The effect of psychosocial factors on the academic persistence of undergraduate university students

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I declare that the thesis, *The effect of psychosocial factors on the academic persistence of undergraduate university students* is my own work, and that all the sources that I have used or quoted have been duly acknowledged by means of complete reference list.

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DEDICATION

I dedicate this thesis to my beloved late grandmother, Maria Masesi Mtshweni. Thank you for your unconditional love and for your words of encouragement, which filled me with a glim of hope. The time we spent with you was never short of wisdom.

May you continue to rest peacefully *Na-Mabunda*….

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LIST OF ABBREVIATIONS

AMS   Academic Motivation Scale

AMOS   Analysis of a Moment Structures

ASUS   Anxiety Scale for Undergraduate Students

COVID-19   Coronavirus disease-2019

HBIs   Historically Black Institutions

HWIs   Historically White Institutions

ICT   Information Computer Technology

MoU   Memorandum of Understanding

MSPSS   Multidimensional Scale of Perceived Social Support

NPHE   National Plan for Higher Education

NSFAS   National Student Financial Aid Scheme

PSSM   Psychological Sense of School Membership

SPSS   Statistical Package for the Social Sciences

SRC   Student Representative Council

UK   United Kingdom

USA   United States of America

ABSTRACT

The high dropout rate of undergraduate students in institutions of higher learning continues to be a concern for the higher education sector globally. Although university dropout has been studied over the years, little attention has been paid to the psychosocial factors that predict university dropout. Therefore, this study investigated the role of sense of sense of belonging, perceived social support, academic motivation, and academic anxiety on the academic persistence of undergraduate university students. The study also investigated the role of background factors, students' socioeconomic status and generation status on academic persistence. The sample comprised 489 students from a university in South Africa and a quantitative research approach was used to test the hypotheses. The findings of this study showed that sense of belonging, academic motivation, and the generation status of students significantly predicted academic persistence, whereas academic anxiety, perceived social support, and the socioeconomic status of students was not predictive of academic persistence. The findings also showed that sense of belonging significantly mediated the relationship between academic anxiety and academic persistence. In addition, sense of belonging significantly mediated the relationship between perceived social support and academic persistence. Furthermore, sense of belonging significantly moderated the relationship between academic motivation and academic persistence. The findings also showed that sense of belonging significantly and directly predicted academic motivation, academic anxiety, academic persistence, and indirectly predicted academic persistence, via academic motivation. However, the study found that sense of belonging could not predict academic persistence, via academic anxiety. The findings also showed that the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence, via academic anxiety and academic motivation, was moderated by participants' generation status.

The findings of the study highlight that undergraduate students need to be supported continually through multiple intervention strategies during their studies at university. Furthermore, the findings encourage university administrators to reform and introduce robust student support policies.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

1.1. Background

The South African higher education system was shaped and structurally influenced by the apartheid administration (Akoojee & Nkomo, 2007). The apartheid administration designed the higher education system to cater for population groups differently according to their race groups, and to entrench power and promote the socioeconomic interests of the White minority (Bunting, 2004), while marginalising Blacks and training them to become servants in the apartheid administration (Heleta, 2016). Gultig (2000) argues that apartheid policies created a higher education system that was not only complex, but discriminatory as well. For instance, during apartheid, Blacks could only further their education in Historically Black Institutions (HBIs), whereas Whites were privileged in that they would attend Historically White Institutions (HWIs). Since their establishment, HBIs have been poorly funded, with poor infrastructure, and have offered poor quality of teaching and learning (Iilorah, 2006). On the contrary, HWIs received adequate state funding, offered quality education, and were equipped in terms of human resources (Badat, 2004). This means that the apartheid policies of the higher education system played a key role in marginalising the Black population groups, while benefiting the White population groups in terms of the quality and standards of education (Mtshweni, 2022). Despite the abolishment of apartheid, the education sector continues to be impacted by policies formulated during the apartheid era. This is evident in that inequalities continue to exist between HWIs and HBIs. These inequalities pertain to; among other things funding, infrastructure development, the standard of teaching and learning, as well as research development or knowledge generation (Bozalek

& Boughhey, 2012; Hlatswayo & Fomunyam, 2019; Leshoro, 2008; Wangenge-Ouma & Kupe, 2020).

In a quest to redress past inequalities within the higher education sector and transform the higher education system to meet the needs of the wider population, the new democratic government post 1994 formulated two policy documents, the Education White Paper 3: *A Programme for the Transformation of the Higher Education System* (Department of Education, 1997) and the National Plan for Higher Education (NPHE) (Ministry of Education, 2001). The policy documents sought to promote access to education for the previously disadvantaged population groups and abolish racial practices in institutions of higher learning. According to the provisions of these policy documents, access to institutions of higher learning would increase, and all institutions of higher learning would be fairly accessible to all, irrespective of their racial group. Moreover, one of the goals of the policies pertaining to higher education was to promote the production, acquisition, as well as application of new knowledge, and also contribute to creating, sharing, and evaluation of knowledge to address the developmental needs of society.

The introduction of the Education White Paper 3 and the NPHE yielded some transformation milestones for the South African higher education system. First, participation rates in institutions of higher learning have increased rapidly since 1994. For example, in 2000 there were 578 134 registered students in South African universities and universities of technology (formerly known as technikons). This number almost doubled, with a total of 975 837 registered students in 2016. Most of these were students from the Black population groups (Statistics South Africa, 2019a). Second, enrolment rates increased in terms of gender, with women representing 43% of registered students in 1993 to 56.3% in 2008 (Department of Higher Education & Training, 2009). Third, the student financial support scheme, the National Student Financial Aid Scheme (NSFAS) was established to redress

social inequalities between poor and rich students (Badat, 2010). Last, a new higher education system was introduced, comprising a differentiated system, which includes universities, universities of technology, comprehensive institutions, contact and distance institutions, and colleges (Badat, 2010). These developments in the higher education sector brought a significant shift in the apartheid policies and steered in the right direction the transformation agenda envisaged in the Education White Paper 3 and the NPHE.

Despite significant strides made to advance higher education through the promotion of access, bringing an end to racial discrimination and inequality in institutions of higher learning, persisting systemic challenges remain. Some of these challenges may undermine the success of university students and hinder them from attaining their qualifications. The challenges include, for example, low participation rates in institutions of higher learning by students from low-income backgrounds, high and unaffordable tuition fees, mostly by students from disadvantaged backgrounds (Mtshweni, 2022). Thus, highlighting the shortfalls of the funding framework. Other challenges include unaffordable residential areas, lack of curriculum transformation, and failures to develop African languages as academic languages which Black African students can identify with as well as leadership and governance failures (South African Human Rights Commission, 2017; Statistics South Africa, 2019a). Additional challenges include the lack of transformation in terms of institutional cultures, which do not accommodate previously disadvantaged racial groups such as Blacks. For example, Hlatswayo (2020) argues that due to the lack of transformation in institutions of higher learning, Black students tend to experience pressures and demands of navigating institutional cultures. According to Hlatswayo (2020) and Puwar (2004), experiences associated with navigating the incongruent institutional culture may serve as obstacles for students to find belongingness towards the institution. Furthermore, such experiences may result in psychological distress, and eventually lead to students dropout

(Hausmann et al., 2009; Kissane & McLaren, 2006; Osterman, 2000; Ostrove, 2003; Pittman & Richmond, 2008; Strayhorn, 2012). This suggests that transformation is warranted in the South African higher education sector, not only in terms of widening access to institutions of higher learning, revising the funding framework, curriculum reform, incepting a responsive leadership and improving governance policies, but also in terms of transforming institutional cultures that would enable students to find a fit and belongingness towards their institutions since belonging plays an imperative role in the success students. These initiatives could be vital in helping students identify with their institutions and commit to their studies. Ultimately, this could contribute to increasing academic persistence and curbing the reported high rates of dropout in institutions of higher learning in South Africa.

Student dropout is a problem that affects all higher education sectors globally (Bonaldo & Pereira, 2016). The United States of America (USA) and the United Kingdom (UK) have, in recent years, reported an increase in the number of students who drop out of tertiary institutions (Bonaldo & Pereira, 2016; Study International, 2020; ThinkImpact, 2022). According to reports, the USA records, on average, a dropout rate of 30% among first year students (ThinkImpact, 2022), whereas the UK recorded a 6.3% dropout rate in first year students between 2016 and 2017 (Study International, 2020). Within the African continent, there is an estimated 50% dropout rate among students in the institutions of higher learning (Partnership for African Social and Governance Research, 2019). In South Africa, 30% of students dropped out of institutions of higher learning in their first year of study in the academic year 2000 (Department of Higher Education and Training, 2005). In recent years, Van Zyl (2015) stated that approximately 50% to 60% of students drop out of tertiary institutions within their first year of studies in South Africa.

Student dropout has negative implications on youth unemployment and contribute in exacerbating the challenge of unemployment. Indeed, youth unemployment has become a

topical issue globally, including South Africa where there are exorbitant rates of unemployment among the youth. Although unemployment can be largely attributed to the ailing economy, student dropout also contributes to the phenomena. Studies have revealed that in South Africa, the lack of skills that are associated with the absence of tertiary education make it difficult for the youth to be employable (Dias & Posel, 2007; van Aardt, 2012). This means that to curb the issue of unemployment in South Africa, the institutions of higher learning need to support students to enrol until completion. This is because failure of students to complete their qualifications may not only affect their prospects of employment but can also result in negative socioeconomic conditions and mental health distress.

Education significantly impact on all aspects of human life. It is a vital investment for human and economic development (Latif et al., 2015). It is critical for economic prosperity, and the alleviation of poverty through employment and enhanced livelihoods. However, despite the positive benefits that come with education, institutions of higher learning continue to experience challenges with student dropout. Retaining university students who would complete their degrees has proven to be a challenging task for institutions of higher learning globally (Singh & Moodley, 2015; Tan & Shao, 2015), and this continues to be the case in South Africa as universities persistently report high dropout rates (Panther, 2018; Van Zyl, 2015). Student dropout has serious implications for universities and students alike (Tan & Shao, 2015). The cost of enrolling new students is, in this regard, often higher than the cost of retaining students (Simpson, 2010; Yongjian et al., 2011). According to Yongquan and Ying (2012), university dropout is likely to lead to lower graduation rates, which may have a negative impact on the social reputation of educational institutions and, therefore, results in reduced government funding. Moreover, university dropout may have a negative impact on students in the sense that it affects their employment opportunities. Latif et al. (2015) state that individuals without education are most likely to struggle to find jobs and survive on

government grants for the rest of their lives. According to the scholars, students who drop out of university often contend with poverty, abuse, or suffer neglect in their homes (Latif et al., 2015), and are likely to suffer from depression.

Several factors contribute to student dropout; and these may be pedagogical, social or even psychological. For example, students may drop out of university if they are not academically prepared for university (Dewall, 2005; Jenkins et al., 2009). Students may also drop out of their institution if they are struggling to adjust to the social environment of the institution (Tinto, 1993). Additionally, students may drop out of university if they experience psychological distress, or cannot cope with the psychological demands of the institutional environment (Borges et al., 2011; Cathrine et al., 2016; Cvetkovski et al., 2018; England et al., 2019; Lester et al., 2013; Respodek et al., 2017). Indeed, psychological factors have also been reported to influence the academic persistence of university students. In relation to this study for example; sense of belonging, academic motivation, academic anxiety, and perceptions of social support have been found to influence academic persistence (Beyers & Goossens, 2002; Carsley et al., 2017; Duchesne et al., 2008; Dupont et al., 2015; England et al., 2019; Fernandez-lasarte et al., 2019; Hausmann et al., 2006; Just, 1999; Levett-Jones & Lathlean, 2009; McGivney, 2009; Pittman & Richmond, 2008; Strayhorn, 2020; Vallerand et al., 1997; Van Ameringen et al., 2003; Zavatkay, 2015). It is against this backdrop that the study sought to investigate the effect of these factors on the academic persistence of university students.

Academic persistence is not only crucial for students, but for institutions of higher learning as well. However, students' ability to persist is, in some instances, hindered by students' background factors (Tinto, 1975, 1993). For example, students' socioeconomic status and their generation status have been found to influence academic persistence (Callender, 2003; DeFreitas & Rinn, 2013; Edwards & McMillan, 2015; Ishitani, 2006;

Martinez et al., 2009; Reynolds & Cruise, 2020; Soria & Stebleton, 2013; Thayer, 2000; Van Zyl, 2016). Therefore, in addition to psychological factors, the study also investigated the role of the socioeconomic status and generation status on the academic persistence of undergraduate university students.

1.2. Significance of the study

The transition from high school to university is an important milestone for students. This is because this period is marked by significant changes which, in some instances, are overwhelming for students (Jones et al., 2008). During this transition period, students are expected to cope with a host of challenges that come with being in a new learning environment, which is in many respects, different from the high school environment. This transition presents psychological challenges, which could hinder students' learning and lower their academic persistence (Alkan, 2016; Sommer, 2013; Strayhorn, 2012).

High levels of academic persistence are necessary for the success of university students and have been found to be enhanced by psychosocial factors. For instance, sense of belonging, academic anxiety, academic motivation and perceived social support have been reported to play a role in university students' persistence (Bunn, 2004; Carsley et al., 2017; de la iglsia et al., 2014; Hart, 2012; Strayhorn, 2012; Vuong et al., 2015; Wylie, 2004). However, research exploring these factors is limited. In addition, sense of belonging has been reported to have an influence on academic motivation and academic anxiety (Allen, 2019; Freeman et al., 2007). According to Roffey et al. (2019), sense of belonging is crucial in academic contexts because it minimises psychological distress and increases the academic persistence of university students. Sense of belonging is a basic or fundamental human need, and if deficient, students may not succeed academically (Strayhorn, 2012, 2016). According to O'keeffe (2013), developing a sense of belonging dispels uncertainty during one's studies

and increases retention in higher education institutions. Thus, sense of belonging is a crucial need for students' academic success. Despite the important contributions of sense of belonging in students' academic success, research on its significance in students' academic persistence is limited in South Africa (Mtshweni, 2019; Silinda, 2018). This reflects a gap in literature and therefore, a study focusing on the role of sense of belonging as a factor that takes priority in students' academic success, as well as academic motivation, academic anxiety and perceived social on academic persistence is warranted. It is for this reason that the study sought to investigate the effect of these factors on the academic persistence of undergraduate university students. Strayhorn's (2012) model of sense of belonging was used to highlight the importance of belongingness in students' academic success. In addition, the study was framed within Bean and Eaton's (2000) psychological model of student retention to understand the role of psychosocial factors on academic persistence. Moreover, the study relied on some elements of Tinto's (1975) model of institutional departure to extend on Bean and Eaton's (2000) model of student retention and to explain institutional factors associated with academic persistence.

Academic persistence is a complex and yet an important phenomenon because it is linked to academic success. The phenomenon has been a focus of higher education research for years (Kennel & Ward-Smith, 2017) and continues to receive attention because of its importance and noticeable literature gaps on the subject. For instance, over the years some studies on academic persistence have focused on institutional characteristics that are linked to academic persistence and the impact of socioeconomic factors on academic persistence (Gillespie & Noble, 1992; Jewett, 2008; Marrero, 2013; Sampson, 2011). Very little research has concentrated on the effect of psychosocial factors on the academic persistence of university students, particularly in the South African context. Furthermore, in acknowledging the role of background factors on students' academic persistence (Bean & Eaton, 2000; Tinto,

1975, 1993), the study also investigated the role of socioeconomic status and generation status on academic persistence, which have been linked to students' academic success (Bennett, 2003; Callender, 2003; Casanova et al., 2018; DeFreitas & Rinn, 2013; Letseka & Maile, 2008; Lohfink & Paulsen, 2005; Thayer, 2000). Thus, the findings of this enquiry will shed some light on how background factors contribute to academic persistence and ultimately, the success of university students. Additionally, it is envisaged that the findings will encourage tertiary institutions and scholars to develop policies that will help students to cope with the transition to university, manage the stressors that come with being in a new environment, and increase persistence levels by implementing institutional student support initiatives.

1.3. Statement of the problem

In South Africa, the UK and the USA, governments employ various methods to assess the quality of education offered by higher education institutions. Some methods of assessing the quality of education that institutions of higher learning offer in these countries include monitoring student retention (Blom & Meyers, 2003). For institutions of higher learning, retaining students may attract generous subsidies and improve university rankings. Further, retaining students may yield positive economic outcomes such as employment opportunities and ultimately, economic growth. Nonetheless, globally, institutions of higher learning continue to report high rates of dropout and low levels of academic persistence (Bonaldo & Pereira, 2016; Bustamante, 2019; Independent News for International students, 2020; Sosu & Pheunpha, 2019; Study International, 2020; ThinkImpact, 2022; Van Zyl, 2015). This is precisely the case with undergraduate students within the South African institutions of higher learning, who have demonstrated that they encounter challenges related to persisting until they complete their degrees (Jones et al., 2008; Nkosi, 2016; Panther, 2018; Van Zyl, 2015).

Low academic persistence is a multifaceted challenge emanating from various factors. For example, Casanova et al. (2018) assert that low academic persistence is precipitated by students' disadvantaged socioeconomic backgrounds, coupled with being first generation students. This is because students from disadvantaged backgrounds often do not receive adequate academic support from their parents, and display poor study habits, which affect their motivation and, therefore, lower their academic persistence (Aina, 2013; Stinebrickner & Stinebrickner, 2014). Educated parents serve as a protective factor against dropout and reinforce their university going children's academic persistence levels by encouraging them and making efforts to provide them with an academically stimulating family environment (Alonso & Roman, 2005; Davis-Kean, 2005; Umek et al., 2005). However, with regards to first-generation students whose parents are not educated, often enjoy minimal forms of support or no support at all. This is likely to undermine students' academic persistence levels (Casanova et al., 2018).

Brubacher and Silinda (2019) emphasise that many factors can contribute to academic persistence. For instance, studies have found that students who are ill prepared for university life display low levels of academic persistence (Jones et al., 2008). Lack of preparedness may be attributed to vocational issues, for instance, if students do not get admission into their first-choice degree course and enrol for a second-choice qualification, they may be less committed to their academic work, develop dissatisfaction and amotivation, which may result in persistence failures (Casanova et al., 2018; Okun et al., 2009). Additionally, the transition and adjustment to university, often associated with several challenges, may impose stress and physical discomfort on students (Sommer, 2013). Studies further revealed that when students enrol at a university for the first time, they often have stress, develop feelings of anxiety and alienation, which could lower their persistence levels (Gerdes & Mallinckrodt, 1994; Osterman, 2000; Pittman & Richmond, 2008).

Low academic persistence has also been attributed, to a certain extent, to psychological factors. For instance, a study by Finn (1989) has revealed that academic persistence failures are associated with low feelings of identification with the university and not having a sense of belonging. Studies by Strayhorn (2012, 2016) have yielded similar findings and revealed that a lack of a psychological fit or not having a sense of belonging impact negatively on academic persistence. Untransformed institutional cultures have also been reported to impact negatively on students' sense of belonging, which could in turn, undermine students' desires to persist academically (Hlatswayo, 2020; Ostrove, 2003; Pittman & Richmond, 2008). Other psychological factors that have been reported to influence students' academic persistence are perceptions of social support, academic motivation and academic anxiety (de la iglsia et al., 2014; Hardre & Reeve, 2003; Shahrouri, 2016). This suggests that other than students' background characteristics, psychological factors also have a bearing on the academic persistence of university students.

The transition to university may be easy for some students. For others, however, this may be challenging and also present transitional difficulties and psychological discomforts (Atinde, 2014; Tinto, 1993). As a result, some students could feel overwhelmed in the face of challenges and, therefore, experience persistence difficulties. This study, therefore, recognises the importance of fostering academic persistence abilities in university students to ensure that they complete their degrees. Hence, it was necessary to conduct a study to investigate the potential effect of psychosocial factors on the academic persistence of students.

Research focusing on the impact of psychosocial factors on academic persistence is scanty, particularly in the South African context (Brubacher & Silinda, 2019; Silinda, 2018). Several studies focused only on environmental and background factors predicting the success of university students (Atinde, 2014; Cortes, 2012; McGhie, 2012). Other studies focused on

the effect of psychological factors on academic performance (Sommer, 2013; Sommer & Dumont, 2011). This study, therefore, built on the studies by Brubacher and Silinda (2019), as well as Silinda (2018). For instance, Brubacher and Silinda (2019) investigated the impact of help-seeking attitudes, intrinsic motivation, as well as stress on academic persistence; whereas Silinda (2018) investigated the influence of psychosocial and social identity factors on academic persistence. In the current study, the psychosocial factors that were investigated in relation to academic persistence were limited to the sense of belonging, academic motivation, academic anxiety, and perceived social support. Furthermore, of all the psychosocial factors explored in this study, emphasis was placed on sense of belonging since it is crucial for the academic persistence of university students. Other factors that this study investigated included students' generation status and socioeconomic status, which were previously reported to be associated with academic persistence.

1.4. Research questions

Based on the problem statement, the following research questions were posed:

R1: Does sense of belonging, academic motivation, academic anxiety and perceived social support significantly predict academic persistence?

R2: Does sense of belonging, academic motivation, academic anxiety, perceived social support, generation status, and socioeconomic status significantly predict academic persistence?

R3: Does sense of belonging significantly mediate the relationship between academic anxiety and academic persistence?

R4: Does sense of belonging significantly mediate the relationship between perceived social support and academic persistence?

R5: Does sense of belonging significantly moderate the relationship between academic motivation and academic persistence?

R6: Does sense of belonging significantly predict academic motivation, academic anxiety, academic persistence, and also have a significant indirect effect on academic persistence via academic anxiety and academic motivation?

R7: Is the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, moderated by the participants' socioeconomic status?

R8: Is the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, moderated by the participants' generation status?

R9: Does perceived social support significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model?

1.5. Purpose and objectives of the study

The purpose of this study was to investigate the influence of psychosocial factors on the academic persistence of undergraduate university students. Hence, the objectives of the study were as follows:

- First, to test if sense of belonging, academic motivation, academic anxiety and perceived social support will significantly predict academic persistence.

- Second, to test if sense of belonging, academic motivation, academic anxiety, perceived social support, generation status, and socioeconomic status will significantly predict academic persistence.

- Third, to test whether sense of belonging will significantly mediate the relationship between academic anxiety and academic persistence.

- Fourth, to test whether sense of belonging will significantly mediate the relationship between perceived social support and academic persistence.

- Fifth, to test if sense of belonging will significantly moderate the relationship between academic motivation and academic persistence.

