Academic Persistence for Undergraduate Students in South Africa

by

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DECLARATION

I, Fortunate Tintswalo Silinda (Student Number 41054458), declare that "Academic persistence for undergraduate students in South Africa" is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

Signature: Date:

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To God be the glory!

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ABSTRACT

Although access to South African universities has increased, academic persistence among undergraduate students remains low. Three cross-sectional studies were conducted to investigate the underlying psychosocial and social identity factors that influence academic persistence among undergraduate students at a South African university. Studies 1, 2, and 3 demonstrated that academic adjustment, academic motivation and identification with the academic department are prominent factors in predicting academic persistence. Studies 1 and 2 supported the hypothesis that students who highly identified with the university/academic department were more likely to adjust to the university environment and to be academically motivated and academically persistent. Study 3 confirmed that students who highly identified with the academic department were more likely to adjust to the university environment and to persist academically. The studies also revealed that the relationship between identification with the university/academic department and academic persistence via academic adjustment and academic motivation was conditional on whether students were from historically underrepresented or overrepresented racial groups (Studies 1 and 2) and whether students were first-generation or continuing-generation students (Study 3). These results underscore the importance of psychosocial and social identity factors on academic persistence among undergraduate students.

Keywords: academic adjustment, academic motivation, academic persistence, first-generation students, historically underrepresented race groups, identification with the academic department

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CHAPTER I

INTRODUCTION

The South African higher education system has been undergoing transformation since 1994, the year in which the country became a full democracy. Currently, the South African higher education system includes 23 universities comprising traditional universities, universities of technology (the merger of technikons) and comprehensive universities (the merger of technikons and traditional universities). Before the transformation of universities took place, the higher education system in South Africa included 21 universities and 15 technikons. The merger of universities was due to structural reform in the educational landscape (Adam, Backhouse, Baloyi, & Barnes, 2010). Although the process of transformation in universities has been relatively slow, there are a few positives. For instance, students from historically underrepresented groups[1] are now able to enrol at a university of their choice, and their numbers have increased considerably.

The Council on Higher Education (2013) reported that the undergraduate enrolment of students from historically underrepresented groups increased by 20% since 1994. Although the enrolment rates of students from historically underrepresented groups have increased, students' retention and graduation rates remain relatively low. The Council on Higher Education (2013) found that approximately 42% of students from historically underrepresented groups completed their studies, while an additional 38% took longer to complete their studies than the time specified. Moreover, research findings regarding completion rates by race from Stellenbosch University in 2016 showed that the completion rate for students from historically overrepresented groups (white students) was vastly higher

[1] In the present thesis, historically underrepresented groups refer to black, Indian and coloured students while historically overrepresented groups refer to white students.

at 71.6% (Jeynes, 2016), with significantly low completion rates for students from historically underrepresented groups (black students: 53.5%; coloured students: 53.8%) (Jeynes, 2016).

Academic persistence has mainly been conceptualised as students' behavioural commitment to their studies (Robbins et al., 2004; Roland, Frenay, & Boudrenghien, 2016). Academic persistence is continuing with a task even when encountering problems (Burrus et al., 2013). Academic persistence may be considered a process that occurs throughout the year and includes a variety of different behaviours such as attending lectures, spending time studying and registering the following year in the same field of studies (Roland et al., 2016). Moreover, some researchers measured academic persistence using the time that students remained enrolled in an institution (Pritchard & Wilson, 2003; Robbins et al., 2004) and their completion of the programme in which they were enrolled (Cabrera, Nora, & Castaneda, 1993; Paulsen & John, 2002). However, other researchers investigated academic persistence through behavioural commitment using an academic effort measure that assessed activities such as attendance of lectures and practicals and time spent studying during the week or the weekend (Roland, Frenay, & Boudrenghien, 2018). Some researchers have measured academic persistence using intention to persist (DaDeppo, 2009; Davidson, Beck, & Milligan, 2009; Toker, 2010).

Intention to persist is a motivational measure that is deemed a more precise motivational measure than those previously used and is often considered in the literature as the most proximal determinant of persistence (Roland et al., 2016). In the present study, academic persistence is measured using intention to persist. This is in line with students remaining at university until completion of their programme and their willingness to enrol for postgraduate studies after attainment of their undergraduate degree.

Research focusing on the role of psychological factors on academic persistence is scant. Therefore, the concepts of academic achievement and academic performance are used interchangeably in the present study because academic persistence forms part of academic achievement and academic performance. Several scholars refer to academic achievement as the extent to which students have achieved their short- or long-term educational goals (Fan & Chen, 2001). Fan and Chen (2001) highlight that there are different indicators of academic achievement, which range from global indicators, including post-secondary attainment and school grade point averages, to specific indicators such as standardised test scores in a specific academic area (e.g., mathematics) and even variables such as a student's academic aspiration and a student's academic self-concept. Academic performance is used as an indicator of a student's academic achievement at university (Richardson, Abraham, & Bond, 2012). In most cases, a student's overall average percentage obtained for all courses at the end of the academic year, semester or quarter is used as the measure of academic performance (Richardson et al., 2012; Sommer & Dumont, 2011).

Academic persistence is a complex phenomenon that affects several universities worldwide. According to Mtshali (2013), only 15% of South African undergraduate students graduate after enrolling at university. This means that 85% of undergraduate students either abandon their programmes or are kept in the university system for longer. Low academic persistence can be attributed to many factors. For instance, studies show that the low academic persistence of undergraduate students can be attributed to students being unprepared for university and adjustment difficulties (Jones, Coetzee, Bailey, & Wickham, 2008; Strayhorn, 2010; Subotzky & Prinsloo, 2011).

Low academic persistence for students from historically underrepresented groups has been linked to the legacy of apartheid, which has resulted in a lack of preparedness for

university among these students (Jones et al., 2008; Strayhorn, 2010; Subotzky & Prinsloo, 2011). It has been documented that students from historically underrepresented groups often lack the skills that are important in helping them adapt to the university environment. According to Subotzky and Prinsloo (2011), students lack skills such as communication, information processing, writing, and independent learning. For instance, students for whom English is not their mother tongue may find it difficult to express themselves in English and thus experience low academic persistence (Jones et al., 2008).

Swami, Arteche, Chamorro-Premuzic, and Furnham (2010) conducted a study among Malaysian students in the United Kingdom. The authors reported that students from higher-income families reported a higher sociocultural adjustment. Swami et al. (2010) posit that this was partly because higher income is associated with more contact with the host culture, better language proficiency, lower perceived cultural differences, and less perceived discrimination. The results of Swami et al. (2010) are also relevant for understanding the academic persistence of first-generation students. This is because these students are also at risk of experiencing difficulties in feeling a sense of belonging in the university environment (Collier & Morgan, 2008; O'Keeffe, 2013). Some of the resources that high-income group students may access that are beneficial to their education are high-speed Internet connections, private tutors, academic coaches, and psychological therapists (Van Laar & Sidanius, 2001).

The transition from high school to university can be stressful. In most cases, students from historically underrepresented groups find this transition stressful because most of them are the first generation in their family to attend university (Pike & Kuh, 2005). First-generation students have been described as students who are at a disadvantage regarding knowledge of post-secondary school because their parents or other members of their family have not attended higher education institutions (Choy, 2001; Duggan, 2004; Pascarella,

Pierson, Wolniak, & Terenzini, 2004; Warburton, Bugarin, & Nuñez, 2001). These students have been documented to encounter challenges in the transition from high school to university.

Moreover, first-generation students have been shown to be less likely than their counterparts to persist academically (Pascarella et al., 2004; Walpole, 2003). One reason is the lack of support and positive affirmations of family members. According to London (1996), parents may not understand why their children need to invest in the university experience, stating that by attending university, first-generation students are *breaking*, not continuing, a family tradition. Merullo (2002) warns that this can take a toll on students' academic persistence in their pursuit of connecting the two worlds, particularly if they lack social support. This is in line with Jetten, Iyer, Tsivrikos, and Young (2008) who argue that entering university is an individual mobility strategy, but the psychological price to be paid for such individual mobility differs depending on the background of the student (e.g., being a member of a historically underrepresented group at university, being a first-generation student). According to Reay (2005), for students from families of lower social-economic status, opting to attend university means breaking away from their social backgrounds.

Lack of university preparedness has been documented extensively to have a negative effect on the academic persistence of students from historically underrepresented groups. In addition, psychosocial factors can play a role in students' decisions to continue with their studies. The documented psychosocial factors that influence a student's academic persistence include perceived stress, adjustment, help-seeking attitudes, perceived academic workload and academic motivation (Karabenick & Knapp, 1988, 1991; Muller & Louw, 2004; Petersen, Louw, & Dumont, 2009; Petersen, Louw, Dumont, & Malope, 2010; Richardson et al., 2012; Rosenberg, 1979; Sommer & Dumont, 2011). Although there is abundant literature

on the effect of the student's background and psychosocial factors on academic persistence, additional factors have received less attention. Specifically, research on whether identification with the academic department, identification with the university and perceived university image affect academic persistence is still limited.

Research conducted on the role of social identity on academic persistence is also lacking. Research on the relationship between identification with the institution and academic persistence argues that identification with an institution develops over time and is a reflection of earlier behaviours in school (Voelkl, 1997). Voelkl (1997) conducted a study among high school students in an attempt to understand the role of early school behaviours and achievements in identification with the school. Identification with the school was indicated to consist of two concepts (Voelkl, 1997). The first was that the student experiences a sense of belonging in the school. The second involved the student valuing school-related outcomes. The results of Voelkl (1997) demonstrated that students with higher patterns of school achievement and participation experienced higher feelings of identification with the school.

Other researchers investigated the role of identification with academics in academic persistence (Griffin, 2002; Osborne, 1997, 1999; Osborne & Jones, 2011; Osborne & Walker, 2006; Walker, Greene, & Mansell, 2006). Identification with academics was found to influence students' cognitive engagement (Walker et al., 2006). Moreover, using the stereotype theory, Osborne and Walker (2006) found that students from historically underrepresented groups who strongly identified with academics were more likely to withdraw than students from historically overrepresented groups. Withdrawal from academics among students from historically underrepresented groups was linked to stereotype threat whereby students identified with the negative stereotypes that other group

members may have had about historically underrepresented groups (Osborne & Walker, 2006; Voelkl, 1997).

Using the social identity perspective, Jetten et al. (2008) demonstrated that the more students perceive compatibility between entering university and their social background, the more they adjust well to the university. However, these studies have not considered the role of identification with the academic department, identification with the university and identification with one's racial group concerning academic persistence.

It is expected that students who strongly identify with the academic department or strongly identify with the university will adjust well to the academic environment, will feel academically motivated and as a result, will have increased academic persistence. Further, identification with the academic department and identification with the university will be more important for students from historically underrepresented groups and first-generation students.

For the present thesis on academic persistence, three studies were conducted. In each study, several psychosocial factors were assessed together with student demographic factors. In each study, psychosocial factors that have been previously investigated (e.g., stress) were tested to determine if they predicted academic persistence for students in South Africa (Hypothesis 1 in each study). Also, factors that have not received much attention in research (e.g., identification with the academic department) were examined to establish if they also predicted academic persistence (Hypothesis 2 in each study). A mediation analysis was then conducted to determine whether the proposed relationship between identification with the academic department and academic persistence and the proposed relationship between identification with the university and academic persistence are mediated by academic

adjustment and academic motivation (Hypothesis 3 in each study). Finally, group status was examined to ascertain if it moderated the mediation effects (Hypothesis 4 in each study). Studies 1 and 2 investigated underrepresented and overrepresented group status, and Study 3 explored first-generation versus continuing-generation status. It was expected that identification with the academic department and identification with the university are more critical for students from historically underrepresented groups and first-generation students than for students from historically overrepresented groups.

Research investigating the university experiences of students from historically underrepresented groups relies heavily on enrolment, retention, graduation rates and grade point averages (Feagin & Sikes, 1995). However, an examination of the experiences of students from historically underrepresented groups in these institutions requires more than mere numbers gathered in the form of university records and surveys. Feagin and Sikes (1995) emphasise that there is a need to listen carefully to what students from historically underrepresented groups tell us about what happens to them and how they feel, act and think. Although Feagin and Sikes (1995) made this inference in the American context, the South African higher education system is also experiencing the same dilemma where the state of students from historically underrepresented groups is understood primarily by enrolment, dropout and graduation rates. The present thesis aims to add to the existing body of knowledge on academic persistence for undergraduate students in South Africa.

CHAPTER II

LITERATURE REVIEW

2.1. Introduction

Predicting academic persistence is an ongoing endeavour in higher education. The role of psychological, sociological and demographic factors on academic persistence has been studied extensively. Factors such as academic adjustment and academic motivation have been investigated and have been found to be directly or indirectly predictive of academic persistence. It is beyond the scope of this research to review all previous factors used in academic research. However, the literature review focuses on four primary areas, with detailed consideration being given to psychological factors.

The literature review has the following four aims:

1. To introduce several psychosocial factors that have been found to be related to academic persistence in prior research
2. To present additional factors that may be related to academic persistence (e.g., identification with the department, identification with the university)
3. To describe a mediation model in which the potential relationships between identification with the department/university and academic persistence are mediated by academic adjustment and academic motivation
4. To explain how underrepresented group status and first-generation status may moderate the mediation effects

This literature was identified to be important in the South African context. In addition, literature regarding research conducted in South Africa was reviewed.

2.2. Psychosocial Factors Previously Found to be Related to Academic Persistence

2.2.1. Academic and social adjustment

Adjustment is a psychosocial factor that is positively related to academic persistence. Theories on student integration propose that adjustment plays a critical role in academic persistence (Cabrera, Castaneda, Nora, & Hengstler, 1992; Cabrera et al., 1993; Petersen et al., 2009; Tinto, 1975). Both academic adjustment and social adjustment are reported to influence academic persistence among students in universities (Tinto, 1975). Tinto (1975) argues that students must form new relations with university peers and faculty members in the university environment in order to adjust to the new university community.

Previous research identified adjustment to university as an essential factor in a student's life that forms the basis for academic persistence (Gall, Evans, & Bellerose, 2000; Hurtado, Carter, & Spuler, 1996; Padilla, Trevino, Trevino, & Gonzalez, 1997; Terenzini et al., 1994; Tinto, 1987). Arkoff (1968) describes university adjustment as occurring when students obtain adequate grades, pass their programmes, and complete their studies. Maladjusted students do not obtain good grades, do not persist in their programmes, and eventually abandon their studies.

Adjustment to university also involves how well students deal with the educational demands of the university in which they are enrolled. In addition, Baker and Siryk (1999) highlight that academic adjustment includes students' interactions with lecturers and peers about their academic tasks. However, students often encounter problems in meeting these demands (Dwyer & Cummings, 2001).

Adjustment to university also encompasses a student's personal growth. An adjusted student demonstrates good personal growth in line with accomplishments outside the classroom such as relationships with peers and taking part in university activities, for example, sports, debate and drama (Arkoff, 1968 as cited in Abdullah, Elias, Mahyuddin, & Uli, 2009).

Some students find it easy to adjust to university while other students find the adjustment difficult (Bowman, 2010). Credé and Niehorster (2012) conducted a meta-analysis of adjustment to university. The results show that adjustment to university is a multidimensional construct and an unusually good predictor of student retention. According to Schwitzer, Griffin, Ancis, and Thomas (1999), students encounter university demands when negotiating the transition from high school and their home to university life. These demands are divided into four adjustment dimensions: academic, social, personal-emotional, and institutional adjustment. For the present research, only academic adjustment and social adjustment are discussed. Academic adjustment refers to how well students deal with the educational demands of the university in which they are enrolled, including interaction with lecturers and fellow students in relation to academic tasks (Baker & Siryk, 1999). Students often encounter challenges in meeting these demands (Dwyer & Cummings, 2001). Students who find it challenging to deal with academic demands are more likely to experience stress, which may lead to psychological distress (Dwyer & Cummings, 2001). Previous research points towards a positive relationship between academic adjustment and academic persistence, showing that students who adjust to the demands of university persist academically (Baker & Siryk, 1984; Chemers, Hu, & Garcia, 2001).

The second dimension of adjustment is social adjustment, which involves how well students function in the social environment of the university. Social adjustment involves

students' efforts to cope with the standards and values of the university and their interaction with lecturers and peers regarding their academic tasks (Baker & Siryk, 1999). Students' satisfaction with their interpersonal relationships and relationships that they have with their peers and the faculty in addition to their involvement in the social activities of the university also involves social adjustment (Tinto, 1975). Successful relationships may make it easier for students to consult their peers or faculty when encountering problems in their programme (Terenzini et al., 1994; Tinto, 1975). Furthermore, these relationships are essential in helping students to adjust to their discipline. Research conducted on adjustment shows that optimal adjustment results in a more substantial social, academic, and institutional adjustment in addition to more significant goal commitment, which supports students' academic persistence (Richardson et al., 2012).

Students who find it difficult to adjust socially to university often report feeling lonely and homesick (Hendrickson, Rosen, & Aune, 2011; Ramsay, Jones, & Barker, 2007; Wilcox, Winn, & Fyvie-Gauld, 2005). Tinto (1975, 1987) demonstrated that a student who has adjusted to the social environment of a university eventually becomes committed to the institution. This process of student adjustment to the university's social life involves forming new relationships with peers at university and managing these social relationships. Research shows that students who are socially adjusted at university are more likely to take part in university activities (Baker & Siryk, 1984; Friedlander, Reid, Shupak, & Cribbie, 2007). University activities include sporting activities, singing competitions, and attending events organised by the university.

The present thesis predicted that academic adjustment would be positively related to academic persistence (Hypothesis 1a for studies 1, 2, and 3). It was also predicted that social adjustment would be positively related to academic persistence (Hypothesis 1b for Study 2).

2.2.2. Perceived stress

According to Lazarus and Folkman (1984), stress occurs as a result of individuals' perceptions that they lack the necessary resources to cope with a stressful event. Students who find it challenging to deal with the stressors that they encounter in their programme may experience academic problems and psychological distress (Dwyer & Cummings, 2001). Stressors are factors that can cause a stress response to occur (Folkman, 2013). Sources of academic stress include the fear of failure (Koochaki et al., 2009), financial problems (Koochaki et al., 2009; Lewin, 2007), balancing work, study and family responsibilities (Carr, 2000; Robotham, 2008; Taylor & Owusu-Banahene, 2010), and family expectations (Tan & Yates, 2010; Wong et al., 2005).

Academic persistence may also be affected by perceived stress (Thomas, Cassady, & Heller, 2017). Perceived stress has been reported to influence academic persistence in various ways. Perceived stress has been shown to have a positive relationship with academic persistence (Kumari & Gartia, 2012) but can be destructive when perceived negatively by a student (Folkman, 2013). Other studies have reported the association of high levels of stress with low levels of academic persistence (Abdullah, Elias, Uli, & Mahyuddin, 2010; Albeg & Castro-Olivo, 2014; Goldstein, Boxer, & Rudolph, 2015; Pritchard & Wilson, 2003; Struthers, Perry, & Menec, 2000). Non-significant effects of perceived stress on academic persistence have also been reported (Petrie & Stoever, 1997; Rafidah et al., 2009; Sandler, 2000; Zajacova, Lynch, & Espenshade, 2005). However, since high degrees of stress have been found to have a negative impact on academic persistence, it was predicted that perceived stress would be negatively related to academic persistence (Hypothesis 1c for studies 1, 2, and 3).

2.2.3. Help-seeking

Another factor linked to academic persistence is help-seeking. Help-seeking has been described by Ames (1983) as an achievement behaviour involving proactive problem-solving strategies that are applied by an individual to achieve a goal. Help-seeking can be linked to students' informal interactions with peers and faculty members and their use of the support system in the university (Tinto, 1975).

One factor that has been associated with avoidant help-seeking is self-stigma. According to Vogel, Wade, and Haake (2006), self-stigma is a factor that inhibits people's decisions to seek help when they encounter challenges. According to Vogel et al. (2006, p. 325), self-stigma is the reduction of an individual's self-esteem or self-worth caused by the individual self-labelling herself or himself as someone who is socially unacceptable. Students must acknowledge their need for help and have a positive appraisal of help-seeking in their environment (Ames, 1983). Karabenick (2004) found that students with positive perceptions of help-seeking were more likely to seek instrumental help from formal sources (e.g., instructors) than from informal sources (e.g., other students). Also, these students had more desire to acquire knowledge and master new skills, and they performed better in the course.

