010; Hagedorn, 2012). Thus, in comparison to graduation rates, throughput rates offer a more comprehensive view of students' courses of action.

The aforementioned measures are broad institutional indicators of academic success. Institutions can also make use of more detailed success indicators, such as students' academic performance (module average) in a specific module (Birch & Miller, 2004; McKenzie & Schweitzer, 2001; York et al., 2015). Learning and institutional outcomes can also be used by the institution, lecturers, or students to determine if success has been achieved (Murphy, n.d.; Student Learning Outcomes and Assessment Committee, 2014).

Thus, from an institutional viewpoint, academic success can be observed in terms of students that achieve academic and developmental goals by graduating on time and being integrated into the system.

**2.1.3 Student success from an individual viewpoint.** The institutional definitions mentioned above abound over the more qualitative and individual approaches (Yazedjian, Toews, Sevin, & Purswell, 2008). As such, academic success is often measured in terms of grades or graduation rates (Yazedjian et al., 2008). However, students' views of their academic success often differ from the largely quantitative measurements utilised by institutions. Students' views on success are multifaceted, and although academic performance forms part of this definition, other areas are viewed as indicative of success too (Yazedjian et al., 2008). Rather than being focussed solely on academic terms, students include aspects that are more qualitative in their views of academic success. According to students, definitions of academic success include academic engagement, application of knowledge, life management, learning and grades, life satisfaction, doing their best, aspects unrelated to grades, and developing into

a balanced and well-rounded individual (Dean & Camp, 1998; Jennings, Lovett, Cuba, Swingle, & Lindkvist, 2013; Osters & Roberts, 2007; Strang, 2015).

For students, degree completion is not the only indicator of success; the achievement of personal goals may also signify success (Deil-Amen, 2005; Hagedorn, 2012; Kuh et al., 2006, Voigt & Hundrieser, 2008). Thus, students might not have goals similar to those set out by their institution (Kuh et al., 2006; Voigt & Hundrieser, 2008). Since no singular definition exists, it could be more apt to view these student definitions as perceptions. Despite the variability in students' perceptions of success, certain common themes exist. Yazedjian et al. (2008) emphasise three themes from their study results: academic performance, social integration, and a sense of navigating the university environment. It became evident that students viewed success in broader terms than the measures used by universities.

Individual students' measures of success align with those identified by HEIs – largely on the academic achievement front (Jennings et al., 2013; Strang, 2015). With regard to the academic focus of success, a shared theme in the studies consulted was that students used their own grades as success indicators (Dean & Camp, 1998; Doyle, 2014; Jennings et al., 2013; Yazedjian et al., 2008). In this regard, their actual grades constitute success, which is similar to institutions using students' grades in a module or programme. However, this approach will have individual variations according to students' views of which grade equals success. Students claimed that only they could conclude if success had been attained, since their priorities and individual goals would vary. Comparably, maintaining grades and whether it meets their expectations were important for fostering academic success (Yazedjian et al., 2008).

Students also list qualitative perceptions of academic success. In this regard, students' emphasis fell on satisfaction with the university experience, accountability, goal achievement, skills development, and balancing various elements of life (Dean & Camp, 1998; Enke & Ropers-Huilman, 2010; Majid, 2017; Mullin, 2012). Additionally, graduation (regardless of the time to completion) was indicative of success (Majid, 2017).

Students' views of success change as they progress through their studies. For first-year students, the process of making new friends was very important, whereas final-year students emphasised maintaining friendships. Life management displayed a similar pattern: Its importance peaked throughout the first and second years at university and declined for senior-year students (Jennings et al., 2013). Academic achievement dominated all students'

perceptions of success, although academic engagement themes did not feature strongly. However, Doyle (2014) found that senior students placed greater weight on the development of professional skills, maintaining good marks, and being employed upon graduation, while the importance of participating in social clubs and organisations waned. These findings contrast with the emphasis placed on maintaining friendships and balancing social ties with academic responsibilities as success indicators (Jennings et al., 2013; Yazedjian et al., 2008). Senior students could merely view their success at university through a different lens. They may have well-established social relationships that are easier to maintain and balance. The closer they are to entering the workforce, the more salient their academic and practical skills become as meaningful indicators of success to employers.

Another important perspective is the one on persistence, which denotes continuing with an action, opinion, or towards a goal despite facing difficulties. In the context of HE, persistence is defined as “the desire and action of a student to stay within the system of HE from beginning year through degree completion” (Berger, Blanco-Ramírez, & Lyons, 2012, p. 12). Berger et al. (2012) maintain that persistence at one or more HEIs to obtain a degree is becoming part of the student success definition. Hagedorn (2012) and Mortenson (2012) state that persistence is a term more related to students, whereas retention is an institutional definition of academic success. However, according to Voigt and Hundrieser (2008), this distinction is not recognised widely. Tinto (1975, 1993) emphasises the importance of persistence and states that it is dependent on students’ academic and social integration with the university environment. Thus, the varying levels of persistence can be broken down according to how students perceive their own integration with the academic and social domains of university life. Furthermore, persistence denotes effort and consequently relates to students’ perceptions of working hard and doing the best they can (Osters & Roberts, 2007).

Taken together, it can be concluded that students view their own academic success in terms of academic performance, balancing various domains of life, being integrated into the HEI, and feeling content with their experiences. Yazedjian et al. (2008) most comprehensively capture the varied perceptions of success as the achievement of academic success, social integration, and the development of autonomy. While it appears that greater attention is paid to quantitative, measurable success outcomes as defined by HEIs, qualitative measures that incorporate students’ definitions could add value to a more holistic understanding of success.

## 2.2 Models explaining Academic Performance

Numerous approaches have been followed to describe and explain academic success, including cultural, economic, organisational, psychological, and sociological theoretical perspectives (Dean & Camp, 1998; Kuh et al., 2007). Despite this extensive range of models and approaches, Kuh et al. (2007) emphasise that no specific approach is comprehensive enough to clarify student success. An integrated approach combining the different models is more appropriate when attempting to explain academic performance, since it provides a more extensive understanding of students' persistence and how the interaction of relevant factors affect their decisions (Cabrera, Nora, & Castaneda, 1993). Hence, using the various models jointly could yield a more holistic explanation of student success and its related aspects (Kuh et al., 2007).

In the following subsections, two well-known models of student success are discussed, followed by an approach relevant to the South African context. The authors' original terminology is used, although the relevance of the models to academic performance are highlighted.

**2.2.1 Tinto's student integration model.** The student integration model (SIM) was developed to explain the interactions between the individual students and the institution that could lead to dropout from HEIs, and to differentiate between different forms of dropout behaviour among different individuals (Tinto, 1975). Instead of merely describing dropout, the longitudinal theoretical framework was developed to explain student dropout behaviour and to understand how individual and institutional characteristics relate to the process of dropout (Tinto, 1975). According to Tinto (1975, 1993), academic success is dependent on the student's degree of academic and social integration with the university environment.

**2.2.1.1 Description of the student integration model.** The foundations of the model include Durkheim's theory of individual suicide (Durkheim, 1951) and Van Gennep's (1960) work regarding the rites of passage (Tinto, 1975, 1987). Tinto (1975) argues that universities can be divided into academic and social domains. Furthermore, the importance of the student's commitment to the attainment of educational goals and their institution of choice is emphasised.

With the SIM, Durkheim's theory of suicide is applied to dropout by arguing that universities can be viewed as distinct social systems with their own structures and value systems. Therefore, conditions resulting in dropout from university will be analogous to the

conditions leading to suicide in the larger society (Tinto, 1975). This occurs through weak ties in the HEI system or the disruption of social connections resulting in feelings of malintegration (Tinto, 1975). Aljohani (2016a, 2016b) concludes that student integration in academic and social domains and the quality of university experiences are central to dropout decisions – a finding which is echoed by Crosling, Heagney, and Thomas (2009). Therefore, improved levels of integration will increase the student's chance to persist and attain academic success.

Rites of passage depict the transformational process of moving to different, clearly defined states and may mark the person's acceptance and successful incorporation therewith (Metz, 2004; Tinto, 1987; Van Gennep, 1960). Van Gennep (1960) categorises the stages of the rites of passage as separation, transition, and incorporation. Student persistence at university can be viewed as a similar process to becoming incorporated with different communities, and therefore will show similar stages of passage students must navigate to persist in this community/system (Tinto, 1987). A brief summary of the process follows. Mental and/or physical *separation* entails students leaving the communities they come from and a resulting distance from past associations. Failure to separate from past associations would complicate the process of integration and decrease the chances of persistence (Morrison & Silverman, 2012). Secondly, *transition* refers to entering a new setting and learning new norms and values. During the transitional stage, "temporary normlessness" can arise, during which students can be especially vulnerable to attrition (Tinto, 1987, p. 93). This is supported by the fact that time at university can create a situation of separation and relates to Durkheim's work on suicide (Durkheim, 1951; Sigelman & Rider, 2015). Hence, to enhance student persistence and success, the transition process must be facilitated. Eventually, *incorporation* will occur, when students will establish new interactional patterns and membership in the new group (Aljohani, 2016a; Morrison & Silverman, 2012; Tinto, 1987).

Universities as social systems comprise academic and social domains (Tinto, 1975). Integration with the academic domain entails students' academic performance and intellectual development, which serve as extrinsic and intrinsic rewards for participation in university (McCubbin, 2003; Tinto, 1975). Academic integration refers to meeting the academic standards of the HEI, as well as the students' identification with the norms and values of the HEI (Tinto, 1975). Peer group relationships and faculty interactions, along with semi-formal extracurricular activities, involve social integration (Tinto, 1975). These interactions provide different forms of support and collective affiliation, which function as social rewards that affect students' commitments (Tinto, 1975). Essentially, academic and social integration involve levels of

integration and degrees of congruency between the student and the university environment (Tinto, 1975). The students' perception of their integration with these systems stand paramount, and a perception of greater integration or social support can increase persistence (McCubbin, 2003; Tinto, 1975). Furthermore, commitment to the domains is developed through the students' experiences and the meanings assigned to them (Tinto, 1975, 1987). Hence, integration with the academic domain would influence students' goal commitment, and actions in the social domain affect institutional commitment (McCubbin, 2003; Tinto, 1975). Thus, experiences that might affect students' degree of integration and congruence with the predominant value system of the HEI would lead to changes in initial commitments to their goals and the university. A discrepancy between the students' and university's academic values and demands would decrease commitment to and integration with the academic domain and therefore affect academic performance.

The distinction between integration in the academic and social domains is necessary to identify dropout behaviour related to specific conditions (i.e., dismissal or withdrawal) (Tinto, 1975). Furthermore, students may have different levels of integration in the domains, and a reciprocal relationship could arise where excessive time dedicated to one domain begins to detract from the other (Tinto, 1975). In some cases, the academic and social domains can merge and offer a balance between the demands of each domain, providing an opportunity for social integration and academic assistance (Deil-Amen, 2005; Karp, Hughes, & O'Gara, 2010; Tinto, 1975). In this manner, if students interact with academically oriented peers, excessive social interaction would not affect academic performance negatively; conversely, the inverse may occur by befriending less academically oriented students. Since these domains form part of the overall university's social system, an imbalance in one domain may lead to detrimental effects on students' integration with the complete system, contributing to decisions regarding dropout.

Tinto considered how individual characteristics could predispose students to drop out from HEIs (McCubbin, 2003; Tinto, 1975). Students' family background, previous schooling, individual characteristics, expectations, and motivations shape their educational and institutional commitments and initial expectations (Braxton & Hirschy, 2005; Tinto, 1975). Subsequent experiences in the academic and social HEI systems influence students' integration with these systems and their educational and institutional commitments, resulting in persistence or different dropout behaviours. In this dynamic model, students' commitments, goals, and expectations fluctuate and are reshaped through their experiences at university (Aljohani, 2016a; Schreiber, Luescher-Mamashela, & Moja, 2014).

Tinto (1999) emphasises the importance of viewing the first year of university as a developmental period in which students gain the dispositions, norms, and skills vital to learning and growth throughout the time spent at university. Therefore, it is essential to support this process of development and transition. In summary, it can be concluded that academic success is dependent on students' integration with the academic and social domains (thus sharing the dominant intellectual and value system of the HEI).

**2.2.1.2 Evaluation of the student integration model.** Although the SIM has been a dominant model for the examination of dropout from HEIs, the SIM and its applicability to student attrition and non-traditional students has been criticised (Aljohani, 2016a; Cabrera et al., 1993; Karp et al., 2010; Kuh et al., 2007; McCubbin, 2003; Metz, 2004; Tierney, 1992). Despite this, researchers' attempts to apply the SIM to various contexts could improve its generalisability, validity, and credibility (Aljohani, 2016a). For instance, doubts regarding the relevance of the SIM to community college students were contradicted by Deil-Amen (2005), who found that community college and four-year university students exhibited similarities in the factors that influenced dropout behaviours.

Views on the predictive value of academic and social integration for student persistence are varied. Studies have shown that either academic integration, social integration, or both types of integration are important in dropout decisions (Kuh et al., 2006; McCubbin, 2003; Pan, 2010). Social integration had lower predictive value of persistence among ethnic minority group students and disabled students (Duquette, 2000; Torres & Solberg, 2001). It is postulated that social integration is less important for these students, or that their social support networks differ from those of fellow students (McCubbin, 2003). Furthermore, studies support Tinto's (1975; 1993) assertion that academic and social domains can merge and strengthen students' academic and social integration simultaneously (Deil-Amen, 2005; Karp et al., 2010). This occurs by providing activities and settings that allow students to interact on academic issues; consequently, additional social interactions may follow (Karp et al., 2010). According to Tinto, the model was not developed to explain all forms of dropout behaviour in specific settings, nor was it asserted that the model was generalisable to all student types (Aljohani, 2016a; Cabrera et al., 1993; McCubbin, 2003; Tinto, 1982).

Tinto acknowledges that the lacking consideration of financial issues is a limitation (Cabrera et al., 1993; McCubbin, 2003). Tinto argues that for the majority of students, financial aid was not a central issue and financial issues may obscure some students' main reasons for

withdrawing (McCubbin, 2003; Tinto, 1987). However, Breier (2010) argues that the issue of finances is much more important than alluded to in the SIM.

**2.2.1.3 Relevance of the student integration model for the South African context and this study.** Schreiber et al. (2014) state that the SIM is a detailed approach to studying student attrition in South Africa, especially when the historical context of the country is considered. The model provides specific factors that can be investigated, and its thorough theoretical grounding aids the transferability of findings across contexts (Perna, 2014). Therefore, the application of Tinto's concept of learning communities could be especially valuable, as it can aid the process of overcoming boundaries in social and disciplinary/academic contexts (Schreiber et al., 2014).

The model does not prescribe what universities in different countries can do to solve the problem of attrition, but provides a framework with regard to aspects that aided universities in improving retention rates and academic success (Perna, 2014; Tinto, 2014). Another significant point is that students' learning stands paramount and without adequate support, improved access to HEIs would not facilitate successful use of the opportunity (Tinto, 2014). The implementation of strategies aimed at improving academic performance will accumulate in academic success (see Tinto, 2009, 2014).

The SIM is relevant to the South African context because it provides a starting point to formulate interventions that promote success, particularly among disadvantaged students. This is especially important, as the South African Government wishes to increase enrolment rates by 2030 (MacGregor, 2012; NPC, 2011). Despite contextual differences between the United States and South Africa, the challenges confronting students are not completely unique (Grayson, 2014). The focus of the SIM is to improve student engagement in classrooms, but the feasibility of this aspect might be limited in the South African context. As such, it was suggested that the introduction of compulsory work-based experiential learning and academic and peer mentoring, as well as promoting the recognition of pre-university experiences as productive, could improve learning and academic and social integration (Ross, 2014).

Although Tinto's SIM has been criticised for its generalisability and focus on traditional students (Karp et al., 2010; McCubbin, 2003; Metz, 2004), this section has shown how researchers are applying the model to non-traditional university student samples and contexts. Ross (2014) has illustrated the applicability of the SIM in the South African context whilst



suggesting context-specific adaptations to the model. Therefore, the model is relevant to the traditional and non-traditional student body in the South African context.

For this study, students' integration with the academic domain is notable. It is acknowledged that the social domain is important and may affect the students' integration with the institution. The importance of both domains cannot be denied, and previous studies have shown the importance of social factors in students' well-being at university (Chao, 2012; Denovan & Macaskill, 2012).

### **2.2.2 Kuh, Kinzie, Buckley, Bridges, and Hayek's framework for student success.**

The framework for student success offers a synthesis of success indicators identified by various models investigating academic success at university. Among the indicators of student success are student satisfaction, student engagement, the development of academic and personal skills, academic achievement, student persistence, and post-graduation achievements (Kuh et al., 2006). A key consideration of this framework was an effort to widen its application to non-traditional students. The framework reflects students' pre-college experiences, college experiences, post-college outcomes, and what students and institutions do to attain academic success.