- Sixth, to test if sense of belonging will significantly predict academic motivation, academic anxiety, academic persistence, and also have a significant indirect effect on academic persistence via academic anxiety and academic motivation.

- Seventh, to test if the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' socioeconomic status.

- Eighth, to test if the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' generation status.

- Last, to test if the perceived social support will significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model.

1.6. Outline of the chapters

Chapter I: Introduction

This chapter provided background of the study on the higher education in South Africa and some of the systemic challenges underpinning the sector. The chapter also discussed the significance of the study, statement of the problem, research questions guiding the study as well as the purpose and objectives of the study.

Chapter II: Literature Review

This chapter provides a comprehensive discussion of each factor investigated in the study (i.e., sense of belonging, academic motivation, academic anxiety, perceived social support, socioeconomic status, and generation); and how each factor is related to academic persistence. The chapter also discusses the theoretical framework underpinning the study and other supporting models of academic persistence.

Chapter III: Research design and methodology

This chapter outlines the research design, paradigm and methodology employed in this study. The chapter also presents the descriptive statistics and demographic characteristics of participants and outlines the research instruments used in the study. The chapter further discusses the reliability and validity of the study, data analysis and ethical considerations for this study.

Chapter IV: The findings

This chapter presents the findings of the study, based on the formulated hypotheses. The findings include the preliminary analysis, which encompass factor analysis, descriptive statistics and bivariate correlations. The chapter also presents the results tested using regression analysis, mediation, moderation and path analysis, as well as the results of the moderated mediation.

Chapter V: Discussions

This chapter discusses the findings of the study in relation to the hypotheses of the study. The chapter also delivers a discussion on the contribution of the study, implications for practice, implications for theory, recommendations for future studies, as well as the study limitations.

1.7. Summary of the chapter

This chapter introduced the study and discussed the background thereof, focusing on the higher education sector in South Africa, significance of the study, statement of the problem, research questions, purpose and objectives of the study, as well as the chapter outline. Chapter II presents the literature reviewed, and outlines the theoretical framework for the study.

CHAPTER II

LITERATURE REVIEW

2.1. Introduction

The purpose of this literature review section is to introduce the psychosocial factors, which have been reported to be associated with academic persistence. These factors are: sense of belonging, perceived social support, academic motivation, and academic anxiety. The section also presents additional factors that may be related to academic persistence which are: students' socioeconomic status and generation status. Additionally, the section outlines the theoretical framework and the psychological models of academic persistence.

2.2. Psychosocial factors previously found to be related to academic persistence

2.2.1. Sense of belonging

Globally, the concept of sense of belonging continues to receive attention within institutions of higher learning. In general, the concept refers to a feeling of relatedness and connection to others (Booker, 2016). It is the experience of personal involvement in a system or environment, which makes persons feel that they are an integral part of the system (Hagerty et al., 1992). According to Osterman (2000), sense of belonging is a feeling of mattering to others, and having shared faith that members' needs will be met through their commitment of being together. In essence, sense of belonging relates to ones' affiliation, relatedness and a psychological fit to a group of individuals who share common goals or ideas. Studies have found that sense of belonging is a basic human need, which is important for the functioning and psychological well-being (Baumeister & Leary, 1995; Maslow, 1954; Strayhorn, 2012).

Strayhorn (2012) posit that sense of belonging is context specific. In the academic context, sense of belonging refers to students' experiences of being full members of the academic community which includes the classroom settings and forms of interactions in that context (Booker, 2016). This may include, but is not limited to virtual or online modes of interaction with the institutional community. Gooednow (1993) conceptualises sense of belonging within the learning environment as a sense of being accepted, valued, included and encouraged by others in the academic setting, and having a sense that one is an integral part of the life and activity of the academic community.

Sense of belonging relates to students' feeling of closeness with their learning environment and a feeling that they are valued members of the institution. For university students, a sense of belonging to a group has various positive cognitions and behaviours such as increased altruism and co-operation with the group (Turner, 1987). In this regard, scholars argue that when students are integrated into the academic systems of the university, they develop a psychological sense of belonging to the university, which is important for academic persistence (Hausmann et al., 2009). Furthermore, Hausmann et al. (2009) state that when students are integrated into the university community, they are likely to have an enhanced sense of belonging and are, therefore, more likely to stay enrolled. Thus, this highlights important associations between feelings of belonging to an institution and retention.

Sense of belonging is associated with positive educational outcomes for students. When students share a sense of psychological membership or belonging with a group, they are willing to take risks and challenge themselves to succeed academically (Booker, 2016). O'keeffe (2013) asserts that students with higher levels of sense of belonging towards their learning environment have better psychological outcomes than students who demonstrate a lower sense of belonging. In particular, students who report a sense of belonging to a learning environment often feel motivated to accomplish their academic goals (Freeman et

al., 2007). Furthermore, studies have shown that feeling connected to university may decrease depressive symptoms, increase academic motivation, academic participation, satisfaction with the learning experience and most importantly, lower attrition rates (Beyers & Goossens, 2002; Levett-Jones & Lathlean, 2009). This suggests that sense of belonging may be a precursor to academic persistence.

Studies have also demonstrated that sense of belonging is important for university students' academic success, and that if students have a low sense of belonging, they may struggle to attain their academic goals. A study by Hausmaan et al. (2007) found that sense of belonging is the strongest predictor of university persistence. In addition, other studies have found that persistence failures are attributed to students' inability to fit in or develop a sense of belonging towards the learning institution (Just, 1999; Swail et al., 2003; Zea et al., 1997). Students who feel that they are not part of the learning community feel excluded, and this may negatively affect their academic performance and their chances of completing their studies (Booker, 2016). Moreover, students who do not feel a sense of belonging to the learning community often have increased levels of stress, emotional distress, and are unlikely to persist academically (Pittman & Richmond, 2008; Strayhorn, 2016). This shows that having a sense that one belongs to a university is important for students to persist academically (Strayhorn, 2020).

Sense of belonging is an important factor that contributes to different forms of human behaviours, as well as emotional and mental well-being across contexts (Maslow, 1962; Strayhorn, 2016), including the learning environment. For example, Furrer and Skinner (2003) found that students who feel a sense of belonging to a learning environment reported positive emotional experiences, whereas those whose sense of belonging was low reported greater anxiety. Not having a sense of belonging towards the learning environment leads to an increase in the levels of anxiety and risks of dropping out (Baumeister & Leary, 1995;

Fletcher, 2008; Lee et al., 2009). In addition, studies have established that sense of belonging decreases academic related anxiety (Boekaerts, 1993; Goodenow, 1993; Roeser et al., 1996). According to Osterman (2000), low levels of sense of belonging engender negative feelings of anxiety. Students who have low levels of belonging towards their learning environment are more likely to behave in ways that are not congruent with successful academic outcomes, tend to experience anxiety, and drop out of university (Allen, 2019). Osterman (2000) supports this assertion and highlights that students who demonstrate greater levels of sense of belonging to their institution are likely to show interest in their academic activities, have higher expectations of success, and lower levels of anxiety. Thus, suggesting that sense of belonging has an influence on the academic anxiety of university students.

Sense of belonging and academic anxiety have an inverse relationship. For instance, anxiety has been reported to result in a lack of sense of belonging (Cuncic, 2022; Theisen, 2021). In addition, Högberg et al. (2021) reported that academic anxiety is a risk factor for low levels of sense of belonging. Academic anxiety was also found to have a stronger predictive effect on university belongingness (Arslan et al., 2021). Therefore, suggesting that academic anxiety may determine belongingness among university students.

Given the association between sense of belonging, academic anxiety and academic persistence, the study, will therefore, investigate if sense of belonging could significantly predict academic persistence among undergraduate university students. Further to this, the study will investigate if sense of belonging could significantly mediate the relationship between academic anxiety and academic persistence.

2.2.2. Academic anxiety

The transition from high school to tertiary presents new challenges to undergraduate students. This is because students have to learn to be more independent during this period

than they have been in high school. The process of acclimatising to a new learning environment is challenging, and may evoke negative emotions, and is, to a certain extent, associated with psychological discomforts. According to Iqbal and Nasir (2015), this period may spark feelings of anxiety in students, which in sum, may be regarded as academic anxiety.

Shakir (2014) defines anxiety as a feeling of apprehension, tension, or uneasiness characterised by fear, dread, or uncertainty about something the source of which is largely unknown or unrecognised by an individual. Anxiety is an emotion, sparked by an appraisal of threat, which entails symbolic, anticipatory and uncertain elements, which result when cognitive systems no longer enable a person to relate meaningfully to a particular environment (Lazarus & Averill, 1972). Barlow (2002) defines anxiety as a displeasing feeling of uneasiness, nervousness, apprehension, fear, concern, or worry and may encompass constant apprehensions of future or anticipated events, as well as generalised emotional reactions to a choice or decision (Good, 1973). Individuals in various anxiety provoking situations may experience feelings of anxiety. However, this study investigated anxiety in the academic context hence reference is made to academic anxiety.

Academic anxiety is a type of anxiety precipitated by academic demands and expectations. Shakir (2014) delineates academic anxiety as the kind of anxiety related to the impending danger from the academic environment; a mental feeling of uneasiness or distress in response to an academic situation perceived negatively. Lee and Larson (2000) conceptualise academic anxiety as a feeling of distress induced by students' appraisal of excessive academic demands. This means that academic anxiety is a feeling of apprehension, fear, worry, edginess, and uncertainty, owing to academic workload and other academic demands associated with being in a learning environment. Shahrouri (2016) adds that academic anxiety is a feeling experienced because of students' lack of motivation or limited

skills, and their misperception of courses and negative experiences from previous learning environments or schooling.

Academic anxiety may be sparked by institutional factors such as the academic environment, university type (i.e., HWIs or HBIs), curriculum, or lecturers. Other factors which may spark academic anxiety could be personal, familial as well as social (Alam, 2017). Personal factors may include emotional disorders, health disorders, maladjustment, low self-concept and so on (Alam, 2017). Familial factors may include low socioeconomic status, family or domestic problems, whereas social factors may be related to societal norms, stereotypes, illiteracy rate, being a first-generation student and others (Alam, 2017; Barinder, 1985; Gautam, 2011).

Academic anxiety plays a dual role in the life of university students. If moderate, it can motivate students to study harder and concentrate on their studies. However, if heightened, it can have adverse consequences for students. According to Hancock (2001), students with heightened academic anxiety have significantly low levels of motivation than students with low levels of anxiety. Heightened anxiety may impede students' academic success (Shahrouri, 2016). Alam (2017) convicts that when students' academic anxiety is high; it is likely to interfere with their intellectual mechanisms such as concentration and memory, which are essential for academic success. Furthermore, Eysenck (2001) adds that heightened academic anxiety leads to academic difficulties through irrelevant thoughts, preoccupation, reduced attention and concentration.

Afolayan et al. (2013) assert that every individual, including students, experiences anxiety. In addition, Afolayan et al. (2013) maintain that anxiety ensues when students are uncertain about a particular situation or outcome. This anxiety may hinder students from attaining their qualifications. According to Iris (2011), high levels of academic anxiety have

negative outcomes on university students' academic success. Carsley et al. (2017) are of the view that higher levels of anxiety impact on students' ability to persist academically. Moreover, a study by Duchesne et al. (2008) has shown that students with high or chronic anxiety are more likely not to persist academically than students with low or moderate levels of anxiety.

A study by Van Ameringen et al. (2003) revealed that students with academic anxiety are likely to drop out of university. In support of this argument, England et al. (2019) also pronounce that one factor that can negatively impact students' academic persistence is academic anxiety. Furthermore, similar findings have also been documented in a study by Respodek et al. (2017) to the effect that academic anxiety is related to the intent to leave the institution, and that anxiety is negatively related to academic persistence. This suggests that academic anxiety is likely to have an effect on students' academic success. Hence, this study hypothesised that academic anxiety will significantly predict academic persistence.

2.2.3. Perceived social support

Gurung (2006) regards perceived social support as the experience of being valued, respected, cared for, and loved by significant others. Perceived social support is further considered one's perception of supportive behaviours from individuals in their social network (i.e., parents, lecturers, classmates, and friends) that enhance their functioning. This form of support may be important in mitigating against adverse feelings in a particular environment (Malecki & Demaray, 2002). Sarafino (1998) also defines perceived social support as the perceived comfort, care, esteem, or assistance a person receives from other people or group. It is a cognitive perception of how an individual perceives the quality of support from other individuals (Talwar et al., 2013).

According to Brissette et al. (2002), perceived social support has been found to promote psychological well-being and buffer the effects of stress. Talwar et al. (2013) assert that perceived social support is an important aspect that contributes to an individual's overall well-being. This sentiment is further expressed by Uchino et al. (1996), who posit that perceived social support reduces the adverse psychological impact of being exposed to stressful life events and on-going life strains. Furthermore, scholars add that perceived social support can improve individuals' positive psychological states, such as positive affect and sense of well-being (Cohen & Wills, 1985; Diener et al., 1999). Perceived social support can provide solutions for individuals facing stressful problems, reduce the perceived magnitude of problems, or facilitate positive psychological reactions and behavioural responses (Cohen & Wills, 1985). This means that perceived social support safeguards individuals from experiencing severe psychological strains, and ensures their positive affect and well-being. Further, this suggests that the more individuals experience the perceived social support, they are less likely to experience psychological problems (Safree et al., 2010).

Perceived social support has been found to yield positive outcomes in university students. Research has shown that the level of perceived social support from the university and other contributors like family, friends and mentors can significantly influence a students' educational success (Trokel et al., 2000). According to de la iglsia et al. (2014), perceived social support has been identified as a variable that is linked to students' success at all educational levels. In addition, perceived social support is considered important in reducing the distress associated with being a student (de la iglsia et al., 2014). Moreover, perceived social support serves as a buffer against academic disengagement (Mackinnon, 2012; Perry et al., 2010); this suggests that perceived social support may compel students to persist academically. This argument is strengthened by de la iglsia et al. (2014), who found that higher perceptions of social support are linked to higher pass rates and less dropout rates.

Scholars argue that it is imperative that students enjoy perceived social support for them to succeed academically; irrespective of their socioeconomic status and other risk factors (Malecki & Demaray, 2006). Furthermore, perceived social support gives university students a sense of security and competence, which, in turn, empowers them to tackle academic challenges efficiently (Sarason et al., 1990). Students' perceived support in the learning environment provides them with positive social contacts with others, which contributes to emotional balance and reduced burnout (Boren, 2013). This also heightens students' need to persist academically. Tinto (1975) posits that being integrated into the university socially engenders persistence. This integration also entails the social connections that students make outside the classroom or university such as friends, parents and mentors who provide support for them to cope academically (Zavatkay, 2015). This means that the support students receive from significant others serves as a buffer against challenges related to their academic lives, and in turn, encourages them to navigate the challenges that they encounter in pursuit of their qualification.

The transition to university is associated with significant distress among undergraduate students: it is, therefore, imperative that they are afforded adequate support to confront the challenges associated with the transition. Tinajero et al. (2020, p. 134) revealed that "perceived social support is considered a key factor for reducing the risk of psychological distress, academic failure and student withdrawal from university". In the same manner, perceived social support has been found to moderate the appraisal of situations as threatening and to enhance students' confidence in dealing with new challenges (Alemán-Ruíz & Calvo-Francés, 2017; Xerri et al., 2018). Perceived social support is not only crucial in assisting students to cope with stress, but to motivate them and foster emotional engagement, which they require to persist academically (Dupont et al., 2015; Fernandez-lasarte et al., 2019).

Several scholars have highlighted the link between perceived social support and academic persistence. Zavatkay (2015) demonstrated that high levels of perceived social support lead to student retention. In addition, Dixon Rayle et al. (2006) and Nicpon et al. (2006) found a relationship between perceived social support and academic persistence. These findings are further supported by Baldwin et al. (2003) and Skowron et al. (2004), who posit that students who perceive that they have social support are less likely to experience academic stress and more likely to navigate university life with ease, persist, and achieve their academic goals. Thus, perceived social support potentially has an important role on the success of university students. Hence, this study will test the hypothesis that perceived social support will significantly predict academic persistence.

Other than the importance of the perceived social support on academic persistence, perceived social support has also been found to be linked to sense of belonging (Davis, 2017). According to Danielsen et al. (2010), perceived social support has an effective role on the sense of belonging of students in the learning environment. According to Roeser et al. (1996), students who view their relationships with the institution in a positive light tend to develop a stronger sense of belonging. In addition, perceptions of social support from others beyond the institutional community tend to help with fostering belonging towards the learning environment. For instance, Davis (2012) found that staying connected and networking with others beyond the confines of the institution helped with fostering belongingness. Further, different types of networks such as friends, family and the student community have been reported to help students identify with the university (Awang et al., 2014). Indeed macro level support factors (i.e., parents, peers and lecturer) have been found to be associated with a sense of belonging (Allen et al., 2018; Garcia-Reid, 2007; Johnson, 2009). This is because parental, peer and lecturer support afford students safety and acceptance and in turn contribute to a sense of belonging (Libbey, 2004; Osterman, 2000).

This suggests that students should have a wide network of support within and beyond the institutional community in order to enhance their sense of belonging. In addition, this shows that perceived social support is important in engendering a pleasant academic experience for students. The relationship between perceived social support and sense of belonging may lead to positive academic outcomes. For example, studies have shown that sense of belonging can mediate the relationship between perceived social support and academic involvement (Vieno et al., 2007; Zumbrunn et al., 2014). Similarly, Vargas-Madriz and Konishi (2021) found that sense of belonging mediates the relationship between perceived social support and academic involvement. This highlights the important role of sense of belonging in bridging the relationship between perceived social support and academic success. Given the role of sense of belonging in mediating the relationship between perceived social support and academic involvement, this study, will therefore, investigate if sense of belonging will mediate the relationship between perceived social support and academic persistence. That is, it is hypothesised that sense of belonging will significantly mediate the relationship between perceived social support and academic persistence.

The perceptions of social support in the learning environment have psychological benefits. According to Bolognini et al. (1996), perceived social support acts as a buffer against academic anxiety (Duraku & Hoxha, 2018). Tinajero et al. (2020, p. 134) have highlighted that "perceived social support is considered a key factor for reducing the risk of psychological distress, academic failure and student withdrawal from university". This means that perceived social support not only serve as a buffer against academic anxiety, but it can lead to student retention and the attainment of qualifications by students. Due to the role of perceived social support on academic anxiety and persistence, it is, therefore, hypothesised that perceived social support will significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model.

2.2.4. Academic motivation

Motivation is a psychological construct that is varied and complex because it requires a thorough understanding of human cognition and emotions (Ahl, 2006; Jones et al., 1984). According to Sharma and Sharma (2018, p. 1) "motivation is what prompts the person to act in a certain way, or at least develop an inclination for specific behaviour". Scholars regard motivation as the reason for individuals' actions, desires and their needs. According to Pintrich and Schunk (2002, p.5), motivation is "something that keeps us going, keeps us moving and helps us complete tasks". In addition, motivation is defined as a process whereby a goal-directed activity is instigated and sustained (Pintrich & Schunk, 2002).

The concept "motivation" is usually referred to in three broad terms namely internal motivation, external motivation, and amotivation. Internal motivation provides that individuals may be motivated from within, and that underlying motives range from personal interest, perceptions of value or relevance (Vanthornout et al., 2012). Stated differently, internal motivation involves individuals engaging in a task for their own reasons, which are not linked to external rewards (Cunningham, 2013). On the contrary, external motivation is a form of motivation that is linked to external factors. According to Vanthornout et al. (2012), individuals with external motivation engage in activities primarily for pleasure or conformity. Furthermore, Vanthornout et al. (2012) indicate that external motivation stems from feelings of pressure, shame, pride, or guilt. In some instances, external motivation may be triggered by pressures such as expectations, rewards, or punishment (Vanthornout et al., 2012). Individuals may be internally and externally motivated at the same time.

Another broad term which defines motivation is amotivation. According to (Banerjee & Halder, 2021; Deci & Ryan, 1985), amotivation is a requirement for fully understanding human behaviour. Individuals that are amotivated are neither intrinsically nor extrinsically

motivated but rather, tend to attribute outcomes to factors other than their own actions (Vallerand et al., 1992). In essence, this implies that when individuals or students that are amotivated experience feelings of incompetence or inability, they tend to attribute these to forces out of their control and, as a result, stop participating in academic activities (Vallerand et al., 1992).

In this study, the construct motivation was assessed as a single factor, which encompasses all three subsets of motivation that is intrinsic motivation, extrinsic motivation, and amotivation. Motivation was investigated in terms of its effect on students' academic persistence. Edgar et al. (2019) posit that exploring how motivation impacts on undergraduate students is key to understanding the effect of motivation on student transition and persistence. Thus, motivation has been identified as an important contributor to students' academic success, and as being influential in determining students' persistence in institutions of higher learning (Edgar et al., 2019). For students in an academic setting, motivation has been identified as a factor that drives them to study and work effectively to reach their potential (Martin, 2004).

The role of motivation in ensuring students' academic success has been documented by scholars in educational research (Cullum, 2016; Lucey, 2018; Pintrich & Schunk, 2002). Further studies have demonstrated that motivation plays a crucial role in students' academic persistence and retention (Bunn, 2004; Hart, 2012; Irizarry, 2002; Keller, 2008; Zvacek, 1991). In addition, studies have demonstrated that students who are motivated are often better organised in their learning activities, concentrate more on their academic work, and persist longer academically (Deci & Ryan, 2000; Niemiec & Ryan, 2009). The findings of these study were corroborated by the findings of a study by Vallerand et al. (1997), who have shown that students who score high on motivation have lower intentions to dropout. This shows that potentially, motivation has a more significant effect on students' academic

success. According to Sharma and Sharma (2018), instances of academic motivation involve students insisting on taking on difficult tasks and putting a lot of effort into learning activities.

Understanding the relationship between motivation and academic success is crucial in educational environments (Cheng et al., 2011). According to Hardre and Reeve (2003), students' decision to drop out of university is not only related to achievement or non-achievement, but more significantly, to how well motivated they are. This is because students' motivation to study drives their thoughts and actions to obtain academic success, and thus, plays an important role in propelling them to study (Anderman & Wolters, 2006). To a certain extent, motivation drives students to succeed; however, a decline or absence of motivation may have a negative effect on their learning and persistence decisions. Dyrye et al. (2005) postulate that lower levels of motivation have been associated with increased distress. In addition, research on student retention has shown that lack of motivation is one of the main reasons why students drop out of university (Argon & Johnson, 2008; Boton & Gregory, 2015; McGivney, 2009). This suggests that motivation is an essential factor that contributes to student retention.