Students may need various forms of help to assist them in coping with the challenges they encounter in their programmes. Students have been shown to seek help from friends, family, and classmates when they experience difficulties at university (Devenish et al., 2009). This could be because students may find it easier to ask for help from their friends, classmates, or members of their family when they encounter difficulties in their programmes

since these relationships are informal. Students have also been shown to seek help from their classmates in the form of informal study groups (Wilcox et al., 2005).

Students who take the initiative and seek help for academic problems are more likely to persist academically than those who require help but do not seek it (Fischer, 2007; Karabenick & Knapp, 1988; Richardson et al., 2012). Research shows that numerous students who need help at university do not request it (Karabenick, 2003, 2004; Karabenick & Knapp, 1988; Ryan, Gheen, & Midgley, 1998). Avoiding seeking help can have a negative effect on a student's academic persistence. Karabenick (2003) found that students who avoided seeking help were more anxious and performed poorly. Moreover, Karabenick (2004) reported that students with higher patterns of help-seeking avoidance were more threatened by help-seeking and were more likely to avoid doing so.

In line with previous research, the present study predicted a positive relationship between help-seeking and academic persistence (Hypothesis 1d for studies 1 and 2).

2.2.4. Perceived academic workload

Academic workload is another psychosocial factor that has been documented to have a negative influence on academic persistence (Petersen et al. 2009). Students often experience academic workload when they feel overwhelmed and when they do not have enough time for their academic tasks such as assignments, tests, and examinations. Academic workload occurs because of students' perceptions of academic and time pressures (Dammeyer & Nunez, 1999). Petersen et al. (2009) found that students who perceived their academic requirements to be demanding to the extent that they were unable to cope with their academic workload achieved lower academic grades.

Bitzer and Troskie-De Bruin (2004) conducted a study among undergraduate students at a South African university to determine first-year student perceptions. Bitzer and Troskie-De Bruin (2004) found that first-year students tend to underestimate university requirements. Students who do not perceive the demands of their academic tasks correctly encounter challenges when adjusting to the university environment or find it challenging to manage their time. Consequently, students may experience an academic workload that can have a negative effect on their academic persistence. Students who are overloaded with academic work (such as assignments and examinations) experience more stress (Kausar, 2010), which leads to low levels of academic persistence. For the present research, it was predicted that students who experience a higher perceived academic workload would score lower on academic persistence (Hypothesis 1e for studies 1 and 2).

2.2.5. Academic motivation

Another psychosocial factor proposed to have a positive effect on academic persistence in academic motivation. Academic motivation is defined as a state in which an individual is stimulated to instigate and sustain a goal-directed activity (Pintrich, Marx, & Boyle, 1993). Academic motivation also involves students' academic effort in the programmes in which they are enrolled (DiPerna & Elliott, 1999).

Academic motivation has been reported to play a role in students' learning experience, which influences their persistence at university. Highly motivated students dedicate time to preparing for their academic tasks and explore study methods that are compatible with their learning styles; these activities help them to persist academically in their programmes. Allen and Robbins (2010) found that academic motivation predicted the academic persistence of first-year students. These results are in line with research that found a link between academic motivation and academic persistence (Mega, Ronconi, & De Beni,

2014; Vallerand & Bissonnette, 1992; Vallerand, Fortier, & Guay, 1997; Vanthournout, Gijbels, Coertjens, Donche, & Van Petegem, 2012).

In the present study, academic motivation was conceptualised in terms of Muller and Louw's (2004) measurement of academic motivation as the relationship between students' learning environment and their ability to learn. The present study hypothesised that there is a positive relationship between academic motivation and academic persistence (Hypothesis 1f for studies 1, 2, and 3).

2.2.6. Perceived social support

The last psychosocial factor is perceived social support. Perceived social support involves individuals' perceptions of the support that is available to help them deal with the challenges that they may encounter. Studies show associations between family support and the academic persistence of students (Barnett, 2004; Cheng, Ickes, & Verhofstadt, 2012; Mattanah, Brooks, Brand, Quimby, & Ayers, 2012; Song, Bong, Lee, & Kim, 2015; Yasin & Dzulkifli, 2011). Students need support from family members to help them deal with the stressful challenges that they encounter at university. Research shows that students seek support within their nuclear and extended family more than within their networks of friends (Pinkerton & Dolan, 2007). Support from family members was reported to increase students' abilities to deal with challenging academic experiences (Klink, Byars-Winston, & Bakken, 2008).

Research on the role of social support on academic persistence has yielded inconsistent results. Some studies report non-significant associations between perceived social support and academic persistence (Bahar, 2010; Carlstrom, 2005; DeBerard, Spielmans, & Julka, 2004; Domagała-Zyśk, 2006; DuBois, Felner, Brand, Adan, & Evans,

1992; Grayson, 2003; Nicpon et al., 2006; Robbins et al., 2004; Román, Cuestas, & Fenollar, 2008; Rosenfeld, Richman, & Bowen, 2000; Rueger, Malecki, & Demaray, 2010; Spain, 2008). Other studies report weak but significant associations between family support and academic persistence (Alnabhan, Al-Zegoul, & Harwell, 2001; Cutrona, Cole, Colangelo, Assouline, & Russell, 1994).

In the present thesis, the perceived social support from the family construct was separated into three variables. The first variable addressed whether or not students' families support the idea of going to university. The second variable addressed whether or not students receive help from family members concerning university challenges and the third variable addressed whether or not students receive help from family members for issues in general. In line with some of the studies conducted previously, it was hypothesised that there is a positive relationship between the three perceived social support variables and academic persistence (Hypothesis 1g for Study 3).

The following section of the literature review examines additional psychosocial factors that may be related to academic persistence but have not previously been investigated.

2.3. Additional Psychosocial Factors that may be Related to Academic Persistence

2.3.1. Perceived university image

Image is described as a combination of beliefs, attitudes, stereotypes, ideas, and impressions that a person holds with respect to an object, person or organisation (Belanger, Mount, & Wilson, 2002; Kotler & Andreasen, 1996; Prahalad & Hamel, 1990). Organisational image has been conceptualised as a multidimensional concept because it is dependent upon several factors such as prestige, competitiveness, distinctiveness, the extent of diversification, and the individual's degree of familiarity with the organisation (Mael &

Ashforth, 1992). University image has been shown to consist of two interrelated components. The first component is the functionality component, which involves physical stimuli. Examples of physical stimuli include tuition fees, departments, and the curriculum. The second component is the psychological component, which is associated with feelings and attitudes. These feelings and attitudes consist of a bond or feeling attached to the university and feelings of satisfaction and pride when associated with the university (Mael & Ashforth, 1992).

Research conducted by Weissman (1990) shows that people respond to the image of a university and not necessarily to its reality. One of the factors that a university image is dependent upon is its reputation or the prestige. The reputation of a university can involve various attributes such as community engagement, quality of services, innovativeness, price, and global reputation. A university may have the reputation of producing an excellent calibre of graduates or of admitting only the best students in their programmes. However, Dutton, Dukerich, and Harquail (1994) posit that the image of a university may or may not match the reputation of the institution in the minds of outsiders. This means that a university may be perceived by outsiders to have a good reputation but a negative image. For example, outsiders may think that a university is one of the best in the country but that it marginalises students of certain ethnic groups or is expensive. Numerous factors may affect the reputation of an organisation. For example, Pityana (2009) emphasises that student attrition can affect the reputation of an institution.

The overall image of a university can influence students. For example, research demonstrated the positive effect of the university image on a student's loyalty mediated by satisfaction (Alves & Raposo, 2010; Helgesen & Nesset, 2007). Students may use academic reputation, campus appearance, cost, personal attention, location, distance from home, and

graduate and professional preparation to benchmark their university against other universities. Students who feel that the university in which they are enrolled is distinctive compared with other universities may feel satisfied, which may lead to a sense of loyalty towards the institution. A student can show their loyalty towards a university by continuing with postgraduate studies at the same university (Ashforth & Mael, 1989; Webb & Jagun, 1997).

Perceived university image was reported to increase student retention at university (Belanger et al., 2002; Nguyen & Leblanc, 2001). It was, therefore, hypothesised that there is a positive relationship between perceived university image and academic persistence (Hypothesis 1h for Study 1).

2.3.2. Sense of belonging

Students' ability to develop a sense of belonging within the university environment has been identified as an essential factor for academic persistence (O'Keeffe, 2013). Students are often confronted with several challenges when entering university, particularly first-year students. These challenges include adapting to a different environment. Students can experience feelings of 'not fitting in' at university, which can make it difficult for them to adjust to the university demands (O'Keeffe, 2013). The students who are at risk of experiencing difficulties in developing a sense of belonging within the university environment include those from historically underrepresented groups and first-generation students (Collier & Morgan, 2008; O'Keeffe, 2013).

Sense of belonging has been conceptualised in various ways by several scholars. Hagerty, Lynch-Sauer, Patusky, Bouwsema, and Collier (1992) conceptualise sense of belonging as the experience of individual involvement in a system or environment and the

perception of being an integral part of that system or environment. In the school context, Goodenow and Grady (1993) conceptualise sense of belonging as the extent to which students feel personally accepted, appreciated, respected, included, and safe in the social environment of the institution. Hurtado and Carter (1997) conceptualise a sense of belonging as a psychological sense of identification and affiliation with the campus community.

Sense of belonging involves a student's perception of 'fitting in' (i.e., the congruence between the student's values and those of the university) (Hoffman, Richmond, Morrow, & Salomone, 2002), the feeling of belonging among peers in the university environment (Anderman & Freeman, 2004; Osterman, 2000), and a sense of commitment to the university (Hagborg, 1994; Smerdon, 2002).

Sense of belonging has been demonstrated to help students transition from high school to university (Hoffman et al., 2002; Pittman & Richmond, 2008). Furthermore, the capacity of a student to develop a sense of belonging in the university environment is a critical factor for student retention (O'Keeffe, 2013) and academic persistence (Hausmann, Schofield, & Woods, 2007; Locks, Hurtado, Bowman, & Oseguera, 2008).

Sense of belonging can also be affected by the perception of classroom tasks as engaging, meaningful, and useful (Anderman, 2003). Moreover, research shows a positive association between culturally dynamic environments and sense of belonging (Guiffrida, 2003, 2005; Lee & Davis, 2000; Maestas, Vaquera, & Muñoz Zehr, 2007; Museus & Neville, 2012; Museus & Quaye, 2009; Museus, Yi, & Saelua, 2017; Nuñez, 2009; Rendón, 1994; Stanton-Salazar, 1997; Tierney, 1999). For instance, a sense of belonging can be enhanced by courses that integrate cultural familiarities such as collectivist orientations, culturally relevant knowledge, and the history of the academic field within the country.

However, the lack of personal feedback from academic staff (e.g., inaccessibility, unfriendliness) may contribute to student attrition and adjustment difficulties. The warmth, supportiveness, fairness, and respect of lecturers have been shown to play a role in a student's experience of a sense of belonging (Murdock, Anderman, & Hodge, 2000; Solomon, Battistich, Kim, & Watson, 1996). The stronger the students' sense of belonging, the stronger is their perceptions of a caring faculty (Freeman, Anderman, & Jensen, 2007) and the more likely they are to stay in university (Hoffman et al., 2002).

None of those mentioned above studies, however, directly tested the link between sense of belonging and academic persistence. It was predicted that a greater sense of belonging would be related to greater academic persistence (Hypothesis 2a, Study 2).

2.3.3. Identification with the academic department, university, and racial groups

There is ample research on the relationship between social identity and academic persistence. However, inconsistencies regarding the role of racial identification have been reported. Some studies found a positive relationship between racial identification and academic persistence (Chavous et al., 2003; Rivas-Drake et al., 2014; Witherspoon, Speight, & Thomas, 1997). Some students from historically underrepresented groups have been shown to experience positive academic outcomes when identifying with their racial group (Crisp, Taggart, & Nora, 2015; Rivas-Drake et al., 2014). However, racial identification has also been shown to have a negative or non-significant relationship with academic persistence (Worrell, 2007).

Another social identification factor, identification with the university, has been shown to influence academic persistence. In the school context, Voelkl (1997) conceptualises identification with the institution as a student's sense of belonging at the school and the

valuing of school-related outcomes. Other researchers conceptualise identification with the university as a student's academic standing and grades achieved at university (Griffin, 2002; Osborne, 1997, 1999; Osborne & Jones, 2011; Osborne & Walker, 2006; Walker et al., 2006). Research shows that identification with a university has a positive effect on students' psychological adjustment (Freeman et al., 2007; Gummadam, Pittman, & Ioffe, 2016; Pittman & Richmond, 2008). Identification with the university is also reported to play a role in academic persistence (Griffin, 2002; Osborne, 1997, 1999; Osborne & Jones, 2011; Osborne & Walker, 2006; Walker et al., 2006).

Identification with the department or the academic discipline has also been linked to deep learning (Smyth, Mavor, Platow, Grace, & Reynolds, 2015) and academic persistence (Bliuc, Ellis, Goodyear, & Hendres, 2011a, 2011b). Students who strongly identify with their departments of study are more likely to engage in deep-learning approaches that have a positive effect on their academic persistence. In addition, students who identify strongly with their departments are more likely to adopt approaches to learning that help them to understand the material and to go beyond what is required by their programmes (Smyth et al., 2015).

The present study explores the effect of identification with the academic department, identification with the university, and racial identification on academic persistence. It is predicted that including these factors will account for unique variance in academic persistence (identification with the department and university: Hypothesis 2b, studies 1, 2, and 3; racial identification: Hypothesis 2c, studies 2 and 3).

2.3.4. Academic adjustment and academic motivation as mediators between identification and academic persistence

Identification with the department and identification with the university may be essential factors in influencing academic persistence, but these factors have received limited attention in the research literature. The present thesis, therefore, aimed to expand on the research by testing for possible mediators between identification and academic persistence. It was anticipated that the relationship between identification with the department and academic persistence and the relationship between identification with the university and academic persistence would both be mediated by academic adjustment and academic motivation.

Regarding adjustment, Sommer and Dumont (2011) found that adjustment to the university partially mediated the relationships between certain psychosocial factors (i.e., academic motivation, self-esteem, perceived stress, perceived academic workload, and help-seeking**)** and academic persistence. However, the relationships between identification with the university/academic department (as independent variables) and academic persistence mediated by academic adjustment have not been tested.

Satisfaction with the university has been shown to be positively related to academic motivation (Baker & Siryk, 1984, 1989). Academic motivation is another variable that has been shown to have mediation effects. Studies have demonstrated that academic motivation has a mediation effect on the relationship between academic persistence as a dependent variable and the independent variables of conscientiousness (De Feyter, Caers, Vigna, & Berings, 2012), academic concept (Guay, Ratelle, Roy, & Litalien, 2010), and self-regulation (Ning & Downing, 2012). To the researcher's knowledge, this relationship has never been tested when measuring the mediation effect of academic motivation as a mediator between identification with the university/academic department and academic persistence. The present study hypothesises that the relationship between identification with the academic

department/university and academic persistence is significantly mediated by academic adjustment and academic motivation (Hypothesis 3 for studies 1, 2, and 3).

In the present study, the variables, academic adjustment, and academic motivation (also referred to as mediator variables) fulfil dual roles by acting as independent and dependent variables simultaneously. That is, academic adjustment and academic motivation act as criteria of multiple independent psychosocial variables and as predictor variables to academic persistence. The study focuses on academic adjustment and academic motivation as predictor variables for students' academic persistence at university and at the same time, concentrates on the influence that certain psychosocial and social identity variables may have on students' adjustment to university and their academic persistence.

2.3.5. Underrepresented and overrepresented status as a moderator variable

The present study also aimed to test for possible moderator effects within the mediation model described above. Whether students were from historically underrepresented groups or historically overrepresented groups was explicitly included as a moderator variable since the representation status of students could affect their identification, adjustment, motivation, and persistence.

Jetten et al. (2008) demonstrated that the more students perceive compatibility between the university environment and their social background, the better they adjust to the university. Students who perceived incompatibility between the university and their social background were less prepared for university, and their level of identification was low. For example, students from historically underrepresented groups were more likely to perceive the university environment as incompatible with their social background, and this may have hindered their adjustment to the university environment. Jetten et al. (2008) found that

students identified more with the university when their social background was compatible with the university environment. The authors also found that students who were less willing to take a new identity were also less likely to endorse the belief that a university qualification is a significant individual mobility strategy. Consequently, by placing less value on a university degree, students may be less likely to persist academically (Jetten et al., 2008).

Previous research demonstrated the role of group representation as a moderator variable between social support and academic persistence (Cole, Matheson, & Anisman, 2007) and between academic adjustment and academic persistence (Próspero & Vohra-Gupta, 2007). Earlier research also showed that there are group-representation differences between academic adjustment and academic persistence. Students from historically underrepresented groups were reported to underperform when compared with students from historically overrepresented groups under standard and high stereotype threat instructions; however, there were no differences under low threat instructions (Brown & Day, 2006).

Students from historically underrepresented groups have also been shown to experience difficulties when adjusting to the university environment. Sennett, Finchilescu, Gibson, and Strauss (2003) conducted a study among undergraduate students at the University of Cape Town in an attempt to investigate the differences between students from historically underrepresented and students from historically overrepresented groups. Sennett et al. (2003) found that students from historically underrepresented groups experienced more challenges with adjustment compared with their counterparts. In addition, students who were reported to have thoughts of abandoning their studies had had stressful experiences with their academic adjustment. Therefore, this may mean that students from historically

underrepresented groups encounter problems with adjusting to the academic environment of the university.

Examples of the stressors that students from historically underrepresented groups encounter are prejudice and racism. Smedley, Myers, and Harrell (1993) conducted a study among students from historically underrepresented and overrepresented groups in an attempt to determine whether the stress that students from historically underrepresented groups undergo in university confers an additional risk for poor adjustment. Smedley et al. (1993) report that sociocultural and contextual stressors, in this case, discrimination, play a significant role in the adjustment process of students from historically underrepresented groups. Students from historically underrepresented groups are more likely to experience low levels of motivation and subsequently are more likely to abandon their studies when they experience adjustment difficulties (Tinto, 1975, 1987, 1995). These experiences also have the potential to affect students' academic persistence negatively (Griffin, 2006).

It is, therefore, expected that the relationships in the mediation model might be moderated by underrepresented versus overrepresented status. In particular, it was expected that the relationships involving identification with the department/university, academic adjustment and academic motivation are moderated by group status (Hypothesis 4a, studies 1 and 2).

2.3.6. Generation status as a moderator variable

In addition to underrepresented and overrepresented group status, the present research investigated whether being a first-generation student versus a continuing-generation student acted as a moderator within the mediation model described above.

First-generation students are more likely to come from low-income families, to have weaker cognitive skills (in reading, mathematics, and critical thinking), to have lower degree aspirations, to have been less involved with peers and teachers in high school, and to have less knowledge of what is expected of them at university (Subotzky & Prinsloo, 2011). First-generation students are reported to adjust poorly to the university and to score lower on academic persistence than continuing-generation students (Aspelmeier, Love, McGill, Elliott, & Pierce, 2012; Hertel, 2002).

Additionally, first-generation students tend to be more dependent, are expected to take longer to complete their degree programmes, and report receiving less encouragement from their parents concerning attending university (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). The difficulties that these students experience concerning attending a university are exacerbated because of the need to bridge two cultures and the lack of a sense of belonging (Oldfield, 2007; Rendón, 1992). Entering university (entering a new group) involves a social identity change, such as a psychological change to the new groups' norms and values (Amiot, Terry, Wirawan, & Grice, 2010). This process can be facilitated by support from family members (Jury, Smeding, Court, & Darnon, 2015). However, lack of family support may result in first-generation students encountering barriers with making this identity change (Jenkins, Belanger, Connally, Boals, & Durón, 2013). Some family members of first-generation students may act judgementally towards them for having high educational aspirations (Davis, 2012). Furthermore, first-generation students may experience cultural norm barriers in university because they have different norms and values than those of the university (Stephens, Townsend, Markus, & Phillips, 2012).

Stephens et al. (2012) argue that the cultural mismatch between university norms and student norms influences students' psychological experiences in academic settings. However,

while first-generation students may experience individual deficits, prior research has found that academic motivation (Garriott, Hudyma, Keene, & Santiago, 2015; Próspero & Vohra-Gupta, 2007) and academic adjustment (Próspero & Vohra-Gupta, 2007) are strong predictors of academic persistence among first-generation students. Besides, Aspelmeier et al. (2012) argue that in most cases, the differences between first-generation students and continuing-generation students are usually small, with differences in generational status accounting for one-tenth of 1% of the variance in academic persistence and one-half of 1% of the variance in attrition rates. Other research reports both modest differences between first-generation students and continuing-generation students in adjusting to university (Hertel, 2002) and no differences between first-generation students and continuing-generation students in adjustment (Bartels, 1995).