**2.2.2.1 Description of the framework.** When the student success framework was developed, a more realistic, cyclical, multifaceted process view of HE was adopted instead of the prevalent linear view (Kuh et al., 2006). This framework incorporated several factors, including student's pre-college experiences, college experience, and post-college outcomes (Kuh et al., 2006). It is recognised that some students might be better prepared for HE than others are due to these experiences before commencing their time at university (Kuh et al., 2007; Tinto, 1975, 1987). The students' behaviours and activities at university can spell the difference between persistence and success or attrition (Kuh et al., 2007). Furthermore, student engagement stood at the nexus between student behaviours and institutional conditions, since it represented factors that universities could act on (Kuh et al., 2006).

Pre-college experiences, the first facet of the framework, include demographic information (gender, race, socio-economic status – SES, and ethnicity), academic preparation, educational aspirations, motivation to learn, enrolment choices, social support (from friends and family), aptitude, readiness for university, and students' expectations of university (Kuh et al., 2007). Kuh et al. (2007) argue that the student's background forms the foundation for

success at university. HEIs cannot control these factors but can take steps to assist different students to succeed (Kuh, 2009; Kuh et al., 2007). The quality of students' high school education is predictive of student success while at university, and SES comes into play as it influences the quality of education received and the motivation to pursue a degree (Kuh et al., 2007). The successful navigation and management of the transitional process to university are considered important to academic success, integration, and continued education. Pre-college experiences further encompass the role of required remedial modules to develop university-level academic skills, financial aid policies, and working off campus. If a student does not cope successfully with any of these aspects, their integration with the HEI is hampered (Kuh et al., 2007).

The second facet of the framework refers to college experiences, consisting of the dimensions of student behaviours and institutional conditions, as well as student engagement, which is a key factor in predicting student success (Kuh et al., 2007). Student engagement has been identified as a core aspect of student success and satisfaction (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Kuh, Kinzie, Schuh, & Whitt, 2011; Strydom, Kuh, & Mentz, 2010). Student engagement is defined as the interactions between the resources and efforts invested by students and HEIs that improve academic performance, learning, and student development (Trowler, 2010). Student engagement is viewed as an "outcome ... and ... a proxy for student success" (Kuh et al., 2007, p. 45); therefore, it is the most important factor of the framework. The idea is that if students spend more time engaged in educational activities, they will learn more and acquire skills and dispositions needed to build on future learning, which will result in success and productive lives after college (Carini, Kuh, & Klein, 2006; Kuh et al., 2007; Kuh, 2009). Furthermore, student engagement in educationally effective practices is tied to higher grades and persistence (Kuh et al., 2007; Mayhew et al., 2016). By engaging actively with academic work, students can perform well academically and thus develop the key skills and competencies necessary for continued success during and after university.

The last facet of the framework pertains to students' post-college outcomes. Included in this facet is graduation, learning gains made, academic performance, employment, and enrolment in graduate school (Kuh et al., 2007). The encouragement of lifelong learning and its relevance to employment by HEIs is highlighted.

Student engagement consists of two dimensions: what the student does (the amount of effort and time invested in educational activities and studying) and what the institution does

(organisation of the curriculum, services and learning opportunities to induce student to participate and benefit from the activities) (Kuh et al., 2007; Kuh et al., 2011). The first dimension, student behaviours, refer to students' motivation, study habits, interactions with faculty and peers, emotional reactions, identification with the institution, as well as the amount of time invested in different tasks (Kuh et al., 2007; Lester, 2013). These factors allude to what students may consider important to their own success. Faculty and peer interactions have been identified as a developmental vehicle for academic and problem-solving skills, self-esteem, and student learning and engagement, contributing to student development, motivation, and satisfaction (Chickering & Gamson, 1987; Kuh et al., 2007; Kuh et al., 2011; Mayhew et al., 2016). As a result, a sense of belonging develops and engagement with educationally purposeful activities is fostered, thus illustrating how academic and social gains can stem from these interactions (Groves, Sellars, Smith, & Barber, 2015; Kuh et al., 2007; Kuh et al., 2011). Additionally, student satisfaction is related to improved student engagement, academic performance, and persistence (Kuh et al., 2007; Kuh et al., 2011).

The second dimension, institutional conditions, entails academic support provided, resources, the first-year experience, teaching and learning, the campus environment, and peer support (Kuh et al., 2007). Institutional conditions operate together to encourage student engagement while adding value to the entire university experience (Kuh et al., 2007). The consideration of student characteristics that could influence efforts to increase student engagement is emphasised. These include generational status, age, race and ethnicity, and access to financial aid (Kuh et al., 2007; Mayhew et al., 2016; Paulson, 2012; Tinto, 1975, 1987). Academic preparedness for university is critical, as universities cannot act as substitutes for poor preparation at high school. Therefore, the emphasis is placed on interventions beginning at the high school level that allow learners to become acquainted with academic expectations (Kuh et al., 2007). These efforts serve to improve academic performance and success. From an organisational and structural viewpoint, it has been concluded that what matters most to learning are student efforts and learning experiences in the classroom (Kuh et al., 2007; Mayhew et al., 2016). Inclusive campus environments and educational approaches emphasising active, integrative, and collaborative learning are associated with student success outcomes. These outcomes include the development of academic skills, faculty and peer interactions, and improved student learning and engagement (Groves et al., 2015; Kuh et al., 2007; Kuh et al., 2011; Manning, Kinzie, & Schuh, 2014; Mayhew et al., 2016; Pascarella & Terenzini, 2005).

This framework synthesises most factors of the models attempting to explain student attrition and persistence, and touches on various social and academic factors. The framework also considers steps that HEIs can take to improve persistence, instead of viewing students as solely responsible for retention or persistence. Individual students interact differently with each facet and exhibit different results. Some conditions and practices may be conditional for different types of students. All students will benefit when HEIs explore how to tailor programmes and practices to assist them (Kuh et al., 2007; Kuh et al, 2011). A central point of the framework is active learning and the collaboration between faculty, students, and peers. This can facilitate student engagement and persistence by enhancing students' integration with social and academic domains, resulting in student success.

**2.2.2.2 Evaluation of the framework.** York et al. (2015) conducted an extensive review of the literature, and their findings support Kuh et al.'s (2006) work as the most comprehensive, encompassing many definitions of student success in other research. However, York et al. (2015) criticised the definition of academic success as broad and that it complicated the operationalisation of the construct. This broad definition points to various factors that may constitute academic success but may become difficult to measure (York et al., 2015). Additionally, Vuori (2014) observes that the definition offered by Kuh et al. (2006) is focussed largely on behavioural aspects and that the emotional perspective is not as dominant.

In this framework, student engagement stands central to academic success. Student engagement is recognised internationally as crucial to student learning and academic performance. Although it may hold benefits for students, some engagement practices could also have negative effects (e.g., restricting student autonomy) (see Macfarlane & Tomlinson, 2017). Therefore, further critical analysis of student engagement and its effects on various stakeholders is necessary (Macfarlane & Tomlinson, 2017). Ashwin and McVitty (2015), Macfarlane and Tomlinson (2017), Trowler (2010), and Zepke (2014) mirror the view that student engagement may mean many things. Because student engagement may have different meanings, its definition will change in particular contexts and conditions. Hence, there is room for a clearer delineation and focus of student engagement in different contexts (Ashwin & McVitty, 2015).

**2.2.2.3 Relevance of the framework for the South African context and this study.** As shown by Ashwin and McVitty (2015), student engagement has various meanings; therefore, it can have far-reaching applications. The value of student engagement having a positive effect on academic outcomes, persistence, and various developmental areas (especially for first-year

students) has been illustrated by various studies (Bonet & Walters, 2016; Carini et al., 2006; Gerber, Mans-Kemp, & Schlechter, 2013; Kuh et al., 2008; Trowler, 2010). Therefore, student engagement can provide a range of areas to tap into to enhance student outcomes. Student engagement research in South Africa provides detailed information on practices that improve student persistence and retention, and spurs action to create environments that foster student success (Schreiber & Yu, 2016; Strydom & Mentz, 2014). It is asserted that student engagement promotes the goals of equity if it is formulated for groups that struggle to engage and connect with the academic environment (Schreiber & Yu, 2016).

Kuh and associates developed the National Survey of Student Engagement (NSSE) to measure students' engagement by indicating their participation in various activities available on their university campus (Kuh, 2009; National Survey of Student Engagement – NSSE, 2017). The relevance of Kuh's student engagement framework is underscored by the adaptation of NSSE for the South African context (South African Survey of Student Engagement – SASSE) (Strydom et al., 2010). Schreiber and Yu (2016) utilised the SASSE and established that student engagement was a positive predictor of academic performance. Students' expectations of university affected the evaluations they made of their university experiences. Furthermore, student engagement patterns and expectations of university varied by race and gender groups. These differences indicate different pre-college experiences, which the authors interpret as remnants of the inequities of the past (Schreiber & Yu, 2016). Some improvements in student-faculty interactions, diverse peer interactions, academic advising, active learning, and university preparedness, as well as evaluating the effect of practices for gender groups, could serve to enhance engagement (Ivala & Kioko, 2013; Schreiber & Yu, 2016).

Owing to the well-established link between student engagement and student success, its exploration in the South African context is especially warranted due to the restructuring of HEIs and the need of the country to improve retention (Strydom et al., 2010; Wawrzynski, Heck, & Remley, 2012). Additionally, Strydom et al. (2010) emphasise the value of student engagement for the improvement of student success in South Africa, based on the wealth of research available and the similarities between the challenges of HEIs internationally and HEIs in South Africa.

A sense of belonging develops as students progress through the transition to university. This sense of belonging promotes engagement with educationally effective practices. Though

not measured directly in this study, it is reasonable to expect that students who achieve higher marks are making use of effective educational practices, and are thus engaged.

**2.2.3 Wilson-Strydom’s student-readiness perspective.** Some South African theorists have focussed on the application of engagement in the South African context and with regard to persistence in non-traditional students. In this section, the focus is on the work of Wilson-Strydom. Student readiness is regarded as a key factor in attaining academic success at university (indicated by academic performance and graduation). Although increasing access to university is a positive goal to strive for, without adequate student support to achieve success, the opportunity to attend university would not be advantageous (Tinto, 2014; Wilson-Strydom, 2015a). Wilson-Strydom (2015b, p. 12) developed a “capabilities-based social justice framework” to examine the transition to university based on Conley’s (2008) model of college readiness.

**2.2.3.1 Description of the perspective.** Social injustices in education include limited and poor resources at schools, teacher shortages, poor quality education, location, race, gender, and SES (De Kadt, 2009; Wilson-Strydom, 2015b). Thus, some individuals may have better access to resources while others do not, and some individuals may have access to the resources but do not benefit in the same way. These factors influence students’ access to HE, quality of education, as well as their academic performance and chances of success (De Kadt, 2009; Wilson-Strydom, 2015b). A crucial point regarding rectifying the injustices that some students might face is the provision of equal resources and opportunities (De Kadt, 2009; Wilson-Strydom, 2015b). Simply providing different students with the same resources does not mean that they will be able to make use of the resources in the same way to attain success and perform well academically.

The development of knowledge and skills in each student readiness facet is essential to attain student success. These facets are cognitive strategies, content knowledge, academic behaviours, and contextual skills and awareness (Conley, 2008). Wilson-Strydom’s (2010) student readiness perspective is based on Conley’s work to understand university readiness and transition in South Africa. South African student experiences aligned with the model as set out by Conley (2008), and most students struggle with the transition process (Wilson-Strydom, 2010, 2015b). The use of student readiness indicators for university might be a more just process in university access. However, merit-based admission practices are most often used as a measure of readiness and to predict student success (McKenzie & Schweitzer, 2001; Naidoo

et al., 2013; Wilson-Strydom, 2015b; York et al., 2015). This approach may indicate students' eligibility for university admission without providing much information on whether they are truly ready for university and its associated challenges (Conley, 2008; Wilson-Strydom, 2015b). The use of merit and achievement is not necessarily unjust – it depends on how it is used and defined (Wilson-Strydom, 2015b). The same can be said of student readiness, since its definition must be just and inclusive (Wilson-Strydom, 2015b). For these reasons, Wilson-Strydom (2015b) advocates the use of the capabilities approach to frame a just process.

Capabilities can be defined as a person's abilities or opportunities to do things that he or she values, or the things the person is able to do or be (Walker & Unterhalter, 2007). The capabilities approach entails a person's ability to reach valued outcomes (functionings) through the development of his or her capabilities/potentials (skills, opportunities, and capacities) that will enable him or her to flourish (Wilson-Strydom, 2015b). Conversion factors affect the extent to which an individual can “convert resources into opportunities (capabilities), and capabilities into achievements (functionings)” (Wilson-Strydom, 2015b, p. 49). Social conditions might enable or inhibit a person's capabilities and connect to the consideration of social justice in the framework proposed by Wilson-Strydom.

Applied to education, the capabilities approach can be used to investigate factors that affect a student's ability to participate in education, such as personal, environmental, or institutional factors (Wilson-Strydom, 2015b). The following seven capabilities that could indicate student readiness for the transition to university were identified: 1) practical reason; 2) knowledge and imagination; 3) learning disposition; 4) social relations and networks; 5) respect, dignity and recognition; 6) emotional health; and 7) language competence and confidence (Wilson-Strydom, 2015b). The list is aimed at identifying areas for students in which they can develop their potential to make a success of attending university while being mindful of contextual influences that could impede or enable this process – to assist students in converting the opportunity into a success (Wilson-Strydom, 2015b).

This perspective aims for a more positive approach to student success compared to other frameworks. Instead of viewing students as having deficits, it is recognised that existing problems in the school system might not have prepared students adequately for HE; thus, there is room for improvement by building on the capabilities they do have (Wilson-Strydom, 2015b).

**2.2.3.2 Evaluation of the student readiness perspective.** Despite this framework being tested at one university in South Africa, students could face shared challenges at different universities, given the South African and educational context. Therefore, its applicability to the challenges of transition and improving readiness in the diverse student population of South Africa is positive (Wilson-Strydom, 2010). However, the model developed by Conley has been criticised for not addressing the cultural experiences and references of diverse student populations, since a standard educational approach might not be effective compared to using culturally relevant frameworks in learning (Baber, Castro, & Bragg, 2010). Therefore, the possibility exists that this same limitation can be applied to Wilson-Strydom's student readiness perspective.

**2.2.3.3 Relevance of the perspective for this study.** The importance of readiness for university has been illustrated in the previous sections. It is especially salient in the South African context since many high schools face the challenge of limited resources and struggle to prepare learners that are equipped for HE (CHE, 2016; Jacobs & Pretorius, 2014; Moodley & Singh, 2015; Nel, Troskie-de Bruin, & Bitzer, 2009). Student readiness was relevant for the current study because students' performance at university would indicate whether they were prepared to cope with the challenges of university, and to convert the opportunity to a success.

## **2.3 Chapter Summary**

In this chapter, some general definitions of academic success and academic performance were provided, as understood from an institutional and student perspective. The multidimensional nature of student attrition, persistence, and transition was illustrated. Furthermore, the importance of academic and social integration was illustrated, and the contributions that students and institutions can make to student engagement were elaborated on. Efforts by HEIs to enhance student engagement and integration have different effects on different students. Considering these varying effects stands central in a diverse society. Factors pertaining to the process of transition to university were highlighted by considering aspects of the South African schooling system. The importance of both academic and social domains in the integration, engagement, and transition of students was highlighted.



## Chapter 3 – Predictors of Academic Performance

In the previous chapter, the various models that were developed to explain student success were discussed. Throughout the discussion, it became evident that wide-ranging demographic, academic, and psychosocial aspects influence students' academic performance and success. These factors include the students' previous academic performance, student employment status, age, self-efficacy, generational status, integration with the university system, gender, ASC, personality, and social support. Ideally, a holistic perspective would be taken when trying to predict academic performance and success, especially with increasingly diverse student bodies with various needs and backgrounds. In this chapter, these factors are discussed briefly under the headings of demographic, academic, and psychosocial predictors.

### 3.1 Demographic Predictors of Academic Performance

The models discussed in the previous chapter highlight the importance of demographic aspects in students' academic performance. Demographic factors influence the probability that students will do what is necessary to prepare for university and attain academic success (Kuh et al., 2006). Although most models regard demographics as the foundation of academic success, mixed results have been reported on the predictive value of demographic variables (Christopher & Redempta, 2016; Jabbar, Aziz, & Zeb, 2011; McKenzie & Schweitzer, 2001; Nichols & Islas, 2015; Sackett, Kuncel, Arneson, Cooper, & Waters, 2009; Sheard, 2009; Stebleton & Soria, 2012; Tafamel & Adekunle, 2016). Demographic aspects include age, family background, race and ethnicity, gender, SES, marital status, generational status, and students' employment status (Insah, Mumuni, & Bowan, 2013; Kuh et al., 2007; McKenzie & Schweitzer, 2001; Tinto, 1975). It was beyond the scope of this study to investigate all these demographic variables, and as such only the most frequently mentioned and most relevant variables to this study were considered.