A study by Alarcon and Edwards (2013) has shown that motivation has a more significant effect on student retention than academic ability. Moreover, factors related to motivation were found to be the more robust predictors of persistence (Alarcon & Edwards, 2013). Hardre and Reeve (2003) tested a motivational mediation model and found that motivation significantly explains students' intention to persist or drop out of university. Additionally, Wolters (2003) has concluded that motivation is a significant predictor of success, and that students who are highly motivated were less likely to procrastinate and succeed in the end. Noting the probable role of motivation on students' academic persistence, this study, therefore, sought to investigate the effect of academic motivation on

students' academic persistence. Stated otherwise, it is hypothesised that academic motivation will significantly predict academic persistence.

Evidence suggests that motivation may also be linked to sense of belonging (Battistich et al., 1997; Patrick et al., 1997). Becker and Luthar (2002) state that one of the key factors affecting students' academic motivation and academic engagement is the sense of belonging. Moreover, Goodenow (1991) and Osterman (2000) found that students who have a sense of belonging tend to be highly motivated academically and show commitment to their academic work. Sense of belonging may be especially important to students' motivation, academic engagement and success (Ferreira et al., 2011). Pedler et al. (2022) found that sense of belonging and academic motivation reduces the likelihood of dropping out of university and, thus contribute to student retention. In addition, the scholars reported that students with a higher sense of belonging tend to have a high academic motivation as well as a high academic engagement (Pedler et al., 2022). Sense of belonging may also induce academic motivation and increase academic participation or engagement (Gillen-O'Neel, 2019). Therefore, indicating an important link between sense of belonging and academic motivation in engendering academic persistence. Hence, the researcher assumes that the interaction between sense of belonging and academic motivation may be important for students' academic success and predict academic persistence. Given this, the study also sought to investigate sense of belonging as a moderating variable between academic motivation and academic persistence. Therefore, it is also hypothesised that sense of belonging will significantly moderate the relationship between academic motivation and academic persistence.

2.2.5. Academic persistence

Scholars regard academic persistence as students' behavioural commitment to their studies (Roland et al., 2016). Academic persistence is also defined as students' ability to overcome obstacles and complete a course or programme of study (Demaris & Kristonis, 2008). A student who is persistent may be described as the one who would enrols and continuously pursue a qualification with an expectation to graduate (Bronstein, 2008). The level of persistence or academic persistence relates to students' ability to continue with a task even when it is challenging (Burrus et al., 2013). Bronstein (2008) is of the view that a persisting student is the one that has inculcated academic aptitude, and is ready and motivated, among other things. In addition, Habley et al. (2012) have shown that a persisting student is motivated, committed, engaging, and self-regulating.

Persistence within academic settings has been identified as an important variable for academic success (Kennel & Ward-Smith, 2017). Holman et al. (2019) have highlighted that students who have confidence in their abilities to overcome academic obstacles and achieve their objectives successfully, and who can engage in effortful behaviours tend to have high levels of academic persistence. These are students who would enrol in universities until they graduate (Kennel & Ward-Smith, 2017).

Academic persistence reflects a students' will and ability to succeed academically despite the challenges they encounter; and is, therefore, linked to the ability to attain qualifications. To a great extent, scholars agree with the conceptual definition of academic persistence. However, there appear to be discrepancies in measuring academic persistence. Various scholars have measured academic persistence differently. Whereas Ghoston (2012) measures academic persistence in terms of student enrolment expectations and qualification completion expectations, Holman et al. (2019) measure academic persistence in terms of

degree commitment or commitment to the qualification, institutional commitment and having academic consciousness. Furthermore, Constantin et al. (2011) has measured academic persistence in relation to long-term and short-term academic commitments. Moreover, academic persistence has been measured in terms of student involvement in an activity, renewal of commitment, as well as how they respond in the midst of obstacles (Lufi & Cohen, 1987; Raman, 2013). This means that academic persistence can be measured or assessed using the methods associated with overcoming obstacles or hardships that prevent students from completing their programmes (Kennel & Ward-Smith, 2017).

Kennel and Ward-Smith (2017) suggest that separating academic persistence from other forms of persistence provides clarity for research and assists in planning intervention strategies. In the context of this study, academic persistence was measured in terms of students' institutional and goal commitments. In particular, the study assessed students' determination to complete their qualifications and graduate. In addition, academic persistence was also measured by assessing students' decisions to attend an institution in which they are enrolled, as well as their decisions to stay enrolled.

Academic persistence is important in institutions of higher learning; since its reverse phenomenon, student dropout attracts wasteful expenditure and tarnish the reputation of higher education institutions. Student dropout may also have negative psychological outcomes on students, among other things. In the same way, students may experience feelings of distress if they find themselves constantly thinking about leaving their institution or dropping out. Therefore, a study on academic persistence addresses a significant concern for university systems attempting to improve retention rates (Holman et al., 2019), and the welfare of students. Pertinent to the South African institutions of higher learning, wherein dropout rates have been reported to be higher (Nkosi, 2016; Van Zyl, 2015), conducting a

study on university students' academic persistence is important as it may provide a basis for understanding dropout for intervention purposes.

2.3. Background factors which have been reported to influence academic persistence among university students

2.3.1. Generation status

Generation status is a term that used to indicate if a student comes from a family of parents or guardians with a tertiary education or post-secondary qualification or not. Accordingly, there are two groups of students at university: these are first-generation students and continuing-generation students. First-generation students are students whose parents or guardians had not participated in post-secondary education (Cataldi et al., 2018; Soria & Stebleton, 2012), whereas continuing-generation students are students whose parents or guardians have participated in post-secondary education, and have a tertiary qualification or any other qualification beyond a secondary education.

Studies have found that the generation status of students determines their success at university. Studies indicate that being a first-generation student presents unique challenges that are hardly experienced by continuing-generation students (Jean, 2010; Pascarella & Ernest, 1995; Stebleton et al., 2014). This is because often, first-generation students have to cope with anxieties, pressures and responsibilities of being the first-generation in the family to attend university. For example, Dewall (2005) highlights that first-generation students struggle at university because they have to break a norm or the family tradition to attend university, and are often not ready for the challenges that come with being a university student as their parents are not in a position to coach and prepare them for university life. Lohfink and Paulsen (2005), as well as London (1989, 1996) add that being the first in the family to experience the culture of university while lacking the intergenerational benefits of

information about university for instance, makes it difficult for first-generation students to find their niche at university.

Studies have found that first-generation students are likely to drop out of university compared to continuing-generation students (Ishitani, 2006; Martinez et al., 2009). In addition, Thayer (2000) also indicates that the rate at which first-generation students are likely to persist in university is lower than that of continuing-generation students. According to Soria and Stebleton (2012), being a first-generation student is associated with low retention rates as opposed to being a continuing-generation student even when controlling for other demographic characteristics. This suggests that first-generation students, unlike their counterparts, may have limited academic success due to persistence challenges associated with their background. Several possible factors have been noted or identified as contributing to low levels of persistence in first-generation students. For example, DeFreitas and Rinn (2013), as well as Thayer (2000) posit that first-generation students struggle with persistence because they are most likely to enter university unprepared. These students' unpreparedness can be attributed to their poor schooling background, as well as family characteristics (Jenkins et al., 2009), which include a home environment that is not academically supportive. Furthermore, not being prepared for university is attributed to the lack of time management, finances, limited understanding of university operations, and the perceived lack of support from their families (Richardson & Skinner, 1992; Stebleton et al., 2014; York-Anderson & Bowman, 1991). Singh and Moodley (2015) also highlight that the psychological pressures of being a first-generation student and the university demands increase the likelihood of dropout.

Scholars argue that first-generation students are less likely to graduate from university even when taking into consideration their academic preparation prior attending university (DeFreitas & Rinn, 2013; Strayhorn, 2006). This means that background factors such as

being the first one in the family to attend university undermine their chances of academic success long before they enter university. Unlike their counterparts, first-generation students are more likely to experience challenges relating to navigating university life and being integrated into the academic environment. Failure to be integrated into the university may lead to dropout or persistence challenges (Tinto, 1993). Soria and Stebleton (2012) note that one of the factors that contribute to integration challenges in first-generation students is their level of social capital (i.e., privileged knowledge, resources, information attained through social networks and parents who had been exposed to the university environment), which are important for students in terms of deciding which university to attend, as well as the academic and social choices to make while at university. Social capital is important because critical information about university is passed down from parents with tertiary education to their children (Coleman, 1990; Soria & Stebleton, 2012), a privilege that first-generation students do not have.

Due to lack of information about university, first-generation students have been reported to lack confidence in their academic ability, readiness for university life, and less likely to ask for assistance from their respective academic departments (Jenkins et al., 2009). This may lead to reduced levels of academic persistence and the eventual withdrawal from the institution. First-generation students struggle with a host of other issues during their transition period. More often than not, first-generation student are likely to come from low income households. In this regard, the findings of a study by Richardson and Skinner (1992) have revealed that first-generation students from middle income backgrounds are more able to cope with the transition to university than their counterparts from low-income backgrounds. In support of the argument, Engle and Tinto (2008) note that first-generation students from low-income households are less likely than their counterparts to be engaged in academic experiences that foster academic success. Thayer (2000) argues that first-

generation students from low-income families may be at a high risk of dropping out of university. On the contrary, Lohfink and Paulsen (2005) posit that first-generation students from high-income backgrounds are likely to persist academically than their counterparts from low-income backgrounds. This suggests that during the transition to university, first-generation students are not only confronted by challenges that relate to their generation status; but their socioeconomic status as well. Longwell-Grice and Longwell-Grice (2008) also highlight that first-generation students are often at risk of dropping out and that their academic success is hindered by a host of other challenges that they encounter during their transition to university. Given that the generation status of students has been suspected to play a role in their academic success, this study, therefore, sought to investigate the potential influence of generation status on academic persistence. Thus, it is hypothesised that the generation status will significantly predict academic persistence.

2.3.2. Socioeconomic status

Socioeconomic status is defined as a measure of an individual's sociological and economic place in society based on income, occupation and education (Reynolds & Cruise, 2020). It is the availability of important social, educational and economic resources that a family has (Altschul, 2012). According to the American Psychological Association (2007) and Maswikiti (2008), socioeconomic status can also be regarded as a position of an individual or group on the socioeconomic scale, determined by a blend of social and economic factors such as income, occupation, education, place of residence in the society, ethnic and religious background.

Individuals are identified differently, based on their socioeconomic standing. Categories often used to identify persons in terms of their socioeconomic status are: low socioeconomic status, middle socioeconomic status, and high socioeconomic status. The

socioeconomic status of university students in this regard, represents their family's socioeconomic standing, or the kind of families they come from in terms of the socioeconomic status.

Socioeconomic status is linked to students' academic success at university (Mtshweni, 2019). Shah et al. (2012) indicate that students' socioeconomic status is likely to play a role in their academic progress and success. The notion that students' socioeconomic status is linked to their academic success is well documented in the literature (Blanden & Gregg, 2004; Carneiro & Heckman, 2002; Gayle et al., 2002; Sciancalepore, 2017). For instance, Casanova et al. (2018) highlight that students from disadvantaged backgrounds, particularly low socioeconomic status backgrounds, are more likely to drop out of university. Additionally, Sommer (2013) also hinted that students from low socioeconomic backgrounds tend to report the highest dropout rates compared to their counterparts from high socioeconomic backgrounds. This finding was also corroborated by Letseka and Maile (2008), who have shown that most students who drop out of universities are from poor backgrounds with low socioeconomic status.

Several factors may help explain why students' socioeconomic status has an influence on academic persistence. For instance, Aina (2013); Stinebrickner and Stinebrickner (2014) argue that students from disadvantaged socioeconomic backgrounds may exhibit poor skills relating to study habits and critical thinking, which may negatively affect students' motivation to learn and increase the risk of dropout. In addition, Merritt and Buboltz (2015) posit that characteristics associated with socioeconomic status, such as a household that can afford educational resources affect scholastic attitude and academic skills. For instance, unlike high socioeconomic households, low socioeconomic households do not offer students opportunities to develop their academic abilities, beliefs and aspirations (Merritt & Buboltz, 2015). Evans (2004) also emphasises that low-income households are considered less

organised and provide fewer learning opportunities to their children. This can, in the long term, have a negative effect on students' preparedness for university, academic abilities, and eventually, their academic persistence when they transition to university. This also implies that students from low socioeconomic homes are disadvantaged, even before their transition to university.

Students from low socioeconomic backgrounds are not only disadvantaged outside the confines of the university, but also within learning institutions. This is because these students have to grapple with challenges relating to their socioeconomic status; such as not being able to afford basic necessities, which include for example residential fees, tuition fees, food, toiletries, study devices such as laptops, data bundles and so on. Callender (2003) adds that financial constraints do not only prevent students from enrolling at institutions of higher learning, but may also force them to drop out of university if at all they do enrol. In addition, Bennett (2003) has shown that financial hardships are the most significant predictors of students' decision to withdraw from their study programme. Moreover, Reynolds and Cruise (2020) add that financial constraints experienced by university students from low socioeconomic backgrounds contribute to their inability to persist academically.

Evidence suggests that students from low socioeconomic backgrounds are more likely to drop out of university than their counterparts from high socioeconomic backgrounds (Smith & Naylor, 2001; Sommer, 2013; Vignoles & Powdthavee, 2009). This shows that students' socioeconomic status as a background factor greatly determines their educational success in the sense that students persist or drop out of university before earning a tertiary qualification. It was therefore important to conduct a study on the role of socioeconomic status on the academic persistence of university students, against the backdrop that students from low socioeconomic status are increasingly gaining access to higher education institutions (Casanova et al., 2018). This is because an awareness of the role of

socioeconomic status on students' academic persistence may influence institutional policy change and lead to the improvement of support mechanisms for disadvantaged students during their transition to university. Hence, this study hypothesised that the socioeconomic status will significantly predict academic persistence.

2.4. Theoretical Framework and models of academic persistence

Bean and Eaton's (2000) psychological model of student retention informed this study. The model was developed, based on the models of attitude and behaviour by Bentler and Speckart (1979), as well as Fishbein and Ajzen (1975). In developing their model, Bean and Eaton (2000) also drew from sociological models by Spady (1971) and Tinto (1975) to explain students' persistence decisions however, with added psychological elements. In this regard, Bean and Eaton (2000) assert that students' decisions to drop out of their learning institutions are not necessarily sociological but rather based on psychological theories and processes. Indeed Pascarella and Terenzini (1991, p. 58) affirm this by positing that "developmental theories and the research based on them suggest that other important student traits may be overlooked if the perspective is strictly sociological", therefore, advocating for multiple theoretical lenses to understand the phenomenon of academic persistence.

Bean and Eaton's model sought to highlight institutional and psychological factors that are associated with academic persistence. As stated, the scholars developed their model using lenses of multiple theories (Bandura, 1986, 1997; Bean, 1982, 1990; Fishbein & Ajzen, 1975; Tinto, 1975, 1993; Weiner, 1986). Of significance, however, is that Bean and Eaton (2000) rest on the assumption that academic persistence behaviours are psychologically motivated. According to these scholars, students' persistence decisions are psychological and

manifest in a form of activities that promote persistence behaviour, for example consistently studying, attending tutorial classes, participating in student support groups and so on.

In outlining the framework for their model, Bean and Eaton claim that students' actions within the learning environment precede their academic outcomes. This means that students' behaviours, interactions or relationships with their institutions precede their academic persistence or their decisions to withdraw from university (Bean & Eaton, 2000). For example, attitudes such as institutional commitment precedes persistence behaviour (Bean & Eaton, 2000). This means that if students show increased institutional commitment (e.g., spending a great deal of time participating in academic tasks and student institutional functions), there is a likelihood that they will become academically integrated than students with decreased institutional commitment (Bean & Eaton, 2000). This may eventually, reinforce their commitment and, therefore, persist until they complete their studies.

Bean and Eaton's (2000) model of psychological persistence emphasises psychological factors as important determinants of academic persistence; hence the scholars have identified four psychological theories that are important to understand academic persistence. These are: attitude-behaviour theory, coping behavioural (approach/avoidance) theory, self-efficacy theory, and attribution (locus of control) theory. The next section discusses these theories and show how each of them fit into Bean and Eaton's psychological model of academic persistence. The section also discusses the relevance of the model for the current study.

Attitude-behaviour theory

The attitude-behaviour theory outlines the link between attitude (an individual's favourable/unfavourable evaluation of a situation) and behaviour (observable actions or a possible action resulting from a particular interpretation of a situation). According to

proponents of this theory, behaviour is the outcome of attitude, where attitude is based on the belief about the consequences of the behaviour (Bean & Eaton, 2000). For example, a student may realise that to complete a course (consequences), they have to develop their love for maths (attitude), and that to nurture their love for maths, they must also realise that it is important for them to attend all maths classes (behaviour). This theory demonstrates that in the educational context, the link between attitude and behaviour is important, particularly when considering the student's desired academic goals.

Students enter university with personal attitudes and other attitudes which relate to their academic achievements. These attitudes often resonate with institutions that they are attending. If a student displays a negative attitude towards their learning institution, they are likely to respond to academic activities with a negative attitude. For example, a student may dislike their university and, thus, abscond from lectures, or even fail to submit assignments. In this case, the student's attitude towards their university (disliking their academic institution) may lead them to neglect their academic work (behaviour). Ajzen and Fishbein (1977) concur with this sentiment and highlight that an individual with an unfavourable attitude is likely to display unfavourable behaviours, and not to perform favourable behaviours. In the same vein, an individual with a favourable attitude toward some object or situation is likely to display favourable attitude and behaviour towards the object or situation (Ajzen & Fishbein, 1977). Ajzen and Fishbein (1977) further argue that the individual's attitude may help us predict behaviour. Therefore, students' negative attitudes towards their university may engender behaviour that produces negative outcomes such as non-submission of assignments, missing examinations, non-participation in group discussions, and eventually discontinuing enrolment. This highlights the importance of encouraging students to have positive perceptions and attitude not only towards their institutions, but also towards their academic work and other aspects relating to their institutions. In this regard, the researcher

argues that students' positive attitude towards the university may be fostered by various factors in their learning environment that include, among others, developing their sense of belonging to the institution. Fostering a sense of belonging may help students commit to their institution, and eventually, increase their chances of succeeding academically. This has also been revealed by scholars who found that sense of belonging has a direct effect on students' institutional commitment (Hausmaan et al., 2007; Hausmann et al., 2009).

Coping behavioural theory

Another theory referred by Bean and Eaton (2000) in their model is the coping behavioural theory. Being in a new environment requires one to adapt to the novelty and pressures in the context. Adaptation, according to Bean and Eaton (2000), is synonymous with what Tinto refers to as integration. Therefore, in educational contexts, adaptation may be regarded as a process, which enables the student to achieve institutional or academic integration (Bean & Eaton, 2000). The scholars maintain that for students to adapt to the learning environment, they must first be able to cope with the demands of the new environment. According to the scholars, coping is a collection of behaviours that students use in order to adapt. This suggests that coping precedes adaptation. Lazarus (1966) is of the view that coping is a behavioural process that can improve a situation or defuse an unpleasant situation. In addition, Bean and Eaton (2000) highlight that coping is a mechanism used to deal with stressful situations. In educational contexts, students who cope well with challenges associated with their transition to university are able to cope with stress, gain the attitudinal perspective of academic and social integration, and most importantly, persist academically (Bean & Eaton, 2000). The coping behavioural theory, therefore, puts emphasis on students' ability to cope with the demands of being a university student, and the inclination to persist academically despite the difficulties encountered. The ability to persist academically despite the challenges, for example, has been highlighted by Zembrodt (2019),

who revealed that students from low socioeconomic backgrounds can navigate the hardships experienced at university and persist academically. In addition, the ability to cope and adapt in an academic environment may, to some degree, indicate that the student feels a sense of belonging, and has found their niche in the institution.

Eaton and Bean (1995) refer to the *approach/avoidance theory,* which is closely related to the coping behavioural theory, to further explain their conceptual model of student attrition, which was found to be helpful in examining ways in which students become integrated into the university. The scholars made a distinction between approach behaviours and avoidance behaviours that students are likely to engage in to cope with the new learning environment. According to the scholars there is a link between these behaviours and academic integration. Bean and Eaton (2000, 1995) argue that for students to persist academically, they have to continually rely on the approach or avoidance strategies. Approach behaviours are regarded as acts that students use to focus attention on and respond aggressively to a stressor, whereas avoidance behaviours are considered passive practices that students may use to avert a stressor (Bean & Eaton, 2000). For example, students have to ''approach'' behaviours related to academic success, such as studying daily and submitting their assignments on time.   Similarly, students have to use the ''avoidance'' strategy, which entails avoiding behaviours that impede their academic success, such as missing lectures or tutoring lessons. These behaviours serve as motivation for students and contribute to academic persistence (Bean, 2005; Bean & Eaton, 2000). Bean and Eaton (2000) further maintain that approach behaviours that ensure students' engagement in their academic work are positively related to academic integration, while avoidance behaviours such as missing lectures are negatively related to academic integration. Avoidance behaviours may produce different outcomes, depending on the task or activity being avoided. For example, avoiding an academic activity by absconding from tutoring lessons may produce negative academic

outcomes, whereas avoiding missing tutoring lessons may produce positive academic outcomes. This means that the manner in which students approach or avoid tasks at university has a significant effect on their academic integration and ultimately, their academic persistence. In the context of this study, the researcher argues that approach and avoidance behaviours may be related to one of the factors under investigation namely academic anxiety. For example, a student who is anxious because they do not want to repeat a course or module may use approach behaviours such as studying constantly to avert failure. Another student who is anxious because they have to render presentations throughout the semester may use avoidance behaviours and abscond each time they have to make a presentation. Eventually, the approach or avoidance behaviour may impact on their academic success and determine whether they persist or dropout of university. Similarly (and linked to academic motivation), a student who is motivated is likely to engage in approach behaviours such as studying consistently; while simultaneously avoiding behaviours that may lead to academic failure, such as absconding from tutoring lessons. In turn, such behaviours may increase a student's level of commitment towards their studies and the institution.