Although the evidence is varied on whether first-generation and continuing-generation students have different experiences with a university, it was predicted that generation status would act as a moderator on the relationships involving identity, academic adjustment, academic motivation, and academic persistence (Hypothesis 4a, Study 3).

2.4. Rationale

Students are expected to perform well academically and to complete their studies within the required time frame. Students are also expected to adjust to a university environment, identify with the academic department or university, and to experience a sense of belonging within the university environment. Universities are also expected to achieve high student retention and high graduation rates.

Understanding the role of psychosocial and social identity factors that predict academic persistence is significant to improve and enhance student retention. Identification of the role of these factors improves programme interventions for student development and academic support. Moreover, the identification of additional factors will provide universities (i.e., student counsellors, academic support staff) with informed knowledge and an advanced understanding of the students' immediate and long-term needs in order for the students to be successful at university. Furthermore, increasing the number of successful university students is likely to have a positive impact on students, universities, and the country's national development.

2.5. Hypotheses

The present study was designed to test the hypotheses outlined below:

Hypothesis 1a: Academic adjustment is positively related to academic persistence (studies 1, 2, and 3).

Hypothesis 1b: Social adjustment is positively related to academic persistence (Study 2).

Hypothesis 1c: Perceived stress is negatively related to academic persistence (studies 1, 2, and 3).

Hypothesis 1d: There is a positive relationship between help-seeking and academic persistence (studies 1 and 2).

Hypothesis 1e: Students who experience greater perceived academic workload score lower on academic persistence (studies 1 and 2).

Hypothesis 1f: There is a positive relationship between academic motivation and academic persistence (studies 1, 2, and 3).

Hypothesis 1g: There is a positive relationship between the three perceived social-support variables and academic persistence (Study 3).

Hypothesis 1h: There is a positive relationship between perceived university image and academic persistence (Study 1).

Hypothesis 2a: Sense of belonging is related to greater academic persistence (Study 2).

Hypothesis 2b: Including identification with the department and university accounts for unique variance in academic persistence (studies 1, 2, and 3).

Hypothesis 2c: Including racial identification accounts for unique variance in academic persistence (studies 2 and 3).

Hypothesis 3: The relationships between identification with the academic department, identification with the university and academic persistence are significantly mediated by academic adjustment and academic motivation (studies 1, 2, and 3).

Hypothesis 4a: Relationships involving identification with the department/university, academic adjustment and academic motivation are moderated by racial group (studies 1 and 2).

Hypothesis 4b: Generation status acts as a moderator on the relationships involving identity, academic adjustment, academic motivation, and academic persistence (Study 3).

Table 1 provides a depiction of the hypotheses for the three studies that were conducted in the present research. In addition, a correlation was done for historically underrepresented and overrepresented groups to determine the relationship between psychosocial and social factors on academic persistence.

Table II-1. Hypotheses for studies 1, 2, and 3

Study	Hypothesis
Study 1	Hypothesis 1: Perceived stress and perceived academic workload are negative predictors of academic persistence, while help-seeking, academic motivation, and academic adjustment are positive predictors of academic persistence. Hypothesis 2: Identification with the academic department, identification with the university, and perceived university image together with the known psychosocial factors improve the prediction of academic persistence. Each is a positive predictor of academic persistence. Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence. Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by membership in a historically underrepresented or overrepresented group.
Study 2	Hypothesis 1: Perceived stress and perceived academic workload are negative predictors of academic persistence, while help-seeking, academic motivation, and academic adjustment are positive predictors of academic persistence. Hypothesis 2: Social adjustment, identification with the academic department, identification with the university, racial identification, and sense of belonging together with the known psychosocial factors improve the prediction of academic persistence. Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence.

Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by membership in a historically underrepresented or overrepresented group.

Study 3

Hypothesis 1: Perceived stress has a negative effect on academic persistence while academic adjustment, academic motivation, family attitudes, family support regarding university, and general support from family have a positive effect on academic persistence.

Hypothesis 2: Identification with the academic department, identification with the university and racial identification together with the known psychosocial factors improve the prediction of academic persistence. In addition, the relationships are positive.

Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence.

Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by generation status.

CHAPTER III

STUDIES 1–3

3.1. The Present Research

Before testing the hypotheses, Study 1 was conducted to establish whether the previously studied psychosocial factors (i.e., academic motivation, academic adjustment, perceived academic workload, perceived stress, and help-seeking) and the social identity factors (i.e., identification with the academic department, and identification with the university) predicted academic persistence. Study 1 was critical because it provided empirical evidence on whether the psychosocial and social identity factors were applicable for studies 2 and 3, which tested the proposed hypotheses. Study 2 replicated the results of Study 1 and included additional predictors of academic persistence. In addition to the studied psychosocial factors, Study 3 explored the effect of family attitudes towards university, family support regarding university and general family support on academic persistence. In addition, generation status was established in Study 3.

3.2. Study 1

The aim of Study 1 was to determine whether the previously studied psychosocial factors (i.e., academic motivation, academic adjustment, perceived academic workload, perceived stress, and help-seeking) would each predict academic persistence when they were all included in the same model. An additional aim was to determine whether identity factors (i.e., identification with the academic department and identification with the university) and university image accounted for additional variance in academic persistence. Finally, mediation and moderation effects were tested.

More specifically, the following hypotheses were tested using a cross-sectional survey in Study 1:

Hypothesis 1: Perceived stress and perceived academic workload are negative predictors of academic persistence, while help-seeking, academic motivation, and academic adjustment are positive predictors of academic persistence.

Hypothesis 2: Identification with the academic department, identification with the university, and perceived university image together with the known psychosocial factors improve the explained variance in academic persistence. Each is a positive predictor of academic persistence.

Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence.

Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by membership in a historically underrepresented or overrepresented group.

3.3. Method

3.3.1. Respondents

Study 1 was conducted with 388 students who were enrolled for undergraduate programmes at a university in South Africa. Gender was well balanced, with 47.4% females

and 52.6% males. The gender distribution of the study reflects the distribution in both the university and South Africa (Brand South Africa, 2017). The racial distribution of the sample was representative of the university and the South African population. The sample consisted of black South Africans (n = 231; 59.5%), white South Africans (n = 104; 26.8%), coloured South Africans (n = 31; 8.0%), and Indian South Africans (n = 22; 5.7%).

In the present study, the black, coloured and Indian respondents from the university are referred to as the historically underrepresented group (n = 284; 73.2%) and the white respondents as the historically overrepresented group (n = 104; 26.8%). The majority of the respondents had registered at the university in 2010. Most respondents were enrolled at the colleges of Economic and Management Sciences, Human Sciences, and Law. The various study fields and other demographic characteristics of the respondents are provided in Table 2.

Table III-2. Demographic characteristics of respondents (Study 1)

	n	%
Gender		
Male	165	47.4
Female	183	52.6
Race		
Black	231	59.5
Coloured	31	8.0
Indian	22	5.7
White	104	26.8
Faculty		
Accounting Sciences	21	6.0
Agriculture and Environmental Sciences	15	4.3
Economic and Management Sciences	109	31.3
Education	5	1.4
Human Sciences	88	25.3
Law	65	18.7
Science, Engineering and Technology	45	12.9
Study Field		
Law	59	15.2
Accounting Sciences	38	9.8
Social Work	24	6.2
Psychology	16	4.1
Communication Sciences	13	3.4
Economics	10	2.6
Environmental Sciences	8	2.1
Commerce	15	3.9
Natural Sciences	16	4.1
Computing	22	5.7
Management	12	3.1
Other fields	155	39.8
Year of Registration		
2008	7	2.0
2009	26	7.5
2010	104	29.9
2011	56	16.1
2012	64	18.4
2013	44	12.6
2014	47	13.5

3.3.2. Procedure

Qualtrics software was used in the present study for data collection. The software is a widely used Internet platform for conducting web-based surveys. An email was sent to undergraduate students inviting them to participate in the survey. The students were provided with the aim of the study and informed that the information collected through the survey would be confidential. Students were also informed that participation in the study was voluntary and that they could withdraw from the survey at any time. Further, the students were informed that starting the survey indicated their consent to participate in the study. Students were also provided with the email address of the researcher, which they could use if they had enquiries or encountered problems when completing the survey.

The first section of the questionnaire comprised questions concerning the respondents' perceptions of the university in which they were enrolled—the questions related to the university's image, reputation and prestige. The second section of the questionnaire measured the respondents' experiences at the university. Respondents' academic motivation, help-seeking perceptions, perceived stress, perceived academic workload, academic adjustment, identification with the academic department, and identification with the university as a whole were examined. The third section involved assessing the respondents' academic persistence in the form of *intention to continue with studies*. The final section of the questionnaire concerned the respondents' demographic details (i.e., gender, age, residence, nationality, and race) and their faculty and study field.

3.3.3. Ethical Clearance

Ethical clearance to conduct this study was granted by the Department of Psychology and the Senate Research and Innovation and Higher Degrees Committee from a university in

South Africa. The university granted approval to use data obtained from students enrolled for undergraduate programmes. Students' participation in the survey was voluntary, and their anonymity was guaranteed. No incentives for participation were provided.

3.3.4. Measurements

Respondents were provided with a five-point Likert scale for their responses to all the items. The scale ranged from 1 (strongly disagree) to 5 (strongly agree). Some of the items were reversed scored. An asterisk is used to identify these items.

Academic persistence. The construct was assessed as students' intention to continue with their studies. Items were selected from the scale for *Intent to Persist and Further Pursue a STEM Field* (Toker, 2010). In total, eight items were selected and adjusted to the context of Study 1. These are as follows: 'Next semester I intend to continue taking modules in my field of study'; 'I intend to take modules related to my field of study in the following year'; 'I intend to continue studying in my field'; 'I intend to get a bachelor's degree in my field of study'; 'I am planning to apply in a master's programme in the future'; 'I intend to get a master's degree in the future'; 'I would like to pursue a PhD in the field of my study'; and 'I am sure that I would like to continue with my education in the field of my study' ($\alpha = .88$).

Academic motivation. This construct was measured using two items from a study by Muller and Louw (2004): 'I really enjoy studying at the university' and 'I really want to become more competent and to develop my skills further' ($r = .31$, n = 363, $p < .001$).

Help-seeking. This was measured using the six-item scale of Karabenick and Knapp (1991): 'Getting help in my academic work would be an admission of my own lack of ability'*; 'I would rather fail on my own than succeed in university because I got help'*; 'I would think less of myself if I couldn't do my academic work without help'*; 'People would

think less of me if I succeeded in a course only because I got help'*; 'I would feel uneasy about what people would think if they found out I needed help in order to succeed academically'* (α = .80).

Perceived stress. This construct was assessed with the following four items selected from the ten items in the Perceived Stress Scale of Cohen, Kamarck, and Mermelstein (1983): 'In the last month, how often have you felt stressed?'; 'In the last month, how often have you felt that things were not going your way?'; 'In the last month, how often have you felt that you were on top of things?'*; and 'In the last month, how often have you been angered because of things that happened that were out of your control' (α = .76).

Perceived academic workload. This was measured by the following two items selected from the five-item scale introduced by Muller and Louw (2004): 'The volume of work in my studies is too high'; and 'Too much is expected of me in the modules I am registered for' (r = .71, n = 359, p <.001).

Academic adjustment. The construct was measured by six selected and adjusted items from the Student Adaptation to College Questionnaire (SACQ*)* developed by Baker and Siryk (1989): 'Getting a university degree is very important to me'; 'I am enjoying my academic work at university'; 'I have been keeping up to date on my academic work'; 'I am finding academic work at university difficult'; 'I am satisfied with the level at which I am performing academically'; and 'I prepare for my assignments regularly'(α = .72).

Identification with the academic department and identification with the university. The contructs were each measured using five items selected from the in-group identification scale developed by Leach et al. (2008): 'I feel a bond with my academic department/university'; 'I am glad to be a student in my academic department/university'; 'I

often think about the fact that I am a student of my academic department/university '; 'I have a lot in common with the average student in my academic department/university'; and 'Students in my academic department/university have a lot in common with each other' (identification with the university: α = .88; identification with the academic department: α = .81).

Perceived university image. This construct was assessed with two items selected from the 10-item scale developed by Nguyen and Leblanc (2001): 'In my opinion, the university has a good image in the minds of students'; and 'I believe that the university has a better image than other universities' (r = .56, n = 321, p <.001).

The length of the questionnaire and the time required for completing the questionnaire were concerns in the present study. Therefore, a limited number of items were included in an attempt to shorten the length of the questionnaire. Studies show that respondents are more likely to complete a questionnaire in full when the questionnaire includes fewer items and is time-efficient (Constantine & Ponterotto, 2006). However, it is worth noting that the limited number of items may have influenced the psychometric properties of the items and the reliability of the measures. The inter-item total correlation and reliability of all scales for all three studies are thus reported in this chapter under research instruments and preliminary analysis.

3.4. Data Analysis

Data analysis of the present study included reliability analysis, descriptive statistics of the data, group comparison, correlation analysis, and path analysis. The data analysis in the current study was conducted with the Statistical Package for Social Sciences (SPSS) 24, and AMOS 24. The software package SPSS is widely used in the social sciences, and AMOS is a

unique add-on program from SPSS to conduct structural equation modelling or path analysis. The version SPSS 24 was used for descriptive statistics, reliability analysis, and correlation analysis, and AMOS 24 was used to conduct path analysis.

3.5. Results

3.5.1. Preliminary analysis

The means, standard deviations, and correlations of the variables are provided in Table 3. Academic persistence (M = 4.25; SD = .68, p = .001) was positively correlated with academic motivation (M = 4.05; SD = .68, p = .001), help-seeking (M = 2.88; SD = 1.00, p = .01), and academic adjustment (M = 3.07; SD = .59, p = .001, p = .01), identification with the university (M = 346; SD = .67, p = .001), identification with the academic department (M = 3.68; SD = .66, p = .001), and perceived university image (M = 3.50; SD = .89, p = .001). There was also a significant negative correlation between perceived stress and academic persistence (M = 4.40; SD = .60, p >.05). Although it was expected that perceived academic workload would have a negative relationship with academic persistence, there was no statistically significant relationship found in Study 1.

Table III-3. Means, standard deviations, and intercorrelations among variables of the sample

	1	2	3	4	5	6	7	8	9
M	4.25	4.40	4.05	3.05	2.88	3.87	3.46	3.64	3.5
SD	0.68	0.56	0.68	0.76	1.00	0.59	0.67	0.66	0.89
Min	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
1 Academic persistence	-								
2 Perceived stress	-.12*	-							
3 Academic motivation	.33***	-.13**	-						
4 Perceived academic workload	-.00	.22***	-.103*	-					
5 Help-seeking	.13**	-.09	-.14**	.11*	-				
6 Academic adjustment	.37***	-.38***	.44***	-.22***	-.15**	-			
7 Identification with university	.36***	-.08	.55***	.07	.04	.45***	-		
8 Identification with academic department	.40***	-.12*	.46***	.12*	-.04	.45***	.69***	-	
9 Perceived university image	.28***	-.12*	.53***	.08	-.18*	.33***	.56***	.50***	-

(Study 1)

Note. † <.10; *p <.05; **p <.01; ***p <.001

The means, standard deviations and correlations of the variables for historically underrepresented and overrepresented groups are reported separately in Table 4. The mean comparisons of the variables between historically underrepresented and overrepresented groups are also included. Respondents from the historically underrepresented group scored higher on the following variables: academic motivation, identification with the academic department, identification with the university, and perceived university image.

Regarding whether academic persistence was significantly correlated with the other variables, there were differences between the two groups. Academic persistence (historically underrepresented: M = 4.37; SD = .62; t(348) = 5.45, p = .001, historically overrepresented:

M = 3.91; SD = .73; *t*(348) = 5.45, *p* = .001) was positively correlated with academic motivation (historically underrepresented: M = 4.46; SD = .53; *t*(363) = 4.14, *p* = .001, historically overrepresented: M = 4.19; SD = .63; *t*(363) = 4.14, *p* = .001); help-seeking (historically underrepresented: M = 4.01; SD = .68; *t*(363) = 1.92, *p* = .05, historically overrepresented: M = 4.16; SD = .68; *t*(363) = 1.92, *p* = .05); perceived academic workload (historically underrepresented: M = 3.05; SD = 1.02; *t*(359) = 6.43, *p* = .001, historically overrepresented: M = 2.42; SD = .75; *t*(359) = 6.43, *p* = .001), identification with the university (historically underrepresented: M = 3.73; SD = .67; *t*(349) = 5.43, *p* = .001, historically overrepresented: M = 3.31; SD = .57; *t*(349) = 5.43, *p* = .001), identification with the department (historically underrepresented: M = 3.56; SD = .68; *t*(351) = 5.75, *p* = .001, historically overrepresented: M = 3.12; SD = .57; t(351) = 5.75, *p* = .001) and perceived university image (historically underrepresented: M = 3.66; SD = .89; *t*(372) = 7.00, *p* = .001, historically overrepresented: M = 2.96; SD = .75; *t*(372) = 7.00, *p* = .001). There were no significant differences between respondents from the historically underrepresented group and respondents from the overrepresented group for the correlations between academic persistence (historically underrepresented: M = 4.37; SD = .62; *t*(348) = 5.45, *p* = .001, historically overrepresented: M = 3.91; SD = .73; *t*(348) = 5.45, *p* = .001); academic adjustment (historically underrepresented: M = 3.86; SD = .61; *t*(363) = .91, *p* >.05, historically overrepresented: M = 3.79; SD = .56; *t*(348) = .91, *p* >.05), and perceived stress (historically underrepresented: M = 3.09; SD = .79; *t*(359) = .81, *p* <.05, historically overrepresented: M = 3.79; SD = .56; *t*(348) = .91, *p* >.05).

Table III-4. Means, standard deviations, and intercorrelations among variables for historically underrepresented and overrepresented groups (Study 1)

		1	2	3	4	5	6	7	8	9
Historically	M	4.37	3.08	4.45	3.05	4.00	3.86	3.72	3.56	3.66
underrepresented	SD	0.62	0.79	0.54	1.02	0.68	0.61	0.66	0.67	0.89
Historically	M	3.91	3.01	4.18	2.42	4.16	3.79	3.31	3.11	2.96
overrepresented	SD	0.73	0.73	0.63	0.75	0.68	0.56	0.57	0.57	0.75
F statistics		(1,348)= 34.59***	(1,359) = 0.66	(1, 363) = 17.16***	(1, 359) = 31.56***	(1,363) = 3.69	(1,356) = 0.82	(1, 349) = 29.47***	(1, 351) = 33.04***	(1.372) = 29.04
1 Academic persistence		-	-.01	.09	-.13	.04	.30**	.19	.16	.20
2 Perceived stress		-.19**	-	-.04	.32**	-.07	-.48***	.05	.09	.10
3 Academic motivation		.40***	-.19**	-	-.23*	.10	.24*	.52***	.28***	.42***
4 Perceived academic workload		-.08	.19**	-.16**	-	-.05	-.34***	-.03	-.09	-0.0
5 Help-seeking		.23***	-.08	.19**	-.09	-	.22*	.09	-.02	-1.3
6 Academic adjustment		.41***	-.35***	.52***	-.22***	.14*	-	.26*	.23*	.90
7 Identification with university		.36***	-.14*	.53***	.01	.06	.52***	-	.54***	.31**
8 Identification with academic department		.42***	-.21**	.48***	.07	.003	.52***	.70***	-	.42***
9 Perceived university image		.27***	-.21**	.53***	-.03	-.08	.40***	48***	.54***	-

Note. The correlation coefficients in the lower section of the table refer to the historically underrepresented group while the upper section of the table refers to the historically overrepresented group.
† <.10; *p <.05; **p <.01; ***p <.001

3.5.2. Hypotheses Testing

The first hypothesis stated that each of the previously identified psychosocial factors would account for unique variance in academic persistence. Perceived stress and perceived academic workload would be negatively related to academic persistence, while help-seeking, academic motivation, and academic adjustment would be positively related to academic persistence. Tests to determine if the data met the assumption of collinearity indicated that multicollinearity was not a concern. A regression analysis was used to determine the influences of the psychosocial factors on academic persistence (see Table 5).