**3.1.1 Gender.** Varied relationships between gender and academic performance have been found. Although some researchers have found insignificant or no relationships between gender and academic performance, there have been reports of correlations between these variables (Birch & Miller, 2004; Christopher & Redempta, 2016; Insah et al., 2013; Nasir, 2012; Remali, Ghazali, Kamaruddin, & Kee, 2013; Voyer & Voyer, 2014). In some studies, female students have exhibited academic achievements equal to or better than those of their male counterparts (including subjects such as mathematics and those of the humanities) (Linver,

Davis-Kean, & Eccles, 2002; Unity & Igbudu, 2015; Voyer & Voyer, 2014). In contrast to this, other studies reported that males outperformed females in various fields, types of assessment, and degree performance (Amuda, Ali, & Durkwa, 2016; Ballard & Johnson, 2004; Du Plessis, Müller, & Prinsloo, 2005; Frischenschlager, Haidinger, & Mitterauer, 2005; McNabb, Pal, & Sloane, 2002). Explanations for the possible gender differences in academic performance relate to socialisation, differences in cognitive ability, vocabulary and writing skills, parental encouragement, expectations for success, motivation and interest in subject matter, as well as study methods and class attendance (Bergold, Wendt, Kasper, & Steinmayr, 2017; Dayioğlu & Türüt-Aşik, 2007; Halpern, 2012; Voyer & Voyer, 2014; Wang & Degol, 2016; Woodfield, Jessop, & McMillan, 2006). Generally, differences in verbal, spatial, and mathematical ability are small and can be improved through development and practice (Sigelman & Rider, 2015; Wang & Degol, 2016).

**3.1.2 Age.** Age is frequently used to distinguish between traditional and non-traditional students (Chung & Turnbull, 2014). Traditional-age students directly progress to university after high school and fall between the ages of 18-23/24 (Adams & Corbett, 2010; Dauer & Absher, 2015; Rabourn, Shoup, & BrckaLorenz, 2015). Non-traditional-age (mature/adult) students are typically older than 23-25 years of age (Adams & Corbett, 2010; Bergman, Gross, Berry, & Shuck, 2014). Mature students must balance multiple roles including familial and work responsibilities with their academic obligations, which significantly limit their available time for study and form barriers to attaining academic success (Bergman et al., 2014; Deil-Amen, 2011; Goncalves & Trunk, 2014; Johnson & Nussbaum, 2012; McKenzie & Gow, 2004; Wyatt, 2011). Conversely, traditional students have fewer responsibilities that interfere with their academic work (Adams & Corbett, 2010; Jinkens, 2009; McKenzie & Gow, 2004). Some researchers reported that mature students exhibited better academic performance than traditional-age students did (Nasir, 2012; Sheard, 2009; Spitzer, 2000), while other researchers found the opposite (Christopher & Redempta, 2016; McCormick, 2011; McKenzie & Schweitzer, 2001; Woods & Frogge, 2017). Attempts to explain these mixed results yielded various conclusions. Mature students have lower integration needs and have clearer career and educational goals than younger students have (Rabourn et al., 2015; Santos et al., 2016). Moreover, mature students are more likely to engage in effective educational practices, are more conscientious and intrinsically motivated, and have mastery goals (Adams & Corbett, 2010; Johnson, Taasoobshirazi, Clark, Howell, & Breen, 2016; McCormick, 2011; McKenzie & Gow, 2004; Rabourn et al., 2015). Consequently, mature students achieve higher grades.

Supportive campus environments and mature students' use of deep learning approaches could contribute to their higher academic performance despite the challenges they face (Bergman et al., 2014; Mlambo, 2011). Despite the fact that traditional students face fewer obstacles per se, they might still struggle to cope with the challenges of university because they are less self-regulating and developmentally less prepared (Johnson & Nussbaum, 2012), have poorer decision-making skills (Torres, Gross, & Dadashova, 2010), and are likely to endorse performance appearance goals (which seldom contribute to positive academic outcomes) (Johnson & Kestler, 2013; Senko & Dawson, 2017; Sigelman & Rider, 2015). Additionally, full- or part-time employment, regardless of age, could lead to poor academic performance (McCormick, 2011; Torres et al., 2010).

**3.1.3 Race and ethnicity.** The influence of race on academic performance is a much-contested topic. Although differences have been found among racial groups, it appears that it could be the combined effects of related factors that produced the observed differences (Fletcher & Tienda, 2010; Muller, Riegler-Crumb, Schiller, Wilkinson, & Frank, 2010; Steele-Johnson & Leas, 2013). These related factors include minority status, inadequate quality of schooling, family background, social and cultural capital, and SES (Fletcher & Tienda, 2010; Fram, Miller-Cribbs, & Van Horn, 2007; Kuh et al., 2007; Strayhorn, 2010). Race and ethnicity act as proxy measures because minority group students tend to come from lower socio-economic backgrounds, attend disadvantaged schools, do not receive instruction in their home language, and are most likely to be FGSs (Abbott & Joireman, 2001; CHE, 2016; Fram et al., 2007; Houston, 2016; Spiegler & Bednarek, 2013; Utzman, Riddle, & Jewell, 2007; Van Rooy & Coetzee-Van Rooy, 2015). However, changing demographics of the middle and upper classes make race an increasingly inaccurate proxy for class and disadvantage (CHE, 2010, 2016; Strayhorn, 2010). For example, some minority group students from a higher SES background achieved higher grades than their lower SES peers did (Strayhorn, 2010).

**3.1.4 Socio-economic status.** SES is often viewed and measured as the nexus of occupation, income, and education. SES indicates the unequal distribution of and access to resources (American Psychological Association – APA – Socioeconomic Status Office, n.d.). SES affects students' academic achievement in a variety of ways. For example, poverty-stricken areas tend to have more health risks, inadequate schooling systems and educational resources, social ills such as gangsterism, crime, and drugs, as well as fragmented family structures and limited parental engagement (APA Socioeconomic Status Office, n.d.; Basch, 2011; Lacour & Tissington, 2011; Maree, 2013; Pratt, Vadali, Kvale, & Ellickson, 2015; Sigelman & Rider,

2015; Tuckman & Monetti, 2011; Weiten, 2013). These factors can affect the children's performance at school from a biological and psychological perspective (Sigelman & Rider, 2015).

Students from low SES backgrounds experience psychological barriers at university, which are perpetuated by institutions (Jury et al., 2017). Notably, lower SES students exhibit detrimental forms of achievement motivation, experience more depression, display low well-being and sense of belonging, while negative stereotypes affect their ability to fulfil their true potential (Jury et al., 2017; Sigelman & Rider, 2015). These barriers may be perpetuated by value systems of institutions that promote independence, while lower SES students typically display more interdependent value systems. Large discrepancies between these value systems result in a reduced sense of belonging and greater distress, consequently affecting academic performance (Jury et al., 2017; Phillips, Stephens, Townsend, & Goudeau, 2016).

**3.1.5 Generational status.** Generational status refers to whether or not a student is the first in his or her family to participate in HE. Continuing-generation (or second-generation) students are students whose parents or guardians have completed university – obtained “at least one baccalaureate degree” (Pike & Kuh, 2005, p. 277). There is some disagreement regarding the definition of “first-generation student”, although researchers generally operationalise the term as a student whose parents have not completed higher education (Hertel, 2002; Mehta, Newbold, & O'Rourke, 2011; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Patton, Renn, Guido, & Quay, 2016; Pike & Kuh, 2005; Toutkoushian, Stollberg, & Slaton, 2015). Different parental figures have been used to define FGS, which raises the question if it matters whether it is the students' biological parents or any other relative or guardian who attended university (Smith, 2015; Toutkoushian et al., 2015). FGSs are often from ethnically diverse and minority groupings (Nuñez & Cuccaro-Alamin, 1998; Saenz, Hurtado, Barrera, Wolf, & Yeung, 2007; Spiegler & Bednarek, 2013). FGSs tend to come from lower-income families, and are more likely to be female and working full or part-time (Nuñez & Cuccaro-Alamin, 1998; Pascarella et al., 2004; Saenz et al., 2007; Spiegler & Bednarek, 2013).

CGSs typically perform well at university because they know what to expect. They receive familial support, as well as advice about what to expect on campus on a social and academic front. They can then prepare accordingly, and this could make them feel more confident, while also fostering a sense of belonging at the university (Hertel, 2002; Horn & Nuñez, 2000; Klink et al., 2008; Marsden, 2014). They may also tend to view the university

experience as important for learning and self-development, which is an essential facet of academic success and persistence (Mekolichick & Gibbs, 2012). CGSs benefit more from social support from friends than their first-generation counterparts do and display improved social adjustment (Hertel, 2002; Marsden, 2014; Morrison & Silverman, 2012). Hence, their adjustment to the university environment can occur efficiently. This can lead to better academic achievement, and CGSs tend to earn higher grades than FGSs do (Aspelmeier, Love, McGill, Elliott, & Pierce, 2012; Marsden, 2014; Stephens, Hamedani, & Destin, 2014).

In contrast, FGSs may not know what to expect and may struggle to adapt to the new university environment (Hertel, 2002; Patton et al., 2016; Tinto, 2014). Students' unclear expectations and incongruent university experiences mean they are less prepared to navigate the university environment and its challenges successfully (DeFreitas & Rinn, 2013; Kuh et al., 2007). Consequently, FGSs' academic performance, social adaptation, and persistence could be compromised. FGSs are often encouraged by their parents to attend university, although their parents might be unable to provide adequate advice and support on how to navigate and adjust to university (Kuh et al., 2007; Nel et al., 2009; Patton et al., 2016). Often FGSs work part-time while studying, especially since attending university is a financial burden (Hertel, 2002; Patton et al., 2016). They are also less engaged or integrated with the university system, as they tend not to belong to any campus organisations, and most do not live in residences on campus (Hertel, 2002; Patton et al., 2016; Pike & Kuh, 2005; Saenz et al., 2007). Consequently, their sources of social support, such as empathising peers, are limited (Chao, 2012; Nel et al., 2009; Yusoff, 2011). FGSs perform less well academically and graduate at lower rates than their CGS peers (Hertel, 2002; Mehta et al., 2011; Pascarella et al., 2004; Patton et al., 2016; Smith, 2015). Additionally, they tend to view the university experience pragmatically – as a credential and a means to an end, focusing more on job-related skills and being more career-oriented than CGSs do (Giancola, Munz, & Trares, 2008; Hertel, 2002; Mekolichick & Gibbs, 2012; Saenz et al., 2007; Spiegler & Bednarek, 2013; Thering, 2010). This is not necessarily wrong, as many students attend university with the aim of obtaining a qualification and to work.

The expectations first-year students have influence and shape their ideas and behaviours in important ways, and consequently influence their academic performance and social adjustment (Kuh et al., 2007). The expectations, behaviours, and perceptions students have when they enter university reflect their social and cultural capital. Social and cultural capital entail the resources at a person's disposal, pertaining to relationships with other people, knowledge, assets, skills, and esteemed practices (Inglis, 2012; Webb, Schirato, & Danaher,

2002). Thus, students from higher social classes will have more resources at their disposal, in the form of advice and support from parents and friends who are acquainted with the institution of the university, as well as better academic preparation (in the form of the schools they attended and other educational resources). These resources are transferred across generations and are used differently by CGSs and FGSs (Lohfink & Paulsen, 2005). Therefore, the differential use of resources/capital can serve to perpetuate specific views and approaches to HEIs among CGSs and FGSs. Any disparities between the culture (valued behaviours and practices) of the university and those of the students will complicate the transition process and affect how the students experience university and perform academically. These differences appear to persist throughout the time spent at university, and any social class gaps in important university outcomes (e.g., academic performance, well-being, and social networks) could widen (Phillips et al., 2016). However, the university experience entails social and academic gains; therefore, students' cultural capital will increase (Mekolichick & Gibbs, 2012).

Thus, it is evident that generational status could have important implications for students. Consideration of generational status in the South African context is necessary, as well as how students can be assisted to overcome any difficulties they might face due to their generational status. Not all FGSs will struggle at university, and not all CGSs will excel. With the view of improving accessibility to university and increasing enrolment numbers as one of the strategies to address inequalities of the past (MacGregor, 2012, 2014; NPC, 2011; Ramrathan, 2016), there could very well be an influx of FGSs at universities in the future. This has already been occurring after the advent of democracy in South Africa (Bunting, Sheppard, Cloete, & Belding, 2010; Moodley & Singh, 2015).

### **3.2 Academic/Cognitive predictors of Academic Performance**

Cognition entails the processing and interpretation of information, knowledge acquisition, and how this information is used to direct behaviour and solve problems (Louw & Louw, 2014; Sigelman & Rider, 2015). Various cognitive processes are essential to academic performance and gaining academic knowledge (Mbatha, 2015; Musso, 2016; Puerta, 2015), including perception, memory, and language proficiency. Students must engage with academic work through abstract and critical thinking; therefore, their cognitive development is an important consideration. It has been found that the quality of high school attended and previous academic performance are useful predictors of academic performance at university (Birch &

Miller, 2004; McKenzie & Schweitzer, 2001; York et al., 2015). In this section, findings on the aforementioned predictors most relevant to the South African context are examined briefly.

**3.2.1 Language proficiency.** Although there is a lack of consensus on what the term means, language proficiency entails a person's knowledge and successful use and comprehension of a language (Bachman, 1990; Del Vecchio & Guerrero, 1995). Language proficiency encompasses the ability to use language effectively to comprehend and formulate logical, meaningful arguments to achieve goals (pragmatic competence), as well as knowledge of syntax, vocabulary, phonology, and morphology (organisational competence) (Archibald, 1997; Bachman, 1990; Sigelman & Rider, 2015; Van Zyl, 2002). As it is difficult to separate cognitive abilities from language proficiency (Dunworth, 2001; Lun, Fischer, & Ward, 2010), progress in cognitive development is associated with developments in language ability and proficiency (Sigelman & Rider, 2015). Language proficiency is a crucial component of academic success, as evidenced by the positive correlations between these constructs (Aina, Ogundele, & Olanipekun, 2013; Ardasheva, Tretter, & Kinny, 2011; Cho & Bridgeman, 2012; Ghenghesh, 2015; Keeve et al., 2012; Naudé et al., 2011). Students with higher levels of language proficiency attain academic success by using language effectively to engage with academic work, learning, and to analyse and express ideas. Students with lower language proficiency scores perform less well academically (Ardasheva et al., 2011; Naudé et al., 2011; Tchatchoueng, 2014).

The effect of language proficiency on academic performance is likely due to the influence of students receiving instruction in a language other than their home language. Consequently, students could struggle to comprehend ideas and use their second language successfully. This becomes especially relevant in a multilingual country such as South Africa, where language proficiency is generally unsatisfactory (Basson, 2006; Grosser & Nel, 2013). Many students do not receive schooling in their home language, which is a significant barrier to their academic success at school and university (Grosser & Nel, 2013; Van Rooy & Coetzee-Van Rooy, 2015). Despite this, English remains the dominant language of instruction, and many parents insist that their children be taught in English (Ayliff, 2010; Van Zyl, 2002). The importance of becoming proficient in the home language before learning a second language has been emphasised because it provides a foundation for second language acquisition (Heugh, 2002). Receiving instruction in both languages leads to greater gains in academic performance and literacy skills (Ardasheva et al., 2011), which relates to additive and subtractive bilingualism. Additive bilingualism involves the successful development of two languages, whereas subtractive

bilingualism entails deficiencies in both home and additional language development, which occurs because the home language is neglected in order to learn the additional language (Basson, 2006; Homel & Palij, 2014). Second language learners take longer to become proficient in the abstract, academic use of the second language, especially when initial instruction is not embedded in context. Consequently, these students may not reach their full academic potential (Cummins, 1981, 1984).