   Self-efficacy theory

   Bean and Eaton also used Bandura's (1986, 1997) model of self-efficacy to explain the psychological process of academic persistence. According to Bandura, self-efficacy is an individual's perception of their ability to carry out the necessary actions to attain particular outcomes. The scholar maintains in this regard that "self-efficacy is concerned with perceived capability" (Bandura, 2005, 308). Perceived self-efficacy plays an important role in human functioning because it affects behaviour, and has an impact on other determinants such as individual aspirations, outcome expectations, and perceptions of impediments (Bandura, 1994, 1997). Academically, self-efficacy is one of the important factors that greatly contributes to students' success; because it greatly influences choices and actions that

one takes to achieve expected academic goals (Pajares, 2002). According to Bean and Eaton (2000), the element of self-efficacy in university students is important for their persistence, because it suggests that students believe in their ability to perform academic tasks, demonstrate competency, and achieve goals. Bean (2005) argues that there is an important link between students' self-efficacy, their academic milestones or goals, and their levels of persistence. In essence, Bean and Eaton (2000) highlight that students' knowledge of competency about themselves is important and motivates them to continue with their studies. In addition, studies found that self-efficacy is related to academic persistence (Gloria et al., 2005; Torres & Solberg, 2001) and, therefore, underscoring the importance of self-efficacy in determining the persistence of university students. The inclusion of self-efficacy in the psychological theory of academic persistence is justifiable, not only because self-efficacy is important for academic persistence, but also because it is crucial in engendering motivation, confidence and courage to act in ways that may be beneficial to students.

Studies have highlighted the significance of self-efficacy in students' academic success (Basith et al., 2020; Lent et al., 1984). For example, a study by Lent Brown and Larkin (1987) found that self-efficacy predicts academic persistence. In addition, self-efficacy was found to have a significant effect on the intentions of students to persist academically (Peck, 2017). These findings highlight the need to ground self-efficacy in theoretical lenses of academic persistence. According to Bean and Eaton (2000), a strong sense of self-efficacy towards the learning environment boosts students' confidence in their ability to survive, adapt, and eventually; inculcate the motivation to persist to graduation. The use of Bean and Eaton's model to guide this study is, therefore, important. This is because this study sought to investigate academic motivation; which, according to Bean and Eaton, is linked to self-efficacy, and ultimately, academic persistence.

Attribution theory

Bean and Eaton also used Weiner's (1986) attribution theory as a basis to develop their model of academic persistence. According to Weiner (1986), there are three categories of attribution; which are locus of control, stability, and controllability. In their psychological model of academic persistence, Bean and Eaton refer to the locus of control as an important aspect for students' academic success, particularly academic persistence. Locus of control refers to the belief that the outcome of an event is decided by one's own actions or by chance (Rotter, 1966). It refers to an individual's perception of the underlying causes of successes or failures in their lives (Rotter, 1975). According to Rotter (1966), locus of control comprises two aspects; namely internal and external locus of control. In terms of internal locus of control, an individual believes that life events are under their control and that they are personally responsible for those events happening whereas with external locus of control an individual believes that life events depend on external factors or the power of others (Pourhoseinzadeh et al., 2017).

In the educational context, a student who believes that they can excel in an exam because they work hard has an internal locus of control, whereas the one who believes that they will not do well in an exam because the lecturer is boring has an external locus of control (Bean & Eaton, 2000). This means that students with an internal locus of control tend to perceive situations to be within their control, and they determine their fate. On the contrary, students with an external locus of control are likely to perceive that situations are beyond their control, and that their educational success is determined by factors out of their control. In the same manner, students who believe that they will succeed academically despite their low socioeconomic status demonstrate an internal locus of control whereas those who believe that their low socioeconomic background will disadvantage them academically demonstrate an external locus of control. Weiner (1986) postulates that individuals with

internal locus of control are more likely to be motivated, whereas individuals with external locus of control are less likely to be motivated. Academically, students with an internal locus of control are likely to strive for achievement, make effort towards their learning and persist despite the challenges they may encounter (Findley & Cooper, 1983). However, students with external locus of control are likely to attribute their poor academic performance and failures to factors beyond their control (Rinn & Boazman, 2014). Ajzen and Fishbein (1980) also add that students with internal locus of control are more likely to complete their studies, whereas those with an external locus of control are more likely to drop out. This is because students with an internal locus of control are eager to learn than those with an external locus of control (Atibuni et al., 2017). Atibuni et al. (2017) further suggest that students should rely on their internal locus of control to succeed academically. This means that having an internal locus of control will ensure that students stay motivated academically, participate in academic activities for self-fulfilment, and persist until they complete their studies.

2.4.1. Other characteristics of Bean and Eaton's model of academic persistence

Bean and Eaton's model combines the four psychological theories discussed in the preceding section. In addition, Bean and Eaton (2000) state that entry characteristics such as past behaviour, skills, and attributes affect how students interact in the learning environment, that is, students' knowledge of themselves in relation to past characteristics influences how they respond to situations in the university environment. The scholars further posit that the decision to persist or withdraw from university is informed by students' personal beliefs about their past behaviours. For example, a university student who struggled to collaborate with other learners in doing academic tasks in high school may be reluctant to participate in academic activities at university, owing to their previous knowledge that they find it difficult to work in groups. Bean and Eaton (2000, p. 56) also highlight that "past experience with stressful situations similar to those anticipated to exist in the new environment will establish a

foundation for the development of a repertoire of coping strategies that can be used in the new environment". This means that students may either succeed or struggle to fit in the university environment, based on their knowledge that they were struggling in high school. The inability to fit in may yield negative psychological outcomes, which may, in turn, have an effect on students' academic and social integration, and eventually undermine their levels of persistence. Conversely, successfully adapting to the learning environment may yield positive psychological outcomes, improve students' institutional commitments, and serve as motivation for them to persist academically. Bean and Eaton' (2000) psychological model of academic persistence is presented in Figure 1 below.
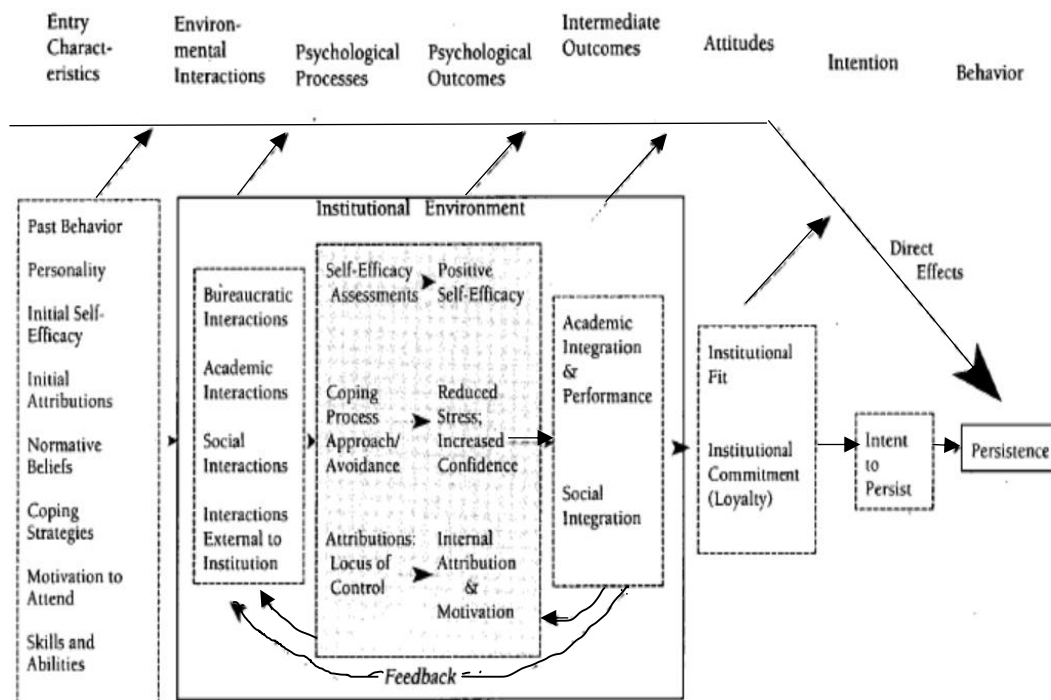
Figure 1: Bean and Eaton's (2000) psychological model of college student persistence. Reprinted from "A psychological model of college student retention. *Reworking the student departure puzzle"*, (p. 57), by J. Bean & S.B. Eaton, 2000, Vanderbilt University Press. Reprinted with permission.

As stated earlier, Bean and Eaton's model focuses on the psychological aspects as important contributors to academic persitence. For instance, the scholars argue that on assuming a novel role in the new learning environment, students make new psychological assessments of the environment. These assessments are important because they are likely to result in students' development of a revised perspective about their university (Bean & Eaton, 2000). Furthuremore, if the revised perspective about their university is positive, students may have an enhanced self-efficacy and develop better coping strategies, which may reduce their stress levels and enhance their confidence in tackling challenges in their academic contexts (Bean & Eaton, 2000). Moreover, the scholars point out that positive psychological assessments of the learning institution may also lead students to develop perceptions that they are in control, and that they are responsible for their academic success. According to these scholars, this may further lead to social and academic integration, which may, in turn, influence academic motivation and persitence. This is particularly important for this study because the researcher argues that positive psychological assessments of the learning institution are important for enhancing students' sense of belonging, academic motivation, and perceived social support. Furhermore, positive psychological assessments of the learning environment may also reduce anxiety levels associated with the transition to university, and, therefore, foster students' integration into the institution, and engender their academic persistence.

Bean and Eaton's model uses psychological theories to explain academic persitence from a psychological perspective. The model shows how psychological factors, particularly self-efficacy, coping mechanisms, attitude, and locus of control are linked to academic success, and precisely academic persitence. Additionally, the scholars argue, using the model as their point of reference, that students are primarily pychological beings; and that

sociological factors play a secondary role in academic persitence (Bean & Eaton, 2000), thus postulating that pschological factors play a primary role in determining academic persitence. The researcher concurs with the scholars and hence, hypothesised that sense of belonging, perceived social support, academic motivation and anxiety will have a significant effect on academic persistence.

Bean and Eaton's model is relevant for this study. Unlike other models, such as Tinto's model of institutional departure, which provides a theoretical model for student dropout; predominantly from a social perspective, Bean and Eaton's model acknowledges the importance of social factors (e.g., entry characteristics), albeit to a minimal extent, while simultaneously emphasising psychological factors as key determinants of students' academic persistence. Bean and Eaton's model is, therefore, important for this study since it acknowledges both psychological and social or entry charactersitics as determinants of academic persistence, with emphasis, however, placed on psychological factors. In the same vein, this study sough to investigate if psychosocial factors have an effect in the academic success of university students. The next section discusses the concepts of social integration and institutional commitment, which Bean and Eaton borrowed from Tinto's model of institutional deparure. Social integration is an extension of Bean and Eaton's (2000) coping behavioural theory which advocates for the need to adapt to the institutional environment in order to succed academically. Tinto (1975) argues that social integration is preceded by an individual's evaluation of the academic system which enables them to identify with the norms of the institution, and strengthen persistence desires. Institutiona commitment, in Bean and Eaton's (2000) model reflects students' devotion towards their learning environment. Tinto (1975) argues that students with high levels of commitmment towards their institution tend to persist to completion compared to students will low levels of commitment, and that variation in dropout behaviour may be attributed to institutional

commitment. Tinto's (1975) social integration and institutional commitment are important for understanding dropout behaviour and holds value for this study since Bean and Eaton (2000) drew on these concepts to understand academic persistence, however, to a minimal extent. The concepts, as modelled in Tinto's (1975) seminal work are discussed below to enhance Bean and Eaton's model of academic persistence.

2.4.2. Tinto's (1975) model of institutial depature

In developig his model of institutional departure, also known as the student integration model, Tinto (1975, 1993) used the theoretical lenses of Durkheim (1961) and Spady (1971) to explain student dropout. Tinto (1975, 1993) likens the university to a social interaction space, in which students have to be integrated. The scholar also posits that integration into the university environment is a process, which is informed by students' experiences within the learning environment. The experiences encountred will determine students' persistence or withdrawal from the institution. According to Tinto's model, students' the decision to persist or leave the institution serves as a reflection of their success or failure to navigate the stages towards integration into the university community (Aijohani, 2016).

Bean and Eaton (2000) used Tinto's model of institutional departure to substantiate what their model stipulates, for instance, the scholars borrowed from Tinto's social integration and institutional commitment concepts. According to Tinto (1975, 1993), social integration reflects the degree of congruency between the student and their social environment. In the learning environment, social integration may be achieved or reinforced through peer interactions, extracurricular activities, and student-faculty relations (Tinto, 1975, 1993). In addition, the scholar states that successful integration into the social sytems of the university may increase the likelihood of academic persitence. Adding to the

argument, and through their empirical model of student dropout, Spady (1971) also revealed

that students' perceptions of social integration are directly linked to academic persitence.

Thus further highlighting the vital role of social integration in students' academic success. In

their model of academic persitence, as informed by Tinto's model of insitutional departure,

Bean and Eaton (2000) show that social integration is a product of psychological outcomes,

and that it also determines students' levels of commitment to the university. This means that

students have to find a psychological fit between themselves and the learning enironment for

them to be socially integrated into institutions. The ability to be socially integrated into the

confines of the institution may contribute to academic persistence (Bean & Eaton, 2000).

This suggts that the concept of social integration holds value with regards to students'

educational success. In the context of this study, social integration into the university is

important, particularly when considering students' relationships in the educational contexts,

which may influence their perceptions of social support, which, in turn, may influence

academic persitence (de la iglsia et al., 2014; Zavatkay, 2015). Figure 2 below illustrates

Tinto's (1975) model of institutional departue.
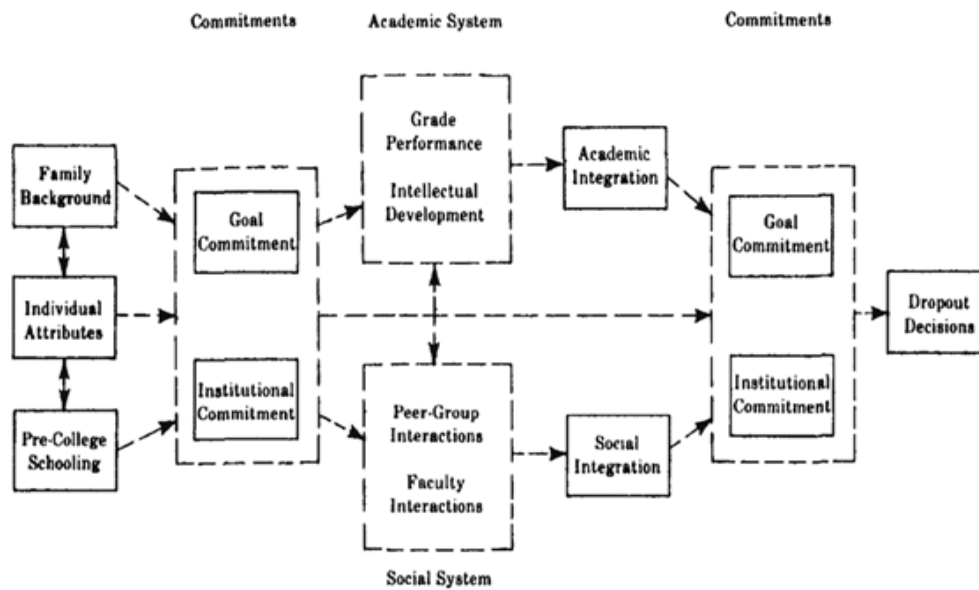
Figure 2: Tinto's (1975) model of institutional departure. Reprinted from "Dropout from higher education: A theoretical synthesis of recent research," by V. Tinto, 1975, *Review of Educational Research*, 45(1), p. 95. Copyrights 1975 by SAGE Publications. Reprinted with permission.

Bean and Eaton (2000) highlight another important aspect of their academic persitence model, borrowed from Tinto's model of institutional departure; namely institutional commitment. Institutional commitment denotes the extent to which students are attached to their institution, as well their level of satisfaction with their institution (Davidson et al., 2009). Institutional commitment is also a reflection of students' satisfaction and disappointments in the learning environment (Tinto, 1975). According to Bean (2005), institutional commitment is the most important variable that influence academic withdrawal. Tinto's (1975, 1993) studies have also shown that being less committed to the institution will likely contribute to dropout. On the contrary, being more commited to the institution may lead to academic persitence. Tinto (1975) further argues that students may continue studying at an institution not because they want to complete their studies, but because they are committed to it. According to Tinto (1975), the interaction between students, the academic,

and social systems of the university continually influence their institutional commitment in ways that may lead to academic persitence. This suggests that institutional commitment, as incorporated in Bean and Eaton's model plays a significant role in predicting students' academic persistence or dropout. Using Bean and Eaton's (2000) model as a basis for this study is, therefore important since the model incorporates (although from a psychological point of view) institutional commitment, which is linked to academic motivation (Al-Madi et al., 2017; Gilar-Corbi et al., 2020; King, 2013). Institutional commitment is not only linked to academic motivation but also related sense of belonging. For instance, Hausmaan et al. (2007) found that sense of belonging is positively related to institutional commitment. Moreover, Hausmaan et al. (2007) found that sense of belonging is a predictor institutional commitmet and that students who reported greater levels of belonging and institutional commmtment had stronger intentions to persist academically. In support of the findings, Hausmann et al. (2009) revealed that sense of belonging had direct effects on institutional commitment. Thus, supporting the need to draw from Tinto's model to understand students commitments to the institution as influnced by sense of belonging. Hausmaan et al. (2007) argue that Bean's model (1985), which is similar to Bean and Eaton's (2000) model and Tinto's (1975) model, considers sense of belonging and institutional commitment as important determinats for academic persistence. Hence, this study relied on these models to frame the role of psychosocial fcators and to understand how they engenders students' commitment levels and academic persistence.

As indicated earlier, Bean and Eaton used Tinto's model of institutional departure to conceptualise their own model. Other scholars have also used Tinto's model of institutional departure widely to shed some light on the phenomenon of dropout among students in institutions of higher learning (Bean, 1982; Berger & Braxton, 1998; Cabrera et al., 1993; Terenzini & Pascarella, 1980). The researcher, however, did not use Tinto's model as a

primary model for this study because the model does not apply to the context of this study, as shortfalls were identified. It is worth noting that this study is distinctively a psychological study, and, therefore, could not be guided by a theory that is considered to be primarily sociological. In this regard, the researcher provided several reasons for not using Tinto's model as the main theoretical model guiding the study: (a) Tinto's model does not adequately address the challenges encountered by historically disadvantaged students, their socioeconomic status, and how these affect their academic persistence, (b) the model does not address Black students' integration challenges in HWIs, nor does it address specific psychological factors that highly influence academic persistence such as having a sense of belonging to the university, (c) Tinto's model does not refer to psychological factors that play a role in students' academic success, and (d) Tinto's model does not address students' generation status, which is an essential aspect that helps shed some light on academic persistence or retention. The generation status of students is a crucial factor, especially when one considers transitional challenges that students in institutions of higher learning encounter, where a significant number of them, particularly in South Africa, are from the generation of parents with no tertiary education. Issues of generation status are important in the South African higher education landscape and higher education institutions in other developing countries in Africa; owing to the economic and transformation challenges and limited access to educational opportunities, which can be attributed to the legacy of apartheid or colonialism.

This study was, therefore, guided by Bean and Eaton's model. The model, however, is not without shortfalls. This is because the model as well does not address the concept of first-generation students and how it influences academic persistence. In the same vein, although the model refers to entry characteristics, it does not delve into socioeconomic factors, and how these affect students' academic success. Students' socioeconomic

circumstances may negatively influence their sense of belonging to university, and therefore undermine their chances of success (De Bortoli, 2018). Furthermore, the model, like Tinto's (1975) model of institutional departure, was conceptualised in high-income countries with advanced, well-funded higher education systems and functional student support service programmes (Charney et al., 1997). In South Africa and other middle-to low-income countries, these models are relevant, however to a limited extent. This is because the education systems of middle and low-income countries are predominantly underfunded (Teferra, 2013; Wangenge-Ouma, 2010; Wangenge-Ouma & Cloete, 2008); and the student support services are not widely recognised as key national priorities of higher education systems (Ngubane, 2018; Van Heerden, 2009). The researcher argues that underfunded and sufficiently funded higher education systems are structurally different in that students' needs are catered for differently. For example, in instances of higher education systems that are underfunded, particularly in middle and low income countries, fewer resources are spent on financial aid support and other institutional support systems that may aid students to succeed (Wangenge-Ouma, 2021; World Bank Group, 2021). Contrary, sufficiently funded higher education systems in high income countries invest adequate resources to education (World Bank Group, 2021). These funding discrepancies contribute to varying institutional typologies. Hence, academic persistence or student dropout may be influenced by different institutional factors due to varying institutional typologies. The education systems in middle and low-income countries differ from the ones within which the models were developed. Therefore, the models, although widely used by scholars to understand aspects of persistence and retention, may not necessarily be relevant to other contexts. In support of this claim, Jama et al. (2008) argue that Tinto, Bean and Eaton's models have weaknesses and a limited scope in the South African context. There is, therefore, a need to develop context-appropriate models of academic persistence from a psychological perspective.

As previously stated, sense of belonging is an important psychological factor and takes priority in this study since it hypothesised that it would directly and indirectly inform academic persistence. Bean and Eaton's model consider psychological factors as key determinants of academic persistence. Nonetheless, the model does not make a specific reference to sense of belonging as a key factor that takes precedence and influences students' educational success, and in particular, academic persistence. Therefore, to address this shortfall, Strayhorn's (2012) model of sense of belonging to university was used to demonstrate the influence of sense of belonging on academic persistence. Strayhorn's model is discussed below.