Academic persistence was regressed on academic motivation, help-seeking, academic adjustment, perceived stress, and perceived academic workload. The regression model was significant (F (5, 344) = 15.56, p <.001) and explained 18.5% of the variance in academic persistence. However, only two predictor variables predicted the outcome variable significantly, academic motivation (β = .21, t = 3.859, p <.001) and academic adjustment (β = .29, t = 4.994, p <.001). The first hypothesis that stated that perceived stress and perceived academic workload negatively influenced academic persistence, while help-seeking, academic motivation, and academic adjustment positively influenced academic persistence was thus partially confirmed.

The second hypothesis stated that identification with the academic department, identification with the university and perceived university image positively predicted academic persistence and that the inclusion of these variables together with the known psychosocial factors into the regression model would improve the explained variance in academic persistence. This hypothesis was tested by extending the previous regression model to include identification with the academic department, identification with the university, and

perceived university image as predictor variables. The results show that identification with the academic department, identification with the university, and perceived university image accounted for an additional 7.6% of the variance in academic persistence. The change statistics reached statistical significance (F_{Change} (2, 342) = 9.98, p <.001). The predictor variables that significantly predicted academic persistence in the extended model were identification with the academic department (β = .23, t = 3.235, p <.01), academic adjustment (β = .19, t = 3.027, p <.01), academic motivation (β = .09, t = 1.473, p <.01), and help-seeking (β = .10, t = 2.089, p <.05). The second hypothesis was, therefore, partially confirmed since identification with the university and perceived university image did not significantly predict academic persistence.

Table III-5. Hierarchical regression analysis (Study 1)

	Variable	R^2	B	SE	β	t	p	VIF
Model 1	Academic motivation	18.5%	.248	.064	.209	3.859	.000	1.240
	Help-seeking		.069	.049	.070	1.403	.161	1.036
	Perceived stress		.011	.047	.013	.240	.811	1.194
	Perceived academic overload		.067	.035	.097	1.917	.056	1.080
	Academic adjustment		.334	.067	.294	4.994	.000	1.458
Extended Model 2	Academic motivation	26.1%	.005	.076	.005	.072	.943	1.917
	Help-seeking		.113	.048	.113	2.362	.019	1.063
	Perceived stress		.010	.045	.011	.220	.826	1.203
	Perceived academic overload		.018	.035	.026	.514	.608	1.166
	Academic adjustment		.199	.069	.175	2.866	.004	1.722
	Identification with the academic department		.197	.069	.196	2.873	.004	2.151
	Identification with the university		-.011	.074	-.011	-.152	.879	2.420
	Perceived university image		.196	.051	.254	3.821	.000	2.038

The third hypothesis predicted that academic adjustment and academic motivation would mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence. A path analysis using the AMOS 24 software was conducted in order

to test the proposed mediation model. Goodness-of-fit statistics show the model had good fit (χ^2 (3) = 39.778, p = .000; NFI = .929; CFI = .933 and RMSEA = .187). The NFI and CFI statistics showed the model had a good fit while the RMSEA statistic showed that the model had a poor fit. However, Kenny, Kaniskan, and McCoach (2014) argue that the RMSEA statistic should not be used for models with a low df, which was the case for the present model. Notwithstanding the issues regarding model fit, an analysis of the path coefficients is provided.

The standardised parameter estimates are presented in Figure 1. Identification with the academic department was significantly predictive of academic adjustment (β = .317, *SE* = 0.063, p <.001) and academic motivation (β = .144, *SE* = 0.071, p <.05). Identification with the university was significantly predictive of academic adjustment (*B* = .268, *SE* = 0.066, p <.05) and academic motivation (β = .451, *SE* = 0.070, p <.05). In addition, academic adjustment and academic motivation were significantly predictive of academic persistence (academic adjustment: β = .277, *SE* = 0.057, p <.05; academic motivation: β = .215, *SE* = 0.055, p <.001).

The significance of the indirect effects were tested using the bias-corrected bootstrap confidence intervals (CIs), to assess whether mediation was present in the model. MacKinnon, Lockwood, and Williams (2004) emphasised that the bias-corrected approach is the best way to test indirect paths in mediation analysis. Although the bias-corrected bootstrap can be conducted in AMOS, specific indirect effects cannot be specified (MacKinnon, 2008). Consequently, 200 bootstrap samples and 95% bias-corrected CIs were generated to test the total indirect effects between the independent variables and academic persistence. As hypothesised, the total indirect effect of identification with the academic department on academic persistence mediated by academic adjustment and academic

motivation was significant with a point estimate of .103 (*SE* = 0.028) and a 95% CI of .055 to .170. The total indirect effect of identification with the university on academic persistence mediated by academic adjustment and academic motivation was also significant with a point estimate of .174 (*SE* = 0.037) and a 95% CI of .115 to .250. The third hypothesis was confirmed since the indirect effects involving academic adjustment and academic motivation were statistically significant.

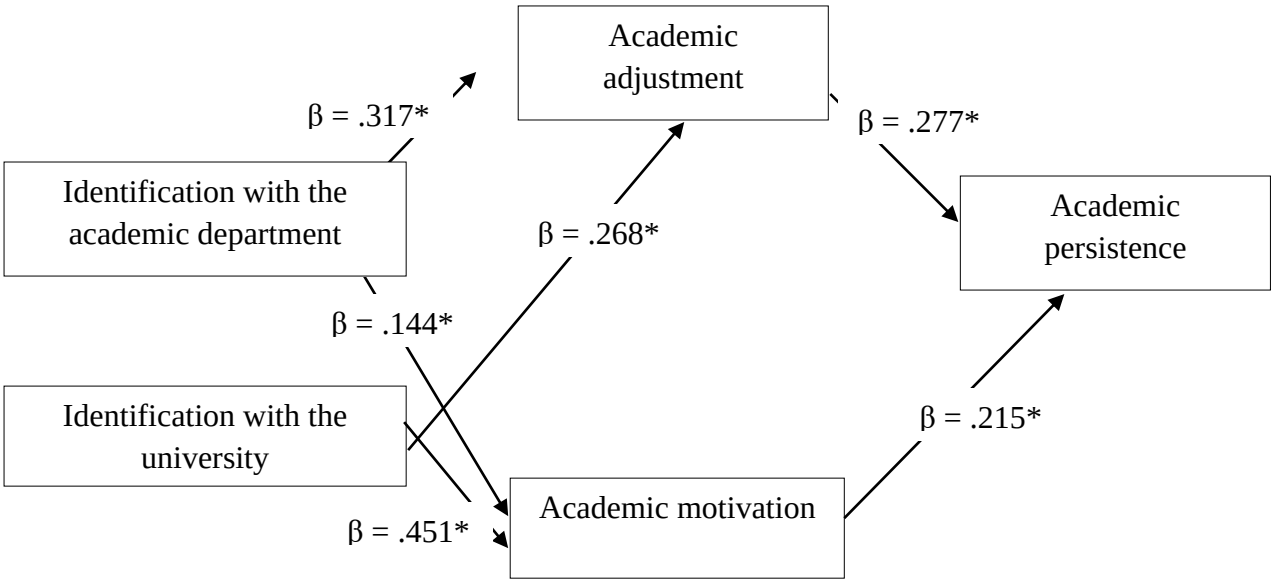

Figure III-1. The mediated model of identification with the academic department/university and academic persistence via academic adjustment and academic motivation (Study 1).

The fourth hypothesis predicted that membership in a historically underrepresented or overrepresented group would moderate the relationships between identification with the academic department, identification with the university and academic persistence mediated by academic adjustment and academic motivation in a historically overrepresented or underrepresented group at university.

A path analysis using the AMOS 24 software was conducted in order to test the proposed moderated mediation model. In the first step, the most parsimonious model was estimated by setting cross-group constraints on all of the paths (null hypothesis: There are no differences between the path estimates of students in the historically overrepresented group and students in the historically underrepresented group at university).

The analysis of the fit indices revealed that the parsimonious model with cross-group constraints on all parameters showed a good fit to the data (χ^2 (12) = 53.158, p = .001; NFI = .901; CFI = .920 and RMSEA = .099). Three additional path models were then compared against the parsimonious model. In the first model, the following path parameters were allowed to vary between groups: the parameter between identification with the academic department and academic adjustment, the parameter between identification with the university and academic adjustment, and the parameter between academic adjustment and academic persistence. Model 1 was significantly different from the parsimonious model (Chi-square difference: χ^2 (3) = 7.823, p = .005) and had good fit (fit indices: χ^2 (9) = 45.335, p = .001; NFI = .915; CFI = .930 and RMSEA = .108). In Model 2, the following parameters were allowed to vary between groups: the parameter between identification with the academic department and academic motivation, the parameter between identification with the university and academic motivation, and the parameter between academic motivation and academic persistence. Model 2 also differed significantly from the parsimonious model (Chi-square difference: χ^2 (3) = 4.484, p = .021) and had good fit (fit indices: χ^2 (9) = 48.674, p = .001; NFI = .909; CFI = .923 and RMSEA = .113). Model 3 had path parameters between academic adjustment and academic persistence and between academic motivation and academic persistence, and these parameters were allowed to vary between groups. Model 3 differed significantly from the parsimonious model (Chi-square difference: χ^2 (4) = 9.041, p

=.006; Model indices: χ^2 (8) = 44.117, p = .001; NFI = .918; CFI = .930 and RMSEA = .114). The results revealed that Model 1 (χ^2 (3) = 7.823, p = .005), Model 2 (χ^2 (3) = 4.484, p = .021), and Model 3 (χ^2 (4) = 9.041, p = .006) fitted the data better than the parsimonious model.

A moderation effect was determined to have occurred when a path coefficient was significant for one group and non-significant for the other group. A significant moderation effect for the path from identification with the university to academic adjustment was revealed in that the path was significant for respondents in the historically underrepresented group (B = .294, SE = 0.077, p <.01). Another significant moderation effect was revealed for the path from identification with the academic department to academic adjustment, with the path being significant for respondents in the historically underrepresented group (B = .317, SE = 0.078, p <.01). Figure 2 provides a depiction of the moderated mediated analysis.

The results supported the fourth hypothesis because they demonstrated that the impact of identification with the department and identification with the university on academic adjustment was significant for the respondents in the historically underrepresented group but not for the respondents in the historically overrepresented group at the university.

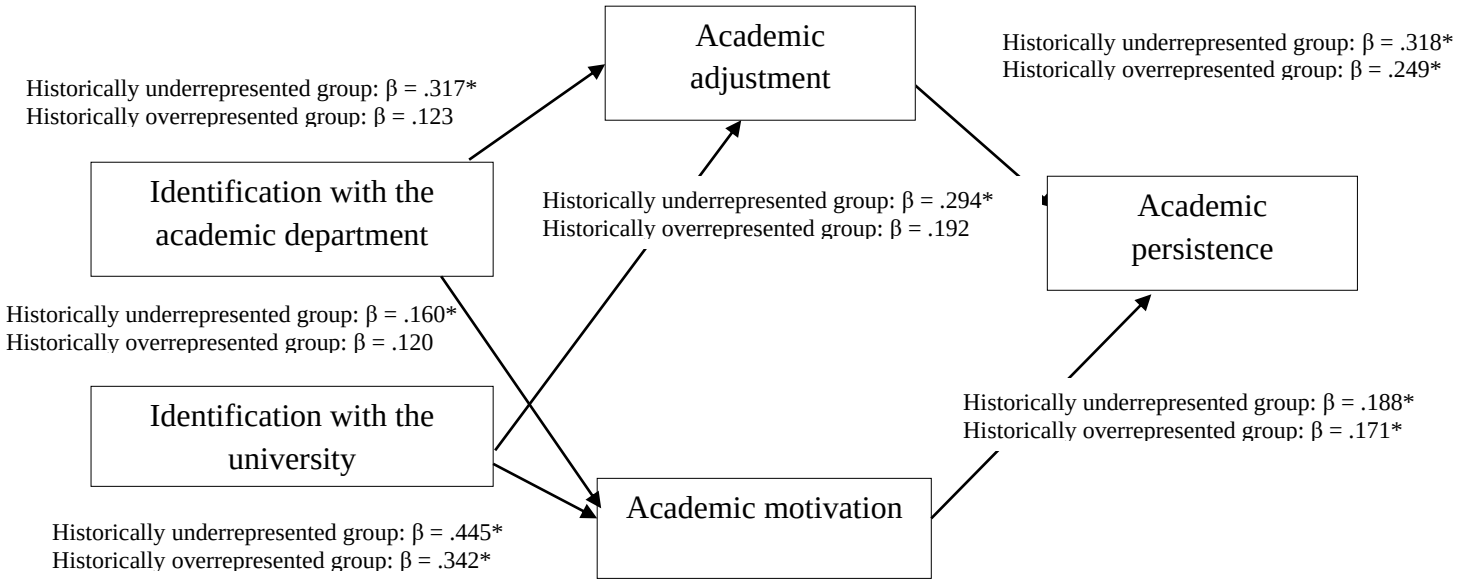

Figure III-2. The moderated mediated model (Study 1).

Note. $*p < .05$

3.6. Discussion

3.6.1. The effect of psychosocial factors on academic persistence

The results of Study 1 indicated that academic motivation and academic adjustment predicted academic persistence. These results are in line with previous studies that demonstrated the link between academic motivation and students' academic persistence (Allen & Robbins, 2010; Allen, Robbins, Casillas, & Oh, 2008; Liao, Edlin, & Ferdenzi, 2014; Petersen et al., 2010) and the link between academic adjustment and students' academic persistence (Rienties, Beausaert, Grohnert, Niemantsverdriet, & Kommers, 2012). These results suggest that students who are motivated to perform academically by internal factors such as pleasure in their studying, and students who have adjusted to university demands are more likely to persist academically.

A consideration relating to why perceived stress, perceived academic workload, and help-seeking did not significantly predict academic persistence may be due to their change in salience for students. For example, Petersen et al. (2010) found that psychosocial factors such as help-seeking, self-esteem, perceived stress, and perceived academic workload predicted academic persistence in the first year of study but not in the third year. Therefore, perceived stress, perceived workload, and help-seeking could be significant at particular stages in students' academic studies.

3.6.2. The effect of identification with the academic department, identification with the university, and perceived university image on academic persistence

The second hypothesis states that identification with the academic department, identification with the university, and perceived university image in addition to the known psychosocial factors predict academic persistence. The results of Study 1 partially confirmed the second hypothesis because identification with the academic department contributed to explaining academic persistence. Overall, identification with the academic department, academic adjustment, and help-seeking significantly predicted academic persistence in the extended model.

To date, literature has not investigated identification with the academic department as a predictor of academic persistence. Research investigating identification with academics (i.e., the extent to which students base their self-esteem on outcomes in the academic domain) shows that students who strongly identify with academics are more motivated and likely to experience desirable academic outcomes (i.e., academically persist) (Osborne & Rausch, 2001; Osborne & Walker, 2006; Osborne, Walker, & Rausch, 2002).

Smyth et al. (2015) report that students who strongly identify with their department are more likely to perceive the norms of fellow students as favouring deep learning practices. Yueh, Chen, and Cheng (2014) posit that students with higher identification with their academic department have a stronger sense of belonging with the department, demonstrate more positive attitudes towards departmental affairs and have more interactions with their peers and the lecturers of the department. Thus, identification with the academic department can be explained in two ways: the sense of belonging and the level of distinctiveness that is appealing to students (Finn, 1989; Voelkl, 1997). According to the social identity approach, identification is a sense of belonging and attachment to a particular group, for example, a university or academic department (Turner, 1985). Additionally, students' identification with their academic department can be explained using the self-categorisation approach. According to the self-categorisation approach, group members categorise themselves depending on the specific aspects of the group (Turner, Brown, & Tajfel, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Self-categorisation plays a significant role in distinguishing a group member from a non-group member. Students distinguish themselves from non-group members (i.e., students from other departments) by identifying more with their academic department.

Moreover, research on organisational identification shows that employees tend to be more loyal, identified and motivated towards their work units than towards the organisation as a whole (Barker & Tompkins, 1994; Mael & Ashforth, 1995). The above could be an explanation for the significant predictors of academic persistence through identification with the academic department and not through identification with the university. In this case, students interpreted their identities to be congruent with the academic department so that they

could be distinctive. Identification with the university could be congruent with students' identities when they compare their university with other universities.

3.6.3. Academic adjustment and academic motivation as mediators of the relationships between identification with the academic department, identification with the university and academic persistence

The third hypothesis states that academic adjustment and academic motivation mediate the link between identification with the academic department, identification with the university and academic persistence. The results confirmed the third hypothesis. Academic adjustment and academic motivation significantly mediated the relationships between identification with the academic department, identification with the university and academic persistence. The results suggest that students who strongly identify with the academic department/university adjust better in the university environment and as a result, academically persist. The results also show that students who strongly identify with the academic department/university are more motivated and academically persist. These results are in line with previous studies that demonstrated the role of academic adjustment and academic motivation as mediator variables (Guay et al., 2010; Petersen et al., 2009; Sommer & Dumont, 2011).

3.6.4. Students' membership as a moderator for the mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation

The fourth hypothesis posits that the mediated relationships are moderated by the student's membership in a historically underrepresented or overrepresented group. The results confirmed the hypothesis. The results revealed a significant moderation effect by

group status for the relationship between identification with the university and academic adjustment for the historically underrepresented group. Another significant moderation effect for the relationship between identification with the academic department and academic adjustment was also revealed for the historically underrepresented group. The results suggest that the relationship between identification with the academic department/university and academic adjustment are more critical for students from historically underrepresented groups.

An explanation for the results could be that the student profile of universities is changing. More students from historically underrepresented groups have access to university, and many are the first in their families to attend university. The results are also in line with Jetten et al. (2008) who argue that students from historically underrepresented groups find it difficult to identify with a university because the university may be at odds with their identities. The argument of Jetten et al. (2008) is in line with that of Haslam, Eggins, and Reynolds (2003) who indicate that individuals resist identification when their identities are not represented in the new context. This suggests that students from historically underrepresented groups may resist their new identities as university students when their identities are not represented in the university environment.

According to Tajfel and Turner (1986), when an individual's self-awareness is attributed and linked to a specific group or society, the individual's self-image, values, and emotions become unconsciously dependent on that group or society. Individuals who identify strongly with a group tend to conform to group standards and norms and to demonstrate specific attitudes, loyalties, efforts, and motives targeted to their group (Tajfel & Turner, 1986). Identification is reported to enhance adjustment only when there is the perception that the group will be useful in the attainment of desired goals (Cameron, 1999). In the context of

the present study, it could be argued that students from historically underrepresented groups perceived the academic department as a means for attaining desired goals.

3.7. Implications

Study 1 has specific implications. Firstly, the current results complement research addressing the question of how students from disadvantaged backgrounds cope with the social environment of the university, which is different from their previous experiences. Study 1 highlighted that social identity factors has the potential to influence adjustment processes, motivation, and academic persistence, especially for students from historically underrepresented groups.

Secondly, the results suggest that academic adjustment, academic motivation, and academic persistence are influenced by social identity factors at university and academic department levels. Thus, this means that identification with the university/academic department is meaningful to students because it provides a social context.

Lastly, the results of Study 1 complement the ongoing debate of the transformation of universities and the universities' responses to political and economic changes. The results demonstrate that students from historically underrepresented groups must assimilate to the tradition, structure, and practice of academic departments and the university. Therefore, academic departments and universities should consider creating an environment that will make students feel that they belong.

3.8. Limitations

Although the present study provides new insights into academic persistence, several limitations should be noted. Firstly, the study used a cross-sectional design. One of the disadvantages of cross-sectional designs is their inability to test for causal effects between

variables. Therefore, it is impossible to assert whether any of the predictor variables caused a change in academic persistence. However, it is still notable that the predictors and outcome variable shared individual relationships. Furthermore, the results of this study show that these relationships differ between the students from the historically underrepresented group and the students from the historically overrepresented group.

Secondly, the sample may have been biased towards respondents who were enrolled for programmes in the colleges of Economic and Management Sciences, Human Sciences, and Law.

Thirdly, data for the present study were collected in the eighth month of the academic year (August). Baker and Siryk (1999) demonstrated adjustment to be time-sensitive. Respondents in the study may have had sufficient time to adjust compared with students who did not participate.