**3.2.2 High school attended.** Learners' academic preparation is fundamental to their future success at HEIs. Schools and teachers prepare learners for further education and develop their repertoire of cognitive skills (critical thinking, academic knowledge, literacy and numeracy competencies), independent learning, and problem-solving skills (Banai & Perin, 2016; Jones, Coetzee, Bailey, & Wickham, 2008; Spaul, 2013). Tasked with this important role, it is no surprise that characteristics of the school predict learners' academic performance, which influences their ASC and subsequent academic performance at university (Banai & Perin, 2016; Birch & Miller, 2004; Dayioğlu & Türüt-Aşık, 2007; Kyoshaba, 2009; McGhie, 2017; Pike & Saupe, 2002; Smith & Naylor, 2005; Thiele, Singleton, Pope, & Stanistreet, 2014). The school characteristics that predict future academic success at school and university level include type and size of school, public or private classification, resources, location, infrastructure, qualifications and experience of staff, average ability level of students, and student attendance rates at a specific high school and university. The quality of the school curriculum plays a critical role in preparing students for further study. Students who are best prepared by their high schools are in a better position to achieve academic success at university, regardless of other characteristics (Banai & Perin, 2016; Jones et al., 2008; Kuh et al., 2007). This is due to rigorous preparation narrowing the gap between what is learnt in high school and university. School characteristics could follow an indirect pathway to influence students' academic performance at university by affecting the relationship between students' admission points and first-year academic performance (Birch & Miller, 2004). SES determines the quality of education available to learners (in the form of the quality of the schools and learning materials, demotivated teachers, overcrowded classrooms, and poor schooling). Teachers from disadvantaged schools typically hold lower expectations for their learners, which lowers learners' expectations for themselves (Louw & Louw, 2014; Sigelman & Rider, 2015). South African schools face many problems, including teacher strikes and shortages, the closing of schools by parents, non-delivery of learning materials, as well as poor quality of learning materials, schooling, and infrastructure (Coopersmith, 2013; eNCA, 2014a, 2014b, 2016;



Makana, 2017; Spaul, 2013; Wilson-Strydom, 2015b). Learners' academic preparation could suffer under these circumstances, which consequently enlarges the gap between high school and university. Despite students' resilience in the face of these adverse conditions, HEIs continue to report high attrition rates and underprepared students (CHE, 2016; McGhie, 2017; Moodley & Singh, 2015; Nkosi, 2015).

**3.2.3 Intelligence and aptitude.** Intelligence is defined as the ability to solve problems effectively and think abstractly (Sigelman & Rider, 2015). Piaget (in Sigelman & Rider, 2015) defines intelligence as adaptive thinking and behaviour. Aptitude is more specific and refers to specific talents and mental abilities (Weiten, 2013). As such, intelligence and aptitude refer to students' ability to learn and apply their knowledge to attain academic success (Steinmayr, Meißner, Weidinger, & Wirthwein, 2014; Weiten, 2013). It has been established that intelligence is a predictor of academic performance at all educational levels (Ahvan & Pour, 2016; Rosander, 2012; Sigelman & Rider, 2015).

Standardised admissions tests are used to measure intelligence and aptitude and are often used in conjunction with matriculation marks to predict academic performance at university (Atkinson & Geiser, 2009; Foxcroft & Roodt, 2013; Hoffman & Lowitzki, 2005; Zekarias, Aba-Milki, & Mikre, 2015). Thus, measures of academic ability are relevant factors to consider in predicting academic performance. The Scholastic Aptitude Test (SAT) and American College Test (ACT) are standardised tests assessing students' academic potential, reasoning skills, and subject-specific knowledge (Atkinson & Geiser, 2009; Kuncel & Hezlett, 2007). In South Africa, the Differential Aptitude Tests Form K and L (DAT K and L), National Benchmark Tests (NBT), and other academic information can be used to make decisions about selection, admission, and careers (Foxcroft & Roodt, 2013; Universities South Africa, 2016). The NBTs are also used to place students into suitable programmes and to ascertain whether remedial modules are required (Rankin, Schöer, Sebastiao, & Van Walbeek, 2012; Wilson-Strydom, 2012b). In the South African context, tests of potential learning (e.g., the Learning Potential Computerised Adaptive Test – LPCAT) have greater predictive ability than conventional psychometric tests of cognitive ability and aptitude (which measure current abilities) have (Van der Merwe & De Beer, 2006).

Both are viewed as strong predictors of university academic performance, although standardised tests might not add as much as high school grades to the prediction of university academic performance. Standardised tests are best suited as a supplemental information source

(Geiser & Santelices, 2007; Jacobs, 2015; Rankin et al., 2012; Wilson-Strydom, 2012b; Zekarias et al., 2015). However, standardised tests could be biased against minority groups, women, and students from lower SES (Kuncel & Hezlett, 2007). Although standardised tests may not show differential prediction overall, it was discovered that this could occur at individual institutions for all gender and ethnic groups (Aguinis, Culpepper, & Pierce, 2016; Vlahakis, 2016). Another criticism raised against its use is that standardised tests might have limited predictive value of future learning and academic success in the university context, explaining only academic performance during the first year (Bowen, Chingos, & McPherson, 2009; Merritt, 2013). Conversely, Kuncel and Hezlett (2007) found that standardised tests are better predictors than previous academic performance is. Komarraju, Ramsey, and Rinella (2013) view grade point averages and standardised tests as effective predictors of academic performance at university, and they state that measures of academic self-discipline add even more value to the prediction. These measures could provide a holistic view of future academic performance if they are used together and in combination with measures of non-cognitive factors. Evidently, using these measures complementarily could serve as a better method to establish a facet of university readiness, while also considering students' potential for learning in specific subject areas.

**3.2.4 Grade 12 academic performance (previous academic performance).** The most common factor used to measure and predict academic success (or academic performance) is students' previous academic performance (McKenzie et al., 2001; York et al., 2015). In South Africa, Grade 12 academic performance (in the form of AP scores) serves as a measure of previous academic performance. It is assumed that high-achieving matriculants will perform well at university (Fraser & Killen, 2003; Mills et al., 2008; Naidoo et al., 2013).

The connection between previous academic performance and academic performance at university could stem from the fact that academic performance reflects students' performance ability, especially in the cognitive domain (Kersop, 2004; York et al., 2015). Previous academic performance is a measure of students' academic potential and reflects the academic skills and knowledge, study skills, and other competencies important to achieve success at university (Jones et al., 2008; Spaull, 2013; Wilson-Strydom, 2015b; York et al., 2015). These competencies are developed at school and transferred to the university context. If they are well developed, the competencies translate into better adaptation to university and academic performance. Therefore, the quality of the curriculum and instruction received at school is important in preparing learners for HE, because it would equip students with the necessary

foundational academic knowledge and cognitive skills for future academic opportunities (Banai & Perin, 2016; Jones et al., 2008; Kuh et al., 2007; Spaull, 2013; Wilson-Strydom, 2015b). However, a gap exists between high school preparation and what is expected of students at the university level (Wilson-Strydom, 2015b). Furthermore, previous academic performance cultivates attitudes towards academic activities and self-confidence in abilities (Kersop, 2004). These psychological effects can carry over to the university environment – if students have performed well at school, they will likely have more confidence in their abilities and a positive attitude towards the new academic requirements/workload.

The predictive value of previous academic performance has been confirmed internationally and locally. Although most studies consistently connect previous academic performance with academic performance at university, some have yielded mixed results on the ability of Grade 12 marks to predict academic performance at university (Cyrenne & Chan, 2012; Fenning & May, 2013; Keeve et al., 2012; Mashige et al., 2014; McKenzie & Schweitzer, 2001; Mills et al., 2009; Olani, 2009; Naidoo et al., 2013; Thiele et al., 2014; Zekarias et al., 2015). The pitfall of this measure is that it is not always accurate in predicting the academic performance for students from disadvantaged backgrounds (Naidoo et al., 2013; Thiele et al., 2014; Vincent & Idahosa, 2014). Despite being a strong predictor of future academic performance, it remains important to recognise that previous academic performance might produce varying results for different students and faculties (Danilowicz-Gösele, Lerche, Meya, & Schwager, 2017; Thiele et al., 2014).

### **3.3 Psychosocial/Non-cognitive Predictors of Academic Performance**

Non-cognitive predictors refer to a range of psychological and social aspects relating to the student. This includes social support, personality, social integration, self-efficacy, and self-concept (Aramburo, Boroel, & Pineda, 2017; Robbins et al., 2004). This is not an exhaustive list, and due to the extensive range that non-cognitive predictors encompass, the focus of the following section is on those most relevant to the current study.

**3.3.1 Perceived social support.** Social support is a valuable resource for navigating many situations faced in life. Perceiving social support (PSS) from family, friends, and significant others as adequate could be more important than the mobilisation of these support networks (Taylor et al., 2004; Zimet, Dahlem, Zimet, & Farley, 1988). PSS is important in the transition to university by serving as a buffer against the stresses brought about by the new

adjustment period (Cohen & Wills, 1985; Denovan & Macaskill, 2012; Nel et al., 2009; Yusoff, 2011). Consequently, higher levels of PSS relate to better academic performance (Bukhari & Afzal, 2017; DeBerard, Spielmans, & Julka., 2004; De la Iglesia, Stover, & Liporace, 2014; Demaray & Malecki, 2002; Song, Bong, Lee, & Kim, 2015; Tayfur & Ulupinar, 2016). In some instances, PSS had no effect on academic performance and did not protect against decreases in academic performance (Mackinnon, 2012; Stack-Cutler, Parrila, & Torppa, 2015). Owing to the social nature of PSS, it could operate largely on social integration rather than academic integration. An indirect relationship might exist between PSS and academic performance, where PSS facilitates the transition to university and thereby acculturates students to the values that the university promotes.

**3.3.2 Personality.** Personality is defined as the dynamic yet relatively stable amalgamation of unique characteristics, consistent behaviours, motives, and values that determine individuals' behaviour within a specific context (Meyer & Moore, 2008a; Sigelman & Rider, 2015; Weiten, 2013). Personality plays a significant role in academic performance because personality dimensions affect academic behaviours (Lubbers, Van Der Werf, Kuyper, & Hendriks, 2010). In addition, intelligence and willingness to perform academically might influence the relationship in important ways (Poropat, 2009).

The Big Five dimensions (openness, conscientiousness, extraversion, agreeableness, and neuroticism) is often used as a way of relating personality to academic performance (Chamorro-Premuzic & Furnham, 2003; Gray, McGuinness, & Owende, 2014; Poropat, 2009). It has been shown consistently that conscientiousness improves academic performance, while neuroticism has a negative effect by decreasing concentration on tasks (Chamorro-Premuzic & Furnham, 2003; Conrad, 2006; Dumfart & Neubauer, 2016; Haque, Bhagat, Bin Simbak, & Jaalam, 2016; Marcela, 2015; O'Connor & Paunonen, 2007; Paunonen & Ashton, 2001; Poropat, 2009). Students exhibiting lower emotional stability focus more on their internal dialogues, resulting in decreased working memory capacity to deal with tasks. Openness to experience, agreeableness, and extraversion have shown mixed results as predictors of academic success (Akomolafe, 2013; Educational Testing Service – ETS, 2012; Gray et al., 2014; O'Connor & Paunonen, 2007; Paunonen & Ashton, 2001; Poropat, 2009). In general, openness to experience and agreeableness correlate positively with academic performance, whereas extraversion has a negative association (O'Connor & Paunonen, 2007). The latter finding can be explained by extraverted students being overconfident in their abilities and engaging more in social and other

activities instead of studying (ETS, 2012; Poropat, 2009; Schaefer, Williams, Goodie, & Campbell, 2004).

Specific trait indicators, such as anxiety (a component of neuroticism) and self-efficacy (related to neuroticism and extraversion), are better predictors of academic performance than the broader Big Five dimensions are (ETS, 2012; Paunonen & Ashton, 2001). Test anxiety significantly detracts from academic performance (Banai & Perin, 2016; Chapell et al., 2005; ETS, 2012). However, the use of broad measures of personality is still valuable since it taps into a wider range of behaviours than the specific traits that comprise personality do (Dumfart & Neubauer, 2016; Paunonen & Ashton, 2001).

**3.3.3 Self-efficacy.** Self-efficacy refers to individuals' belief in their ability to accomplish tasks successfully, or to function effectively in specific situations (Hayden, 2013; Meyer & Moore, 2008b; Weiten, 2013). Usually, this factor is tied to specific subject areas to predict academic success in them. Higher levels of self-efficacy have been identified as strong predictors of academic performance (Fenning & May, 2013; Lent et al., 2016). Academic self-efficacy, students' confidence to master a subject, is related strongly to academic performance for learners and university students (both directly and indirectly) (Chemers, Hu, & Garcia, 2001; Lee, Lee, & Bong, 2014). Students with higher self-efficacy tend to view the university experience as a challenge, while also displaying higher expectations and lower stress levels (Chemers et al., 2001). In contrast, students with lower self-efficacy perceptions have less confidence in their abilities, view the university experience as a threat, and report higher stress levels. Furthermore, students with low academic self-efficacy are discouraged easily when facing challenging tasks (ETS, 2012).

Higher self-efficacy results in greater persistence and the use of more effective metacognitive strategies essential to success at university, including planning, self-regulation, perseverance, and self-control (Chemers et al., 2001; ETS, 2012; Komarraju & Nadler, 2013; Lent et al., 2016). Additionally, students' goals, self-regulation, and processing strategies can have mediating and moderating influences on the relationship between academic self-efficacy and academic achievement (Honicke & Broadbent, 2016; Lee et al., 2014).

**3.3.4 Academic self-concept.** General self-concept is defined as individuals' positive or negative perceptions and beliefs of their traits, behaviours, and attributes – their perception of themselves (Shavelson, Hubner, & Stanton, 1976; Sigelman & Rider, 2015; Weiten, 2013).

Shavelson et al. (1976, p. 411) identifies seven key features of this construct: “organized, multifaceted, hierarchical, stable, developmental, evaluative, differentiable”. Self-concept is shaped by individuals’ experiences, environment, and significant others (Shavelson et al., 1976). These experiences are then structured with identifiable facets or areas, which are organised hierarchically from specific situations and experiences to a general self-concept (Shavelson et al., 1976). Support for the hierarchical and domain-specific view of self-concept has been found largely; therefore, general self-concept can be viewed as consisting of separate, yet related, domain-specific self-concepts (Huang, 2011). Self-concept develops over the life-span as individuals develop abstract thought, have more experiences, and can separate the self from the environment, while also evaluating the self in different situations (Shavelson et al., 1976; Sigelman & Rider, 2015). In general, self-concept appears to be stable and resistant to change, and it would require numerous specific situational experiences to change it (Shavelson et al., 1976). Thus, self-concept can be described as dynamic, since it oscillates between stability and change as individuals incorporate, learn from and adjust to various experiences (Demo, 1992; Louw & Louw, 2009). It is also emphasised that self-concept can be distinguished from concepts to which it is often related, and owing to its hierarchical nature, it would relate more to specific situations and behaviours than a more general view would indicate (Shavelson et al., 1976).

The Shavelson hierarchical model categorises general self-concept into academic and non-academic (which includes social, emotional, and physical) self-concept (Reynolds, 1988; Shavelson et al., 1976). ASC has been defined as a function of students’ attitudes and feelings regarding their academic potential and abilities, students’ perception of their academic aptitude in a specific academic field, and their attitude towards the self as a student (Ahmed, 1986; Flowers, Raynor, & White, 2013; Reynolds, 1988). When considering ASC, it would be useful to reflect on how it differs from related constructs. ASC and academic self-efficacy share many aspects in their definitions, although there are subtle distinctions between them (Bong & Skaalvik, 2003). ASC is defined as individuals’ knowledge and perceptions about their academic ability and entails a past-oriented, stable perception of their competence (Bong & Skaalvik, 2003; Marsh & Seaton, 2013). In contrast, academic self-efficacy refers to individuals’ confidence in their ability to complete specific academic tasks successfully and entails a future-oriented, malleable perception of the self and its potential (Bong & Skaalvik, 2003). As individuals acquire more experience with a given domain/task, their ASC develops from their academic self-efficacy before the two constructs diverge (Bong & Skaalvik, 2003;

Ferla, Valcke, & Cai, 2009). Since self-concept is a component of identity (Sigelman & Rider, 2015), the construct of academic identity is relevant. Academic identity is an element of global identity and is based on the theory of identity statuses (Chorba, Was, & Isaacson, 2012; Was, Al-Harthy, Stack-Oden, & Isaacson, 2009). Was et al. (2009) are of the opinion that students' academic identity development will determine their ASC and influence their academic strategies and behaviours. Hence, ASC refers to individuals' perceptions of their competence in a specific area and their views of themselves in an academic setting. Academic identity entails how students would draw these perceptions into a coherent, overall sense of self, and is less specific than ASC.

ASC develops from success and failure in a specific domain, which influences subsequent academic performance (Bong & Skaalvik, 2003; Dambudzo, 2009; Lohbeck, Grube, & Moschner, 2017). These academic experiences foster the development of competencies, skills, and perceptions of abilities that are vital to academic success (Ordaz-Villegas, Acle-Tomasini, & Reyes-Lagunes, 2014). Three models explain the relationship between ASC and academic performance. Firstly, the self-enhancement model states that ASC determines academic performance. According to Byrne (1984) and Marsh (1988, 1990), ASC has motivational qualities, which would explain how changes in ASC lead to changes in academic performance. Secondly, the skills-development model proposes that academic performance affects ASC (Huang, 2011). Thirdly, a reciprocal model has been proposed to explain the development of ASC (Marsh, 2003; Marsh & Seaton, 2013). According to this model, increases in ASC would lead to increases in academic performance, and vice versa. Evidence for the reciprocal model has been demonstrated (Arens et al., 2017; Guay, Marsh, & Boivin, 2003; Kadir, Yeung, & Diallo, 2017). Parental ASC, educational attainment, and expectations for children significantly influence the ASC of students (Mortimer, Zhang, Wu, Hussemann, & Johnson, 2017). Furthermore, SES is a definite contributor to the development of ASC. As mentioned earlier, students from lower SES typically do not have positive academic experiences due to limited, inadequate resources and poor quality of instruction. Consequently, these students are more likely to develop negative ASCs, which affect subsequent academic performance (at school and university) adversely. Stigmatisation could also serve to influence ASC negatively, whereas for some it was a motivator to prove themselves (Prince & Nurius, 2014; Vincent & Idahosa, 2014).