2.4.3. Strayhorn's model of sense of belonging to university

This study considers sense of belonging to take on a heightened importance; since its lack thereof may lead to academic failure. Sense of belonging has been identified as a basic human need, which is essential for the psychological well-being and daily functioning of individuals across contexts, including the educational context (Baumeister & Leary, 1995; Jackson, 2016; Maslow, 1954; Tovar & Simon, 2010). Furthermore, sense of belonging has been reported to have consequences on behaviour (Bollen & Hoyle, 1990). In the context of learning, sense of belonging has been found to increase commitment to the institution and persistence (Hausmann et al., 2009). Strayhorn (2012) also states that sense of belonging takes priority and determines students' persistence or drop out decisions. According to the scholar, students in higher education institutions cannot achieve their goals until their sense of belonging is gratified. This suggests that sense of belonging is a vital psychological variable which, if fulfilled, can determine students' academic success. Indeed, the scholar argues that during their tenure at university, students' sense of belonging occupies a special prominence. This means that students' sense of belonging informs their academic milestones, social and institutional integration, as well as all other forms of commitment to

the institution. According to Strayhorn (2012), when students begin to experience a decline in sense of belonging to social spaces and contexts (i.e., classrooms, lecturer halls, university environment), then, there is an increased likelihood that they will develop negative outcomes such as stress and depression. Conversely, increased feelings of sense of belonging may engender students' involvement in academic activities, achievement and retention (Strayhorn, 2012). Figure 3 below depicts Strayhorn's model of sense of belonging.
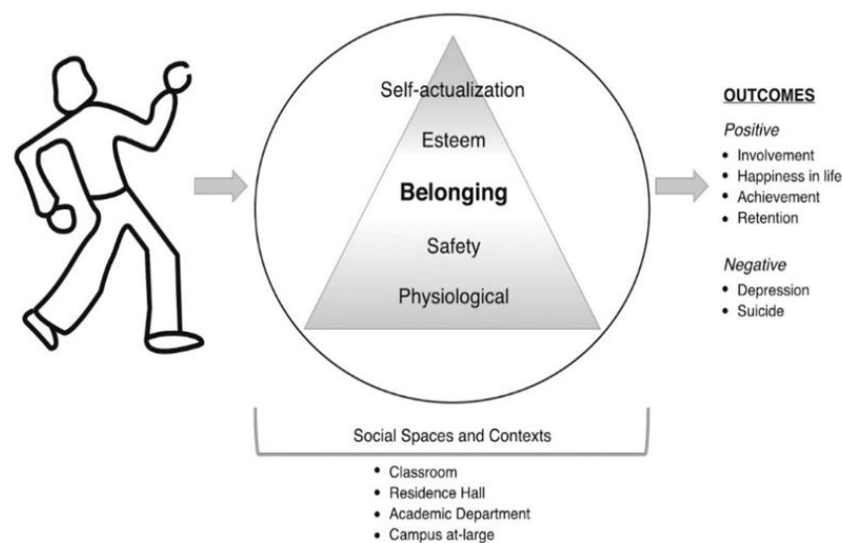
Figure 3: Strayhorn's (2012) model of sense of belonging. Reprinted from "College students' sense of belonging: a key to educational success for all students", (p. 25), by T. L. Strayhorn, 2012, New York, NY: Routledge, Taylor & Francis group. Reprinted with permission.

Sense of belonging is vital to students' academic success, and without it, their chances of succeeding academically are limited. This is because a deficiency in belonging may result in reduced academic commitment levels. Strayhorn (2012) states that because sense of belonging is essential, emphasis should be placed on developing institutions that foster sense of belonging, as this may increase students' chances of completing their degrees. It is, therefore, essential that students in educational contexts feel a sense of belonging as it has

been found to influence students' academic motivation, academic anxiety, and academic persistence (Allen, 2019; Becker & Luthar, 2002; Booker, 2016; Ferreira et al., 2011; Roffey et al., 2019). Therefore, using Strayhorn's (2012) lenses and acknowledging the role played by sense of belonging in the educational success of students, the researcher hypothesised that sense of belonging will significantly predict academic motivation, academic anxiety, academic persistence, and also have a significant indirect effect on academic persistence via academic anxiety and academic motivation. Based on this hypothesis, the researcher argues that the study will highlight the importance and the need for students to have a of sense of belonging towards their learning institutions. This means that in the current study, sense of belonging takes priority (Strayhorn, 2012), because of its important role in students' educational success.

A multitude of background factors may influence students' sense of belonging, among them is the socioeconomic status. Scholars have shown that there is a link between students' socioeconomic status and sense of belonging to the learning environment (Ostrove & Long, 2007; Soria & Stebleton, 2013). In this regard, Jury et al. (2019, p. 1) are of the view "that low socioeconomic status students have a low sense of belonging to university than high socioeconomic status students". Hence, the researcher hypothesised that the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' socioeconomic status.

Sense of belonging is multidimensional and may be linked to students' generation status. According to Salazar (2019), sense of belonging can enhance the academic experience of first-generation students. Despite this, scholars argue that compared to their counterparts, first-generation students' sense of belonging seem to be lacking (Choy, 2001;

Terenzini et al., 1996). In support of this argument Stebleton et al. (2014) argue that there are significant differences between first-generation students and continuing-generation students' sense of belonging. According to their findings, first-generation students reported lower levels of sense of belonging compared to continuing-generation students (Stebleton et al., 2014). First-generation students are inclined to display a low sense of belonging to university due to lack of connections with people who have attended university (Graham, 2011). Jehangir (2010) adds that first-generation students are likely to drop out if they do not have feelings of belonging towards their university. Therefore, highlighting the influence of the students' generation status on their sense of belonging which could result in academic persistence challenges. Given the link between generation status and students' sense of belonging, this study, therefore, also sought to examine the hypothesis which states that the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' generation status.

2.5. Summary of the chapter

This chapter discussed factors which were previously found to be related to academic persistence namely, sense of belonging, academic motivation, academic anxiety and perceived social support. The chapter also discussed other factors namely socioeconomic status and the generation status of students, which were found to be related to academic persistence. The theoretical framework, focusing on Bean and Eaton's psychological model of academic persistence, Tinto's model of institutional departure, and Strayhorn's theory of sense of belonging was also discussed. Chapter III discusses the research design and methodology that informed this study.

<center>**CHAPTER III**</center>

<center>**RESEARCH DESIGN AND METHODOLOGY**</center>

3.1. Introduction

This chapter presents the research design and methodology used to conduct this study. The purpose and objectives of the study are discussed. The chapter also outlines the research paradigm and design, the study population and the sampling technique used. In addition, the data collection techniques, research instruments and data analysis procedures are also discussed.

3.2. Purpose and objectives of the study

The purpose of the study was to investigate whether or not psychosocial factors have an influence on the academic persistence of undergraduate university students. In this regard, the objectives of the study were as follows:

- First, to test if sense of belonging, academic motivation, academic anxiety and perceived social support will significantly predict academic persistence.

- Second, to test if sense of belonging, academic motivation, academic anxiety, perceived social support, generation status and socioeconomic status will significantly predict academic persistence.

- Third, to test whether sense of belonging will significantly mediate the relationship between academic anxiety and academic persistence.

- Fourth, to test whether sense of belonging will significantly mediate the relationship between perceived social support and academic persistence.

- Fifth, to test if sense of belonging will significantly moderate the relationship between academic motivation and academic persistence.

- Sixth, to test if sense of belonging will significantly predict academic motivation, academic anxiety, academic persistence, and also have a significant indirect effect on academic persistence via academic anxiety and academic motivation.

- Seventh, to test if the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' socioeconomic status.

- Eighth, to test if the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' generation status.

- Last, to test if the perceived social support will significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model.

3.3. Research paradigm and design

A research paradigm is a philosophical worldview of science which encompasses a research approach and assumptions inherent to that particular worldview (Haase & Taylor, 1988). According to Jonker and Pennink (2010), a research paradigm constitutes a set of fundamental assumptions and believes, which serve as a thinking framework that guides the

behaviour of the researcher. This study is underpinned by the post-positivism paradigm. The post-positivist paradigm rests on the notion that one can never fully capture the true reality, and that there is no perfect scientific method that yields fully accurate findings as all methods have limitations and shortcomings (Panhwar et al., 2017; Ponterotto, 2005). Unlike the positivist paradigm, the post-positivist paradigm provides that one can never unearth absolute truth when studying human behaviour (Phillips & Burbules, 2000). In post-positivism, the goal of researcher is to describe and make predictions, based on human behaviour (Racher & Robinson, 2002). However, prediction is possible in limited ways, because human beings are self-interpreting; and therefore, subject to change their interpretations during the research (Racher & Robinson, 2002). This means that during research, human beings can make errors when responding to questionnaires. In this regard, Ponterotto (2005) adds that human intellectual interpretations may be flawed and intractable, and therefore, this makes true reality difficult to capture. The researcher acknowledges the reality from a post-positivist perspective, and that the error component is inherent in social science research; hence, the study was guided by the post-positivist paradigm.

Different research designs are used to answer different research questions (Cook & Cook, 2008). Thus, to answer the research questions posed in this study, and in conjunction with the post-positivist paradigm, a non-experimental research design was used. A non-experimental research design does not involve the manipulation of an independent variable; but rather, measures variables as they occur naturally. (Price et al., 2017). Johnson (2001) also adds that a non-experimental research design does not involve manipulation of an independent variable, and that randomisation of participants is not possible. The non-experimental research design seeks to describe or predict the nature of relationships between variables (Price et al., 2017). Tompson and Panacek (2007) state that non-experimental

research is purely observational, and that the findings thereof, are intended to be purely descriptive.

Non-experiential research designs make no reference to causality and thus, cannot claim cause and effect. Nevertheless, the findings from non-experimental research designs can be better generalised and the design has relatively stronger external validity than experimental designs (Shadish et al., 2002). Non-experimental research designs serve as an appropriate alternative when manipulation of the independent variable and randomisation is not feasible (Belli, 2009). "Non-experimental research design is systemic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or they are inherently not manipulable" (Kerlinger, 1986, p. 348).

Thus, the non-experimental research design was found to be relevant for this study. This is because the study sought to investigate variables as they occur naturally (i.e., students' academic experiences) with no manipulation of variables and random assignment of participants. Johnson (2001) highlights that non-experimental research is an important and appropriate type of research within the field of higher education. According to the scholar, this type of a research design is an important area of research for educational researchers because there are important non-manipulable variables that require further research within the field of higher education. This is particularly the case with the current study in the sense that it sought to investigate and shed light on the effect of psychosocial factors on academic persistence without establishing any causality. Non-experimental research consists of various typologies, which include, for example correlational, survey, causal-comparative, observational, and cross-sectional research (Christensen, 2001; Cook & Cook, 2008; Johnson, 2001; Price et al., 2017; Tompson & Panacek, 2007). This study sought to establish whether

relationships exist between variables under investigation and to make predictions. Therefore, to achieve this, a correlational research was used.

3.4. Correlational research

Correlational research is the type of non-experimental research where the researcher measures variables and assesses the statistical relationship among them with no effort or intention to manipulate the independent variable or control extraneous variables (Price et al., 2017). Correlational research is concerned with discovering associations between two or more variables in the same study population (Leedy & Ormrod, 2010). Asamoah (2014) also states that correlational research is a quantitative research method where two or more quantitative research variables from the same group of subjects are taken through a series of computations to determine the relationship between them. Furthermore, correlational research represents an approach to research that focuses on assessing covariates among naturally occurring variables (Asamoah, 2014). In addition, a correlational research method may be used to determine a regression equation for making predictions about the variables under investigation (Simon, 2011). According to Maiwanda and Lawrence (2015), correlational research provides a platform for regression to predict the values of the dependent variable, based on the known associations that exist between predictor and dependent variables.

The use of correlational research in the social sciences cannot be overemphasised (Maiwanda & Lawrence, 2015). Other than being used to establish relationships between variables, correlational research may be used to confirm a theory or test hypotheses (Prince et al., 2017). Adding to the argument, Maiwanda and Lawrence (2015) also indicate that correlational research can play a significant role in the development and testing of theoretical models. Duncan (1966), as well as Maiwanda and Lawrence (2015) argue that once the

nature of correlations has been established, the information relating to the correlations can be used to develop theoretical models, using advanced statistical techniques. This suggests that the use of correlational research in this study is relevant; since one of the aims of the study was to test theoretical models of academic persistence with sense of belonging as a variable of heightened importance. The study also sought to test whether psychosocial factors being investigated predict academic persistence. Therefore, the researcher deemed it appropriate to use correlational research since it enables the researcher to test for regression equations to make predictions.

3.4. Cross-sectional survey

A cross-sectional survey was considered the appropriate method for this study. A cross-sectional survey is a method of observation or collecting data at a specific point (Creswell, 2012, 2014). According to Connelly (2016), a cross-sectional survey occurs at one point in time, and is considered a snapshot that gives a picture of what the researcher wants to study. This method involves the use of a single questionnaire per participant over a short period (Maree & Pietersan, 2010). This means that a cross-sectional survey can be used in instances where the researcher does not intend to track participants over the course of time for follow-up purposes.

The use of a cross-sectional survey in this study is justifiable. According to Field (2009), the cross-sectional survey method is used in social sciences research for collecting cross-sectional data. In addition, Connelly (2016) indicates that cross-sectional surveys are often used in social sciences research to collect data on the prevalence of behaviours, intentions and attitudes. This suggests that this method is appropriate for the current study since the study sought to understand students' behaviour in an academic setting. Access to the study site was limited to a certain time frame, hence the researcher sought to collect data

on a single occasion, with no attempts to make follow-ups. Other reasons for using this method is that it is relatively less costly, not associated with participant attrition, and that the researcher cannot influence participants (Connelly, 2016; Kuhn, 2016; Lavrakas, 2008). Moreover, the researcher decided on the cross-sectional survey because the intention was not to manipulate the independent variable. According to Meninger (2012), a cross-sectional survey is an appropriate approach for testing a hypothesis and investigating independent variables, which cannot be manipulated for ethical reasons. This means that a cross-sectional survey is a viable research approach in instances where the researcher is interested in investigating naturally occurring variables, with no intention of introducing any control or manipulation. As this was the case with the current study, and considering the easy administration process, time effectiveness and confidentiality, the approach was considered suitable for this study.

3.5. Population and sampling

3.5.1. Population

This study sought to investigate the effect of psychosocial factors on the academic persistence of undergraduate students. Therefore, all students registered for undergraduate qualifications at the university under study were considered the population for this study.

3.5.2. Sample and sampling strategy

Participants took part in the survey on the basis of their willingness and availability to respond to the online questionnaire. As such, a non-probability sampling method, in particular, convenience sampling was used. Convenience sampling is a type of non-probability sampling where members of the target population (i.e., undergraduate students) that meet the researcher's criteria, are available and willing to participate are included in the sample (Dörnyei, 2007). In this study, participants that formed part of the sample were

registered undergraduate students who were at least 18 years and older. Students who did not meet this criterion were considered ineligible and were, therefore excluded from participating in the study.

3.5.3. Research setting

The data were collected among undergraduate students at a public university in South Africa. The university is classified as a comprehensive university (i.e., it offers academic and vocational programmes) and offers a range of qualifications at an entry level, and comprises different faculties; which include education, law, human sciences, accounting sciences, economic and management sciences, agriculture and management sciences, science, engineering, and technology. In terms of enrolment statistics, the majority of the students are Black and female. The university attracts approximately 9% of international students. In addition, with regards to age, 60% of students are between the ages of 25 and 39 years. The university has previously reported a challenge of student dropout. Hence, it was considered the appropriate site for the study.

3.6. Data collection procedures

The *Qualtrics* web-based survey tool was used to collect the data from participants. The tool is used to conduct survey research and enables participants to respond to the survey questions using the link generated from the tool. When preparing the survey in *Qualtrics*, the researcher also drafted an information letter detailing the aim and purposes of the study with the link where participants can access the consent form and the questionnaire. The information letter was sent to the university's Information Computer Technology (ICT) department for distribution. Students who participated in the survey received the information letter from ICT through their institutional student email addresses. The survey was distributed to 90 000 undergraduate students registered for junior diplomas and degrees, and

who were eligible for participation (i.e., at least 18 years of age). A total of 489

questionnaires were completed. All incomplete questionnaires were not considered and,

therefore, discarded before data analysis.

Participants were asked to read and sign the consent form electronically before

attempting to respond to the questionnaire. The first part of the questionnaire asked questions

that assessed participants' feelings about belonging to the university. The second part

assessed their perceptions of social support. The third part assessed their academic

motivation. The fourth part assessed their academic anxiety. The fifth part assessed their

academic persistence, while the last part solicited their demographic information which

included their age, gender, population group, their families' socioeconomic status, as well as

their parents' level of education.

3.7. Participants

This study was conducted among (n=489) undergraduate students at a public

comprehensive university in South Africa. Participants were enrolled in the faculty of law,

education, human sciences, accounting sciences, economic and management sciences,

agriculture and management sciences, science engineering and technology. Of this sample,

most (n=348, 71.2%) were female, (n=137, 28.0%) were male, whereas (n=4, 0.8%)

identified themselves as ''other''. In terms of race, (n=391, 80.0%) were Black, (n=27,

5.5%) were Coloured, (n=13, 2.7%) were Indian, (n=54, 11.0%) were White, and (n=4, 0.8%)

identified themselves as ''other''. Regarding socioeconomic status, (n=218, 44.6%) of

participants were from low socioeconomic households, (n=259, 53.0%) were from middle

socioeconomic households, whereas only (n=12, 2.4%) were from high socioeconomic

households. Regarding parents' level of education, (n=55, 11.2%) of participants indicated

that both their parents had Bachelor's degrees, (n=98, 20.0%) indicated that at least one of

their parents had a Bachelor's degree, (n=96, 19.6%) indicated that at least one parent had

some education after high school; whereas most participants (n=240, 49.2%) indicated that

neither of their parents had more than a high school qualification. The average age of

participants was 27.67 years ($SD = 5.24$) with a range of 19-40 years (see Table 1 below).

Table 1: Demographic characteristics of participants

	n	%
Gender		
Male	137	28.0
Female	348	71.2
Other	4	0.8
Race		
Black	391	80.0
Coloured	27	5.5
Indian	13	2.7
White	54	11.0
Other	4	0.8
Socioeconomic status		
Low socioeconomic status	218	44.6
Middle socioeconomic status	259	53.0
High socioeconomic status	12	2.4
Parents' level of education		
Both parents had a Bachelor's degree	55	11.2
At least one parent had a Bachelor's degree	98	20.0
At least one parent had some education after high school	96	19.6
Neither of parents had more than a high school qualification	240	49.2

3.8. Research instruments

Sense of belonging was assessed using the Psychological Sense of School

Membership (PSSM) measurement scale, developed by Gooednow (1993). This

measurement is used to assess the sense of belonging and has been used by researchers to

measure university students' sense of belonging (Jackson, 2016; Mtshweni, 2019; Zumbrunn

et al., 2014). The PSSM is a reliable scale; for example the original scale developed by

Gooednow (1993) was found to have a Cronbach's alpha of (α= .87). In other studies,

Zumbrunn et al. (2014) found that the scale has a Cronbach's alpha of (α=.86), whereas Jackson (2016) and Mtshweni (2019) found that the scale has Cronbach's alphas of (α=.86) and (α=.84) respectively. These are good reliability coefficients, which are almost comparable to the original scale developed by Gooednow (1993). The scale comprised 12 items which included statements such as, "I feel like a part my university", "Sometimes I feel as if I don't belong to my university"; and "I feel proud to belong to my university". Furthermore, the scale had response options ranging from 1 (*Not at all true*) to 5 (*Completely true*). Negatively phrased statements were reverse coded. In this study, the items in the PSSM scale yielded a reliability coefficient of (α=.77).

Academic anxiety was measured by the Anxiety Scale for Undergraduate Students (ASUS), developed by Singhal (2015). The ASUS comprises statements such as, "I feel nervous I might not complete my work on time"; "I feel nervous I might not be able to complete my work on time"; and "My studies are a burden for me". The scale consisted of 5 items and all negatively stated items were reverse scored. The ASUS was measured using a 5-point Likert scale with two options, 1 (*Strongly disagree*) to 5 (*Strongly Agree*) and was found to have a Cronbach's alpha of (α=.71).

Perceived social-support was assessed using a scale developed by Zimet et al. (1998), referred to as the Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS was designed to assess social-support perceptions from three specific sources namely family, friends and significant others. According to Zimet et al. (1998), the MSPSS has proven to be psychometrically sound, with good reliability, factorial and adequate construct validity. The MSPSS consists of statements such as "I can count on my friends when things go wrong", "I can talk about my problems with my family", and "My family is willing to help me make decisions". The total number of items used in this study from the MSPSS were 12. The items were rated on a 5-point Likert scale with rating options ranging from 1

(*Strongly Disagree*) to 5 (*Strongly Agree*). The scale was previously found to have a Cronbach's alpha of (α=.88), which suggests good reliability (Zimet et al., 1998). In this study, the MSPSS items had a reliability coefficient of (α=.92).

Academic motivation was measured using the Academic Motivation Scale (AMS) developed by Vallerand et al. (1992). This scale was developed to measure motivation in educational contexts, and specifically among university students. The AMS is a 7-point Likert scale and focuses on students' perceived reasons for engaging in academic activities. In this regard, Revilla et al. (2014) posit that a Likert scale with over five answer options may contribute to low data quality. Therefore, to avert this, the AMS was adapted to a 5-point Likert scale with options ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Some of the items in the scale include "I attend university because I want to have a good life later on", "I attend university because I want to prove to myself that I can succeed in my studies", and "I attend university because it allows me to experience personal satisfaction". The number of items used to measure academic motivation were 7. The scale has been used in the South African context and has been found to have Cronbach's alphas of between (α=.63) and (α=.84) (Rasoaisi, 2017). These Cronbach's alphas suggest an acceptable and good reliability level respectively (Hulin et al., 2001).   In this study, the scale was found to have a reliability coefficient of (α=.82).

Academic persistence was assessed using Terenzini and Pascarella's (1980) Institutional and Goal commitment scale. The scale measures students' commitment to the institution and goals associated with graduation. For instance, the scale comprises items such as "It is important for me to graduate from university" and, "I am confident I made the right decision to attend university", which can be responded to on a 5-point Likert scale, with options ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Negatively stated items were reverse scored. The scale has been reported to have a reliability coefficient of (α=.71)

(Terenzini & Pascarella, 1980). Another study reported a reliability coefficient of (α=.69) on the same scale (Dwyer, 2015). A total of 6 items were used to measure academic persistence in this study. However, due to a low reliability coefficient, 3 items were discarded. In this study, the scale yielded a reliability coefficient of (α=.60). This reliability coefficient is relatively low compared to other reliability coefficients in the study. Nonetheless, Hulin et al. (2001) and Wim et al. (2008) argue that Cronbach's alpha values with a minimum of .60 are acceptable. Due to the relatively low reliability coefficient of the institutional and goal commitment scale in this study, an exploratory factor analysis was conducted to validate the underlying properties and theoretical structure of the scale.

Socioeconomic status was assessed using three categorical values ranging from (1= low socioeconomic status), (2= middle socioeconomic status) and (3= high socioeconomic status). Dummy variables were created to fit the categorical data in the regression models (Mtshweni, 2021).

The *generation status* was assessed using four categorial values, which were (1= both parents hold a Bachelor's degree or higher), (2= at least one parent holds a Bachelor's degree or higher), (3= at least one of my parents has some education after high school), and (4= neither of my parents has more than a high school qualification). Dummy codes were also created before entering the variable into regression models.