A fourth limitation of the study is that a self-report method for data collection was employed. There are possibilities of response bias (i.e., inconsistent responding, acquiescence, extreme responses, and neutral bias) with self-report data collection methods (Krumpal, 2013; McGrath, Mitchell, Kim, & Hough, 2010). In addition, respondents may aim to present themselves favourably, offering feedback that is independent of their actual attitudes in order to conform to social norms.

Lastly, numerous psychosocial factors may contribute to academic persistence. For example, both academic adjustment and social adjustment may predict academic persistence. Study 2 included both academic adjustment and social adjustment. In addition, Study 2 assessed sense of belonging and identification with a racial group.

3.9. Study 2

Study 2 aimed to replicate the results of Study 1 and to include additional predictors of academic persistence. Social adjustment was added and distinguished from academic adjustment. Furthermore, Study 2 extended the model by including identification with race group and sense of belonging to the university. More specifically, the following hypotheses were tested using a cross-sectional survey in Study 2:

Hypothesis 1: Perceived stress and perceived academic workload are negative predictors of academic persistence, while help-seeking, academic motivation, and academic adjustment are positive predictors of academic persistence.

Hypothesis 2: Social adjustment, identification with the academic department, identification with the university, racial identification, and sense of belonging together with the known psychosocial factors improve the prediction of academic persistence.

Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence.

Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by membership in a historically underrepresented or overrepresented group.

3.10. Method

3.10.1. Respondents.

This study was conducted with 577 students enrolled for undergraduate programmes at a university. Gender was well balanced, with 58.4% females and 41.6% males. The racial representation of the respondents was black respondents (n = 267; 46.3%), white respondents (n = 194; 33.6%), coloured respondents (n = 33; 5.7 %), Indian respondents (n = 26; 4.5 %) and respondents from other racial groups (n = 57; 9.9%). The gender and racial distributions of the sample for Study 2 were representative of the university and the South African population.

The black, coloured and Indian respondents from the university and the respondents from other racial groups are referred to as the historically underrepresented group (n = 326; 62.7%). The white respondents are referred to as the historically overrepresented group (n = 194; 37.3%). The majority of respondents registered at the university between 2012 and 2016 (n = 362; 69.1%). Respondents were enrolled at the colleges of Law, Economic and Management Sciences, Human Sciences, Science, Engineering and Technology, Education, Accounting Sciences, and Agriculture and Environmental Sciences (i.e., study fields: law, information technology, engineering, commerce, human sciences, environmental sciences, agriculture, education, and psychology). Table 6 provides an overview of the demographic characteristics of the respondents.

Table III-6. Demographic characteristics of respondents (Study2)

	n	%
Gender		
Male	218	41.6
Female	306	58.4
Race		
Black	267	46.3
Coloured	33	5.7
Indian	26	4.5
White	194	33.6
Other	57	9.9
Faculty		
Accounting Sciences	3	0.6
Agriculture and Environmental Sciences	104	19.8
Economic and Management Sciences	82	15.6
Education	12	2.3
Human Sciences	91	17.4
Law	112	21.4
Science, Engineering and Technology	120	22.9
Study Field		
Law	122	21.1
Information technology	55	9.5
Engineering	38	6.6
Commerce	91	15.8
Human science	52	9.0
Environmental science	22	3.8
Agriculture	61	10.6
Education	13	2.3
Geography	8	1.4
Psychology	9	1.6
Natural science	68	11.8
Other fields	34	6.6
Year of Registration		
2008	72	13.7
2009	23	4.4
2010	30	5.7
2011	37	7.1
2012	72	13.7
2013	76	14.5
2014	71	13.5
2015	84	16.0
2016	59	11.3

3.10.2. Procedure

As in Study 1, data were collected using the Qualtrics software. The first section of the questionnaire measured the respondents' experiences at the university in which they were enrolled. Respondents' motivation, help-seeking perceptions, perceived stress, perceived academic workload, academic adjustment, social adjustment, identification with the academic department, identification with the university, identification with a racial group, and sense of belonging were examined. The second section involved assessing the respondents' academic persistence in the form of intention to continue with studies. The final section of the questionnaire involved asking respondents to indicate their demographic details (i.e., gender, age, residence, nationality, and race). In the final section, respondents were asked to indicate their faculty and study field.

3.10.3. Measures

As in Study 1, all the measurements for Study 2 were presented on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). It was decided to analyse academic motivation with one item due to the weak correlation between the two items (r = .20, n = 548, p <.001). The following item was used to measure academic motivation: 'I really want to become more competent and to develop my skills further'. The present study used a cross-sectional survey to assess the variables. The measures of academic persistence (α = .86), help-seeking (α = .85), perceived stress (α = .74), perceived academic workload (r = .67, n = 874, p <.001), academic adjustment (α = .69), identification with the academic department (α = .83), and identification with the university (α = .79) were assessed as in Study 1.

Social adjustment. This was assessed using selected items from the SACQ developed by Baker and Siryk (1989). The original scale of the SAQC consists of 67 items with

four subscales: academic adjustment, social adjustment, personal-emotional adjustment, and attachment. Baker and Siryk (1989) used 20 items to measure social adjustment. Of the 20 items, six were selected for Study 2: 'I'm very involved with social activities in university'; 'I have several close social ties at university'; 'I feel that I have enough social skills to get along well in the university setting'; 'I'm quite satisfied with my social life at university'; 'I'm having difficulty feeling at ease with other people at university'*; and 'I have been feeling lonely a lot at university lately'* (α = .68).

Students' racial identification. This was assessed by first asking the respondents to indicate which racial group they considered themselves to belong to (i.e., black, white, Indian or coloured South African). Subsequent to selecting the racial group, respondents were presented with five items selected from the Leach et al. (2008) scale: 'I feel a bond with my group'; 'I am glad to be like my group'; 'I often think about the fact that I am one of my group'; 'I have a lot in common with the average member of my group'; and 'Members in my group have a lot in common with each other' (α = .87).

Sense of belonging. Sense of belonging to the university was measured by using selected items from the Psychological Sense of School Membership (PSSM) Scale (Goodenow, 1993). The measure aims to assess the extent to which students feel that they are an accepted, respected, and valued part of their academic context. Five selected items from the scale were adjusted to the context of Study 2: 'I feel like a real part of the university'; 'People here notice when I am good at something'; 'Other students at my university take my opinions seriously'; 'Sometimes I feel as if I do not belong here'; and 'I am treated with as much respect as other students' α = .79.

3.11. Data Analysis

As in Study 1, data analysis of Study 2 included reliability analysis, descriptive statistics of the data, group comparison, correlation analysis, and path analysis. As in Study 1, the data analysis was conducted using SPSS 24 and AMOS 24.

3.12. Results

3.12.1. Preliminary analysis

The means, standard deviations and correlations of the variables are provided in Table 7. A Pearson correlation was conducted to identify the strength and direction of the relationships between the variables.

As in Study 1, the results of Study 2 revealed that academic persistence (M = 4.34; SD = .63, p = .001) was significantly correlated with academic adjustment (M = 3.91; SD = .57, p = .001), academic motivation (M = 4.67; SD = .53, p = .001), help-seeking (M = 3.94; SD = .77, p = .01), identification with the university (M = 3.72; SD = .73, p = .001), and identification with the academic department (M = 3.70; SD = .73, p = .001). All the relationships were positive. As in Study 1, there was no relationship between perceived workload and academic persistence in Study 2. One difference between the two studies, however, was that Study 1 demonstrated a negative relationship between perceived stress and academic persistence but there was no significant relationship identified in Study 2.

The three additional variables in Study 2, social adjustment, sense of belonging, and racial identification were each positively correlated with academic persistence.

Table III-7. Means, standard deviations, and intercorrelations among variables of the sample (Study 2)

	1	2	3	4	5	6	7	8	9	10	11
M	4.33	4.04	3.02	4.67	3.85	2.82	3.14	3.81	3.89	3.90	3.76
SD	0.52	0.54	0.75	0.55	0.77	1.08	0.71	0.80	0.72	0.65	0.69
Min	1	1	1	1	1	1	1	1	1	1	1
Max	5	5	5	5	5	5	5	5	5	5	5
1 Academic persistence	-										
2 Academic adjustment	.285**	-									
3 Perceived stress	-0.082	-.461**	-								
4 Academic motivation	.292**	.095*	0.017	-							
5 Help-seeking	.092*	0.031	-.099*	.232**	-						
6 Perceived academic workload	.038	-.267**	.418**	.052	-.155**	-					
7 Social adjustment	.205**	.440**	-.334**	.075	-.009	-.003	-				
8 Sense of belonging	.261**	.478**	-.391**	.143**	.010	-.112**	.606**	-			
9 Identification with university	.297**	.369**	-.214**	.198**	-.026	.037	.500**	.667**	-		
10 Identification with academic department	.336**	.412**	-.265**	.187**	-.026	.014	.511**	.692**	.810**	-	
11 Racial identification	.202**	.221**	-0.080	.170**	-0.060	.202**	.378**	.411**	.493**	.522**	-

Note. † <.10; *p <.05; **p <.01; ***p <.001

The means, standard deviations and correlations of the variables for the historically underrepresented and overrepresented groups are provided separately in Table 8. As in Study 1, significant relationships between academic persistence and academic adjustment, academic motivation, identification with the university, and identification with the academic department were revealed among respondents from the historically underrepresented groups in Study2. The correlations between academic persistence and perceived stress, help-seeking, and perceived academic workload among respondents from the historically underrepresented group were not significant.

Among the respondents from the historically underrepresented and overrepresented groups, significant correlations were revealed between academic persistence (historically underrepresented: M = 4.46; SD = .59; $t(474) = 4.92$, $p = .001$, historically overrepresented: M = 4.17; SD = .68; $t(474) = 4.92$, $p = .001$), social adjustment (historically underrepresented: M = 3.19; SD = .76; $t(480) = 5.54$, $p = .001$, historically overrepresented: M = 2.85; SD = .58; $t(480) = 5.54$, $p = .001$), academic motivation (historically underrepresented: M = 4.74; SD = .51; $t(492) = 3.63$, $p = .001$, historically overrepresented: M = 4.56; SD = .56; $t(492) = 3.63$, $p = .001$), perceived stress (historically underrepresented: M = 3.26; SD = .81; $t(500) = 2.10$, $p = .001$, historically overrepresented: M = 3.11; SD = .76; $t(500) = 2.10$, $p = .001$), perceived workload (historically underrepresented: M = 3.38; SD = 1.01; $t(500) = 12.80$, $p = .001$, historically overrepresented: M = 2.32; SD = .82; $t(500) = 12.80$, $p = .001$), identification with the university (historically underrepresented: M = 3.85; SD = .72; $t(518) = 6.86$, $p = .001$, historically overrepresented: M = 3.42; SD = .65; $t(518) = 6.86$, $p = .001$), identification with racial group (historically underrepresented: M = 3.66; SD = .79; $t(518) = 7.09$, $p = .001$, historically overrepresented: M = 3.17; SD = .75; $t(518) = 7.09$, $p = .001$), and sense of belonging (historically

underrepresented: M = 3.58; SD = .89; $t(509) = 3.68$, $p = .001$, historically overrepresented: M = 3.29; SD = .75; $t(509) = 3.68$, $p = .001$). There were no significant correlations among respondents from the historically underrepresented and overrepresented groups for academic persistence (historically underrepresented: M = 4.46; SD = .59; $t(474) = 4.92$, $p = .001$, historically overrepresented: M = 4.17; SD = .68; $t(474) = 4.92$, $p = .001$), academic adjustment (historically underrepresented: M = 3.88; SD = .58; $t(480) = 1.37$, $p > .05$, historically overrepresented: M = 3.95; SD = .56; $t(480) = 1.37$, $p > .05$), and help-seeking (historically underrepresented: M = 3.95; SD = .80; $t(492) = .228$, $p > .05$, historically overrepresented: M = 3.96; SD = .74; $t(492) = .23$, $p > .05$).

The results of the Pearson correlation of Study 2 partially replicated the results of Study 1, revealing positive relationships between academic persistence and academic adjustment, academic motivation, help-seeking, identification with the university, and identification with the academic department among respondents from the historically underrepresented group. However, Study 2 revealed a non-significant correlation between academic persistence and perceived stress.

Study 1 revealed a relationship between academic adjustment and academic persistence among respondents from the historically overrepresented group. However, for this group, Study 2 revealed positive relationships between academic persistence and academic adjustment, perceived stress, academic motivation, identification with the university, and identification with the academic department. Study 2 also revealed negative relationships between academic persistence and perceived stress and academic persistence and perceived academic workload.

Regarding the additional variables in Study 2, academic persistence was positively correlated with social adjustment, sense of belonging, and racial identification among respondents of the historically underrepresented group. A positive relationship between academic persistence and sense of belonging among respondents of the historically overrepresented group was also revealed. However, the correlations between academic persistence and social adjustment and identification with a racial group among respondents from the historically overrepresented group were not significant.

Table III-8. Means, standard deviations, and intercorrelations among variables for historically underrepresented and overrepresented groups (Study 2)

		1	2	3	4	5	6	7	8	9	10	11
Historically underrepresented	M	4.46	3.88	3.26	4.74	3.95	3.38	3.19	3.58	3.85	3.81	3.66
	SD	0.59	0.58	0.82	0.51	0.80	1.01	0.76	0.88	0.72	0.75	0.79
Historically overrepresented	M	4.17	3.95	3.11	4.56	3.96	2.32	2.85	3.29	3.42	3.47	3.17
	SD	0.68	0.56	0.76	0.55	0.74	0.82	0.58	0.75	0.65	0.66	0.75
F statistics		(1.474) = 24.251**	(1.480) = 1.865	(1.500) = 4.425*	(1.366) = 13.178**	(1.492) = 0.052	(1.464) = 163.71**	(1.464) = 30.689**	(1.454) = 14.723**	(1.518) = 47.005**	(1.518) = 27.491	(1.518) = 50.279
1 Academic persistence		-	.274**	-.186*	.225**	0.091	-.267**	0.080	.221**	.188*	.265**	0.059
2 Academic adjustment		.328**	-	-.368**	.151*	0.078	-.345**	.380**	.387**	.318**	.303**	.211**
3 Perceived stress		-0.070	-.500**	-	-0.042	-0.077	.446**	-.285**	-.386**	-.226**	-.262**	-0.009
4 Academic motivation		.296**	0.047	0.043	-	.215**	-.181*	-0.042	.177*	.205**	.192**	0.124
5 Help-seeking		0.107	0.008	-.124*	.265**	-	-.181*	0.062	0.085	0.081	0.101	-0.106
6 Perceived academic workload		-0.026	-.295**	.461**	0.033	-.182**	-	-.180*	-.334**	-.189**	-.213**	0.014
7 Social adjustment		.196**	.508**	-.402**	0.061	-0.021	-.140*	-	.484**	.365**	.413**	.214**
8 Sense of belonging		.250**	.560**	-.436**	0.095	0.015	-.204**	.644**	-	.676**	.680**	.228**
9 Identification with university		.270**	.450**	-.273**	.128*	-0.047	-.117*	.521**	.664**	-	.741**	.333**
10 Identification with academic department		.328**	.507**	-.307**	0.109	-0.064	-0.093	.513**	.679**	.816**	-	.308**
11 Racial identification		.177**	.237**	-.144*	0.110	-0.031	0.097	.365**	.423**	.476**	.555**	-

Note. The correlation coefficients in the lower section are from the historically underrepresented group, whereas the correlation coefficients in the upper section are from the historically overrepresented group.

† <.10; *p <.05; **p <.01; ***p <.001

3.12.2. Hypotheses Testing

The first hypothesis states that perceived stress and perceived academic workload have a negative effect on academic persistence, and help-seeking, academic motivation, and academic adjustment have a positive effect on academic persistence. Tests to establish if the data met the assumption of collinearity indicated that multicollinearity was not a concern. A regression analysis was used to determine the influences of the psychosocial factors on academic persistence (see Table 9).

Academic persistence was regressed on academic motivation, help-seeking, academic adjustment, perceived stress, and perceived academic workload. The regression model was significant (F (5,519) = 19.899, p <.001) and explained 16.1% of the variance in academic persistence. Only three predictor variables significantly predicted the outcome variable. The standardised regression coefficients for the significant predictors were as follows: academic motivation (β = .25, t = 5.865, p <.001), academic adjustment (β = .29, t = 6.293, p <.001), and perceived academic workload (β = .10, t = 2.274, p <.05), indicating that respondents who show high academic motivation and academic adjustment are more likely to demonstrate academic persistence.

Academic adjustment was distinguished from the social aspects of adjustment by adding social adjustment as a predictor variable in the extended Model 2. The regression model was significant (F(6,518) = 17.196, p <.001), and social adjustment contributed an additional 0.5% in explaining academic persistence. However, the change statistic did not reach statistical significance (F_{Change} (1, 518) = 3.247, p >.05). The beta coefficients for the significant predictors were as follows: academic adjustment (β = .26, t = 5.275, p <.001),

social adjustment (β = .084, t = 1.802, p <.001), and academic motivation (β = .24, t = 5.803, p <.001).

Study 2 replicated the results of Study 1 and revealed that academic adjustment and academic motivation positively predict academic persistence. Additionally, the regression analysis revealed that perceived academic workload significantly predicts academic persistence. Therefore, the first hypothesis, which states that perceived stress and perceived academic workload are negative predictors of academic persistence, and help-seeking, academic motivation, and academic adjustment are positive predictors of academic persistence, was partially confirmed.

The second hypothesis states that identification with the academic department, identification with the university, identification with a racial group, and sense of belonging together with the known psychosocial factors improve the explained variance in academic persistence. The second hypothesis was tested in two steps. In the first step, identification with the department and identification with the university were added to the model (extended Model 3). The second step, identification with a racial group and sense of belonging were added to the model (extended Model 4). In the first step, the regression model was significant (F (8,516) = 16.120, p <.001), and identification with the academic department and identification with the university contributed to an additional variance explanation of 4%. The change statistic reached statistical significance (F_{Change} (2,516) = 10.918, p <.001). The predictor variables that significantly predicted academic persistence in the extended Model 3 were identification with academic department (β = .21, t = 2.962, p <.01), academic motivation (β = .21, t = 4.937, p <.001), and academic adjustment (β = .21, t = 4.233, p <.001).

Study 2 partially replicated the results of Study 1. As in Study 1, academic adjustment and identification with the academic department significantly predicted academic persistence. In contrast to Study 1, help-seeking did not significantly predict academic persistence; however, academic motivation significantly predicted academic persistence in Study 2. Therefore, the second hypothesis, which states that identification with the academic department and identification with the university improve the prediction of academic persistence, was confirmed, although identification with the university was not a significant predictor.

In the second step, racial identification and sense of belonging were added as predictor variables. The regression model was significant (F (10,514) = 12.851, p <.001). Unexpectedly, there was no change in the amount of variance explained; however, the change statistic did not reach statistical significance (F_{Change} (2, 514) = .019, p >.05). Racial identification and sense of belonging did not significantly predict academic persistence. The predictor variables that significantly predicted academic persistence in the extended Model 4 were identification with the academic department (β = .21, t = 2.781, p <.01), academic motivation (β = .21, t = 4.916, p <.001), and academic adjustment (β = .21, t = 4.187, p <.001). Since racial identification and sense of belonging did not significantly predict academic persistence, the extended hypothesis was not confirmed.