Internationally, the relationship between ASC and academic performance has been investigated in the school and university contexts. Predominantly, a strong relationship between ASC and academic performance has been reported (Chen, Yeh, Hwang, & Lin, 2013; Choi,

2005; Cokley, 2000; DeFreitas & Rinn, 2013; Dramanu & Balarabe, 2013; Ghazvini, 2011; Khalaila, 2015; Kornilova, Kornilov, & Chumakova, 2009; Marsh, 2003; Prince & Nurius, 2014). There is limited support for the assertion that self-concept is not related to academic performance. Huang's (2011) extensive meta-analysis included studies that measured general self-concept or ASC, and the correlations examined revealed that high self-concept related to higher academic achievement, and vice versa. A recent study conducted at a Japanese university indicated that self-concept, among other variables, was an important predictor of future academic achievement (Fryer, 2015).

Other researchers found that, compared to ASC and subject-specific self-concept, general self-concept and non-academic domains of self-concept do not correlate strongly with academic performance (Huang, 2011; Marsh & Craven, 1996; Marsh & Seaton, 2013; Reynolds, 1988). This is in accord with Shavelson et al.'s (1976) assertion that, in comparison to general self-concept, ASC would correlate strongly with academic performance. In this vein, the use of mathematics or verbal self-concept, ASC, and other specific domains of self-concept pertaining to academics yield higher correlations and serve as better predictors of academic performance than general self-concept does (DeFreitas & Rinn, 2013; Fenning & May, 2013; Huang, 2011).

However, weak and insignificant relationships between ASC and academic performance have also been found (Awad, 2007; Shahid, Jabeen, & Ansari, 2016). Whether a school is urban or rural could influence learners' ASC, with learners from urban schools displaying higher ASCs (Dramanu & Balarabe, 2013). Socio-economic and ethnic differences in ASC have been observed, with students from low SES, as well as African American, Native American, Hawaiian, and Latino students, reporting lower ASC scores and academic performance (DeFreitas & Rinn, 2013; Prince & Nurius, 2014). Tracey and Sedlacek (1982) reported that positive self-concept was related significantly to academic performance at university for white and black students. Furthermore, FGSs with a positive ASC achieved higher grades (DeFreitas & Rinn, 2013).

In South Africa, ASC and its relation to academic performance has come under more intense scrutiny in recent years. Although positive correlations between ASC and academic performance have been found (Sikhwari, 2014; Van der Westhuizen, 2008), other studies could not verify this result (Keeve et al., 2012; Ochse, 2003; Van den Berg & Coetzee, 2014). It appears that year level of study for university students and ASC combined with other predictors could be influential factors in this relationship (Keeve et al., 2012; Van den Berg & Coetzee,



2014). Because ASC is a principal factor to consider when predicting future academic performance (CHE, 2016; Jama et al., 2008), more research on its role in the South African context is necessary.

### **3.4 An Integrated Perspective on the Prediction of Academic Performance**

Previous studies have considered the predictors discussed to varying degrees, and have shown that each may affect diverse students differently. Although a range of factors ultimately explain academic performance, the focus of this study was on the potential role of Grade 12 performance, ASC, and generational status in the academic performance of first-year psychology students in the South African context.

Firstly, generational status was considered as an influential variable. Although various demographic factors were shown to be influential, throughout the discussions of the two chapters, generational status emerged as a variable of specific relevance in the changing and diverse student population (Marsden, 2014; Stephens et al., 2014). As noted in the theoretical models, students' knowledge of the university environment could have a profound effect on their academic performance at university. If students are more prepared for HE and have a sense of belonging to the university, they will engage with effective educational strategies and perform well academically (Groves et al., 2015; Hertel, 2002; Horn & Nuñez, 2000; Klink et al., 2008; Kuh et al., 2007; Marsden, 2014; Patton et al., 2016). Thus, it was expected that generational status would affect (moderate) the relationship between previous academic performance and academic performance at university.

Secondly, previous academic performance was identified as a strong predictor of academic performance at university. In comparison to various other measures, previous academic performance has the greatest predictive value (Bowen et al., 2009; Jacobs, 2015; Rankin et al., 2012; Wilson-Strydom, 2012b). Furthermore, previous academic performance shapes ASC (Bong & Skaalvik, 2003). Therefore, it was expected that students who performed well at school would perform well at university because they had developed a positive ASC. Continued positive academic performance will continue to shape the ASC. Additionally, student integration, engagement, and readiness affect academic performance at university (Kuh et al., 2007; Tinto, 1975, 1993; Wilson-Strydom, 2015b).

Thirdly, of the psychosocial predictors, ASC was identified as a variable most relevant to academic performance (Choi, 2005; DeFreitas & Rinn, 2013; Huang, 2011). York et al. (2015,

p. 4) grouped ASC under “acquisition of attainment of educational objective” of their revised definition of academic success. This arrangement does not necessarily allow the investigation of ASC on its own, but rather in a broader sense pertaining to specific educational outcomes. In effect, ASC is a measure of students’ beliefs regarding their competence and chances of attaining academic success (Bong & Skaalvik, 2003; Reynolds, 1988). The predictive value of ASC in academic performance was considered. Furthermore, the moderating and mediating roles of ASC in the relationship between previous and university academic performance were investigated. ASC is viewed as an outcome and moderator of achievement, and as a mediator which leads to positive academic outcomes (Arens, Yeung, Craven, & Hasselhorn, 2011; Klapp, 2017; Marsh & Martin, 2011). The rationale was that ASC might influence academic performance by affecting how students perceive their abilities and engage with academic work.

Thus, students enter university with pre-university educational experiences and characteristics (Kuh et al., 2007; Tinto, 1975, 1993; Wilson-Strydom, 2015b) that could shape the way they view their own potential and abilities. Consequently, ASC could come into play when considering students’ academic integration, readiness for university, and their engagement with educationally effective practices. This is because students will have certain values and ideas about their competencies in specific fields and how to engage with work and peers (as developed during high school). These perceptions and beliefs might not be explicit per se, but could shape the way students will interact with the new environment, at least to some extent, as well as what they will take from the new experiences and what they will incorporate into their practices and beliefs. Thus, it could be argued that ASC can facilitate the process of converting the opportunity of university into a successful achievement. This process could be facilitated by the potential, skills, and capabilities contained in ASC. Because of the relevance of ASC to academic performance, it was postulated that ASC would influence the relationship between previous academic performance and academic performance at university.

### **3.5 Chapter Summary**

In this chapter, the effects of various demographic, academic, and psychosocial predictors were considered. In accordance with the previous chapter, it was shown that several personal and situational factors influence students’ university experiences. The main variables of this study were discussed in depth. Lastly, the chapter was concluded with an integrated perspective related to the focus of this study.

## **Chapter 4 - Research Methodology**

In this chapter, the research methodology and design employed in this study are discussed. The chapter begins with an outline of the research aim and questions. Following this, the research approach is explained in depth. Next, the participants, sampling procedures, and data-collection and -analysis procedures are described. Lastly, ethical issues are discussed. The chapter concludes with a chapter summary.

### **4.1 Research Aim and Questions**

The literature review provided an in-depth discussion of the need to conduct research on academic success, particularly in the South African context. Various student characteristics and contextual factors influence academic performance. The review indicated that main variables of interest (generational status, previous academic performance, and ASC) have profound effects on subsequent academic performance. Against this background, the present study aimed to investigate the role of ASC in the relationship between Grade 12 academic performance and first-year academic performance in psychology, for both first- and continuing-generation students.

The possible role of generational status in the relationship between Grade 12 academic performance and first-year academic performance in psychology was investigated first before the role of ASC in the relationship between Grade 12 academic performance and first-year academic performance in psychology was investigated. If generational status were shown to be a significant moderator variable, further analyses would be split for the two generational groups (first-generation and continuing-generation students).

The following two research questions were investigated:

- 1) Can Grade 12 academic performance explain a significant amount of variance in first-year academic performance in psychology?
- 2) Does ASC moderate/mediate the relationship between Grade 12 academic performance and first-year academic performance in psychology?

## 4.2 Research Approach and Design

Paradigms provide specific assumptions and beliefs that give rise to world views or lenses that guide the interpretation of reality (Chilisa & Kawulich, 2012; Nieuwenhuis, 2014). The selection of a research approach and design is guided by the paradigm (Chilisa & Kawulich, 2012). This study was oriented within the positivist/post-positivist paradigm, since the study aimed to describe reality by measuring variables with questionnaires and using numerical data (Chilisa & Kawulich, 2012; Nieuwenhuis, 2014). Post-positivism can serve to combine factors of positivism and interpretivism; thus, the influence of contextual factors on an objective reality is recognised (Nieuwenhuis, 2014). Therefore, the unique South African contextual factors and their influence on the variables of interest could be considered when interpreting data. Framed within this paradigmatic view, the research approach and design (quantitative approach and correlational design) are discussed in this section, followed by an explanation of why these choices were appropriate for this study.

**4.2.1 Research approach.** A non-experimental type, quantitative research approach formed the base for this study. The quantitative methodological approach emphasises the objective, formal measurement of phenomena, subsequently yielding objective, numerical, and empirical data that can be subjected to further statistical analyses and interpretation (Babbie, 2007; Belli, 2009; Cresswell, 2003; Neuman, 2014; Stangor, 2015). This approach enables the researcher to establish systematically and clearly how the variables of interest relate to one another (Stangor, 2015).

Quantitative research allows the testing of hypotheses and has the advantage of producing objective and empirical data, as well as the ability to generalise results to large populations (Neuman, 2014; Taylor & White, 2015). However, quantitative research is limited by the fact that it cannot explore the contextual nature of a research question in depth, and may be less detailed than qualitative research is because participants' views on the topic under study or contextual factors could be excluded (Mujis, 2010; Taylor & White, 2015).

Non-experimental type studies do not involve the manipulation of variables or the random assignment of participants to groups (Maree & Pietersen, 2014a; Spector, 2013; Vanderstoep & Johnston, 2009). Rather than using interventions, measurement instruments are used to describe characteristics and behaviours of populations or assess the relationship between variables, as they occur naturally (Belli, 2009; Huysamen, 2001; Stangor, 2015). For this

reason, non-experimental research is especially suited to measure variables that occur naturally and cannot be manipulated (Belli, 2009). In non-experimental research, the researcher has less control over procedures and nuisance variables (Huysamen, 2001). Consequently, causal statements about observed relationships or outcomes cannot always be made (Belli, 2009).

A quantitative approach was most appropriate for this research, since the aim was to establish systematically how Grade 12 academic performance and first-year academic performance are related, and how ASC and generational status may influence this relationship. The use of non-experimental research was best suited for this study, since the researcher could not manipulate the variables of interest (such as generational status), but could only observe the association between the variables.

**4.2.2 Research design.** A correlational research design was utilised in this study. Correlational research enables a researcher to investigate the relationship between the variables of interest by measuring the variables and analysing the relationship between them (Howell, 2014; Huysamen, 2001; Stangor, 2015). Furthermore, correlational research allows the researcher to determine the nature and the strength of the relationship between variables (Belli, 2009; Boslaugh & Watters, 2008; Howell, 2014). Testing these relationships establishes the predictive value of the variables (Belli, 2009; Stangor, 2015; Vanderstoep & Johnston, 2009). A limitation of correlational research is that it can only identify and describe relationships, but it does not provide explanations for why these relationships exist (Stangor, 2015).

A correlational design was most appropriate, since the purpose of this study was to examine and describe associations among the variables ASC, generational status, Grade 12 academic performance, and first-year academic performance in psychology.

In addition, this study was exploratory and descriptive in nature. The aim was to gain more information and insight on specific constructs and the context in which they are embedded, instead of providing definite, explanatory answers to research questions (Adler & Clark, 2011; Neuman, 2014; Singh, 2007; Stangor, 2015).

### **4.3 Research Participants and Sampling Procedures**

First-year psychology students at the University of the Free State were the population of interest. Only first-year psychology students were included in the sample, with the aim to make the sample more homogenous and the obtained results more comparable. The first year at

university is regarded as an important developmental year, since most students will acquire skills and attitudes that can be beneficial for further academic pursuits (Tinto, 1999).

The study included all gender and racial groups, as well as both first- and continuing-generation students. Since the first year at university is regarded as an important developmental year, all first-time first-year students were included in the study, and returning first-year students were excluded because they already may have developed the skills and dispositions necessary to navigate academic endeavours at university successfully (Tinto, 1999) and their ASC may have been affected accordingly. Students' academic records were used to determine if students were first-time first-year students, and students who had been previously registered for either the specific module or another degree programme were excluded from the study.

Non-probability, convenience sampling methods were employed to recruit participants. Non-probability sampling procedures are not based on probability theory (Babbie, 2007). Non-probability sampling methods are best suited when large samples are required, and it is a cost-effective and time-saving method (Babbie, 2007; Maree & Pietersen, 2014b; Neuman, 2014). Convenience sampling entails the selection of participants because they are available, due to convenience for the researcher, or due to self-selection (Daniel, 2012; Neuman, 2014). It is suited for exploratory research (Neuman, 2014); therefore, it was an appropriate sampling method for this descriptive and exploratory study. Despite the advantages of the method, it has the disadvantage of limiting the generalisability of results by yielding non-representative samples and distorted views; as such, results must be interpreted with caution (Babbie, 2007; Neuman, 2014; Stangor, 2015).

The researcher recruited the participants. The researcher, with the help of lecturers, introduced the study to students during four separate class sessions. The researcher then invited the students to participate in the study and briefly explained what would be expected of them. Furthermore, an announcement of the study and the available survey was placed on the students' Blackboard portal (the online learning platform that facilitates all online learning activities for the module), which ensured that students not attending lectures were reached.

In total, 229 first-year psychology students completed the survey. The data of the following participants were removed: 1) all participants who completed Grade 12 more than two years prior registering as a first-year student, as well as returning students who have been registered before; 2) participants whose Grade 12 results could not be accessed through their

student numbers; and 3) participants who did not complete the semester (and had no psychology module mark). The demographic characteristics of the final sample of 203 participants are presented in Table 1.

Table 1

*Demographic Data of the Participants*

<b>Characteristic</b>		<b>N</b>	<b>Percentage (%)</b>
<b>Gender</b>	Female	168	82.8
	Male	32	15.8
	Unknown	3	1.5
<b>Race</b>	Asian	5	2.5
	Black African	150	73.9
	Coloured	13	6.4
	White	28	13.8
	Other	2	1
	Unanswered	5	2.5
<b>Generational</b>	First-generation	83	40.9
	Continuing-generation	119	58.6
	Unanswered	1	.5
<b>Age</b>	18	60	29.6
	19	50	24.6
	20	49	24.1
	21	18	8.9
	22	15	7.4
	23	4	2
	24	1	.5
	Unanswered	6	3

The final sample consisted of 203 participants, of which 82.8% ( $n = 168$ ) were female, and 15.8% ( $n = 32$ ) were male. Although female participants were represented disproportionately in the sample, the final sample is representative of the composition of the psychology class. With regard to racial representation, the majority of the participants (73.9%) were black. Slightly more of the participants were CGSs (58.6%,  $n = 119$ ) than FGSs (40.9%,  $n = 83$ ). The age of the participants ranged from 18-24 years of age. The mean age of the participants was 19.46, which is expected for first-year students. The fact that some of the first-time first-year participants in the study were older than 20, is explained by the fact that many learners matriculate at an age older than 18.

#### 4.4 Procedures of Data Collection

Various data sources were utilised in this study. Participants completed an online survey consisting of a demographic background section and the *ASCS-SF*. The survey was available from March until the end of May 2017. In addition to this, data were captured using academic student records. Each method is discussed in detail below.

**4.4.1 Online self-report survey.** Fixed-format self-report measures (Stangor, 2015) were used in this study; thus, participants were presented with a set of items and response options they needed to choose from. Self-report measures are easily administered to large samples and pose many questions to participants in a short period, thus making it a cost-effective and time-saving data-collection method (Barker, Pistrang, & Elliott, 2016; Paulhus & Vazire, 2009; Stangor, 2015). However, the collected data can be less reliable since these measures are subject to issues with questionnaire design and respondent errors (Foxcroft & Roodt, 2013; Neuman, 2014; Weiten, 2013). Additional disadvantages include reactivity, and the response sets of social desirability and acquiescent responding, which might affect the truthfulness of answers that are based on respondents' own perceptions and opinions (Barker et al., 2016; Stangor, 2015; Vanderstoep & Johnston, 2009). Reactivity occurs when participants change their responses because they know they are being measured or observed (Stangor, 2015). Social desirability can be described as a filter through which respondents answer questions to portray themselves more positively (Babbie, 2007; Stangor, 2015; Vanderstoep & Johnston, 2009). Acquiescent responding is the tendency of respondents to agree rather than disagree, and true agreement with question content cannot be discerned (Barker et al., 2016; Stangor, 2015).