3.9. Descriptive statistics

Descriptive statistics refer to properties of the data set (Sutanapong & Louangrath, 2015). These statistics provide summaries of observations found in the study (Kuashik & Mathur, 2014). These summaries form the basis of the initial description of the data as part of a more extensive statistical analysis (Kuashik & Mathur, 2014). This suggests that

descriptive statistics may be used to provide a summary of the data before hypothesis testing commences. Table 2 shows the descriptive statistics for all continuous variables in the study.

Table 2: Descriptive statistics for all continuous variables in the study

Variable	*M*	*SD*	*SE*	Min	Max	N
Sense of belonging	3.31	0.81	.03	1	5	489
Perceived social support	3.61	0.91	.04	1	5	489
Academic motivation	4.16	0.67	.03	1	5	489
Academic anxiety	3.08	0.81	.04	1	5	489
Academic persistence	4.44	0.65	.03	1	5	489

3.10. Reliability and validity

Reliability refers to the consistency of the instrument, whereas validity refers to the ability of an instrument to measure or assess that which it claims to measure. Research instruments must first be reliable to be valid (Field, 2009). This means that an instrument cannot be valid if it is not reliable. There are numerous methods to assess reliability (Prince et al., 2017); however, to assess reliability in this study, internal consistency (that is the consistency of people's responses across the items on a multiple-item measures) was used (Prince et al., 2017). Table 3 shows the Cronbach's alpha coefficients of the research instruments used in the study.

Table 3: Reliability of the instruments used

Instrument	Cronbach's alpha (α)
Psychological Sense of School Membership (PSSM)	.77
Anxiety Scale for Undergraduate Students (ASUS)	.71
Multidimensional Scale of Perceived Social Support (MSPSS)	.92
Academic Motivation Scale (AMS)	.82
Institutional and Goal commitment scale (academic persistence)	.60

3.11. Data analysis

Data analysis in this study included descriptive statistics, reliability analysis on the measurement instruments used, exploratory factor analysis, bivariate correlation analysis, multiple linear regression, mediation, moderation, moderated mediation and path analysis. The Statistical Package for the Social Sciences (SPSS) version 27 was used for descriptive statistics, reliability analysis, bivariate correlation analysis, and multiple linear regression analysis. In addition, the special add-on programme, PROCESS macro and IBM SPSS Analysis of a Moment Structures (AMOS) software version 27 were used to test for moderation analysis and the path analysis respectively.

In terms of the measurement instruments, sense of belonging, perceived social support, academic anxiety, academic motivation, and academic persistence were measured on 5-point rating scales and, therefore, considered continuous variables. The generation status and socioeconomic status were assessed as categorical data, and, therefore, (K-1) dummy codes were created to calculate the regression estimates (Hayes & Rockwood, 2017). Dummy codes (K-1) were also created for categorical covariates (e.g., gender and race). For the generation status, the category, first-generation status was assigned the value of 1, whereas all other categories were assigned a value of 0. For the socioeconomic status, the category, low socioeconomic status was assigned a value of 1 and all other categories assigned a value of 0. In addition, for gender, the category of female was assigned a value of 1 and the category of male assigned a value of 0. In terms of dummy coding for race, the category Black was assigned a value of 1 and all other categories a value of 0.

3.12. Ethical considerations

Ethical clearance was sought and granted by the Unisa College of Human Sciences Research Ethics Committee (see Appendix A). In addition, permission to conduct the study

was sought and granted by the Research Permissions Sub-committee of the Senate Research, Innovation, Postgraduate Degrees and Commercialisation Committee.

After the study was approved, the researcher prepared a survey for potential participants, which contained the information letter about the study and clearly stating the purpose and objectives of the study (see Appendix B). Contact details of the principal investigator and the supervisor were included in the information letter, as well as a link directing participants to the consent form (see Appendix C). In the consent form, participants were informed that participation in the study was voluntary, and that they can withdraw from the study at any time before submitting their responses without being penalised. Additionally, participants were informed that there would be no compensation for participating in the study. Participants were also assured of their anonymity (i.e., that the survey is anonymous), and that the information collected from the survey would be kept confidential; and that only the principal investigator and the supervisor would have access to the information. Moreover, participants were informed that the data would be reported in aggregated forms; and that the information published in the report and publications would not, in any way, be linked to them. Further, participants were informed that the information collected would be stored in a password protected device to further ensure confidentiality. The consent form also stated that participants should at least be 18 years and older to take part in the study. Participants read and signed the consent form electronically before taking part in the survey.

Although it was not anticipated that participants would be harmed as a result of participating in the survey, they were, nonetheless, informed that they may contact the researcher in case they experienced any form of psychological distress as a result of taking part in the survey. Participants were also informed that the researcher would facilitate a referral to the institution's health and wellness centre or to the Department of Higher

Education: Health, Wellness and Development Centre (*Higher Health*), a national agency that among other things, offers counselling to all higher education students in South Africa.

3.12. Summary of chapter

The chapter outlined the research design, methodology, and paradigm used in the study. Further, the chapter provided the demographic characteristics of participants and descriptive statistics. The chapter also discussed the types of research instruments used, how reliability and validity were ensured, data analysis procedures, and the ethical considerations of the study. Chapter IV presents the results, based on the hypotheses of the study.

CHAPTER IV

RESULTS

4.1. Introduction

This chapter presents the study hypotheses and the preliminary analyses, which include factor analysis and descriptive statistics. The chapter also presents analyses of the data in relation to hypotheses testing. Regression analysis, mediation and moderation analysis, moderated mediation, as well as the path analysis results are presented.

4.2. Hypotheses

Hypothesis 1: Sense of belonging, academic motivation, academic anxiety and perceived social support will significantly predict academic persistence.

Hypothesis 2: Sense of belonging, academic motivation, academic anxiety, perceived social support, generation status and socioeconomic status will significantly predict academic persistence.

Hypothesis 3: Sense of belonging will significantly mediate the relationship between academic anxiety and academic persistence.

Hypothesis 4: Sense of belonging will significantly mediate the relationship between perceived social support and academic persistence.

Hypothesis 5: Sense of belonging will significantly moderate the relationship between academic motivation and academic persistence.

Hypothesis 6: Sense of belonging will significantly predict academic motivation, academic anxiety, academic persistence, and also have a significant indirect effect on academic persistence via academic anxiety and academic motivation.

Hypothesis 7: The relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, will be moderated by the participants' socioeconomic status.

Hypothesis 8: The relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, will be moderated by the participants' generation status.

Hypothesis 9: Perceived social support will significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model.

4.3. Preliminary analysis

Factor analysis of the academic persistence scale

The academic persistence scale had a low reliability coefficient. Hence, an exploratory factor analysis was conducted to validate the underlying properties and theoretical structure of the academic persistence scale. The analysis conducted using the principal component extracted one factor based on the eigenvalue > 1 criterion; thus, confirming that the scale used to measure academic persistence is a one-dimension scale. The factor accounted for 58% of the variance. The three items yielded factor loadings of > .40 and were thus, considered acceptable. Moreover, the factor loadings were within the

ranges of the original academic persistence scale (Pascarella & Terenzini, 1980). These

factor loadings are shown in Table 4 below.

Table 4: Exploratory factor analysis of the academic persistence scale

Item	1
It is important for me to graduate from university	.69
I am confident that I made the right decision in choosing to attend university	.84
It is likely that I will register at this institution next semester	.74

Note: All loadings were > .40

Descriptive statistics and bivariate correlations

Table 5 presents the descriptive statistics and bivariate correlations of study variables.

Sense of belonging (M = 3.31; SD = .81, $p < .01$) positively correlated with academic

persistence (M = 4.44; SD = .65, $p < .01$), perceived social support (M = 3.61; SD = .91, $p =$

<.05) significantly correlated with academic persistence, academic motivation (M = 4.16; SD

= .67, $p < .01$) positively correlated with academic persistence, while academic anxiety (M=

3.08; SD = .81, $p < .01$) was found to have a significant negative correlation with academic

persistence.

Table 5: Means, Standard Deviations and inter correlations among variables for all participants

Variable	*M*	*SD*	1	2	3	4	5
Sense of belonging	3.31	0.81	-				
Perceived social support	3.61	0.91	.177**	-			
Academic motivation	4.16	0.67	.176**	.173**	-		
Academic anxiety	3.08	0.81	-.436**	-.179**	-.005	-	
Academic persistence	4.44	0.65	.323**	.094*	.400**	-.162**	-

Note: *p <.05; **p <.01

Socioeconomic status has been reported to play an important role in university students' experience, and most importantly, their academic persistence (Aina, 2013; Mtshweni, 2021). Table 6 presents the descriptive statistics and bivariate correlations of study variables in relation to low socioeconomic status and middle socioeconomic status student categories. The high socioeconomic status category has not been included, due to the inadequate sample size (n=12).

The results show that sense of belonging (low socioeconomic status: M =3.38; SD = .78, $p < .01$) significantly correlated with academic persistence (low socioeconomic status: M = 4.45; SD = .67, $p = .01$), perceived social support (low socioeconomic status: M = 3.40; SD = .93, $p > .05$) insignificantly correlated with academic persistence (low socioeconomic status: M =4.45; SD = .67, $p > .05$), academic motivation (low socioeconomic status: M = 4.22; SD = .64, $p < .01$) significantly correlated with academic persistence (low socioeconomic status: M =4.45; SD = .67, $p < .01$), while academic anxiety (low socioeconomic status: M = 3.13; SD = .82, $p < .05$) was found to have a significant negative correlation with academic persistence (low socioeconomic status: M =4.45; SD = .67, $p < .05$).

The results also show that sense of belonging (middle socioeconomic status: M = 3.26; SD = .81, $p < .01$) significantly correlated with academic persistence (middle socioeconomic status: M = 4.43; SD = .64, $p < .01$), and that perceived social support (middle socioeconomic status: M = 3.76; SD = .84, $p > .05$) insignificantly correlated with academic persistence (middle socioeconomic status: M = 4.43; SD = .64, $p > .05$), academic motivation (middle socioeconomic status: M = 4.11; SD = .69, $p < .01$) significantly correlated with academic persistence (middle socioeconomic status: M = 4.43; SD = .64, $p = < .01$), while academic anxiety (middle socioeconomic status: M = 3.07; SD = .78, $p = < .05$) had a

significant negative correlation with academic persistence (middle socioeconomic status: M =4.43, SD = .64, $p < .05$).

Table 6: Means, Standard Deviations and inter correlations among variables for low and middle socioeconomic status students

		1	2	3	4	5
Low socioeconomic status	M	3.38	3.40	4.22	3.13	4.45
	SD	0.78	0.93	0.64	0.82	0.67
Middle socioeconomic status	M	3.26	3.76	4.11	3.07	4.43
	SD	0.81	0.84	0.69	0.78	0.64
Variable						
1 Sense of belonging		-	.149*	.169**	-.412**	.361**
2 Perceived social support		.248**	-	.205**	-.067	.113
3 Academic motivation		.207**	.192**	-	-.022	.454**
4 Academic anxiety		-.461**	-.256**	-.005	-	-.132*
5 Academic persistence		.276**	.057	.343**	-.173*	-

Note: The correlation coefficients in the lower part of the table refer to the low socioeconomic status group, while the correlation coefficients in the upper part in the table refer to the middle socioeconomic group.

*p <.05; **p <.01

Studies revealed that first-generation students tend to experience high levels of psychological distress, and are more likely to drop out of university than continuing-generation students (Lisa et al., 2019; Martinez et al., 2009). Table 7 shows the descriptive statistics and bivariate correlations of study variables for first-generation (i.e., students whom neither parents has more than a high school qualification) and continuing-generation students (i.e., students with both parents that hold a Bachelor's degree, or at least one parent holds a Bachelor's degree, or at least one parent has some education after high school). The results show that sense of belonging (first-generation students: M = 3.40; SD = .78, $p < .01$) significantly correlated with academic persistence (first-generation students: M = 4.43; SD = .69, $p < .01$), and that perceived social support (first-generation students: M = 3.55; SD = .94, $p > .05$) insignificantly correlated with academic persistence (first-generation students: M =

4.43; SD = .69, $p > .05$), academic motivation (M =4.27; SD = .61, $p < .01$) significantly correlated with academic persistence (first-generation students: M = 4.43; SD = .69, $p < .01$), while academic anxiety (first-generation students: M = 3.09; SD = .78, $p < .05$) had a negative significant correlation with academic persistence (first-generation students: M = 4.43; SD = .69, $p < .05$).

In terms of continuing-generation students, the results show that sense of belonging (continuing-generation students: M = 3.23; SD = .83, $p < .01$) significantly correlated with academic persistence (continuing-generation students: M =4.46; SD = .63, $p < .01$), perceived social support (continuing-generation students: M = 3.66; SD = .86, $p > .05$) insignificantly correlated with academic persistence (continuing-generation status: M = 4.46; SD = .63, $p > .05$), academic motivation (continuing-generation status: M = 4.06, SD = .71, $p < .01$) significantly correlated with academic persistence (continuing-generation students: M = 4.46; SD = .63, $p < .01$), while academic anxiety (continuing-generation students: M = 3.07; SD = .83, $p < .01$) had a negative significant correlation with academic persistence (continuing-generation students: M = 4.46; SD = .63, $p < .01$).

Table 7: Means, Standard Deviations and inter correlations among variables for first-generation and continuing-generation students

		1	2	3	4	5
First-generation students	M	3.40	3.55	4.27	3.09	4.43
	SD	0.78	0.94	0.61	0.78	0.69
Continuing-generation students	M	3.23	3.66	4.06	3.07	4.46
	SD	0.83	0.86	0.71	0.83	0.63
Variable						
1 Sense of belonging		-	.169*	.106	-.445**	.344**
2 Perceived social support		.201**	-	.162*	-.170**	.096
3 Academic motivation		.234**	.212**	-	.019	.443**
4 Academic anxiety		-.432**	-.189**	-.041	-	-.171**
5 Academic persistence		.311**	.091	.376**	-.153*	-

Note: Correlation coefficients in the lower part of the table refer to the first-generation students group, while correlation coefficients in the upper part of the table refer to continuing-generation students.

*p <.05; **p <.01

The correlation results among all participants show that sense of belonging had a positive significant correlation with academic persistence. These findings are similar to the findings of previous studies, which have demonstrated a link between sense of belonging and academic persistence (Baumeister & Leary, 1995; Hausmaan et al., 2007; Knekta et al., 2020). The findings demonstrate the importance of sense of belonging on the retention and success of university students. Sense of belonging towards a learning context is valuable in the sense that it keeps students motivated to achieve their academic goals and stay enrolled (Knekta et al., 2020).

The results also show that academic motivation had a significant positive correlation with academic persistence. These findings are also corroborated by the findings of previous studies, and suggest a relationship between academic motivation and academic persistence (Brubacher & Silinda, 2019; Edgar et al., 2019). Tinto (2017) considers motivation a

significant aspect of students' success. Students who are motivated are resilient, better organised, and tend to persist academically (Niemiec & Ryan, 2009).

Research has demonstrated the link between perceived social support and academic persistence (de la iglsia et al., 2014; Motsabi et al., 2020; Strom & Savage, 2014). In line with these studies, the findings of this study have also shown that there is a positive and statistically significant relationship between perceived social support and academic persistence among all participants in this study. The results pertaining to students from low and middle socioeconomic status and the results pertaining to first-generation and continuing-generation students, however, show a statistically insignificant positive correlation between perceived social support and academic persistence. This indicates that although the generation status and socioeconomic status may have an influence students' perceptions of social support, however, the support may not have any bearing on academic persistence.

Regarding the relationship between academic anxiety and academic persistence, the correlation analysis among variables for all participants (i.e., for students from low and middle socioeconomic status and for first generation and continuing generation students), the results show that academic anxiety had a statistically significant negative correlation with academic persistence. In accordance with previous findings, a negative relationship between academic anxiety and academic persistence was anticipated. This is because increasing levels in academic anxiety negatively impacts on or reduces students desires to persist academically; whereas decreasing levels in academic anxiety positively influences academic persistence (Carsley et al., 2017; Duchesne et al., 2008). This, therefore, highlights the importance of reduced or moderate levels of anxiety for the retention and success of students.

4.4. Hypothesis testing

Multiple regression analysis

Multiple linear regression analysis was conducted to determine the effect of sense of belonging, academic motivation, academic anxiety, perceived social support, generation status, and socioeconomic status (i.e., predictor variables) on academic persistence (i.e., dependent variable). However, prior to conducting the analysis, the assumptions of multiple linear regression analysis were assessed. These included linearity, normality, and multicollinearity. The data for all the cases examined using the *q-q* plots appeared to be linear, with a slight variation from normal. No outliers were obtained. Multicollinearity was determined if no predictor variable correlation coefficients were greater than .08 (Field, 2009). In addition, the tolerance values for all the variables were above 0.1, while variance inflation factor (VIF) were below 10. The Durbin-Watson values fell between 1.5 and 2.5, therefore indicating that the data were not autocorrelated.

The first hypothesis, in this regard, sought to determine if sense of belonging, academic motivation, academic anxiety, and perceived social support will significantly predict academic persistence. Therefore, academic persistence was regressed on sense of belonging, academic motivation, academic anxiety, and perceived social support. The regression model was found to be statistically significant, $F(4,484) = 35.96$, $p < .001$ and explaining about 22.9% of the variance in academic persistence. In terms of the predictor variables, only sense of belonging ($\beta = .236$, $t = 5.215$, $p < .001$) and academic motivation ($\beta = .362$, $t = 8.794$, $p < .001$) were found to significantly predict academic persistence. Therefore, the hypothesis, which stated that that sense of belonging, academic motivation, academic anxiety, and perceived social support will significantly predict academic persistence was partly confirmed (see model 1 in Table 8).

Students' socioeconomic status, coupled with psychological factors, have been reported to contribute to academic persistence (Diemer et al., 2013; Sommer, 2013; Stephens et al., 2014). Moreover, scholars have stated that psychological factors are strong determinants of academic success, especially in contexts where socioeconomic resources are limited (Destin et al., 2019). Similarly, the generation status of students has been reported to be important for academic persistence and the attainment of tertiary education (Soria & Stebleton, 2013). In this regard, Kraus and Stephens (2012) posit that parents' level of education has an effect on students' academic success.

Due to the suspected role of the generation status and socioeconomic status on the academic success of students, the second hypothesis sought to determine if the inclusion of background factors, generation status and socioeconomic status in the regression model, together with predictor variables from model 1 would predict academic persistence. Further, the hypothesis sought to establish if the inclusion of these background factors in the model would improve the explained variance in academic persistence. The generation status and socioeconomic status were added to the previous regression model to test the hypothesis. The results in this regard show a statistically significant model, $F(6,482) = 25.398$, $p < .001$, which explained about 24% of the variance in academic persistence. This means that the generation status and socioeconomic status accounted for an additional 1.1% of the variance in academic persistence. In terms of the predictor variables, the results show that sense of belonging ($\beta = .249$, $t = 5.479$, $p < .001$), academic motivation ($\beta = .380$, $t = 9.144$, $p < .001$), and the generation status ($\beta = -.105$, $t = -2.467$, $p < .05$) were the only significant predictors of academic persistence. This means that the second hypothesis was partly confirmed (see Model 2 in Table 8 below).

Table 8: Regression analysis with regard to the effects on academic persistence

Variable	R^2	B	SE	β	t	p
Model 1						
Sense of belonging	22.9%	.191	.037	.236	5.215	.001
Perceived social support		-.015	.030	-.021	-.506	.613
Academic motivation		.352	.040	.362	8.794	.001
Academic anxiety		-.049	.036	-.060	-1.345	.179
Extended Model 2						
Sense of belonging	24.0%	.202	.037	.249	5.479	.001
Perceived social support		-.024	.031	-.033	-.874	.433
Academic motivation		.369	.040	.380	9.144	.001
Academic anxiety		-.045	.036	-.055	-1.238	.216
Generation status		-.137	.055	-.105	-2.467	.014
Socioeconomic status		-.012	.056	-.009	-.207	.836

Mediation analysis

Sense of belonging has been identified as an important factor in mitigating academic anxiety and dropping out of the institution (Hausmaan et al., 2007; Osterman, 2000). Hence, the third hypothesis stated that sense of belonging will significantly mediate the relationship between academic anxiety and academic persistence. Hayes (2013) PROCESS macro was used to test for mediation (Model 4). The tool is appropriate for generating bootstrap inference for conditional indirect effects and for estimating model coefficients (Hayes & Rockwood, 2020). In this study, 95% confidence interval (CI) of the indirect effects were obtained with 5000 bootstrap samples. Before testing for mediation, the researcher considered the potential influence of race, gender, socioeconomic and generation status on academic persistence. Therefore, to minimise measurement errors and produce more precise

estimates of effects (Hayes & Rockwood, 2017), these factors were controlled (i.e., entered as covariates) in the mediation model after creating (K-1) dummy variables. Academic anxiety was considered a predictor variable and academic persistence an outcome variable, with sense of belonging entered as a mediating variable (see Figure 4 below).
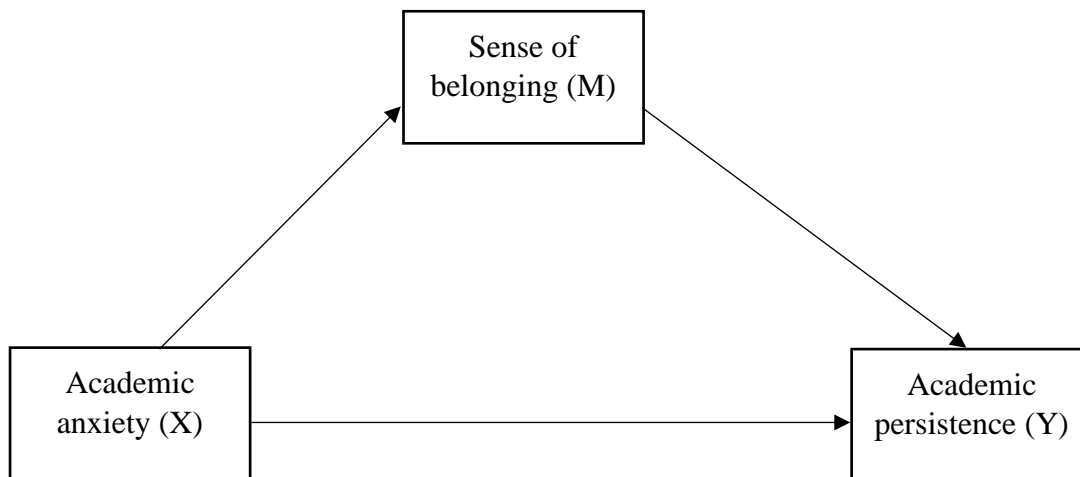
Figure 4: The mediation model 1

The results for simple mediation show that academic anxiety was a significant predictor of sense of belonging, $b = -.43$, SE = .04, 95%CI [-.51, -.35], $p = < .001$. Sense of belonging was also a significant predictor of academic persistence, $b = .26$, SE = .03, 95%CI [.18, .33], $p < .001$. However, academic anxiety could not directly predict academic persistence, $b = -.01$, SE = .03, 95% [-.09, .05], $p > .05$ (see Table 9 below). The results show that the indirect coefficient was significant, $b = -.11$, SE = .02, 95%CI [-.16, -.07], thus supporting the hypothesis that sense of belonging mediates the relationship between academic anxiety and academic persistence.