Table III-9. Hierarchical regression analysis (Study 2)

	Variable	R^2	*B*	*SE*	β	*t*	Sig	VIF
Model 1	Academic motivation	16.1%	.292	.050	.246	5.865	.000	1.085
	Help-seeking		.038	.034	.047	1.11	.267	1.094
	Perceived stress		.007	.039	.008	.174	.862	1.468
	Perceived academic overload		.061	.027	.103	2.274	.023	1.265
	Academic adjustment		.322	.051	.289	6.293	.000	1.308
Extended Model 2	Academic motivation	16.6%	.289	.050	.243	5.803	.000	1.086
	Help-seeking		.040	.034	.049	1.165	.245	1.095
	Perceived stress		.025	.040	.031	0.614	.539	1.564
	Perceived academic overload		.051	.027	.086	1.865	.063	1.320
	Academic adjustment		.288	.055	.258	5.275	.000	1.491
	Social adjustment		.075	.042	.084	1.802	.072	1.346
Extended Model 3	Academic motivation	20.0%	.246	.050	.207	4.937	.000	1.13
	Help-seeking		.054	.034	.065	1.582	.114	1.103
	Perceived stress		.043	.040	.053	1.075	.283	1.579
	Perceived academic overload		.037	.027	.063	1.392	.164	1.338
	Academic adjustment		.232	.055	.208	4.233	.000	1.564
	Social adjustment		.001	.044	.001	0.025	.980	1.576
	Identification with the academic department		.182	.061	.209	2.962	.003	3.204
	Identification with the university		.018	.060	.021	0.306	.759	3.099
Extended Model 4	Academic motivation	20.0%	.246	.050	.207	4.916	.000	1.139
	Help-seeking		.053	.034	.065	1.575	.116	1.106
	Perceived stress		.044	.040	.055	1.085	.278	1.626
	Perceived academic overload		.038	.027	.065	1.394	.164	1.397
	Academic adjustment		.231	.055	.208	4.187	.000	1.582
	Social adjustment		-.001	.047	-.001	-0.012	.990	1.757
	Identification with the academic department		.181	.065	.207	2.781	.006	3.575
	Identification with the university		.017	.061	.020	0.276	.783	3.272
	Identification with racial group		-.004	.038	-.006	-0.118	.906	1.511
	Sense of belonging		.008	.048	.010	0.161	.872	2.620

The third hypothesis states that academic adjustment and academic motivation mediate the relationship between identification with the academic department and academic

persistence and the relationship between identification with the university and academic persistence. A path analysis using the AMOS 24 software was conducted in order to test the proposed mediation model. Goodness-of-fit statistics related to this model show good fit (χ^2 (3) = 25.397, p = .000; NFI = .968; CFI = .972 and RMSEA = .119).

The standardised parameter estimates are presented in Figure 3. Identification with the academic department was significantly predictive of academic adjustment (β = .343, *SE* = 0.073, p <.001). Identification with the academic department was not significantly predictive of academic motivation (β = .088, *SE* = 0.067, p >.05). Identification with the university was not significantly predictive of academic adjustment (β = .084, *SE* = 0.073, p >.05) but was predictive of academic motivation (β = .127, *SE* = 0.067, p =.05). In addition, academic adjustment and academic motivation were significantly predictive of academic persistence: academic adjustment (β = .259, *SE* = 0.043, p <.001) and academic motivation (β = .267, *SE* = 0.050, p <.001).

The significance of the indirect effects were tested as in Study 1 to assess whether mediation was present. As hypothesised, the indirect effect of identification with the academic department on academic persistence via academic adjustment and academic motivation was significant, with a point estimate of .098 (*SE* = 0.027) and a 95% CI of .064 to .158. Moreover, the indirect effect of identification with the university on academic persistence via academic adjustment and academic motivation was significant, with a point estimate of .048 (*SE* = 0.025) and a 95% CI of .010 to .093. Therefore, the third hypothesis was confirmed.

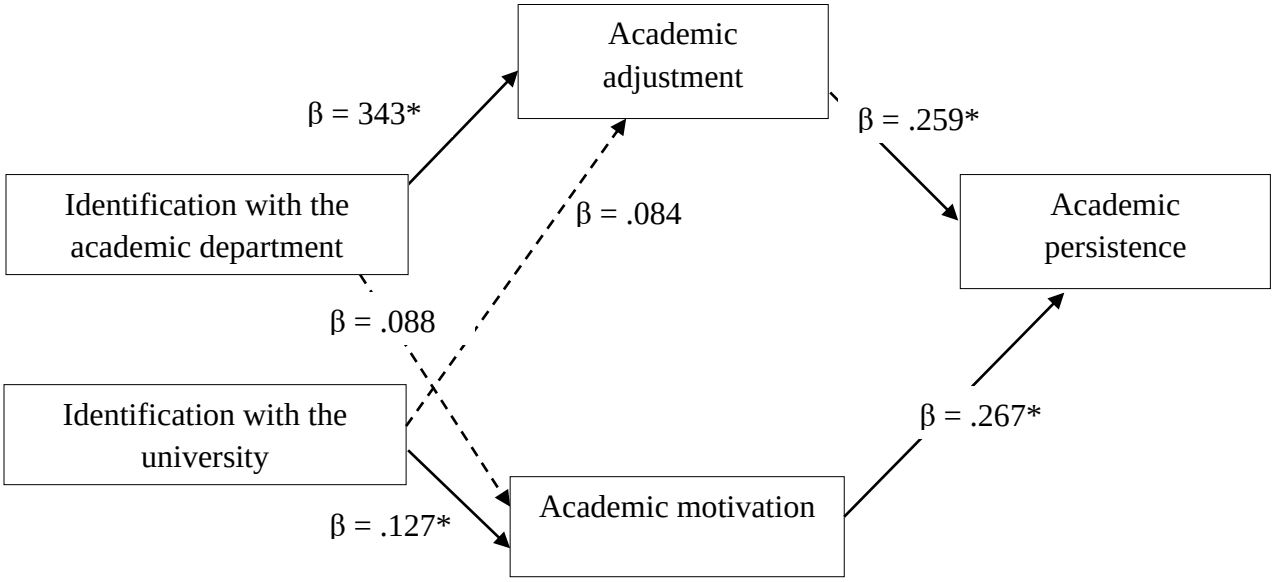

Figure III-3. The mediated model of identification with the academic department/university and academic persistence via academic adjustment and academic motivation (Study 2).

*p <.05

The fourth hypothesis states that the membership in a historically underrepresented or overrepresented group moderate the relationships between identification with an academic department/university and academic persistence mediated by academic adjustment and academic motivation in a historically overrepresented or underrepresented group at university.

A path analysis using the AMOS 24 software was conducted in order to test the proposed moderated mediation model. In the first step, the most parsimonious model was estimated by setting cross-group constraints on all of the direct and indirect paths (null hypothesis: There are no differences in the path estimates of students in the historically overrepresented group and students in the historically underrepresented group at university).

The same procedure was used in Study 2 as in Study 1. The analysis of the fit indices revealed that the parsimonious model with cross-group constraints on all parameters showed

a good fit to the data (χ^2 (12) = 24.258, p = .019; NFI = .965; CFI = .982 and RMSEA = .046). Model 1, which allowed the path parameters between identification with the academic department and academic adjustment, identification with the university and academic adjustment, and academic adjustment and academic persistence to vary between groups was not significantly different from the parsimonious model (Chi-square difference: χ^2 (3) =2.371, p = .499; Model indices: χ^2 (9) = 21.887, p = .009; NFI = .968; CFI = .981 and RMSEA = .055). Model 2 demonstrated path parameters between identification with the academic department and academic motivation, identification with the university and academic motivation, and academic motivation and academic persistence. These path parameters were allowed to vary between groups. Model 2 was also not significantly different from the parsimonious model (Chi-square difference: χ^2 (3) = 4.717, p = .193; Model indices: χ^2 (9) = 19.541, p = .021; NFI = .972; CFI = .984 and RMSEA = .050). Model 3 had path parameters between academic adjustment and academic persistence and between academic motivation and academic persistence. These path parameters were allowed to vary between groups. Model 3 was also not significantly different from the parsimonious model (Chi-square difference: χ^2 (4) = 6.097, p = .192; Model indices: χ^2 (8) = 18.161, p = 020; NFI = .974; CFI = 985 and RMSEA = .052).

Although none of the alternative models were significantly different from the parsimonious model, individual moderation effects were assessed based on whether a single path was significant for one of the groups but not significant for the other. A significant moderation effect for the path from identification with the academic department to academic adjustment was found since the path was significant for respondents from the historically underrepresented group (B = .444, SE = 0.091, p <.01). Figure 4 provides a depiction of the moderated mediated analysis.

The results provided support for the fourth hypothesis because they demonstrated that the relationship between identification with the department and academic adjustment was different between students from the historically underrepresented group and students from the historically overrepresented group.

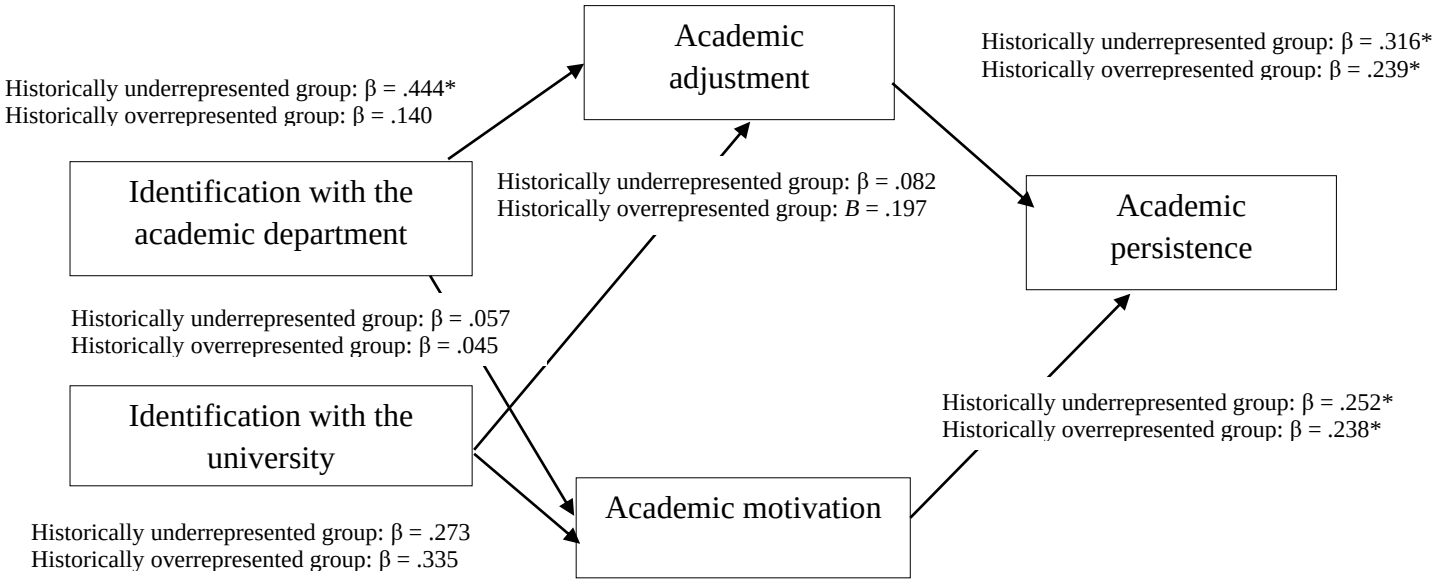

Figure III-4. The moderated mediated model (Study 2).

Note. **p* <.05

3.13. Discussion

The first aim of Study 2 was to replicate the results of Study 1. The second aim was to include additional factors that may predict academic persistence (i.e., social adjustment, racial identification, and sense of belonging).

3.13.1. The effect of psychosocial factors on academic persistence

Study 1 demonstrated that academic adjustment, academic motivation, and help-seeking significantly predict academic persistence. Study 2 demonstrated that academic motivation, academic adjustment, and perceived academic workload significantly predict academic persistence. The results of Study 1 and Study 2 demonstrate that academic adjustment and academic motivation are constant predictors of academic persistence. Research on academic performance shows that academic adjustment (Chemers et al., 2001; Gerdes & Mallinckrodt, 1994; Richardson et al., 2012), academic motivation (Richardson et

al., 2012), and perceived academic workload (Macan, Shahani, Dipboye, & Phillips, 1990; McKenzie & Schweitzer, 2001; Petersen et al., 2009; Richardson et al., 2012) are predictors of academic persistence.

However, the other psychosocial factors that were investigated (i.e., help-seeking, perceived stress, social adjustment, sense of belonging, and racial identification) did not significantly predict academic persistence. The first explanation for the non-significant factors is that the psychosocial factors highly correlated with each other. When two or more predictor variables are correlated and are included in a model, one may become insignificant. The second explanation is that research has shown that certain psychosocial factors are essential for academic persistence during a particular period in a student's academic life (Petersen et al., 2010). Study 1 revealed that help-seeking predicted academic persistence.

In contrast to Study 1, Study 2 revealed that perceived academic workload predicted academic persistence. The different results between Study 1 and Study 2 may be due to the different periods during the academic year in which the data were collected. Study 1 was conducted during a period when students were preparing for examinations. Study 2 was conducted during a period when examinations were being completed. An explanation for the results is that help-seeking was salient among students who were preparing for examinations while perceived academic workload was salient among students who were completing their examinations.

Unexpectedly, perceived academic workload had a positive effect on predicting academic persistence. This result may be explained by the items used to measure academic persistence: intention to continue taking modules in the field of study, intention to continue studying in the field, intention to gain a bachelor's degree in the field of study, and intention to pursue postgraduate studies in the field of study. In other words, the value of persisting to

the next level may have become more salient when perceived academic workload was present. McKenzie and Schweitzer (2001) found that non-traditional students who had full-time responsibilities persisted academically more than their counterparts. McKenzie and Schweitzer (2001) argue that these non-traditional students may have been more motivated and may have had more explicit career goals than their counterparts.

3.13.2. The effect of identification with the academic department, identification with the university, racial identification, and sense of belonging on academic persistence

The second aim of Study 2 was to assess whether the inclusion of identification with the academic department and identification with the university, in addition to the known psychosocial factors, would improve the prediction of academic persistence. The results of Study 2 replicated those of Study 1; the inclusion of identification with the academic department and identification with the university improved the prediction of academic persistence. Additionally, identification with the department was a significant predictor in both studies, while identification with the university was not. In prior research, identification with academics was demonstrated to contribute to the prediction of meaningful cognitive engagement (Walker et al., 2006), which could be important for students' academic persistence.

Although previous studies demonstrated bivariate correlations between racial identification, sense of belonging, and academic persistence (Lockett & Harrell, 2003), the studies did not account for the unique variance indicated in the regression model in Study 2. Only academic adjustment, academic motivation, and identification with the academic department were significant predictors. Therefore, academic adjustment, academic motivation, and identification with the academic department seem to be more reliable predictors of academic persistence than the other factors.

Racial identification also did not significantly predict academic persistence. Inconsistent results have been reported concerning the role of racial identification and academic persistence. Cokley and Chapman (2008) found that racial identification significantly predicted academic persistence. Other studies reported significant negative relationships between racial identification and academic persistence (Cokley, McClain, Jones, & Johnson, 2012). However, in other studies, racial identification did not significantly predict academic persistence (Awad, 2007).

The non-significant results between racial identification and academic persistence show that salience may play a role in students' identification levels. Oyserman and Lewis (2017) emphasise that people interpret situations in ways that are congruent with their current active identities; they prefer identity-congruent actions to identity-incongruent behaviours and interpret any difficulties they encounter while considering identity-congruence. In the context of Study 2, it is possible that identification with the department was more salient for students because the academic department identity was congruent with their current situation.

3.13.3. Academic adjustment and academic motivation as mediators of the relationships between identification with the academic department, identification with the university and academic persistence

The third aim of Study 2 was to determine the mediation relationship between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation. The results revealed that only academic adjustment significantly mediated the relationship between identification with the academic department and academic persistence. The results also revealed that academic motivation significantly mediated the relationship between identification with the university

and academic persistence. These results suggest that identification with the academic department is essential in influencing academic adjustment, which subsequently influences academic persistence. The results also suggest that identification with the university is essential in influencing academic motivation, which informs students' academic persistence. As mentioned, the results are in line with previous research that demonstrated the mediator role of academic adjustment (Petersen et al., 2009; Sommer & Dumont, 2011). Therefore, this means that students who identify with the academic department are more likely to adjust to the university environment and to persist academically.

Academic adjustment has been shown to play a mediator role in previous studies (Petersen et al., 2009; Sommer & Dumont, 2011). Petersen et al. (2009) and Sommer and Dumont (2011) investigated academic adjustment as a mediator of the relationship between psychosocial factors and academic performance. The authors reported academic adjustment to mediate the relationship between psychosocial factors and academic performance. As a result, academic adjustment to university plays a critical role in a student's academic persistence or performance at university. Therefore, the higher the adjustment of students, the more they are likely to persist academically.

3.13.4. Students' group membership as a moderator for the mediated relationship between identification with the academic department/university and academic persistence via academic adjustment

The fourth aim of Study 2 was to test whether the relationship between identification with the academic department/university and academic persistence mediated via academic adjustment and academic motivation was moderated by the student's membership in a historically underrepresented or overrepresented group. The results partially confirmed the hypothesis. There was only a significant moderation effect by group status for the

relationship between identification with the academic department and academic adjustment for the historically underrepresented group, as was demonstrated in Study 1. This suggests that the relationship between identification with the academic department/university and academic persistence mediated by academic adjustment is more important for students from historically underrepresented groups than for students from historically overrepresented groups. An explanation for these results may be that students from historically underrepresented groups consider understanding the requirements of the academic department important for their adjustment to the university environment in order to persist academically and thus have a better future.

3.14. Implications

Study 2 has specific implications. Firstly, the results highlight the importance of adjustment processes, motivation processes, and academic workload. This means that universities should consider providing students with relevant support systems in order for the students to adjust smoothly into the academic environment, experience motivation, and manage their workload.

Secondly, the results suggest that academic adjustment, academic motivation, and academic persistence are influenced by social identity factors at university and academic departmental levels. Using the social categorisation theory, this means that identification with the academic department is meaningful to students because it provides a social context whereby the student identifies as a student who belongs to a particular department.

Lastly, the results of Study 2 suggest that students from historically underrepresented groups view understanding the requirements of the academic department to be important in

their adjustment to the university environment in order to persist academically and thus have a better future.

3.15. Limitations

Some limitations of Study 2 should be noted. Firstly, the measure of academic motivation was assessed using one item because of poor inter-item reliability. Additional items should be included to allow for a more valid measure of the construct.

Secondly, convenience sampling was used in the study to select respondents. Therefore, the results of Study 2 should be interpreted within the context in which the study was conducted, and the results may not be generalised to other universities.

3.16. Study 3

The aim of Study 3 was to explore the effect that psychosocial factors (i.e., academic motivation, academic adjustment, perceived stress, family attitudes towards university, family support regarding university, and general family support) and identity factors (i.e., identification with the academic department, identification with the university, and racial identification) have on academic persistence. Further, Study 3 considered whether students were first-generation students or continuing-generation students. More specifically, the following hypotheses were tested in Study 3 using a cross-sectional survey:

Hypothesis 1: Perceived stress has a negative effect on academic persistence while academic adjustment, academic motivation, family attitudes, family support regarding university, and general family support have a positive effect on academic persistence.

Hypothesis 2: Identification with the academic department, identification with the university, and racial identification together with the known psychosocial factors improve the prediction of academic persistence. In addition, the relationships are positive.

Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence.

Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by generation status.

3.17. Method

3.17.1. Respondents

The study was conducted with 376 students enrolled for undergraduate programmes at a university. The gender composition of the respondents was 51.9% female and 48.1% male. The racial representation of respondents was black respondents (n = 128; 52.5%), white respondents (n = 77; 31.6%), coloured respondents (n = 20; 8.2%), Indian respondents (n = 15; 6.1%), and respondents from other racial groups (n = 4; 1.6%). Gender and racial distributions of the sample for Study 3 were also representative of the university and the South African population. The generation representation of respondents was first-generation students (n = 80; 21.3%) and continuing-generation students (n = 162; 43.1%), with missing information (n = 134; 35.6%).

Most respondents studied at the university between 2015 and 2017 (n = 136; 57%). Respondents were enrolled at the College of Law, Human Sciences, Accounting Sciences, Science, Engineering and Technology, Education, and Agriculture and Environmental Sciences (i.e., study fields: law, information technology, engineering, agriculture, education, and social sciences). Table 10 provides an overview of the demographic characteristics of the respondents.

Table III-10. Demographic characteristics of respondents (Study 3)

	n	%
Gender		
Male	114	48.1
Female	123	51.9
Race		
Black	128	52.5
Coloured	20	8.2
Indian	15	6.1
White	77	31.6
Other	4	1.6
Faculty		
Accounting Sciences	19	7.7
Agriculture and Environmental Sciences	30	12.1
Economic and Management Sciences	30	12.1
Education	20	8.1
Human Sciences	66	26.6
Law	48	19.4
Science, Engineering and Technology	35	14.1
Study Field		
Accounting science	16	6.6
Education	19	7.8
Engineering	23	9.4
Information technology	5	2.0
Law	42	17.2
Social science	58	23.8
Agriculture	13	5.3
Information science	8	3.3
Other fields	60	24.6
Year of Registration		
2008	28	11.7
2009	9	3.8
2010	7	2.9
2011	10	4.2
2012	8	3.3
2013	15	6.3
2014	26	10.9
2015	32	13.4
2016	25	10.5
2017	79	33.1

3.17.2. Procedure

As in Study 1 and Study 2, data were collected using the Qualtrics software. The first section of the questionnaire involved assessing the respondents' academic persistence in the form of intention to continue with studies. Respondents' motivation, academic adjustment, perceived stress, identification with the academic department, identification with the university, identification with a racial group, family attitudes, family support regarding university, and general support from the family were examined. The second section of the questionnaire involved assessing respondents' generation status and other demographic details (i.e., gender, age, residence, nationality, and race). In addition, respondents were asked to indicate their faculty and study field.