Measures to reduce these drawbacks include stressing the importance of honest answers to the questionnaires (Stangor, 2015). This was done by emphasising that participants had to answer questions honestly and that their responses would be kept and reported anonymously and confidentially. The *ASCS-SF* also makes use of reverse-coded items, thus reducing the effect of acquiescent responding.

The popularity of Internet-based survey research is increasing, as Internet access is more readily available to people (Fricker & Schonlau, 2002; Manfreda & Vehovar, 2008). Although traditional paper-based self-report measures yield greater response rates than web-based methods do (De Leeuw & Hox, 2008; Nulty, 2008), a web-based survey was viewed as the



most suitable data-collection method, since this study aimed to recruit approximately 300 participants. This procedure had the potential to reach more participants than paper-and-pen questionnaires used in class because some students might not attend classes but could see the announcement posted on their Blackboard portal. The use of web-based research offers the benefits of being fast, cost-effective, reaching many participants, and presenting interactive items on questionnaires (Fricker & Schonlau, 2002; Neuman, 2014; Williams, 2007). Furthermore, it saves time and costs that would be associated with printing questionnaires and attempting to obtain enough participants from visiting lecture halls. An online survey also did not encroach on lecture time, as only three to five minutes were used to introduce the study during class time.

Students were informed that they had to follow a link to the survey that was placed on their Blackboard portal. Blackboard offers the option to create online surveys; therefore, it was the sole platform used to host the online survey. This ensured that all participants received the questionnaire in the same layout, which is in keeping with recommendations for Internet-based surveys (De Leeuw & Hox, 2008). The utilisation of Blackboard to host the survey also offered a familiar user interface with which students could interact. The informed consent document preceded the survey, and participants' electronic consent was obtained first before they could proceed with the questionnaire. Questions relating to demographic information were presented afterwards, which is in accordance with the recommendations on the organisation of items in questionnaires proposed by Neuman (2014). After participants had completed the demographic questions, they were presented with the *ASCS-SF*.

**4.4.1.1 Demographic information.** The collection of participants' demographic background information provided contextual information on the sample. Demographic background information included questions on participants' age, race, biological gender, and generational status (see Appendix A). The items were posed with a series of fixed response options from which participants could choose (e.g., first- or continuing-generation). Additionally, participants were asked to provide their student numbers.

**4.4.1.2 Academic Self-concept Scale – Short Form.** The *ASCS-SF* aims to measure students' ASCs – students' perceptions of their self-worth regarding their academic potential and abilities, as well as their attitude towards the self as a student (Ahmed, 1986; Reynolds, 1988). The *ASCS-SF* was based on the 40-item version developed in 1988, which was designed for use with university students (Reynolds, 1988). The original 40-item scale had a high internal

consistency of .92, and the subscales displayed acceptable reliabilities (ranging between .56 and .81) (Reynolds, 1988). Cokley, Komarraju, King, Cunningham, and Muhammad (2003) used the full scale and found high overall internal consistency reliabilities in a study with European American students ( $\alpha = .95$ ) and African American students ( $\alpha = .91$ ).

The shortened scale used in this study comprises 18 items on a 4-point Likert scale, with response options ranging from 1 (“strongly disagree”) to 4 (“strongly agree”), with higher total scores indicating higher levels of ASC. The scale does not contain subscales. To calculate the participants’ scores, the negatively stated items are reverse coded (Reynolds, 1988; Reynolds et al., 2012). Reynolds et al. (2012) administered the *ASCS-SF* to psychology students and reported an internal reliability of .90, with convergent validity coefficients ranging between .46 and .49. The results obtained were consistent with the results previously found for the full scale, thus making the *ASCS-SF* a good and reliable alternative to the full scale (Reynolds et al., 2012).

The strengths of this measure include the high reliability coefficients and the fact that it was designed for use with student populations (Reynolds et al., 2012). For this reason, the *ASCS-SF* was an appropriate measuring instrument in this study. The limitations the measure poses are that it has not been used widely in South Africa, and the measure may include terminology/words that are not understood similarly by the students (Foxcroft & Roodt, 2013). The researcher tried to circumvent any conceptual misunderstandings by highlighting the students’ university experience in the instructions.

In this study, the reliability (internal consistency) found for the measure was .841. This is an acceptable alpha coefficient, according to Multon and Coleman (2010), and can also be viewed as a high reliability coefficient in the South African context, according to Pietersen and Maree (2014a), who consider values below .70 as low.

**4.4.2 Academic documents.** Participants’ academic records were accessed to obtain participants’ Grade 12 academic performance and their first-year psychology module marks.

Grade 12 academic performance, indicated by AP scores, were used to measure previous academic performance. AP scores can be viewed as a summative score of students’ Grade 12 academic performance as it is calculated by assigning numerical codes to achievement percentage ranges reflected on the students’ National Senior Certificate (University of the Free State – UFS, 2016; University of Cape Town – UCT, 2017). At the UFS, an AP score of 30 is generally required for admission in most programmes. Furthermore, an AP score of 30 is

required to gain admission to the mainstream programme, whereas an AP score of 25-29 is sufficient for admission to the extended curriculum programme (UFS, 2016).

Academic performance at university was measured by obtaining the participants' psychology module marks for the first semester of their first year at university (Introduction to Psychology module). Students' module marks are calculated by including all assessments and their examination marks. Only first-year psychology module marks were used to ensure that the measure was as specific and homogenous as possible, and results more comparable.

The use of participants' academic records was a reliable, accurate, and convenient way to obtain the required information. The academic records also served as a screening method to ensure that only participants who met the requirements were included in the sample.

#### **4.5 Data Analysis**

The Statistical Package for the Social Sciences (SPSS), Version 22.0 (SPSS, V 22.0, International Business Machines (IBM) Corporation, 2013) was used to calculate and analyse statistical data. After the data had been drawn from Blackboard into SPSS, it was cleaned by eliminating incomplete questionnaires (as mentioned above) and entering missing items through the use of maximum probability (median scores). Items were reverse scored where necessary. Items were coded and transformed to obtain the scale total.

##### **4.5.1. Reliability analyses**

Cronbach's alpha was used to determine the reliability (internal consistency) of the items of the *ASCS-SF* in this study. Internal consistency refers to the extent that test items correlate with each other and measure the true scores on specific constructs (Salkind, 2011; Stangor, 2015). Although there is some debate as to which alpha value could be viewed as acceptable, values between .60 and .80 are generally regarded as acceptable in practice (Foxcroft & Roodt, 2013; Goforth, 2015; Loewenthal & Lewis, 2015; Multon & Coleman, 2010; Pietersen & Maree, 2014a). The acceptability of a reliability coefficient depends on the purpose of the measure and is affected by test length (tests with more items will produce a stronger alpha) (Cronbach, 1951; Pietersen & Maree, 2014b; Tavakol & Dennick, 2011). The value of coefficient alpha, and what would constitute a "good" value, might differ for this population group in comparison to those found in previous studies – the cultural orientation of the diverse South African student sample may have had an influence on their responses to the measure (Foxcroft & Roodt, 2013).

#### 4.5.2. Descriptive statistics

Descriptive statistics aim to describe and summarise the tendencies in data (Stangor, 2015). A frequency distribution was included to summarise the categorical variables (demographic information of the sample) and provided a clear indication of the age, gender, race, and generational status distribution in the sample. The information provided by the frequency distributions would contextualise the sample. Descriptive statistics were also used to indicate the distribution of the continuous variables (namely Grade 12 academic performance, first-year psychology marks, and ASC). Thus, the mean and standard deviations were calculated to illustrate the distribution and dispersion (Babbie, 2007; Stangor, 2015).

#### 4.5.3. Inferential statistics

To investigate the first research question, the relationship between Grade 12 academic performance and psychology marks was calculated. Thus, a Pearson product-moment correlation coefficient ( $r$ ) (Howell, 2014; Pietersen & Maree, 2014a) was calculated to measure the direction and strength of the relationship between Grade 12 academic performance and academic performance in a first-year psychology module. The Pearson product-moment correlation coefficient is used most often to measure linear relationships among quantitative variables (Howell, 2014; Stangor, 2015). Pearson's  $r$  is computed by summing the cross-products, dividing them by the sample size, and subtracting one (Howell, 2014). Pearson's  $r$  can range between -1 to +1 (Stangor, 2015). Values closer to either -1 or +1 indicate stronger relationships between variables. The underlying assumptions of the Pearson product-moment correlation coefficient include that variables must be continuous and the relationship between them must be linear. Furthermore, outliers must be absent or limited and variables must be normally distributed (Stangor, 2015).  $R^2$  was calculated to determine the amount of variance in first-year academic performance in psychology that could be explained by Grade 12 academic performance.

To investigate the second research question, a moderated hierarchical regression analysis (Howell, 2014) was conducted to investigate the possible mediating/moderating role of ASC and generational status in the relationship between Grade 12 academic performance and first-year academic performance in psychology. In this case, raw scores were converted to standardised scores before the analyses were made. Multiple regression (Wilson & McLean, 2011) was deemed an appropriate data analysis technique because three variables were investigated as predictors of academic performance in a first-year psychology module. Furthermore, multiple regression analysis was appropriate because the aim of the study was to

investigate the moderating and mediating effect of generational status and ASC in the relationship between Grade 12 academic performance and academic performance in a first-year psychology module. Hierarchical multiple regression analysis entails inputting variables in a specific order (into the equation), which is usually determined by theory or the research question (Wilson & McLean, 2011). First, the researcher had to determine if generational status had a significant influence on the relationship between Grade 12 and university academic performance. The underlying assumptions of multiple regression include that variables must be continuous and a linear relationship between variables must exist. Furthermore, all predictor variables must make a unique contribution to the outcome variables and must correlate with the outcome variable (though multicollinearity must be absent). Additionally, it is best to have 15 (or more) participants for each predictor. Outliers must also be absent or limited because of this statistical technique's sensitivity towards outliers (Howell, 2014).

The moderating effect of generational status and ASC (as part of research question two) was investigated with moderation analysis. Moderator variables alter the direction and/or strength of the relationship between predictor and criterion variables (Baron & Kenny, 1986; Wu & Zumbo, 2008). In instances where moderators are dichotomous (Baron & Kenny, 1986), such as generational status, unstandardised regression coefficients would be used to measure the effect of Grade 12 academic performance with first-year academic performance for each generational group. The underlying assumptions of moderation are that the independent variable must cause the dependent variable in a linear relationship, and the moderator variable alters the effect of the independent variable in this relationship. If the interaction between the independent and moderator variables is significant, moderation has occurred (Baron & Kenny, 1986). Additionally, no measurement error must occur (Wu & Zumbo, 2008).

Mediation analysis was used to investigate the mediating effect of ASC. Mediator variables explain the relationship between predictor and criterion variables and create an indirect pathway through which predictors operate (Baron & Kenny, 1986; Wu & Zumbo, 2008). According to Baron and Kenny (1986), mediation should be tested with three regression equations. Firstly, the mediator must be regressed on the independent variable, after which the dependent variable is regressed on the independent variable. Lastly, the dependent variable must be regressed on the moderator and independent variables (Baron & Kenny, 1986). The underlying assumptions of mediation are that a relationship must exist between the independent variable and the dependent variable. Secondly, a relationship must exist between the independent variable and the possible mediator variable. Thirdly, the mediator variable must

correlate with the dependent variable. Lastly, when controlling for the effects of the mediator variable, a previously significant relationship between the independent and dependent variable will decrease or equal zero (Baron & Kenny, 1986; Wu & Zumbo, 2008). Additionally, no measurement errors must be present. Thus, Grade 12 academic performance must relate to first-year academic performance in a psychology module, and Grade 12 academic performance must be related to ASC. Lastly, ASC must predict students' first-year academic performance in their psychology module.

Statistical significance was determined by considering the alpha values at .01 and .05.

#### **4.6 Ethical Considerations**

Ethical clearance to conduct this study was obtained from the Research Ethics Committee of the Faculty of the Humanities (see Appendix B) at the UFS. The Research Desk of Student Affairs also provided permission for data gathering with students on campus (see Appendix C). Furthermore, the psychology lecturers of the first-year students were approached to gain permission to address students during class time. This particular study formed part of an overarching research project, namely *Identity, engagement and success among first- and continuing-generation students*, with Professor L. Naudé (the supervisor of this study) as the principle researcher. Furthermore, the Research Ethics Committee granted clearance for data collection over a one-year period from May 2016 to May 2017.

Allan (2011, p. 75) states that consent is an “interactive process” in which competent respondents are provided with accurate and complete information that enables them to make a true choice. Since the survey was available online, students had to give their informed consent electronically before proceeding with the survey (see Appendix D). Obtaining valid informed consent is a principal issue with regard to Internet-based research. It is accepted practice to view survey completion as an indication of consent (British Psychological Society – BPS, 2017). Nonetheless, an electronic consent checkbox that participants had to click was included in the online survey. The informed consent document clearly expressed the goal and the nature of the study, what was expected of participants, potential risks and benefits, incentives, and how data would be reported. During class sessions, the researcher described the survey layout and approximate time to complete it. Voluntary participation was emphasised, and students were informed that they could withdraw from the study without fear of adverse consequences. No deception was used in this study, and participants were notified from the outset that their student

numbers would be used to access their academic records. The researcher's and the supervisor's contact details were provided, should participants have any questions. These steps were in accord with Allan's (2011) view on valid consent, where adequate information was provided, participants had an opportunity to ask questions, and participants could communicate their voluntary decisions.

The principle of non-maleficence was adhered to in this study. Non-maleficence entails not harming participants, not engaging in harmful behaviour towards others, and minimising harm (Allan, 2011). There were no foreseeable risks from participating in this study, although unforeseeable risks could occur. An important limitation of online surveys and Internet-based research is that the researcher cannot monitor participants for any signs of discomfort or distress (Convery & Cox, 2012). Although no risks were anticipated, the researcher or supervisor would refer students to the Student Counselling and Development centre if they indicated any distress or discomfort. This step was followed to address the limitation of monitoring participants.

The confidentiality and anonymity of participants were of paramount importance. Internet-based research has some limits with regard to how private and confidential information can be kept (BPS, 2017). The most important concern of Internet-based surveys is the protection of participants' privacy, and third parties (Blackboard and UFS administrative services) complicate this principle due to different data storage practices on their servers (BPS, 2017; Neuman, 2014). Extra care was taken with handling participants' questionnaires and other information, as they were identifiable by their student numbers (provided voluntarily). The use of secure servers to store data increased confidence in keeping data confidential. While participants in this study cannot be viewed as anonymous, they were informed that the information provided would be reported anonymously and confidentially in aggregate form. Data were stored on password-protected laptops, and access was restricted to the researcher and supervisor.

The salience and relevance of the research topic might not always be enough motivation for participants to partake in a study (Neuman, 2014; Singer & Couper, 2008). Incentives tend to increase the cooperation/response rate of participants, in web-based and traditional surveys (Manfreda & Vehovar, 2008; Neuman, 2014; Singer & Couper, 2008). Incentives are ethical if no undue influence is exerted (Grant & Sugarman, 2004; Singer & Couper, 2008) and the incentives offered are not excessive in proportion to what is expected of participants. To recruit more participants, a lucky draw (with two memory sticks and vouchers as prizes) was

incorporated in the study. Care was taken to outline the process of selecting winners for the two lucky draws clearly to avoid confusion among participants.

#### **4.7 Chapter Summary**

In this chapter, the research aim and questions of the study were presented. The research approach and design were examined. The use of a quantitative, non-experimental, correlational research approach was justified. The sampling method and procedures were explained, and the final sample was described. Inclusion and exclusion criteria were outlined. The details of how the study was introduced to the students were provided. A brief discussion followed on self-report and online surveys and how this data-collection method was utilised in this study to administer the survey. The *ASCS-SF* was discussed and elaborated on by providing details about the psychometric properties of this measure. Specific procedures for data analysis and how they had been used were explained, as well as why these analysis procedures were appropriate for this study. The chapter was concluded with a discussion of the ethical considerations pertaining to this study.



## Chapter 5 – Results

The aim of this chapter is to present and discuss the results of this research study. Firstly, the descriptive results are presented. Secondly, the inferential statistics related to the various research questions are provided. Thirdly, the results are discussed in relation to relevant literature. Lastly, this chapter is concluded with a chapter summary including an overview of the key findings.

### 5.1 Descriptive Statistics

Descriptive statistics present a summary of the relationships among variables of interest and merely describe the data obtained from the sample (Babbie, 2007; Howell, 2014). In Chapter 4, the demographic characteristics of the sample were summarised. In this section, the descriptive statistics illustrate the tendencies, dispersion, and distribution of the three continuous variables (Grade 12 academic performance as measured by AP score, first-year psychology marks, and ASC), as presented in Table 2.