Table 9: Simple mediation results for effects of sense of belonging and academic anxiety on academic persistence

	B	SE	t	p	95%CI
X → M (*a*)	-.4363	.0409	-10.706	.0001	[-.51, -.35]
M → Y (*b*)	.2603	.0393	6.6209	.0001	[.18, .33]
X → Y (*c′*)	-.0194	.0393	-.4940	.6216	[-.09, .05]

Sense of belonging is an important need, which determines students' prospects of academic success, particularly academic persistence (Strayhorn, 2020). Indeed, sense of belonging is considered of heightened importance in this study. Studies have shown that that sense of belonging significantly correlates with perceived social support, and mediates the relationship between perceived social support and academic involvement (Davis, 2017; Vargas-Madriz & Konishi, 2021). Hence, the fourth hypothesis sought to determine if sense of belonging could mediate the relationship between perceived social support and academic persistence (see Figure 5).
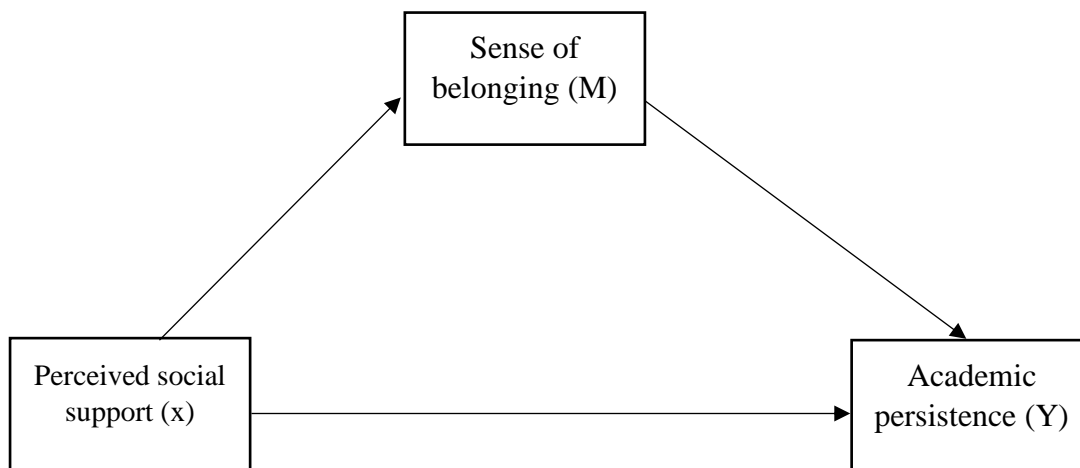
Figure 5: The mediation model 2

The simple mediation results, obtained using PROCESS macro (model 4) after controlling for race, gender, socioeconomic and generation status show that perceived social support significantly predicted sense of belonging, $b = .18$, SE $= .04$, 95%CI [.10, .26], $p = <$ .001. In turn, sense of belonging significantly predicted academic persistence, $b = .26$, SE $=$ .03, 95%CI [.19, .33], $p = < .001$. However, perceived social support was not found to be directly predicting academic persistence, $b = .02$, SE $= .03$, 95%CI [-.03, .08], $p = > .05$ (see Table 10 below). The indirect effect coefficient was significant, $b = .04$, SE $= .01$, 95%CI [.02, .07], thus confirming the hypothesis that sense of belonging significantly mediates the relationship between perceived social support and academic persistence.

Table 10: Simple mediation results for effects of sense of belonging and perceived social support on academic persistence

	B	*SE*	*T*	*p*	**95%CI**
X → M (*a*)	.1836	.0402	4.5611	.0001	[.10, .26]
M → Y (*b*)	.2631	.0361	7.2862	.0001	[.19, .33]
X → Y (*c'*)	.0252	.0326	.7735	.4396	[-.03, .08]

Moderation analysis

According to Strayhorn (2016), university students' success is dependent on their feelings of belonging. The need to belong to the learning environment is important and has an effect on all aspects of learning (Strayhorn, 2012), including students' motivation and persistence abilities. Hence, this study sought to test the fifth hypothesis, which stated that sense of belonging will significantly moderate the relationship between academic motivation and academic persistence.

Academic motivation was considered a predictor variable, academic persistence an outcome variable, while sense of belonging was considered a moderator variable. Gender,

race, socioeconomic, and generation status of students were entered as covariates. The results obtained using PROCCESS macro (model 1) show that the moderation model was statistically significant, $R^2 = .2471$, $F (7.481) = 22.5515$, $p < .001$. In addition, the model revealed a statistically significant interaction between academic motivation and sense of belonging, $b = -.1126$, 95%CI [-.20, -.01], $t = -2.3802$, $p < .05$, thus suggesting that the relationship between academic motivation and academic persistence is moderated by sense of belonging (see Table 11 below). The fifth hypothesis was, therefore, confirmed.

Table 11: Regression coefficients for effects on academic persistence

	B	*SE*	*t*	*P*	**95%CI**
Constant	0.7623	.6716	1.1336	.2575	[-.55, 2.08]
Academic motivation	0.7304	.1597	4.5738	.0001	[0.41, 1.04]
Sense of belonging	0.6898	.2007	3.4370	.0006	[0.29, 1.08]
Academic motivation x sense of belonging	-0.1126	.0473	-2.3802	.0177	[-0.20, -0.01]
Gender	0.0369	.0580	0.6351	.5257	[-0.07, 0.15]
Race	-0.0313	.0681	-0.4593	.0462	[-0.16, 0.10]
Socioeconomic status	-0.0042	.0568	-0.0735	0.9414	[-0.11, 0.10]
Generation status	-0.1284	.0554	-2.3191	0.0208	[-0.23, -0,01]

Path analysis

In their theoretical model of student retention, Bean and Eaton (2000) highlight that psychological factors determine whether students dropout or persist academically. Indeed, sense of belonging has been identified as one such factor with an influence on academic persistence or student dropout (Strayhorn, 2012, 2016, 2020). In the same vein, the researcher argues that sense of belonging contributes to students' levels of academic and institutional commitment and ultimately, influences academic persistence. This is because sense of belonging has been reported to have an influence on multiple aspects in the learning

environment, these include lessening students' levels of anxiety (i.e., it acts as a buffer against student anxiety), boosting students' motivation, and ultimately enhancing students' aptitude to persist (Roffey et al., 2019). Given the suspected influence of sense of belonging on academic motivation, academic anxiety, and academic persistence. This study, therefore, sought to test the sixth hypothesis, which states that sense of belonging will significantly predict academic motivation, academic anxiety, academic persistence, and also have a significant indirect effect on academic persistence via academic anxiety and academic motivation. Contrary to the third hypothesis in which sense of belonging was tested as a mediator between academic anxiety and persistence. In the sixth hypothesis, academic anxiety was considered as a mediator between sense of belonging and academic persistence. This is due to the previous findings which revealed an inverse relationship between sense of belonging and academic anxiety (Allen, 2019; Arslan et al., 2021).

A path analysis using AMOS 27 was conducted to test the sixth hypothesis. The model revealed an acceptable fit (χ^2 (1) = 3.158, p = .076; NFI = .987; CFI = .991 and RMSEA = .066). In addition, the model revealed that sense of belonging significantly predicted academic motivation (β = .146, SE = .037, p < .001), academic anxiety (β = -.434, SE = .041, p < .001), and academic persistence (β = .190, SE = .036, p < .001). Furthermore, the results show that sense of belonging significantly predicted academic persistence via academic motivation with a point estimate of .051 (SE = .015), and a 95% confidence interval of .025 to .084. However, sense of belonging was not found to have a significant indirect effect on academic persistence via academic anxiety, with the results indicating a point estimate of .020 (SE = .015), and 95% confidence interval of -.009 to .051. Therefore, the hypothesis, which stated that sense of belonging will significantly predict academic motivation, academic anxiety, academic persistence, and also have a significant indirect

effect on academic persistence via academic anxiety and academic motivation was partly confirmed (see Figure 6 below).
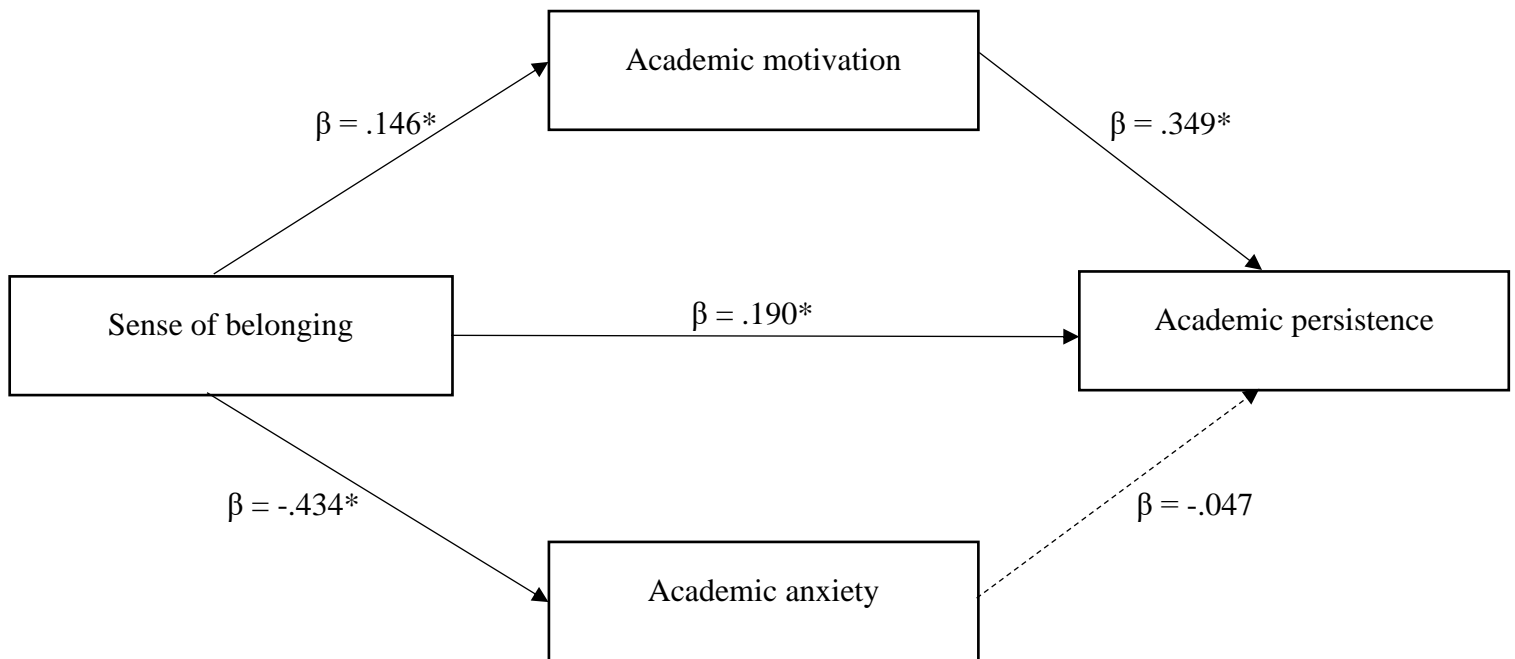
Figure 6: Hypothesised model of sense of belonging as a predictor of academic motivation, academic anxiety and academic persistence. Solid lines represent paths that showed significant effects. The dashed line represents a path that did not show a significant effect.

*$p < .001$

Sense of belonging is a critical aspect for university students. Students who struggle with identifying and connecting to the learning environment may have challenges relating with others. This, in turn, may result in persistence challenges. Scholars report that often students from low socioeconomic backgrounds report that they do not feel like they belong to the institution in which they are enrolled (Pittman & Richmond, 2007; Soria & Stebleton, 2013). Consequently, such feelings may negatively affect their abilities to persist academically. Students' socioeconomic status, therefore, can impact negatively on their

sense of belonging; which may, in turn, have an influence on student's academic motivation, anxiety and persistence. Given the potential influence of students' socioeconomic status on academic persistence. This study retested the model in Figure 6; however, with the socioeconomic status hypothesised as a moderator. In essence, this study sought to test the seventh hypothesis, which states that the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' socioeconomic status.

In terms of socioeconomic status, the study included the categories low socioeconomic status and middle socioeconomic status. The hypothesis tested using the AMOS 27 software revealed that the unconstrained model (χ^2 (2) = 3. 082, p = .214; NFI = .988; CFI = .995 and RMSEA = .034), and the constrained model (χ^2 (7) = 6.295, p = .506; NFI = .975; CFI = 1.000 and RMSEA = .001) had an acceptable fit. In addition, multi group comparison was conducted to determine the Chi-square difference of the unconstrained and the constrained model. The results of the study show a Chi-square difference of χ^2(5) = 3.213, p = .667.

Parameter constraints were used to determine moderation. A moderation effect was determined to have occurred when a path coefficient was found to be statistically significant for one group and not for the other group (on the same path). The results revealed a non-significant moderation effect for the path from sense of belonging to academic motivation (low socioeconomic status; B = .169, SE = 0.054, p < .05, middle socioeconomic status; B = .146, SE = 0.053, p < .01), a non-insignificant moderation effect for the path from sense of belonging to academic anxiety (low socioeconomic status; B = -.484, SE = 0.063, p < .001, middle socioeconomic status; B = -.399, SE = 0.055, p < .001), a non-significant moderation effect for the path from sense of belonging to academic persistence (low socioeconomic

status; $B = .146$, $SE = 0.061$, $p < .05$, middle socioeconomic status; $B = .230$, $SE = 0.046$, $p < .001$), a non-significant moderation effect for the path from academic motivation to academic persistence (low socioeconomic status; $B = .324$, $SE = 0.067$, $p < .001$, middle socioeconomic status; $B = .368$, $SE = 0.048$, $p < .001$), and a non-significant moderation effect for the path from academic anxiety to academic persistence (low socioeconomic status; $B = -.076$, $SE = 0.057$, $p > .05$, middle socioeconomic status; $B = -.002$, $SE = 0.047$, $p > .05$). Figure 7 illustrates the hypothesised relationships, moderated by the socioeconomic status. The seventh hypothesis was, therefore, not confirmed; as there was no evidence of moderation, because the path coefficients were found to be similar for low socioeconomic and middle socioeconomic status students. That is, no path coefficient was found to be statistically significant for one group and not statistically significant for the other group.
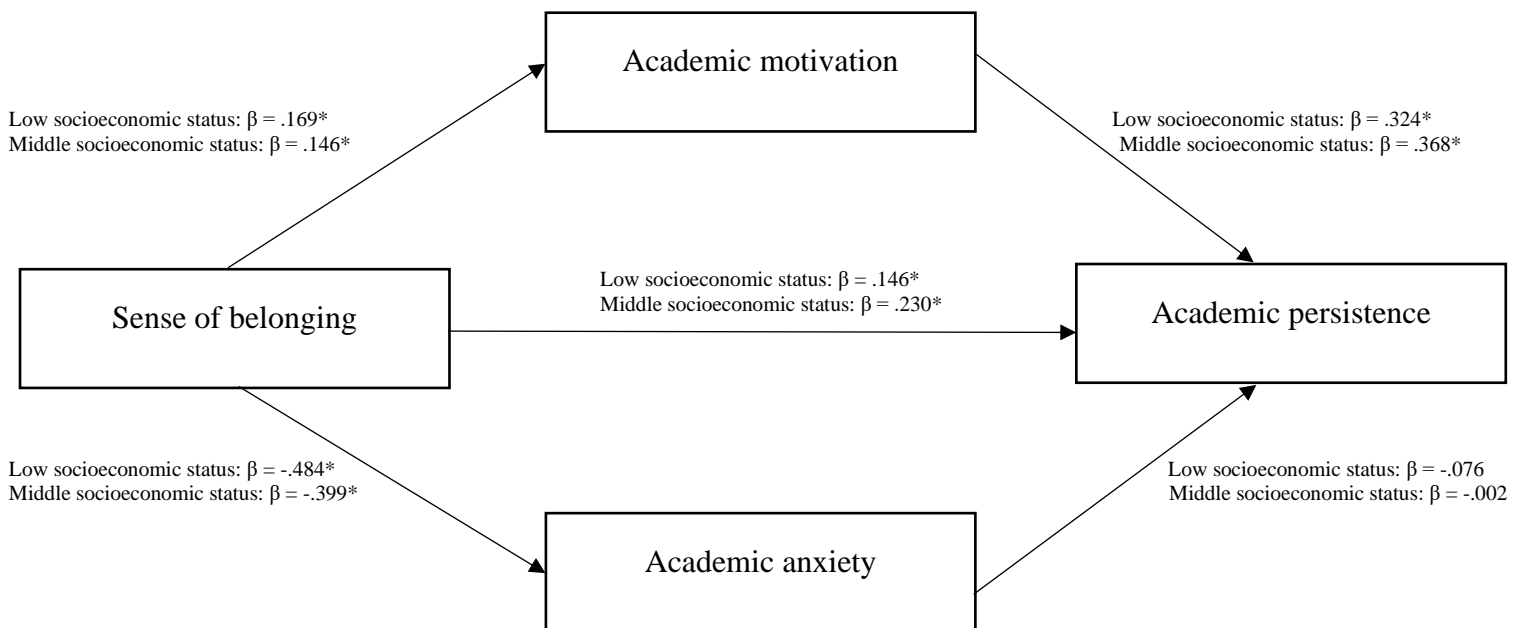

Figure 7: Hypothesised relationships moderated by socioeconomic status

*$p < .05$.

Students who come from families of parents with a tertiary qualification tend to have higher levels of sense of belonging to the institutional environment than their counterparts,

whose parents do not have a tertiary qualification (Ruedas-Gracia et al., 2020). In addition,

students whose parents are educated are likely to persist academically than students whose

parents do not have a tertiary qualification (Engle & Tinto, 2008; Thayer, 2000). This

suggests that first-generation and continuing-generation students have different psychological

coping mechanisms, and this may eventually, affect their academic success. Students'

background characteristics, particularly their generation status, plays a vital role in their

education. Hence, this study sought to test the eighth hypothesis, which stated that the

relationship between sense of belonging, academic motivation, academic anxiety and

academic persistence, with sense of belonging predicted to have a significant indirect effect

on academic persistence via academic anxiety and academic motivation, would be moderated

by the participants' generation status (i.e., being a first-generation or a continuing-generation

student). This means that the model in figure 7 was re-tested; however, with generation

status as a moderating variable.

Regarding the generation status, this study considered students whose parents have

some education after high school continuing-generation students, whereas students whose

parents do not have any qualification beyond high school were considered first-generation

students. The hypothesis was tested using the AMOS 27 software, and the results show that

the unconstrained model, (χ^2 (2) = 2. 532, p = .282; NFI = .990; CFI = .998 and RMSEA =

.023), and the constrained model, (χ^2 (7) = 4.292, p = .756; NFI = .983; CFI = 1.000 and

RMSEA = .001) had an acceptable fit. Furthermore, the results of the multi group

comparison, used to determine the Chi-square difference of the unconstrained and

constrained model revealed a Chi-square difference of χ^2(5) = 1.760, p = .051.

Parameter constraints were used to determine moderation. A moderation effect was

determined to have occurred when a path coefficient was found to be statistically significant

for one group and not for the other group (on the same path). The results show a non-

significant moderation effect for the path from sense of belonging to academic anxiety (first-generation students; B = -.435, SE = 0.059, $p < .05$, continuing-generation students; B = -.444, SE = 0.057, $p < .05$), non-significant moderation effect for the path from academic motivation to academic persistence (first-generation students; B = .360, SE = 0.066, $p < .05$, continuing-generation students; B = .367, SE = 0.048, $p < .05$), non-significant moderation effect for the path from academic anxiety to academic persistence (first-generation students; B = -.040, SE = 0.056, $p > .05$, continuing-generation students; B = -.043, SE = 0.045, $p > .05$), and a non-significant moderation effect for the path from sense of belonging to academic persistence (first-generation students; B = .188, SE = 0.058, $p < .05$, continuing-generation students; B = .207, SE = 0.045, $p < .05$). The results, however, show a significant moderation effect for the path from sense of belonging to academic motivation (first-generation students; B = .184, SE = 0.050, $p < .05$, continuing-generation students; B = .091, SE = 0.054, $p > .05$).

This means that the eighth hypothesis, which tested moderation, was, therefore, affirmed, since the effect of sense of belonging on motivation was statistically significant for first-generation students but not statistically significant for continuing-generation students. The hypothesised relationships moderated by the generation status are depicted in Figure 8.

First-generation students: β = .184*
Continuing-generation students: β = .091

First-generation students: β = .360*
Continuing-generation students: β = .367*

Academic motivation

Sense of belonging

First-generation students: β = .188*
Continuing-generation students: β = .207*

Academic persistence

First-generation students: β = -.435*
Continuing-generation students: β = -.444*

First-generation students: β = -.040
Continuing-generation students: β = -.043

Academic anxiety

Figure 8: Hypothesised relationships moderated by students' generation status

p < .05.