3.17.3. Measures

As in Study 1 and Study 2, all the measurements for Study 3 were presented on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), unless stated differently. Two items were used to measure academic motivation ($r = .40$, $n = 248$, $p < .001$). The following items were used to measure academic motivation: 'I experience pleasure and satisfaction when learning new things'; and 'I feel satisfied when I accomplish difficult academic activities'. The measures of academic persistence ($\alpha = .84$), perceived stress ($\alpha = .76$), academic adjustment ($\alpha = .67$), identification with the academic department ($\alpha = .81$), and identification with the university ($\alpha = .84$) were assessed as in Study 1 and Study 2. Racial identification ($\alpha = .90$) was also assessed as in Study 2.

Generation status. The construct was assessed using six items. The following items were used to measure generation status: 'I have a primary caretaker (person who looked after you when growing up) who attended university'; 'I have a primary caretaker (person who

looked after you when growing up) who graduated from university'; 'I have another caretaker who is not my primary caretaker who attended university'; 'I have another caretaker who is not my primary caretaker who graduated from university'; 'I have a family member (other than a caretaker) who attended university'; and 'I have a family member (other than a caretaker) who graduated from university'. Responses were provided using a 'yes' or 'no' format. First-generation respondents constituted 66.9% of the sample, and continuing-generation students accounted for 33.1%.

Family attitudes towards university. This was assessed with four items that were developed for this study by drawing on previous research on family attitudes towards university (Cheng et al., 2012; Song et al., 2015; Zimet, Dahlem, Zimet, & Farley, 1988). The original scale consisted of eight items, but only four items were selected for Study 3: 'In general, my family supports the idea of me going to university'; 'In general, my family is proud that I am going to university'; 'In general, my family wants me to graduate from university'; and 'I can easily talk to my family about university life' (α = .87).

Family support regarding university. Family support regarding university (the extent to which family members were able to provide university-related support) was measured with four items that were developed for this study by drawing on previous research on family support regarding university (Cheng et al., 2012; Song et al., 2015; Zimet et al., 1988): 'I have a family member who gives me advice about university'; 'I have a family member who can answer questions that I have about university'; 'I have a family member who helps me with the challenges of university life'; and 'My family is a valuable resource for me to talk to about university' (α = .92).

General support from family. The construct was developed for this study by drawing on previous research on general support from members of the family (Cheng et al., 2012; Song et al., 2015; Zimet et al., 1988). Four selected items from the scale were adjusted to the context of Study 3: 'I get emotional support from my family'; 'In general, I can talk about my problems with my family'; 'I can count on my family when things go wrong'; and 'In general, my family really tries to help me' (α = .90).

3.18. Data Analysis

As in studies 1 and 2, the data analysis of Study 3 included reliability analysis, descriptive statistics of the data, group comparison, correlation analysis, and path analysis. As in the previous studies, data analysis was conducted using SPSS 24 and AMOS 24.

3.19. Results

3.19.1. Preliminary analysis

The means, standard deviations, and correlations of the variables are provided in Table 11. A Pearson correlation was conducted to identify the strength and direction of relationships between the variables. Academic persistence (M = 1.56; SD = .67, p = .001) was positively correlated with academic motivation (M = 1.21; SD = .41, p = .001), academic adjustment (M = 1.96; SD = .60, p = .001), perceived stress (M = 2.91; SD = .84, p = .001), identification with the academic department (M = 2.36; SD = .81, p = .001), identification with the university (M = 2.36; SD = .85, p = .001), identification with a racial group (M = 2.50; SD = .93, p = .01), family attitudes towards university (M = 1.40; SD = .72, p = .001), and family support regarding university (M = 2.87; SD = .140, p = .01). However, there was no significant correlation between general support from family and academic persistence.

Table III-11. Means, standard deviations, and intercorrelations among variables of the sample (Study 3)

Variable	1	2	3	4	5	6	7	8	9	10
M	1.56	1.21	1.96	2.92	2.36	2.36	2.50	1.40	2.87	1.92
SD	0.67	0.41	0.60	0.84	0.81	0.85	0.93	0.72	1.40	1.12
Min	1	1	1	1	1	1	1	1	1	1
Max	5	5	5	5	5	5	5	5	5	5
1 Academic persistence	-									
2 Academic motivation	.283**	-								
3 Academic adjustment	.359**	.341**	-							
4 Perceived stress	.170**	.159*	.442**	-						
4 Identification with the academic department	.370**	.240**	.452**	.132*	-					
5 Identification with the university	.305**	.214**	.399**	0.115	.795**	-				
6 Identification with racial group	.132*	.150*	.247**	0.031	.555**	.492**	-			
7 Family attitudes towards university	.191**	.178**	.254**	.284**	.234**	.226**	.203**	-		
8 Family support regarding university	.129*	0.076	.266**	.176**	.285**	.171**	.140*	.456**	-	
9 General support from family	0.072	.132*	.245**	.309**	.181**	.161*	.170**	.638**	.560**	-

Note. † <.10; *p <.05; **p <.01; ***p <.001

The means, standard deviations, and correlations of the variables for first-generation and continuing-generation groups are reported separately in Table 12. The first section of the table reports the correlations for continuing-generation students, and the second section reports the correlations for first-generation students.

To some degree, the two groups differed in the significance of the correlations. For both groups, academic persistence (first-generation: M = 1.50; SD = .61; $t(240) = 1.00$, $p > .05$, continuing-generation: M = 1.59; SD = .68; $t(240) = 1.00$, $p > .05$) was positively correlated with perceived stress (first-generation: M = 2.72; SD = .85; $t(240) = 2.42$, $p = .05$, continuing-generation: M = 3.00; SD = .82; $t(240) = 2.42$, $p = .05$); family support regarding

university (first-generation: M = 2.33; SD = 1.32; $t(240) = 4.28$, $p = .001$, continuing-generation: M = 3.12; SD = 1.36; $t(240) = 4.28$, $p = .001$), and general support (first-generation: M = 1.62; SD = .99; $t(240) = 2.92$, $p = .01$, continuing-generation: M = 2.04; SD = 1.14; $t(240) = 2.92$, $p = .01$).

Table III-12. Means, standard deviations, and intercorrelations among variables for first generation and continuing generation groups (Study 3)

		1	2	3	4	5	6	7	8	9	10
First generation	M	1.50	1.21	1.85	2.72	2.33	2.34	2.50	1.28	2.33	1.63
	SD	0.61	0.35	0.61	0.85	0.75	0.76	1.00	0.66	1.33	0.99
Continuing generation	M	1.59	1.99	1.20	3.00	2.38	2.37	2.51	1.45	3.12	2.04
	SD	0.68	0.60	0.43	0.82	0.83	0.83	0.90	0.74	1.36	1.14
F statistics		(1.240) =0.523	(1.239) =0.187	(1.239) =0.025	(1.240) =0.229	(1.240) =1.582	(1.239) =2.535	(1.237) =1.333	(1.239) =3.837	(1.240) =0.366	(1.240) =4.294
1 Academic persistence		-	.258**	.347**	.180*	.404**	.323**	.232**	.161*	0.111	0.021
2 Academic motivation		.437**	-	.266**	0.125	.168*	.178*	0.118	0.106	0.051	0.116
3 Academic adjustment		.390**	.555**	-	.404**	.467**	.400**	.251**	.163*	.235**	.197*
4 Perceived stress		.118	.298**	.494**	-	0.148	0.153	0.125	.294**	.186*	.330**
5 Identification with the academic department		.339**	.431**	.445**	0.116	-	.794**	.584**	.249**	.247**	.185*
6 Identification with the university		.267*	.323**	.410**	0.046	.796**	-	.537**	.284**	0.122	.190*
7 Racial identification		-.007	.237*	.251*	-0.111	.491**	.406**	-	.233**	0.112	0.149
8 Family attitudes towards university		.259*	.333**	.401**	.247*	0.130	0.040	0.113	-	.413**	.642**
9 Family support regarding university		197	0.107	.261*	0.054	.343**	.280*	0.179	.508**	-	.542**
10 General support from family		.143	0.148	.286*	0.192	0.070	0.044	0.196	.599**	.523**	-

Note. The correlation coefficients in the lower part of the table refer to continuing-generation respondents while the upper part in the table refers to those of first-generation respondents.
† <.10; *p <.05; **p <.01; ***p <.001

3.19.2. Hypothesis Testing

The first hypothesis was tested. Hypothesis 1 states that perceived stress has a negative effect on academic persistence while academic adjustment, academic motivation, family attitudes towards university, family support regarding university, and general support from family have a positive effect on academic persistence. The data met the assumption of non-zero variances (see Table 13). A hierarchical regression analysis was used to determine the influences of the psychosocial factors on academic persistence (see Table 13).

Academic persistence was regressed on academic adjustment, academic motivation, perceived stress, family attitudes towards university, family support regarding university, and general support from family. The regression model was significant (F (6.236) = 8.817, p <.001) and explained 18.3% of the variance in academic persistence. Only three predictor variables significantly predicted the outcome variable: academic motivation (β = .17, t = 2.736, p <.001), academic adjustment (β = .29, t = 4.037, p <.001), and family attitudes towards university (β = .16, t = 1.967, p = .05). The results suggest that students who show high academic motivation and academic adjustment are more likely to demonstrate academic persistence. The results also show that family attitudes towards university have the potential of contributing to students' academic persistence. The first hypothesis states that perceived stress has a negative effect on academic persistence. In contrast, academic adjustment, academic motivation, family attitudes towards university, family support about university, and general support from family have a positive effect on academic persistence. The first hypothesis was partially confirmed.

The second hypothesis states that identification with the academic department, identification with the university and racial identification together with the known

psychosocial factors improve the explained variance in academic persistence. This hypothesis was tested by extending the previous regression model to include identification with the academic department, identification with the university, and racial identification as predictor variables. The regression model was significant (F (9, 233) = 8.006, p <.001), and identification with the academic department, identification with the university, and racial identification accounted for an additional 5.3% of the variance in academic persistence. The change statistic reached statistical significance (F_{Change} (3, 233) = 5.398, p <.001). The predictor variables that significantly predicted academic persistence in the extended model were identification with the academic department (β = .30, t = 2.843, p <.01), academic motivation (β = .16, t = 2.527, p <.01), and academic adjustment (β = .18, t = 2.430, p <.001). The second hypothesis, which states that identification with the academic department, identification with the university and racial identification together with the known psychosocial factors improve the explained variance in academic persistence, was confirmed. However, not all the factors were significant predictors.

Table III-13. Hierarchical regression analysis (Study3)

	Variable	R^2	*B*	*SE*	β	*t*	Sig.	VIF
Model 1	Academic motivation	18.3%	.285	.104	.173	2.736	.007	1.157
	Academic adjustment		.322	.080	.286	4.037	.000	1.446
	Perceived stress		.013	.055	.016	0.238	.812	1.333
	Family attitudes towards university		.145	.074	.155	1.967	.050	1.785
	Family support regarding university		.026	.035	.055	0.748	.455	1.551
	General support from family		-.094	.051	-.155	-1.836	.068	2.069
Extended Model 2	Academic motivation	23.6%	.257	.102	.156	2.527	.012	1.166
	Academic adjustment		.205	.084	.182	2.430	.016	1.708
	Perceived stress		.027	.054	.034	0.501	.617	1.364
	Family attitudes towards university		.126	.073	.134	1.733	.084	1.822
	Family support regarding university		.003	.035	.006	0.083	.934	1.637
	General support from family		-.078	.050	-.130	-1.575	.117	2.092
	Identification with the academic department		.249	.088	.296	2.843	.005	3.315
	Identification with the university		.011	.077	.013	0.141	.888	2.801
	Identification with racial groups		-.081	.051	-.112	-1.604	.110	1.489

Note. † <.10; *p <.05; **p <.01; ***p <.001

The third hypothesis states that academic adjustment and motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence. A path analysis using the AMOS 24 software was conducted in order to test the proposed mediation model. Goodness-of-fit statistics showed poor fit (χ^2 (4) = 36.336, p = .000; NFI = .908; CFI = .914 and RMSEA = .218).

Despite the poor fit of the model, the standardised parameter estimates are presented in Figure 5. Identification with the academic department was significantly predictive of academic adjustment (β = .405, *SE* = 0.112, p <.001). In addition, academic adjustment (β = .308, *SE* = 0.080, p <.001) and academic motivation (β = .209, *SE* = 0.99, p <.001) were significantly predictive of academic persistence.

The significance of the total indirect effects was tested as in studies 1 and 2 to assess if mediation was present. As hypothesised, the indirect effect of identification with the academic department on academic persistence via academic adjustment and academic motivation was significant, with a point estimate of .130 (*SE* = 0.045) and a 95% CI of .061 to .213. The indirect effect of identification with the university on academic persistence via academic adjustment and academic motivation was not significant, with a point estimate of .032 (*SE* = 0. 032) and a 95% CI of -.016 to .095. The third hypothesis was partially confirmed since the total indirect effect involving identification with the academic department was significant, but the indirect effect involving identification with the university was not significant.

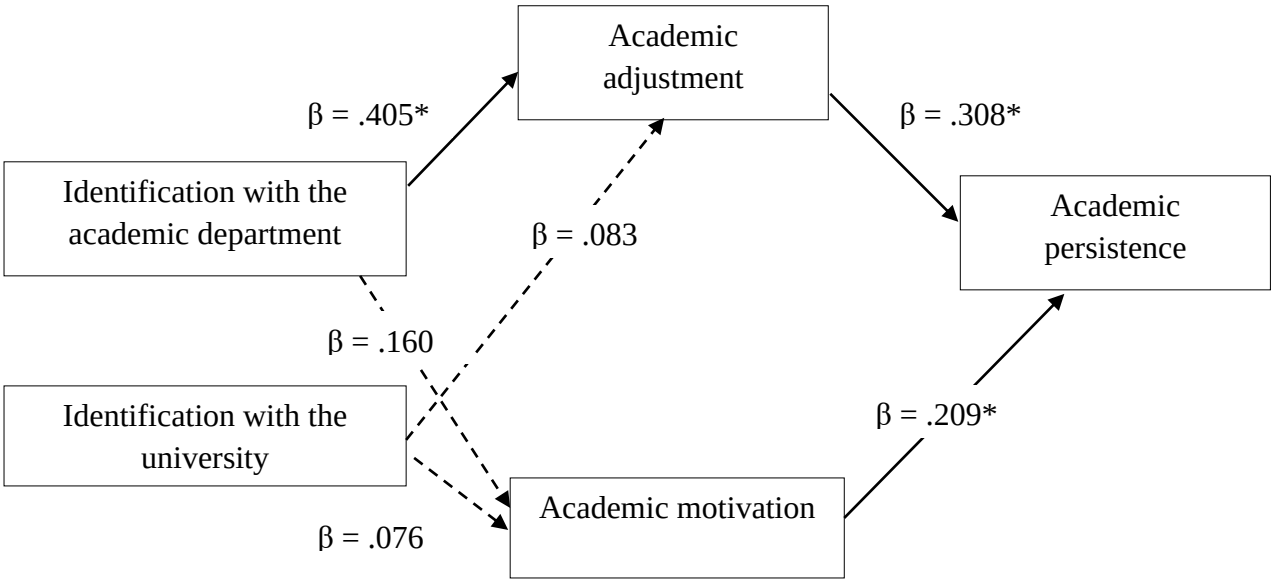

Figure III-5. The mediated model of identification with the academic department/university and academic persistence via academic adjustment and academic motivation (Study 3).

Note. Solid lines represent paths that had significant effects. Dashed lines represent paths that did not have significant effects; *p <.05

The fourth hypothesis predicted that the paths in the mediation model are moderated by the respondents' generation status. The same procedure used in studies 1 and 2 were used in Study 3. The most parsimonious model, with cross-group constraints on all parameters, showed a good fit to the data (χ^2 (12) = 50.471, p = .001; NFI = .879; CFI = .903 and RMSEA = .118). Model 1 allowed the path parameters between identification with the academic department and academic adjustment, identification with the university and academic adjustment and the path between academic adjustment and academic persistence to vary between groups. However, Model 1 did not differ significantly from the parsimonious model (Chi-square difference: χ^2 (3) = 4.787, p = .188; Model indices: χ^2 (9) = 45.684, p = .001; NFI = .890; CFI = .907 and RMSEA = .133). Model 2 had path parameters between identification with the academic department and academic motivation, identification with the university and academic motivation, and academic motivation and academic persistence, which were allowed to vary between groups. Model 2 also did not differ significantly from the parsimonious model (Chi-square difference: χ^2 (1) = 0.783, p = .085; Model indices: χ^2 (9) = 49.688, p = .001; NFI = .880; CFI = .897 and RMSEA = .140). Model 3 had path parameters between academic adjustment and academic persistence and between academic motivation and academic persistence, which were allowed to vary between groups. Model 3 also did not differ significantly from the parsimonious model (Chi-square difference: χ^2 (4) = 4.855, p = .299; Model indices: χ^2 (8) = 45.586, p = .001; NFI = .890; CFI = .905 and RMSEA = .142).

The same procedure used in studies 1 and 2 was used in Study 3 to determine if individual moderation effects had occurred. Figure 6 provides a depiction of the moderated mediated analysis. There was a significant moderation effect by generation status for the path from identification with the academic department to academic motivation since the path was

significant for first-generation students (B = .491, SE = 0.205, p <.01) students. A significant moderation effect also occurred for the path from academic motivation to academic persistence since the path was significant for first-generation students (B = .277, SE = 0.159, p <.05).

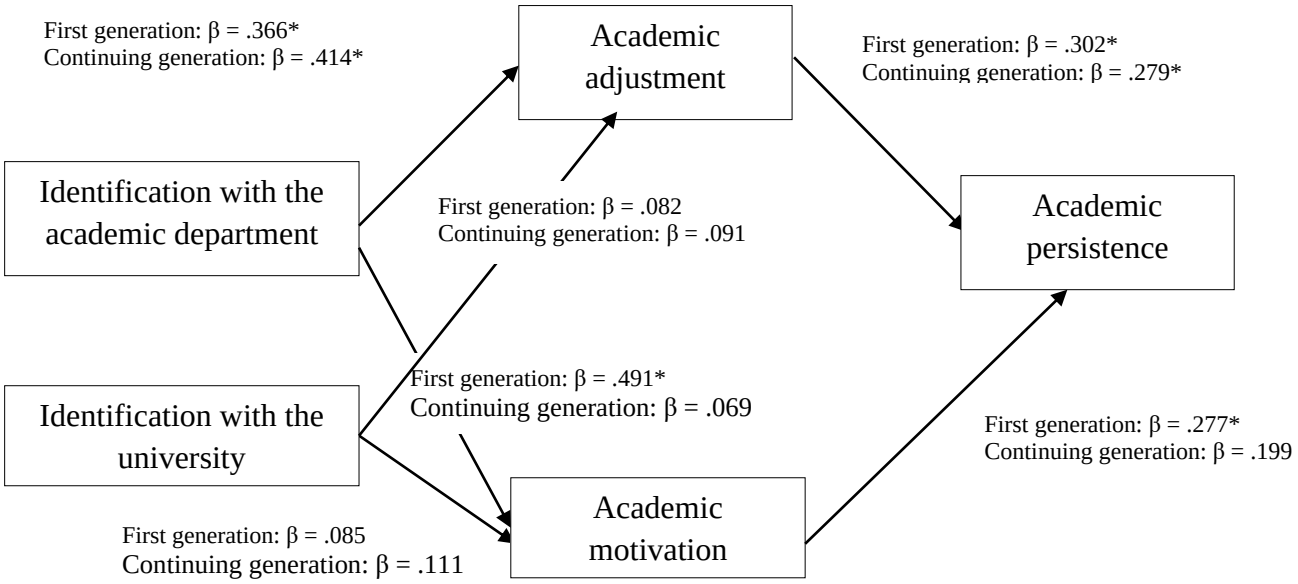

Figure III-6. The moderated mediated model (Study 3).