Table 2

*Minimum and Maximum Scores, Means, and Standard Deviations for the Variables*

<b>Variable</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>SD</b>
<b>Grade 12 academic performance (AP score)</b>	203	20	48	29.17	4.372
<b>First-year psychology mark</b>	203	14	92	58.99	14.156
<b>Academic self-concept</b>	203	28	64	47.236	6.727

For Grade 12 academic performance, participants obtained scores ranging from 20 to 48, with a mean AP score of 29.17 and a standard deviation of 4.372. The final mark for the participants' psychology module ranged between 14 and 92, with a mean of 58.99 and a standard deviation of 14.156. The *ASCS-SF* has a possible scoring range of 18 to 72. In this sample, participants obtained scores between 28 and 64, with a mean of 47.236 and a standard deviation of 6.727. These relatively high scores on the *ASCS-SF* indicate that the participants' ASCs are relatively intact.

## 5.2 Inferential Statistics

Inferential statistics are used to make inferences about the population from which the sample was drawn (Babbie, 2007; Howell, 2014). In this section, inferential statistics related to the research questions posed in this study are presented.

**5.2.1 Results pertaining to generational status as a moderator variable.** Before commencing with the data analyses regarding the role of ASC in the relationship between Grade 12 academic performance and first-year academic performance in psychology, the potential role of generational status as a moderator variable was investigated. To this end, a moderated multiple regression analysis was conducted. The interaction variable of the moderated regression analysis yielded an  $R = .373$ ,  $R^2 = .139$ , and was not significant ( $F_{(1, 198)} = .707$ ,  $p = .402$ ). This indicates that generational status did not significantly moderate the relationship between Grade 12 academic performance and first-year psychology marks. Subsequently, all further analyses were completed for the total sample (and not separately for the first-generation and continuing-generation groups).

**5.2.2 The relationship between Grade 12 academic performance, first-year academic performance in psychology, and academic self-concept.** To investigate the first research question, a Pearson product-moment correlation coefficient ( $r$ ) (Howell, 2014) was used to measure the relationship between Grade 12 academic performance and first-year psychology mark. This correlation and correlations between the other variables are displayed in Table 3.

Table 3

*Correlations among the Variables – Academic Self-concept, Grade 12 Academic Performance (AP score), and First-year Psychology Mark*

	<b>Academic self-concept</b>	<b>Grade 12 academic performance (AP score)</b>	<b>First-year psychology mark</b>
<b>Academic self-concept</b>	1	.067	.274**
<b>Grade 12 academic performance (AP score)</b>		1	.317**
<b>First-year psychology mark</b>			1

\*\* $p < .01$

A significant positive correlation was found on the 1% level between Grade 12 academic performance (AP score) and the participants' first year psychology mark ( $r_{(203)} = .317, p < .01$ ). In addition to this, first-year psychology mark showed a significant positive correlation with ASC ( $r_{(203)} = .274, p < .01$ ). Both these coefficients represent a medium effect size which indicates that the relationships are of practical importance. However, the relationship between Grade 12 academic performance (AP score) and ASC was not significant ( $r_{(203)} = .067, p > .05$ ).

To determine how much of the variance in academic performance could be explained by Grade 12 academic performance,  $r^2$  was used ( $r^2 = .1005$ ) indicating that Grade 12 academic performance could explain 10.05% of the variance in first-year psychology marks.

**5.2.3 The moderating and/or mediating role of academic self-concept in the relationship between Grade 12 academic performance and first-year academic performance in psychology.** A moderated hierarchical regression analysis was conducted to investigate the second research question – to determine the moderating and/or mediating role of ASC in the relationship between Grade 12 academic performance and first-year psychology mark. Mediation will occur if the strength of the relationship between the predictor (AP score) and outcome (first-year academic performance) is significantly reduced by including the third (ASC) variable. If a mediation effect is present the direct-significant effect (model 1) will become a non-significant effect (model 2) when the variable (ASC) is added to the equation.

Moderation alludes to the combined effect of two variables (independent and interfering) on an outcome. If a moderation effect is present, the interaction effect (model 3) will be significant on at least the 5% level.

The results yielded significant main effects; however, the interaction effects were not significant. The results are summarised in Table 4.

Table 4

*Moderated Hierarchical Regression Analysis with Grade 12 Academic Performance as Independent Variable, First-year Psychology Marks as Dependent Variable, and Academic Self-concept as Intervening Variable.*

Model	Unstandardised Coefficients		Standardised Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>
	<i>B</i>	Std. Error	$\beta$						
1 (Constant)	-9.693	.067		.000	1.000	22.485	.317	.101	.096
Grade 12 academic performance	.317	.067	.317	4.742	.000				
2 (Constant)	-5.050	.064		.000	1.000	19.770	.406	.165	.157
Grade 12 academic performance	.300	.065	.300	4.637	.000				
Academic self-concept	.254	.065	.254	3.929	.000				
3 (Constant)	-.007	.064		-.115	.909	14.437	.423	.179	.166
Grade 12 academic performance	.308	.065	.308	4.773	.000				
Academic self-concept	.260	.064	.260	4.028	.000				
Grade 12 academic performance x Academic self-concept	.111	.061	.117	1.820	.070				

The first model pertains to Grade 12 academic performance and first-year psychology marks, and yielded statistically significant results as a main effect ( $\beta = .317$ ,  $R^2 = .101$ ,  $F_{(1, 201)} = 22.485$ ,  $p < .01$ ). Accordingly, 10.1% of the variance in first-year psychology marks can be explained by the variance in Grade 12 academic performance.

In the second model, ASC was added to the equation, indicating that ASC had a main effect ( $\beta = .254$ ) on first-year psychology marks. Thus, 16.5% of the variance in first-year psychology marks can be explained by Grade 12 academic performance and ASC combined. When ASC was added to the equation, the relationship between AP score and first-year performance was still significant, which indicates no significant mediating effect.

In the third model, the product (interaction) of Grade 12 academic performance and ASC was added, producing an  $R^2$  change of .014 ( $F_{(1, 199)} = 3.313$ ,  $p = .070$ ), indicating that ASC had no significant moderating effect on the relationship between Grade 12 academic performance and first-year psychology marks ( $\beta = .117$ ).

Thus, Grade 12 academic performance and ASC each had a significant main effect on first-year psychology marks. However, ASC displayed no moderating or mediating effects on the relationship between Grade 12 academic performance and first-year psychology marks. Figure 1 depicts the findings discussed.

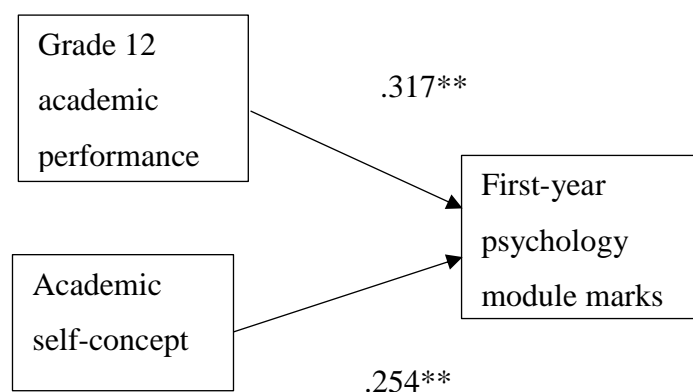


Figure 1. Graphical representation of the significant main effects.

### 5.3 Discussion of Results

In this section, firstly, some remarks are made regarding the descriptive tendencies of the sample. Secondly, the results pertaining to the various research questions are discussed.

**5.3.1 Descriptive statistic tendencies.** Examining the descriptive tendencies in this research sample may shed light on the context of this research study and how it relates to developments in HE in general.

Some tendencies were observed in the biographic characteristics of the sample. A slight majority of the participants were CGSs (58.6%). A tendency towards equal representation of the CGS and FGS groups was observed in the sample. This finding provides some support for the national increases of FGSs enrolling in HE (Jacobs & Pretorius, 2016; Moodley & Singh, 2015). International trends in HE indicate that FGSs have improved access to HEIs (Pascarella et al., 2004; Stebleton, Soria, & Huesman, 2014). The racial composition of the sample was diverse and reflective of the increasing diversification of global student populations at HEIs (Brock, 2010; Bunting et al., 2010; CHE, 2016; Michalski, Cunningham, & Henry, 2017; Teranishi & Kim, 2017). Improving access to HE for diverse and previously disadvantaged students has been an important goal of the government after the advent of democracy in South Africa (Heymann & Carolissen, 2011). The majority of the participants in this study (73.9%) were black, supporting claims regarding progress with regard to the increasing diversity of the South African university student body (Bunting et al., 2008; CHE, 2010, 2016). Female participants were represented disproportionately in this study sample (82.8%). More female students have been enrolling at HEIs internationally and locally (Brock, 2010; Bunting et al., 2008; CHE, 2010; England & Li, 2006; Van Stolk et al., 2007). Furthermore, more female students tend to enrol in psychology studies and programmes of the humanities in South Africa (CHE, 2010). The gender composition of this sample could be reflective of this trend.

The next set of descriptive data provided an overview of participants' academic performance. The average first-year psychology module mark was 58.99%. This is not a particularly high mark, although it is enough to pass the module. Furthermore, participants' AP scores averaged 29.17, which is just below the admission requirements for the mainstream programme (AP score of 30) (UFS, 2016). This confirms the fact that many first-year students are prepared only marginally for HE and might require additional academic support. Regarding participants' ASC, the mean score obtained for this sample was 47.236, which points to a

tendency that participants have relatively high ASCs. Previous studies have found similar scores on ASC (Choi, 2005; Cokley, 2000; DeFreitas & Rinn, 2013; Ghazvini, 2011; Kornilova et al., 2009; Sikhwari, 2014; Van der Westhuizen, 2008).

**5.3.2 Generational status as a moderator variable.** In this study, it was hypothesised that generational status might moderate the relationship between Grade 12 academic performance and first-year psychology marks. Previous studies allude to the role of generational status in both academic performance and ASC (DeFreitas & Rinn, 2013; Hertel, 2002; Marsden, 2014; Mehta et al., 2011; Pascarella et al., 2004; Patton et al., 2016; Smith, 2015; Stephens et al., 2014). This was not confirmed in this study. A possible explanation for this finding is that university admission relies on Grade 12 academic performance – only FGSs and CGSs who have already succeeded in Grade 12, are allowed to higher education, which possibly eliminates generational effects.

Another possibility might be the effectiveness of programmes designed to develop academic skills and literacy during the first year (such as UFS101 and the Academic Literacy Development Course). These programmes could close the gap between FGSs and CGSs during the first year. Students from various backgrounds are brought together in these programmes, improving their social integration, which subsequently enhances academic integration and effort (Marsden, 2014; Tinto, 1975). The increase in resources and support FGSs experienced may explain why the strength of the relationship between Grade 12 academic performance and first-year psychology marks did not change, depending on the generational group.

**5.3.3 The relationship between Grade 12 academic performance and first-year academic performance in psychology.** The first research question posed in this study was: Can Grade 12 academic performance explain a significant amount of variance in first-year academic performance in psychology? In the current study, Grade 12 academic performance explained a significant amount of variance in first-year academic performance in psychology. This finding provides support for the role of previous academic performance in predicting future academic performance and success (Cyrenne & Chan, 2012; Jacobs, 2015; Keeve et al., 2012; McKenzie & Schweitzer, 2001; Naidoo et al., 2013; Olani, 2009; Thiele, Pope, Singleton, & Stanistreet, 2016; Zekarias et al., 2015). As mentioned earlier, previous academic performance is a reflection of students' performance ability, academic potential, high school preparation, and competencies required for success at HEIs (Jones et al., 2008; Kersop, 2004; Spaul, 2013; Wilson-Strydom, 2015b; York et al., 2015). Additionally, academic performance

can foster the development of a positive attitude towards academic activities and self-confidence in abilities (Kersop, 2004). Thus, these competencies and dispositions will affect academic performance at university, as can be seen in the significant results in this study pertaining to Grade 12 academic performance explaining a significant amount of variance in first-year academic performance in psychology.

The predictive value of Grade 12 academic performance has been questioned before, especially for students from disadvantaged backgrounds (Mashige et al., 2014; Schöer, Ntuli, Rankin, Sebastiao, & Hunt, 2010; Thiele et al., 2014; Vincent & Idahosa, 2014). Furthermore, Mashige et al. (2014) assert that students enter university underprepared; therefore, their previous academic performance cannot be used as a sole predictor of university success. Furthermore, previous academic performance could have different effects for students in different faculties (Danilowicz-Gösele et al., 2017; Mashige et al., 2014; Naudé et al., 2011; Thiele et al., 2014).

It should be noted that, for the sample of this study, Grade 12 academic performance could explain only 10.05% of the variance in first-year psychology marks. Although previous academic performance does explain an aspect of academic performance at university, a sizeable proportion of the variance is still unaccounted for. Some contextual factors could influence academic performance at university, thereby contributing or detracting from the contribution of Grade 12 academic performance in this relationship. Therefore, considering additional factors (e.g., ASC, SES, etc.) that could play a role in students' academic performance at university will provide a holistic perspective on the prediction of academic success.

**5.3.4 The moderating and/or mediating role of academic self-concept in the relationship between Grade 12 academic performance and first-year academic performance in psychology.** The second research question posed in this study was: Does ASC moderate/mediate the relationship between Grade 12 performance and first-year academic performance in psychology? In this study, ASC played neither a mediating nor a moderating role in the relationship between Grade 12 academic performance and first-year psychology marks. However, ASC had a significant main effect on participants' psychology module marks. In this subsection, the facets of the second research question are examined in more detail.

**5.3.4.1 Academic self-concept as a moderator.** The investigation of the role of ASC as a moderator yielded no significant results. Therefore, the relationship between Grade 12



academic performance and first-year psychology marks did not change because of any variation of students' ASC. Therefore, ASC did not significantly strengthen, weaken, or change the relationship between Grade 12 academic performance and first-year psychology marks. The relationship between Grade 12 academic performance and first-year psychology marks will hold for all students with varying levels of ASC (thus, Grade 12 academic performance is equally effective in predicting first-year psychology marks for students at all levels of ASC).

This finding does not confirm the view of self-concept as an outcome and moderator of achievement (Marsh & Martin, 2011; Shavelson et al., 1976). However, the main effect of ASC on academic performance provides support for the predictive value of ASC (DeFreitas & Rinn, 2013; Huang, 2011; Khalaila, 2015; Marsh & Seaton, 2013; Reynolds, 1988; Sikhwari, 2014).

In the current research study, although ASC scores spanned a wide range, most participants obtained relatively high scores on this measure, indicating a relatively intact ASC. These higher scores could be akin to range restriction, which would leave possible moderating effects undetected (Aguinis, 2004). Therefore, the result does not conclude that there are no moderating effects in the population of interest. Subtle variations in the variable might be too small for detection.

**5.3.4.2 Academic self-concept as a mediator.** When ASC was added to the regression equation, ASC did not mediate the relationship between Grade 12 academic performance and first-year psychology marks, as hypothesised. Therefore, the effect of Grade 12 academic performance on first-year psychology marks is not attributable to the influence of ASC (Grade 12 academic performance does not operate through ASC on participants' first-year psychology marks). This finding is consistent with results found by Hughes (2011), but contrasts with the view that ASC is a mediator producing favourable educational outcomes and affecting subsequent academic performance (Arens et al., 2011; Bong & Skaalvik, 2003; Klapp, 2017; Marsh & Craven, 2006; Marsh & Martin, 2011). According to the reciprocal model, previous academic performance is related to ASC, and ASC is related to subsequent academic performance (Marsh, 2003). The results of the current study did not provide support for this view. However, in the self-enhancement model of ASC, prior academic performance does not predict ASC, but ASC predicts academic performance (Huang, 2011).

The absence of a significant mediator effect in this study might be explained by a variety of factors. Firstly, the relevance of participants' ASC developed during high school to the new

academic content in their programmes must be considered before concluding that ASC would not mediate the relationship between prior and subsequent academic performance. Secondly, continued development of ASC during the first year at HE could mean that students' current ASC could be different from their ASC developed during high school. A final possible explanation is that other factors (such as students' high schooling, SES) affect their Grade 12 academic performance. Hence, students may have an intact ASC, but other variables could confound the relationship between ASC and prior academic performance.

In the current study, there was not a significant correlation between Grade 12 academic performance and ASC. This is an unanticipated finding, since various researchers claim that ASC is shaped by previous academic experiences (Bong & Skaalvik, 2003; Dambudzo, 2009; Lohbeck et al., 2017; Marsh & Seaton, 2013). The ASC measured in this study (during the participants' first year in higher education) is in closer proximity to the first-year psychology marks. If ASC were measured during participants' Grade 12 year, it would be possible to see a stronger correlation between Grade 12 academic performance and ASC. This might clarify any developmental trends in participants' ASCs.

**5.3.4.3 Academic self-concept as a main effect.** In this study, there was a significant positive correlation between participants' ASC and first-year psychology marks. Thus, ASC made a significant unique contribution to the variance in first-year psychology marks. This result substantiates previous findings on the predictive value of ASC (Choi, 2005; DeFreitas & Rinn, 2013; Dramanu & Balarabe, 2013; Ghazvini, 2011; Khalaila, 2015; Kornilova et al., 2009; Marsh, 2003; Reynolds, 1988; Sikhwari, 2014; Van der Westhuizen, 2008). It is possible that students' ASC develops from their academic experiences, and positive academic experiences could encapsulate the development of skills, competencies, and a perception of abilities that facilitate academic success (Ordaz-Villegas et al., 2014).

## **5.4 Chapter Summary**

In this chapter, the results of the study were presented. The descriptive statistics of the sample were considered. With regard to inferential statistics, all analyses were conducted for the total sample because generational status did not have a moderating effect on the relationship between the variables of interest. A significant relationship was found between Grade 12 academic performance and first-year psychology marks. ASC displayed no mediating or moderating effects (but a main effect) on the relationship between Grade 12 academic

performance and first-year psychology marks. The results were discussed with regard to the research questions posed and previous literature. In the following chapter, the limitations of the present study and recommendations for future research are discussed.

## **Chapter 6 – Limitations, Recommendations, and Conclusion**

The key findings of the current study are presented in this chapter. The discussion of this chapter focuses on limitations of this study and recommendations for future research. The chapter is concluded with a summary of the issues considered and the contribution of the study.

### **6.1 Key Findings of the Research Study**

The first year at university signals a time of transition. How well this transition is handled in conjunction with student characteristics can set the foundation for success at university. The South African education system is afflicted by various obstacles and does not deliver students who are prepared adequately for the challenges of HE, as discussed in the previous chapters. Inadequate preparation for HE could hinder students' chances of academic success.

The main aim of this study was to investigate the role of ASC in the relationship between Grade 12 academic performance and first-year academic performance in psychology. Additionally, the role of generational status as a possible moderator variable in this relationship between Grade 12 academic performance and first-year academic performance in psychology was investigated prior to the role of ASC in this relationship.

The following research questions were thus examined:

- 1) Can Grade 12 academic performance explain a significant amount of variance in first-year academic performance in psychology?
- 2) Does ASC moderate/mediate the relationship between Grade 12 academic performance and first-year academic performance in psychology?

Firstly, generational status did not act as a moderator variable in this study, and subsequent data analyses were conducted for the total group. This finding contrasted with previous studies pointing to the role of generational status (Hertel, 2002; Marsden, 2014; Mehta et al., 2011; Pascarella et al., 2004; Patton et al., 2016; Smith, 2015; Stephens et al., 2014). Possible reasons for this finding include effective programmes aimed at developing academic skills and improving the transition process, as well as other moderators that affected the relationship. This finding opens other avenues for exploration in future studies.

Secondly, Grade 12 academic performance explained a significant amount of variance in first-year academic performance in psychology. This finding provides support for the value of previous academic performance in the prediction of future academic performance (Fenning & May, 2013; Jacobs, 2015; Keeve et al., 2012; McKenzie & Schweitzer, 2001; Mills et al., 2009; Naidoo et al., 2013; Olani, 2009; Zekarias, 2015).

Thirdly, ASC had neither mediating nor moderating effects in the relationship between Grade 12 academic performance and participants' first-year psychology marks. These findings contrasted with views of ASC as a mediator and a moderator (Arens et al., 2011; Klapp, 2017; Marsh & Craven, 2006; Marsh & Martin, 2011; Shavelson et al., 1976). Instead, ASC exhibited main effects with first-year psychology marks. This confirms various previous studies regarding the importance of ASC in academic success (Choi, 2005; DeFreitas & Rinn, 2013; Dramanu & Balarabe, 2013; Ghazvini, 2011; Khalaila, 2015; Kornilova et al., 2009; Marsh, 2003; Reynolds, 1988; Sikhwari, 2014; Van der Westhuizen, 2008).

## **6.2 Limitations of the Study**

The study was based on a non-experimental type, quantitative research approach. Although the approach generates objective, empirical data, it does not allow for the in-depth exploration of contextual factors or the participants' views on the topics at hand (Mujis, 2010; Taylor & White, 2015). Furthermore, the researcher has limited control over the procedures and nuisance variables (Belli, 2009). Correlational research designs clarify relationships between variables and establish their predictive value (Belli, 2009; Stangor, 2015; Vanderstoep & Johnston, 2009). However, relationships between variables can only be described, with no definite explanations for these relationships.

Non-probability, convenience sampling was used to obtain the sample. The disadvantage of this sampling method is that it may not yield a representative sample of the population of interest (Babbie, 2007; Neuman, 2014; Stangor, 2015). Although the study was announced on Blackboard and in lecture halls, the approach adopted to recruit participants yielded a smaller sample than aimed for initially. Only a single university participated. Hence, the results of this sample are not generalisable to the entire population of interest (first-year university students).

The data-collection method posed additional limitations. Fixed-format, self-report surveys do not allow participants to elaborate on their responses (Barker et al., 2016), thereby limiting the depth of information obtained from participants with this measure. The issues of

social desirability and acquiescent responding are especially salient. The higher scores on the ASC measure could indicate that participants wanted to portray themselves as having a more positive ASC. However, the questionnaire utilised in this study displayed adequate psychometric properties. The internal consistency reported by Reynolds et al. (2012) for this measure was  $\alpha = .90$ , and in this study, it was also high ( $\alpha = .841$ ).

The cross-sectional design adopted in this study posed a limitation, as the development of the participants' ASC is not examined fully. The time at which the questionnaire was administered could have skewed the results of the study, as the measurement of participants' developing ASC was closer in proximity to their first-year psychology performance than their Grade 12 performance was. Having this information regarding participants' ASC during their Grade 12 year would provide more details regarding the properties of the relationships found in this study, or new relationships could be revealed.

Despite the aforementioned limitations, the study contributes to the understanding of the relationships between ASC and academic performance in a sample of South African first-year psychology students.

### **6.3 Recommendations for Future Studies**

The quantitative approach (non-experimental type) adopted in this study provided objective data and an indication of the relationship between ASC and academic performance in a sample of first-year psychology students. However, this study did not allow for an in-depth examination of participants' views on the topic. As such, incorporating a qualitative element in future studies (mixed-method approaches) would yield valuable in-depth, contextual information on participants' ASC and its relationship to academic performance at university. Furthermore, supplemental interviews with participants will provide insights into why Grade 12 academic performance was not related to ASC.

A longitudinal design could yield more information on the development of ASC and the relationship between ASC and Grade 12 performance. For instance, participants can be tracked from their Grade 12 academic year to the end of their first year at university, with repeated measurements of their ASC and academic performance, supplemented by individual interviews or focus groups. A longitudinal design would provide in-depth contextual information, describe the developmental patterns of ASC across a transitional period, and examine relationships between the variables over a longer period. Furthermore, more time to conduct the research

would provide an opportunity to examine the apparent insignificant interaction between ASC and Grade 12 academic performance as predictors of academic performance at university.

The use of probability sampling methods would serve to counteract the disadvantages of non-probability and convenience sampling used in this study. Sampling that is more representative will increase the generalisability of results. Therefore, using random sampling methods is a valid approach. Researchers should consider using proportionate or disproportionate stratified sampling due to the disproportionate gender and generational group representations in this study. To obtain statistical results that are more robust, researchers should attempt to include either equal or proportionate numbers of participants in the distinct groups (including generational, cultural, and gender). Additionally, including students from all faculties will enable the comparison of ASC across different faculties. Ideally, students from different universities could also be included in the sample.

In the literature review, numerous predictors of academic success were identified. Therefore, it is recommended that additional predictors be examined. The inclusion of more predictors in future studies will enable researchers to elucidate potential networks between variables while illustrating how these variables relate to South African university students. Scrutinising numerous variables and their interrelations would be similar to the approaches adopted by Kuh et al. (2006) and Tinto (1975) to establish models of academic success. Furthermore, researchers interested in the topic could inspect the differences between different gender and age groups, as well as re-examine different generational groups (perhaps on a continuum). Hence, factors of interest to include along with ASC, generational status, and previous academic performance are gender, age, SES, type of high school, and institutional characteristics.

The results of this study indicate that Grade 12 academic performance is not the sole predictor of student success. Academic performance is not only dependent on characteristics of the individual, but environmental factors could play an influential role. This would include the quality of high schools and the resources available to students. The high schools students attended serve to prepare students for HE. Thus, students who attended under- or well-resourced schools could display different levels of academic performance at university. Although characteristics of the students are important, environmental factors could add even more to understanding students' diverse contexts.

Owing to ASC having a main effect on first-year psychology marks, examining mediators could elucidate the nature of the relationship between ASC and academic performance. Motivation, test anxiety, and academic self-pressure have been found to mediate the relationship between ASC and academic performance (Ferla et al., 2009; Guay, Ratelle, Roy, & Litalien, 2010; Khalaila, 2015; Rodriguez, 2012). Additionally, investigating moderators of the relationship between ASC and future academic performance will further clarify the relationship. Moderators include age, achievement indicators, and the globality/specificity of the self-concept measure (Huang, 2011; Pinxten, De Fraine, Van Damme, & D'Haenens, 2013). It would be useful to explore these variables in the South African university context.

Finally, it must be noted that most of the participants in this study portrayed marginal academic success (e.g., the mean AP score of 29.17 and a mean final mark of 58.99% for psychology). These results could reflect that students are not adequately prepared for HE. Many schools in South Africa face challenges and struggle to prepare students sufficiently for HE (Makana, 2017; Spaul, 2013; Wilson-Strydom, 2015b). Introductory and remedial modules at university could ameliorate students' academic skills, thereby assisting students to perform better academically. However, universities cannot assume the preparatory role of high schools (Kuh et al., 2007). The implementation of partnerships with high schools could have positive effects on developing skills necessary for academic success. Furthermore, students with a psychology module encounter new subject material, which likely was not covered in high school and does not build on work covered. As such, participants not only are undergoing a transition into HE, but also are faced with a transition regarding the subject matter they need to work with. Consequently, incorporating additional resources for these students could assist them to achieve success. The value of ASC in predicting academic performance points to the need to incorporate support for all students' developing ASCs. This step could foster the development of positive ASCs, which will contribute to academic success.

#### **6.4 Conclusion**

Degree attainment confers many personal and economic benefits and is viewed as a pathway to improving society (Kuh et al., 2007; Reed & Kennett, 2017; Schuh & Gansemertopf, 2012). Universities admit students exhibiting academic potential and great progress has been made to widen access for diverse student groups (CHE, 2016; Kuh et al., 2007). Despite this, universities are still challenged with underprepared students and low retention rates.



The troubling issue of attrition is salient in South Africa, where close to half of enrolled students drop out, especially during their first year at university (CHE, 2016; Moodley & Singh, 2015; Nkosi, 2015; Wilson-Strydom, 2012a). Understanding factors relating to academic performance stands paramount, as universities can take steps to assist students (Kuh et al., 2007).

This study contributes to the understanding of factors affecting students' academic performance by clarifying the relationships between academic performance and ASC. In this study, the role of Grade 12 academic performance and ASC in participants' first-year academic performance was confirmed. However, the interaction between variables was insignificant. As such, researchers pursuing this field of interest must be cognisant of contextual factors that could affect established relationships in diverse cultural contexts.

It can be concluded from the results of this study that both previous academic performance and ASC are significant predictors of first-year psychology students' future academic performance. Although this study has provided an informative presentation of the operation of ASC and academic performance in a South African sample, deeper insight would be gained by investigating the potential relationships raised by the results while being mindful of contextual factors in the relationships. The results of this study point to the need to prepare students for HE, as emphasised by previous studies (CHE, 2016; Kuh et al., 2007; Jacobs & Pretorius, 2014; Moodley & Singh, 2015; Wilson-Strydom, 2015b). Without a strong foundation formed during high school, students will not be able to convert the opportunity of university into a success. Additionally, supporting the development of students' ASC is crucial. Academic performance is a complex, multidimensional construct, and more work is required to understand the factors that affect it.

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## Appendix A: Online Questionnaire – Biographic section

Dear student,

You have volunteered to participate in a study on academic self-concept, generational status and academic performance. Please answer all questions as honestly as possible, and provide your student number.

### 1. Biographic Background

#### 1.1 Gender?

Female	1
Male	2

#### 1.2 Age?

18-20 years	1
21-23 years	2
24-26 years	3
27-29 years	4
30-32 years	5
33-35 years	6
36 years and older	7

#### 1.3 How would you describe your “race”?

“Asian/Indian”	1
“Black African”	2
“Coloured”	3
“White”	4
Other	5

#### 1.4 What is your generational status?

First-generation student (first person in the family to attend a tertiary education institution)	1
Continuing-generation student (someone in your family attended a tertiary education institution)	2

Please provide your student number

## Appendix B: Ethical Clearance Letter from the Research Ethics Committee of the Faculty of the Humanities



Faculty of the Humanities

25-May-2016

Dear Prof Naude

Ethics Clearance: **Identity, engagement and success among first- and continuous-generation students**

Principal Investigator: **Prof Luzelle Naude**

Department: **Psychology (Bloemfontein Campus)**

### APPLICATION APPROVED

With reference to your application for ethical clearance with the Faculty of the Humanities. I am pleased to inform you on behalf of the Research Ethics Committee of the faculty that you have been granted ethical clearance for your research.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2016/0313**

**This ethical clearance number is valid for research conducted for one year from issuance.** Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the ethics office to ensure we are kept up to date with your progress and any ethical implications that may arise.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours Sincerely

Prof. Robert Peacock  
Chair: Research Ethics Committee  
Faculty of the Humanities



## Appendix C: Ethical Clearance Letter from the Research Desk of Student Affairs



09 May 2016

Faculty of the Humanities  
University of the Free State

Dear Prof. Naude

### SA Research Committee: Study approval and registration

With reference to your application for approval by registration with the Student Affairs (SA) Research Desk for your study, *Identity, engagement and success among first- and continuous generation students*, submitted on 28 April 2016, I am pleased to report that approval has been granted for your study to engage the student population for the purposes of the research.

Your study is registered with the SA Research Desk for its full duration, which desk is appointed to offer you support in further detailing access to and data collection among students.

Kindly also note to schedule the submission of the required report of findings to the Research Desk upon completion of the study, as reflected in the research timeline you provided for the study.

Please do not hesitate to contact Mr. Vhugala Nthakheni, with further queries or requests for support.

Yours sincerely,

C Faasen, (Acting) Dean of Student Affairs

CC: Mr. V Nthakheni





## **Appendix D: Informed Consent Document**

### **INFORMED CONSENT TO PARTICIPATE IN A RESEARCH STUDY**

#### **The role of academic self-concept in the relationship between matric performance and academic performance in first-year psychology students.**

Principal researcher: Lené Groenewald

Supervisor: Professor L. Naudé

#### **Invitation to Participate in a Research Study**

You are invited to participate in a research study about the role of academic self-concept in first-year academic performance at university. The aim of the study is to investigate how academic self-concept, as well as matric results, may impact on the academic performance in first-year Psychology students.

#### **What is Expected of You?**

If you volunteer to participate in the study, you will be asked to complete a short survey on Blackboard, with questions regarding your biographic background and your academic self-concept. If you feel comfortable, we ask that you also provide your student number so that we can access your academic record. This survey will not take more than 10 minutes of your time.

#### **Potential Benefits and Risks of Participation**

Direct benefits of partaking in this study include getting practical experience on the research process – this can be useful when you study and when you will conduct research in the future. Other benefits may not affect you directly, but you will play an important role in obtaining more information on these variables and how to support students like you in the future.

There are no foreseeable risks from participating in this study.

#### **Confidentiality**

All information will be treated with confidentiality and will be reported anonymously (thus, no-one will be able to trace any information back to you).

Only the researchers and supervisor will have access to the information provided.

**Voluntary Participation**

Participation in this study is completely voluntary. You may decide to withdraw your participation at any time without fear of any negative consequences. You do not have to answer questions you do not want to or that make you feel uncomfortable.

**Compensation for Participation**

By participating in this study, you will automatically be entered into a lucky draw and stand a chance of winning a prize. Two winners will be chosen with a lucky draw. Your student number is needed for this purpose. The prizes are: a 16 gigabyte memory stick and a R100 Träumerei voucher. Winners will be notified via email and will be announced in class and on Blackboard.

**Contact Information**

Feel free to direct any questions regarding the research to the principal researcher (Lené Groenewald: L\_Groenewald\_@outlook.com) or supervisor (Professor L. Naudé: naudel@ufs.ac.za).

**Electronic Consent**

Please select your choice. By selecting “agree”, you have indicated that:

- You read the preceding information
- You voluntarily agreed to participate in the study
- You are 18 years of age or older

- Agree  
 Disagree

## Appendix E: Turnitin Report

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