Note. *p <.05

3.20. Discussion

Study 3 expanded on studies 1 and 2 by including additional factors that may predict academic persistence (i.e., family attitudes towards university, family support regarding university, and general support from family) and by considering whether first-generation status and continuing-generation status moderated the mediation model.

3.20.1. The effect of psychosocial factors on academic persistence

The first aim of Study 3 was to assess the effect of perceived stress, academic adjustment, academic motivation, family attitudes towards university, family support regarding university, and general support from family on academic persistence. It was expected that perceived stress would have a negative effect on academic persistence while academic adjustment, academic motivation, family attitudes towards university, family support regarding university, and general support from family would have a positive effect on academic persistence. The results for Study 3 demonstrated that academic motivation, academic adjustment, and family attitudes towards university predicted academic persistence. These results are in line with research that has demonstrated the role of academic motivation (Bonneville-Roussy, Evans, Verner-Filion, Vallerand, & Bouffard, 2017; Petersen et al., 2010), academic adjustment (Lopez & Jones, 2017; Rodrigues, Tinajero, & Páramo, 2017; van Rooij, Jansen, & van de Grift, 2017), and family attitudes towards university (Carter-Francique, Hart, & Cheeks, 2015) on academic persistence.

However, perceived stress, family support regarding university, and general support from family did not significantly predict academic persistence. While perceived stress has been demonstrated to have a positive effect on academic persistence (Banu, Deb, Vardhan, & Rao, 2015; Richardson et al., 2012; Stallman, 2010; Vaez & Laflamme, 2008), it has also been demonstrated to be a non-significant predictor of academic persistence (Petrie & Stoever, 1997; Rafidah et al., 2009; Sandler, 2000; Zajacova et al., 2005). General support from family has been shown to influence academic persistence (Carter-Francique et al., 2015; Cheng et al., 2012; Gore et al., 2016) as has family support regarding university (Song et al., 2015). However, when including the effect of family attitudes towards university on

academic persistence, general family support, and the support of family members regarding university may become less critical.

3.20.2. The effect of identification with the academic department, identification with the university, and racial identification on academic persistence

The second hypothesis states that identification with the academic department, identification with the university, and racial identification together with the tested psychosocial factors improve the explained variance in academic persistence. The results of studies 1 and 2 were replicated. Only identification with the academic department predicted academic persistence.

3.20.3. Academic adjustment and academic motivation as mediators of the relationship between identification with the academic department, identification with the university and academic persistence

The third hypothesis predicted that academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department, identification with the university and academic persistence. The results revealed that academic adjustment and academic motivation significantly mediated the relationship between identification with the academic department and academic persistence, as was demonstrated in studies 1 and 2. The relationship between identification with the university and academic persistence was not mediated by academic adjustment and academic motivation in Study 3.

3.20.4. Student's generation status as a moderator for the mediated relationship between identification with the academic department, identification with the

university and academic persistence via academic adjustment and academic motivation

Finally, Study 3 tested whether the student's generational status moderated the paths in the mediation model. The results partially confirmed Hypothesis 4. There was a significant moderation effect by generation status for the relationship between identification with the academic department and academic motivation for first-generation students. There was also a significant moderation effect by generation status for the relationship between academic motivation and academic persistence for first-generation students. These results correspond with the findings of research that academic motivation is a predictor of academic persistence among first-generation students when compared with continuing-generation students (Dennis, Phinney, & Chuateco, 2005; Próspero & Vohra-Gupta, 2007). The results also highlight the importance of identification with the department for first-generation students, which was also the case for students from historically underrepresented groups (studies 1 and 2).

3.21. Implications

Study 3 has specific implications. Firstly, the results highlight the importance of adjustment processes, motivation processes, and family support. This means that in addition to support systems at university, family support is essential for students' meaningful learning experience in order for them to persist academically.

Secondly, in line with studies 1 and 2, the results of Study 3 suggest that academic adjustment, academic motivation, and academic persistence are influenced by social identity factors at an academic departmental level.

Lastly, the results of Study 3 highlight the importance of social identity factors for first-generation students, adjustment processes, motivational processes, and academic persistence.

3.22. Limitations

Certain limitations of Study 3 should be noted. Firstly, the measure of academic motivation was assessed using two items because of poor inter-item reliability. Additional items should be included to allow for a more valid measure of the construct.

Secondly, convenience sampling was used to select respondents for the study. Therefore, the results of Study 3 should be interpreted within the context in which it was conducted, and the results may not be generalised to other universities.

Table III-14. Summary results of the tested hypotheses of the present thesis

Study	Hypothesis	Confirmed	Partially confirmed	Not supported at all
Study 1	Hypothesis 1: Perceived stress and perceived academic workload are negative predictors of academic persistence, while help-seeking, academic motivation, and academic adjustment are positive predictors of academic persistence.		•	
	Hypothesis 2: Identification with the academic department, identification with the university, and perceived university image together with the known psychosocial factors improve the prediction of academic persistence. Each is a positive predictor of academic persistence.		•	
	Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence.	•		
	Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by membership in a historically underrepresented or overrepresented group.	•		
Study 2	Hypothesis 1: Perceived stress and perceived academic workload are negative predictors of academic persistence, while help-seeking, academic motivation, and academic adjustment are positive predictors of academic persistence.		•	
	Hypothesis 2: Social adjustment, identification with the academic department, identification with the university, racial identification, and sense of belonging together with the known psychosocial factors improve the prediction of academic persistence.		•	

	Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence.	•	
	Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by membership in a historically underrepresented or overrepresented group.	•	
Study 3	Hypothesis 1: Perceived stress has a negative effect on academic persistence, while academic adjustment, academic motivation, family attitudes, family support regarding university, and general support from family have a positive effect on academic persistence.		•
	Hypothesis 2: Identification with the academic department, identification with the university, and racial identification together with the known psychosocial factors improve the prediction of academic persistence. In addition, the relationships are positive.		•
	Hypothesis 3: Academic adjustment and academic motivation significantly mediate the relationship between identification with the academic department and academic persistence and the relationship between identification with the university and academic persistence.		•
	Hypothesis 4: Hypothesis 4: The mediated relationships between identification with the academic department, identification with the university and academic persistence via academic adjustment and academic motivation are moderated by generation status.		•

CHAPTER IV

GENERAL DISCUSSION

This chapter presents a discussion of the results of the present thesis. Moreover, the results are placed in context with previous research. The aims of the current research are detailed, and a summary of the significant results and contributions regarding the understanding of the role of psychosocial and social identity factors on academic persistence is provided. A detailed discussion of each contribution and its implication is presented, demonstrating how psychosocial and social identity factors influence university students. Thereafter, previous discourse in the literature is discussed, and recommendations are made for university personnel in order to assist, support, and help students to have a good university experience. The limitations of the study are outlined and followed by recommendations for future research.

The primary motivation in conducting the present study was the scarcity of local research that addressed psychosocial and social identity factors and their roles towards explaining academic persistence at university. This thesis should be viewed as ‘a step in the right direction’ because it advances and extends current knowledge and the understanding of students’ experiences at university, particularly students from historically underrepresented groups. The overall purpose of the present study was to identify and explore the role of psychosocial and social identity factors on academic persistence. Path analysis was applied to test different theoretical models and to determine which model is most appropriate for students enrolled in higher education. Besides establishing the direct and indirect effects of the psychosocial and social identity variables of academic adjustment, academic motivation,

and academic persistence, the present study examined the possibility of group differences among these psychosocial and social identity variables.

The present thesis aimed to add to the existing body of knowledge on academic persistence for undergraduate students. Three studies were conducted to determine the role of previously studied psychosocial factors and additional social identity factors in predicting academic persistence. It was argued that in addition to psychosocial factors (i.e., academic adjustment, academic motivation, perceived stress, academic motivation, help-seeking, family support regarding university, general support from family, and family attitudes towards university), social identity plays a role in academic persistence.

All three studies determined that only academic adjustment and academic motivation predicted academic persistence, considering the previously studied psychosocial factors. These results are in line with previous research that demonstrated the role of academic adjustment in influencing academic persistence (Baker & Siryk, 1984; Chemers et al., 2001; Gerdes & Mallinckrodt, 1994; Petersen et al., 2010; Richardson et al., 2012). Research has also demonstrated that academic motivation can influence a student's academic persistence (Allen & Robbins, 2010; Mega et al., 2014; Vallerand & Bissonnette, 1992; Vallerand et al., 1997; Vanthournout et al., 2012).

Moreover, family attitudes towards university predicted academic persistence in the third study. The results are in line with previous research that demonstrates the role of family advice about university on academic persistence (Clark, 2015; Li, Han, Wang, Sun, & Cheng, 2018). This means that students' home environments can affect their psychological processes, resulting in positive or negative academic outcomes. For example, students are more likely to persist academically when members of the family value education or provide them with

positive university advice. Therefore, family members should be sensitive to the advice that they give to students.

All three studies determined that only identification with the academic department significantly predicted academic persistence when all other factors were included in the regression analyses, considering the social identity factors. The mediation analyses in all three studies demonstrated that students who strongly identify with the academic department demonstrate better adjustment to the university environment and are more motivated academically, both of which proved to be related to academic persistence. The results suggest that identification with the department plays a role in a student's academic adjustment and academic motivation, which influences academic persistence. Social identity theory provides an explanation for these consistent results. Social identity theory highlights that intergroup behaviour is guided by the pursuit of positive evaluative social identities through positive intergroup distinctiveness, which is subsequently motivated by the need for positive self-esteem (Abrams & Hogg, 1988; Hogg & Abrams, 1990, 1993; Hogg & Mullin, 1999). In the context of the present thesis, the need for a positive distinctiveness may have led students to identify strongly with the academic department since this would enable them to distinguish themselves from students enrolled in other departments. For example, a student may receive positive affirmations when they identify themselves as psychology students among engineering students and vice versa. Furthermore, this effect of identity may be more substantial when identifying with the department than when identifying with the university overall.

The present study also tested whether the mediation relationship between identification with the academic department/university and academic persistence via academic adjustment and academic motivation would be conditional upon racial group or

generation status. The results revealed that identification with the academic department was an incredibly important factor for predicting academic adjustment for students from historically underrepresented groups (studies 1 and 2). The results suggest that for students from historically underrepresented groups, identification with the academic department and academic adjustment are especially crucial for academic persistence. The results emphasise the importance that academic departments should place on identification, especially for students from historically underrepresented groups. Although academic persistence may be a product of academic adjustment, efforts by academic departments to facilitate identification with the academic department can improve adjustment into the university environment for students from historically underrepresented groups. This is because students from historically underrepresented groups receive little or no support in attending university and may experience difficulties in balancing family, friends, and educational demands (Strayhorn, 2006). Hunt et al. (2018) highlight that students from historically underrepresented groups place more emphasis on social interactions as a reason for going to university than on degree attainment and employment after graduation.

The results also revealed a moderation effect by generation status for the relationship between identification with the academic department and academic motivation for first-generation students (Study 3). Another moderation effect by generation status occurred for the relationship between academic motivation and academic persistence. These results suggest that identification with the department may be particularly important for first-generation students in terms of how it affects academic motivation. Furthermore, the results demonstrate that the relationship between motivation and persistence is also essential for first-generation students. The importance of academic motivation for first-generation students can be explained by the difference between personal and collective reasons for

pursuing academics. Some students may experience motivation based on their interests, intellectual curiosities, and the desire to attain a rewarding career. Alternatively, collective motivation involves going to university in order to meet the expectations of family members or to change the social status of a family (Dennis et al., 2005). Therefore, students who experience collective motivation may ensure that they understand the requirements of the academic department, and their vision of an improved social status for their group increases their motivation to learn and to persist academically.

The results may also have been due to a reciprocal relationship between identifying with the academic department and academic motivation among first-generation students. While identifying with the academic department may reinforce student motivation to achieve, academic motivation may have an effect on increasing identification with the department.

The present thesis revealed underlying factors that may help to explain research findings that show that an increase in access to a university does not automatically lead to equal graduation rates for students from historically underrepresented groups or first-generation students (Soudien, 2010). Specifically, the degree to which historically underrepresented students and first-generation students identify with their academic departments has a significant impact on the psychological factors that influence academic persistence and subsequently, graduation rates.

4.1. Contributions of the Present Thesis

The thesis contributed towards understanding student behaviour at university and in identifying how students can benefit from assistance to persist academically. The results are essential for universities such as those in South Africa with historically underrepresented students and first-generation students in order to facilitate student throughput and retention.

The thesis demonstrated additional empirical support for the role that psychosocial factors play in predicting academic persistence. The thesis contributed to the understanding that identified socio-economic factors and the lack of preparedness for university in students are not the only factors that influence academic persistence among university students. The thesis highlighted the central role of academic adjustment and academic motivation on students' academic persistence. Also, other psychosocial factors (i.e., help-seeking and family attitudes towards university) were demonstrated in the research to influence students' academic persistence at university. The results add to the existing knowledge on the psychosocial factors that influence academic persistence, the research of which is limited. This applies particularly to identification with the academic department, identification with the university, and racial identification since these factors are unique and have not been previously tested to determine their influence on academic persistence at universities. To the knowledge of the researcher, the present thesis is the only thesis that addresses and assesses academic persistence with the focus on social identity in the South African context.

Although previous studies have examined the role of identification with academics (Griffin, 2002; Osborne, 1997, 1999; Osborne & Jones, 2011; Osborne & Walker, 2006; Walker et al., 2006) and school identification (Voelkl, 1997) on students' cognitive engagement and achievement behaviours, the role of identification with the academic department and the university has not been thoroughly examined in the university environment.

An additional contribution of the research is the mediation relationship between identification with the academic department/university and academic persistence via academic adjustment and academic motivation. These relationships are also unique and have not been previously tested.

A further contribution is the assessment of moderator variables (i.e., race group and generation status) in the present thesis. Research on the effects of these two moderator variables is also limited.

4.2. Implications

The results confirmed that there were several demographic differences (i.e., race and generation status) and some path differences among the investigated variables. This suggests that future research should consider moderator variables that will extend current knowledge, enhance their appropriate interpretation and facilitate their application among specific groups of students. The South African higher education system is changing, as are the educational systems in other African countries and countries worldwide. However, in order to make higher education systems more accessible, their transformation must involve more than merely access and admission to universities. A racially representative university does not necessarily mean it is a transformed institution (Soudien, 2010). This is demonstrated by the inverse relationship between the increase in students accessing university and the low graduation and retention rates of students from historically underrepresented groups.

The results demonstrated that when the students from historically underrepresented groups identify with the department/university, they adjust well, are motivated and benefit greatly in their academic persistence. The results of the present study indicate implications for institutional policy. For example, universities and academic departments should invest in approaches for first-generation students and for students from historically underrepresented groups that increase identification with academic departments in order to increase academic persistence and possibly graduation rates. McClain and Cokley (2017) highlight that the trust

of students from historically underrepresented groups in the faculty is important for students' academic persistence.

One way to increase rapport with students from historically underrepresented groups may be to invest in multicultural environments. According to Branscombe, Schmitt, and Harvey (1999), multiculturalism permits a sense of distinctiveness, which is important for social identity and positive well-being. This is because a multicultural society protects the well-being of devalued groups by directly encouraging group identification and by making an essential self-protective strategy in the face of discrimination possible (Branscombe et al., 1999). In line with this argument, Ogbu (1992) suggests that students could be assisted in developing a sense of belonging in academia through universities using a strategy of "accommodation without assimilation". When students are accommodated into the university environment, they experience a sense of belonging because they can participate in the university's primary culture and language together with their own without losing their identity.

The results also demonstrated the role of the university environment in affecting students' psychological processes leading to positive or negative academic outcomes. This is because students from historically underrepresented groups have to adjust continuously to different but related university systems. The adjustment process forces students to assimilate into university requirements in order to persist academically. Tinto (1993) argues that students from historically underrepresented groups experience challenges when adjusting to the university environment because their values and norms are not congruent with those of students from historically overrepresented groups. Students from historically underrepresented groups often experience social discomfort, isolation, and stress due to the difficulty in adjusting to the university environment. This is because the changes in

individuals' personal and collective experiences and social realities regarding their group identities present them with challenges with their group categorisations (Turner, Reynolds, Haslam, & Veenstra, 2006). This suggests that students from historically underrepresented groups have the option of either assimilating the values and norms of the university in order to persist academically or dropping out. Jetten et al. (2008) refer to this option of assimilating or dropping out as the costs of identification.

Although institutional restructuring has occurred within the education sector, institutional cultures in South Africa still require attention in fostering equity and interaction, especially in previously advantaged universities (Binikos & Rugunanan, 2015). According to Jansen (2004), transformation transcends the visible and publicised material of how far South Africa has come and how its course was filled with difficulties. The author further highlights that universities have been successful at racial desegregation but have been less successful in achieving the ideal institutional culture integration, retaining a culture that still fails to include, accommodate, and affirm racial diversity and differences fully (Jansen, 2004). Matthews (2013) proposes that a culture of support for transformation may not accompany institutional transformation on its own. The author states that making a previously advantaged South African university function in a way that is not racist is not easy and cannot be achieved solely through establishing appropriate policies and procedures. Matthews (2013) argues that in post-segregationist settings (places where segregation has been removed), racism often operates in subtle ways. This suggests that institutional transformation is more than merely macro structuring that repositions the public image of higher education; universities should consider transforming their environment in order to serve the diverse populations better.

In 2014, the English-medium University of KwaZulu-Natal in South Africa introduced the native language of isiZulu as a compulsory subject for all new students. It was believed that learning isiZulu would enhance students' general education and help improve throughput. Since isiZulu is the local language of the university, the introduction of isiZulu was also envisaged to help staff and students to engage better with their local community during in-service learning and in research-led community projects (Ndimande-Hlongwa, Balfour, Mkhize, & Engelbrecht, 2010). Students' low performance in the College of Law and Management at the University of KwaZulu-Natal was linked to not understanding the content in English (Kamwendo, Hlongwa, & Mkhize, 2014). The introduction of isiZulu was reported to have resulted in an increased number of students wanting to participate in the tutorials and improved academic outcomes for the first-year programme (Kamwendo et al., 2014). In addition, Majors and Billson (1992) highlight that a sense of belonging in academia, and perhaps identification, can be fostered by incorporating Afrocentric ideas that include teaching values, cooperation, mutual respect, and commitment together with the love of family, race, community, and nation from the perspective of historically underrepresented groups.

4.3. Limitations

The present thesis has certain limitations that should be noted. Firstly, the thesis used a cross-sectional design, and cross-sectional designs do not test causal effects. This thesis cannot assert whether any of the predictor variables caused a change in academic persistence. However, it is worth noting that the predictors and outcome variable shared individual relationships. Furthermore, the results of the research show that these relationships differed between students from the historically underrepresented group and students from the

historically overrepresented group and between first-generation and continuing-generation students.

Secondly, the measure of academic motivation was assessed using two items (Study 1 and Study 3) and one item (Study 2) because of poor inter-item reliability. Future studies should consider additional items to allow for a more valid measure of the construct.

A third limitation is the assessment of generation status. The present thesis did not assess whether students in the first-generation sample or the continuing-generation sample were from the historically underrepresented group or the historically overrepresented group. Future research should consider studying the moderated mediated relationship between historically underrepresented and overrepresented groups to determine whether students benefit from academic adjustment and academic motivation when faculties invest in student learning and development.

Another limitation is that convenience sampling was used in studies 1, 2, and 3 to select the respondents. Therefore, the results should be interpreted within the context in which the study was conducted, and the results may not be generalised to other universities.

Lastly, a self-report method for data collection was used. There are possibilities of response bias. Respondents may have aimed to present themselves favourably, offering feedback that was independent of their actual attitudes in order to conform to social norms.

4.4. Conclusion

This thesis provided empirical evidence that psychosocial factors (academic adjustment and academic motivation) and social identity factors (identification with the academic department) influence academic persistence. The results also confirmed that

academic adjustment and academic motivation mediate the relationship between identification with the academic department and academic persistence. Furthermore, the results highlight the importance of the relationship between identification with the academic department and academic adjustment for students from historically underrepresented groups. In addition, the results emphasise the importance of the relationship between identification with the academic department and academic persistence mediated by academic motivation for first-generation students.

These results can be applied by a variety of educators and researchers who are interested in understanding how psychosocial and social identity factors influence academic persistence in an increasingly diverse population of university students. The results can be used to help bridge the gap between universities, academic departments, and students and facilitate the implementation of programmes to improve the graduation and retention rates of students.

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