Moderated mediation analysis

Mental health issues among university students may be attributed to their socioeconomic backgrounds (Mofatteh, 2021). Academic anxiety has been cited as one such mental health issue, which could be exacerbated by students' socioeconomic backgrounds (Glozah, 2013). Further, Glozah (2013) found that students from high socioeconomic backgrounds have less anxiety than those from middle and low socioeconomic backgrounds. In turn, academic anxiety may contribute to academic persistence challenges (England et al., 2019; Respodek et al., 2017). However, the availability of social support may act as a buffer against the impact of anxiety (Bolognini et al., 1996), which may in turn contribute to academic persistence. Hence, the ninth hypothesis sought to test if perceived social support will significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model. The hypothesis was tested among students from low and middle socioeconomic status respectively. Sense of belonging was included in the model due to its positive influence on mental distress and academic persistence (Strayhorn,

2012).
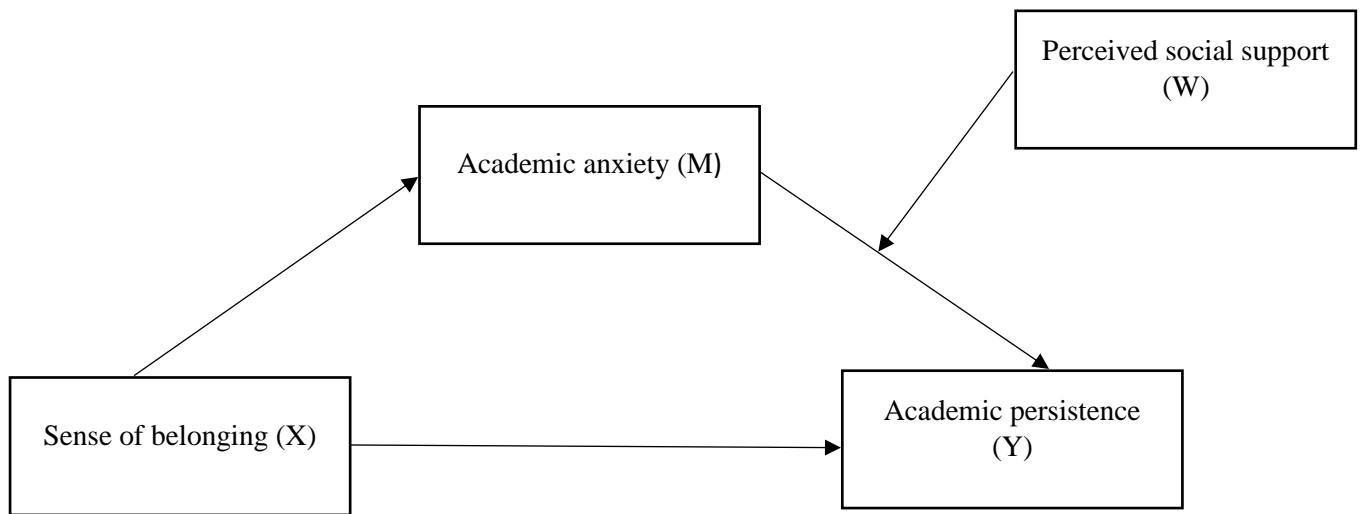
Figure 9: The moderated mediation model

The first moderated mediation model was tested with students from low

socioeconomic status. The hypothesised moderated mediation model was tested, using the

PROCESS macro model number 14. Sense of belonging was entered as a predictor variable;

academic anxiety as a mediating variable, whereas academic persistence was entered as an

outcome variable. Social support was entered as a moderating variable, moderating the

relationship between academic anxiety and academic persistence. Gender and race were

treated as covariates. The results in relation to the moderated mediation model show that

overall, the model was statistically significant, R^2 = .2390, F (3.214) = 22.4091, $p < .001$.

However, the test of moderated mediation model was not statistically significant, b = .0042,

SE = .02, 95%CI [-.04, .04]. The results also show that academic anxiety could not

significantly predict academic persistence, b = -.0210, 95%CI [-.37, .33], t = -.1163, p > .05.

Additionally, the results show that social support could not significantly moderate the

relationship between academic anxiety and academic persistence, b = -.0086, 95%CI [-.10,

.08], t = -.1744, p >.05. Therefore, the hypothesis that states that perceived social support

will significantly moderate the relationship between academic anxiety and academic

persistence in a moderated mediation model could not be confirmed with students from low socioeconomic status (see Table 12).

The second moderated mediation model tested the hypothesis which states that perceived social support will significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model. The hypothesis was tested with students from middle socioeconomic status using PROCESS macro model 14. Sense of belonging was entered as a predictor variable, academic anxiety as a mediator variable, while academic persistence was entered as an outcome variable. Perceived social support was considered a moderator variable; moderating the relationship between academic anxiety and academic persistence. The potential influence of gender and race was considered; hence, these were entered as covariates. The moderated mediation model was found to be statistically significant, $R^2 = .1771$, $F (3.255) = 18.2951$, $p < .001$. The test of the moderated mediation model, however, was not statistically significant, $b = .0064$, SE $= .02$, 95%CI [-.03, .05]. In addition, academic anxiety was not found to significantly predict academic persistence, $b = .0793$, 95%CI [-.34, .49], t $= -.3716$, p $> .05$. The results also revealed that social support could not significantly moderate the relationship between academic anxiety and academic persistence, $b = -.0163$, 95%CI [-.12, .09], $t = -.2941$, $p >.05$. Therefore, the hypothesis that perceived social support will significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model could not be confirmed with students from middle socioeconomic status (see Table 12 below). Additionally, there results showed that there was no evidence of moderated mediation.

Table 12: Moderated mediation results

	B	*SE*	*t*	*p*	**95%CI**
Low socioeconomic status students					
X → M (*a*)	-.4846	.0629	-7.7066	.0001	[-.60, -.36]
M → Y (*b*)	-.0210	.1805	-.1163	.9076	[-.37, .33]
X → Y (*C`*)	.2299	.0648	3.5482	.0005	[.10, .35]
M*W → Y	-.0086	.0494	-.1744	.8617	[-.10, .08]
Index of moderated mediation	.0042	.0224			[-.04, .04]
Middle socioeconomic status students					
X → M (*a*)	-.3914	.0562	-6.9698	.0001	[-.50, -.28]
M → Y (*b*)	.0793	.2133	.3716	.7105	[-.34, .49]
X → Y (*C`*)	.2791	.0520	5.3655	.0001	[.17, .38]
M*W → Y	-.0163	.0553	-.2941	.7689	[-.12, .09]
Index of moderated mediation	.0064	.0249			[-.03, .05]

4.5. Summary of the chapter

The chapter presented the results of the study, based on the hypotheses and research questions. The types of analyses used to answer the research questions included preliminary analysis, regression analysis, mediation, moderation, path analysis, and moderated mediation analyses. Chapter V discusses the findings of the study.

CHAPTER V

DISCUSSIONS

5.1. Introduction

This chapter presents a discussion of the findings based on the formulated hypotheses. The chapter also discusses implications for theory, contribution of the study to the body of knowledge and implications for practice. The chapter also discusses recommendation for future research, the limitations of the study, and draw conclusions based on the findings.

5.2. Psychosocial factors as predictors of academic persistence

The first hypothesis sought to determine if sense of belonging, academic motivation, academic anxiety, and perceived social support will significantly predict academic persistence. Of these factors, sense of belonging and academic motivation were found to be the only significant predictors of academic persistence. These findings are in line with the findings of previous studies, which found that sense of belonging and academic motivation play a role in influencing academic persistence (Brubacher & Silinda, 2019; Kuperminc et al., 2008; Mega et al., 2014; Mtshweni, 2019; Pittman & Richmond, 2008; Silinda, 2018; Slaten et al., 2014; Strayhorn, 2020; Vanthornout et al., 2012). However, the findings of this study revealed that academic anxiety could not predict academic persistence. These findings are partly in line with the findings of previous studies, this is because literature on the influence of academic anxiety on academic persistence is inconsistent. For example, Strahan (2003) found that academic anxiety does not predict academic persistence, whereas England et al. (2019) and Respodek et al. (2017) found that academic anxiety influences academic persistence. Furthermore, the findings of this study revealed that perceived social support could not predict academic persistence, thus contradicting the findings of previous studies,

which found that perceived social support is a predictor of academic persistence (Motsabi et al., 2020; Nicpon et al., 2006; Strom & Savage, 2014).

Sense of belonging is concerned with identifying with a group and membership. In the academic context, identifying with the wider institutional community and the university is important for academic success (Strayhorn, 2012). In this study, sense of belonging was found to predict academic persistence significantly; thus, confirming the findings of previous studies, which underscore belongingness as a key predictor of academic persistence. In the context of this study, the findings show that students consider identifying with the institution and being a member of the institution crucial for their academic success. This means that in the context of this study, students' resilience, commitment to the institution and study goals are better explained by their feeling of belonging to their institution, thus further corroborating the findings of previous studies which demonstrate that sense of belonging is vital as it influences academic persistence (Freeman et al., 2007; Pittman & Richmond, 2008). Practically, the findings indicate that students' chances of success may be thwarted if the institution does not promote activities that engender belongingness and make students feel like important members of the institutional community. This means that students need to feel valued as members of the institution for them to succeed in their studies. To develop students' sense of belonging, institutions of higher learning may consider for example, assigning group work, which requires students to work with others, encourage them to join student formations such as Student Representative Councils (SRC) or ethnic student organisations, which may be important in inculcating affirming spaces within institutions of higher learning (Museus, 2008; Strayhorn, 2019).

This study found that academic motivation significantly predicts academic persistence. This finding was anticipated because it is thought by the researcher that the end goal of enrolment (i.e., degree attainment) depends on students' motivations. This means that

without motivation, students may not attain their degrees. For students to persist academically, they need to be motivated continually. In this regard, Corpus et al. (2020) argue that it is crucial to devise strategies to motivate students prior to their entry into universities, as well as during enrolment. In this regard, studies have found that students who are motivated find it easy to organise their learning activities, tend to score high grades, and pertinent to this study, tend to persist longer (Deci & Ryan, 2002; Niemiec & Ryan, 2009; Reeve et al., 2007). The findings of this study suggest that students may be persisting and anticipating completing their qualifications because academically, they are highly motivated. Research suggests that students should be motivated continuously for them to be successful in their studies. Therefore, institutions of higher learning should consider initiating programmes that will foster students' motivation, these may include for example, student mentorship and career orientation programmes which emphasise the benefits of completing one's tertiary studies. Such programmes could be initiated at institutional, faculty and departmental level. Mentorship programmes could, where feasible, be incorporated into the curriculum. Such initiatives may help motivate students. Further, mentorship programmes may lead to student retention (Pagan, 2003).

Contrary to sense of belonging and academic motivation, academic anxiety and perceived social support could not predict academic persistence. The interpretation thereof is that students felt that they belong to the institution, and thus, were motivated to persist academically. Such feelings of belonging and motivation may have buffered the effects of academic anxiety (Ergene, 2011; Gopalan et al., 2022), hence, academic anxiety could not predict academic persistence.

The researcher had anticipated that the findings of the study would reveal that perceived social support predicts academic persistence. Nonetheless, the findings revealed that perceived social support does not predict academic persistence in this study. This

suggests that perceptions of social support were not of primary importance for the students' academic success in this study. This means that students may not regard social support from significant others as important for their academic success. The findings of other scholars (Mackinnon, 2012; Román et al., 2008; Rueger et al., 2010) supported the argument that perceived social support does not have a bearing on academic persistence and success. This, therefore, suggests that other factors such as sense of belonging may have been more salient as predictors of students' academic persistence than their perceived social support. According to Strayhorn (2012, 2019), sense of belonging takes precedence and may solely determine students' retention in learning spaces. Thus, although important, the needs of social support may have been considered less important by students. Hence, the first hypothesis was partly confirmed.

The second hypothesis of the study sought to determine if sense of belonging, academic motivation, academic anxiety, perceived social support, generation status, and socioeconomic status will significantly predict academic persistence. This means that students' generation status and socioeconomic status were entered into the first model as additional predictor variables of academic persistence. Like the first hypothesis, the results from the second hypothesis revealed that sense of belonging and academic motivation significantly predicted academic persistence, thus further highlighting the importance of these factors in university students' retention. The results also revealed that academic anxiety and perceived social support could not predict academic persistence. Regarding the additional variables, the results revealed that the socioeconomic status could not predict academic persistence, whereas the generation status of university students significantly predicted academic persistence. This means that the second hypothesis was partly confirmed. The results of the study that show that generation status predicts academic persistence are consistent with the results of previous studies (Choy, 2001; DeFreitas & Rinn, 2013; Ishitani,

2006; Lohfink & Paulsen, 2005; Martinez et al., 2009; McFadden, 2016; Pascarella et al., 2004; Somers et al., 2004; Strayhorn, 2006; Thayer, 2000). In the context of this study, this means that the generation status of students was one background factor that predicts academic persistence. The role of students' generation status has been highlighted in literature. For instance, scholars have argued that the transition to university is challenging for all students, but that it is, however, more challenging for first-generation students as they are often unprepared for university, and therefore, tend to be anxious about navigating the unknowns of university (Choy, 2001; Terenzini et al., 1996). Furthermore, first-generation students break the family norm by attending university. This at times, presents a challenge, because often, such families are not supportive of their children's decision to enroll at university (Jehangir, 2012). Moreover, first-generation students tend to face unreasonable expectations from their families as result of pursuing a university education (Dewall, 2005; Jean, 2010; Orbe, 2008). Such expectations may lead to anxiety and eventually, academic failure (Orbe, 2004, 2008).

This study was conducted at a comprehensive university where most participants are first-generation students. The results of the second hypothesis, which show that the generation status predicts academic persistence are, therefore, important in helping the first-generation students succeed academically. Scholars state that first-generation students are students at-risk, and need administrative support to survive and succeed at university (Terenzini et al., 1996). Institutions of higher learning, therefore, need to priorities the needs of first-generation students on admission. For example, because first-generation students are often not prepared, and are not familiar with university life, institutions of higher learning need to initiate dedicated support programmes for them. Such programmes could, for instance, focus on identifying the pressing needs of first-generation students, orientate them to institutional systems and the learning environment, offer them counselling which focuses

on students' domestic and university-based challenges, which may render their enrolment unpleasant, and mitigating anxieties associated with the transition to university. Longwell-Grice and Longwell-Grice (2008) suggest that university faculties should conduct out-of-class meetings with first-generation students, individually and collectively, to discuss their academic progress and explore needs for support. Such meetings could help increase interaction between staff and students. In this regards, Davis (2010) and Longwell-Grice and Longwell-Grice (2008) emphasise that it is important for first-generation students to develop and maintain relations with members of the faculty because this will facilitate staff's understanding of first-generation students' experiences and enhance their support for these students. This may also increase their level of sensitivity towards students' academic experiences.

The results of the study from the second hypothesis also revealed that students' socioeconomic status could not predict academic persistence. These results are in line with some previous studies. This is because literature on the influence of socioeconomic status on academic persistence is inconsistent. For example, studies found that the socioeconomic status influenced academic persistence and students' success (Braunstein et al., 2002; Casanova et al., 2018; Destin et al., 2019; Edwards & McMillan, 2015; Van Zyl, 2016; Vignoles & Powdthavee, 2009), whereas other studies revealed that socioeconomic status does not entirely influence academic persistence since other students from low socioeconomic status backgrounds are able to complete their qualifications (Browman et al., 2017; Engle & Tinto, 2008; Zembrodt, 2019). Therefore, according to the results of this study, socioeconomic status did not influence academic persistence. This may be attributed to the likelihood that some students can persist academically despite the socioeconomic hardships they encounter (Mtshweni, 2021), thus demonstrating resilience in the face of adversity. Scholars emphasise that "despite facing daunting odds of academic success

compared with their more socioeconomically advantaged peers, many students from low socioeconomic status backgrounds maintain high levels of academic motivation and persist in the face of difficulty" (Browman et al., 2017, p. 45). Although socioeconomic status may have a bearing on students' success, other factors may counteract its effect. For instance, students from low socioeconomic backgrounds may be motivated to complete their studies if they are made aware of the link between education and income (Destin & Oyserman, 2010). In this regard, CRIP (2015) and Rosenbaum (2001) assert that the academic persistence of students from low socioeconomic status is enabled by the belief that education will guarantee them a better socioeconomic future. Furthermore, students are motivated to persist when they feel connected to their institution and have envisioned positive future identities for themselves (Destin & Oyserman, 2010; Oyserman et al., 2015). The results, therefore, suggest that students from a low socioeconomic status should be supported emotionally and be encouraged for them to envision positive outcomes associated with attaining tertiary qualifications. Therefore, mentorship and counselling may be key in inculcating envisioned positive futures associated with attaining qualifications among students.

Students from low socioeconomic status may persist academically if they receive adequate support in their studies. Therefore, institutions of higher learning need to offer adequate support to these students for them to succeed. This support could be psychological and financial. Financial support can be in a form of special grants for economically disadvantaged students (Mtshweni, 2021), and should cover non-tuition costs such as internet, living expenses, food and other basic essentials. Special grants have been found to assist with academic persistence and retention (Astin, 1975; Austin, 1999; Herdon, 1982; Nora, 1990; Voorhees, 1985). Thus, these special grants could benefit most students in South African institutions of higher learning who do not afford to pay study related costs (Statistics South Africa, 2019b). Additionally, finding ways of supporting students through special

grants is an indication that institutions care about students and their success, and may engender a sense of belonging that is vital for their persistence (Strayhorn, 2020).

The third hypothesis of the study sought to determine whether sense of belonging will significantly mediate the relationship between academic anxiety and academic persistence. The findings in this regard confirmed that sense of belonging significantly mediated the relationship between academic anxiety and academic persistence. Although previous studies did not test this hypothesis, similar studies, however, have reported that sense of belonging serves as a buffer against the effects of academic anxiety, and in turn, reduces levels of anxiety and increases the likelihood of academic persistence (Hausmaan et al., 2007; Osterman, 2000). Additionally, Roffey et al. (2019, p. 6) state that "a sense of school belonging can not only buffer the effects of student anxiety and depression but also boost academic engagement and motivation". This argument is in line with Strayhorn's (2012) theory of belonging which demonstrated that sense of belonging is important for students' mental health, and that it may lower psychological distress and lead to happiness and retention. This confirms that sense of belonging is a basic human need and that it is also crucial within the confines of the learning environment, and for students' academic success. The findings of this study, therefore, highlight that students' desire to persist may be attributed to sense of belonging. Further, sense of belonging may serve as a buffer against academic anxiety. Hence, academic anxiety could not predict academic persistence. This means that sense of belonging alleviates psychological distress in students, while engendering desires to persist. This suggests that institutions of higher learning should create institutional environments that are welcoming and inclusive of students from diverse socioeconomic and cultural backgrounds. A culture of inclusivity may create an atmosphere of belonging, where students feel that their needs are met.

The fourth hypothesis tested whether sense of belonging will significantly mediate the

124

relationship between perceived social support and academic persistence. The findings of this study revealed in this regard that sense of belonging significantly mediated the relationship between perceived social support and academic persistence. These findings are in line with the findings of previous studies (Davis, 2017; Kiefer et al., 2015; Vargas-Madriz & Konishi, 2021; Vieno et al., 2007; Xerri et al., 2018; Zumbrunn et al., 2014). Perceived social support could not directly predict academic persistence, however, through sense of belonging, perceived social support predicted academic persistence. The results offer some important insights into the relationship between perceptions of social support, sense of belonging and academic persistence.   According to the findings of this study, this suggest that although students may not have had high perceptions of social support from their significant others that would influence their levels of academic persistence, sense of belonging likely compensated for the inadequate levels of social support to influence academic persistence. The results, therefore, render sense of belonging an important factor that boosts students' persistence desires, in the absence of social support. Gooednow (1993) partly refers to sense of belonging as the extent to which students feel personally accepted and supported by others in the university environment. Further, sense of belonging encompasses membership and identification with a group (Bollen & Hoyle, 1990). Therefore, the absence of perceived social support may be fulfilled by the presence of sense of belonging (i.e., group membership through identifying with a group and a feeling that one matters to that particular group).

The fifth hypothesis sought to determine if sense of belonging will significantly moderate the relationship between academic motivation and academic persistence. The results in this regard revealed that sense of belonging significantly moderated the relationship between academic motivation and academic persistence. These results contradict the results of a study by Thomas et al. (2014), which revealed that sense of belonging and academic motivation do not predict academic persistence. However, the results are consistent with the

results of other studies, which revealed that sense of belonging and academic motivation predict academic persistence (Becker & Luthar, 2002; Ferreira et al., 2011; Zumbrunn et al., 2014). Further research revealed that students who report having a strong sense of belonging have been linked to higher academic motivation, higher completion rates, and the intentions to persist academically (Johnson et al., 2007). In the same manner, Connell and Wellborn (1990) emphasise that human beings have a fundamental need to belong, and that the extent to which belonging needs are gratified within a context predicts motivation and engagement. In this study, the interaction between sense of belonging and academic motivation was found to predict academic persistence. These results, therefore, underscore the importance of belonging and motivation for learning. Thus, for students to thrive and persist academically, they need to feel connected to the institution and the wider institutional community. Furthermore, students have to be motivated to succeed in their studies. The results further suggest that other than increasing students' sense of belonging to the learning environment through orientating them to different institutional social groups and programmes, institutions of higher learning should also explore other mechanisms, which will enhance students' academic motivation. This may include, for instance, course re-curriculation (to ensure that students are motivated to consume content that is up-to-date), offering incentives for good performance such as the issuing of certificates, and offering gadgets for outstanding performance. Other incentives may include tuition discounts and textbook purchase vouchers (Cox & Huston, 2020). Other alternatives should be explored to recognise outstanding performance in the faculties as well as in the departments, or even at module or course level. Such initiatives may help motivate students to stay committed to their studies.

Literature reveals that sense of belonging alleviates psychological distress, ensures good physical health and is a predictor of academic success (Begen & Turner-cobb, 2015; Haslam et al., 2008; Iyer et al., 2009; Newman et al., 2007; Osterman, 2000; Slaten et al.,

2016; Strayhorn, 2012, 2016, 2019, 2020). Sense of belonging is a basic human need that affects all aspects of human life since human beings desire to belong in contexts within which they live (Maslow, 1962; Strayhorn, 2012). As stated previously, sense of belonging takes precedence in this study due to its importance on academic persistence. Furthermore, sense of belonging is associated with psychological or mental health benefits. Due to the important role of sense of belonging on students' educational success, therefore, the sixth hypothesis of the study sought to test if sense of belonging will significantly predict academic motivation, academic anxiety, academic persistence, and also have a significant indirect effect on academic persistence via academic anxiety and academic motivation.

The findings of this study in this regard reveal that sense of belonging significantly predicted academic motivation, academic anxiety and academic persistence. Further, the findings revealed that sense of belonging had a significant indirect effect on academic persistence via academic motivation. However, sense of belonging could not have a significant indirect effect on academic persistence via academic anxiety. This partly confirms the hypothesis. These findings are in line with the findings of previous studies, which found that sense of belonging predicts academic motivation, academic anxiety and academic persistence (Becker & Luthar, 2002; Gooednow, 1993; Gooednow & Grady, 1993; Hausmaan et al., 2007; Hausmann et al., 2009; Lester et al., 2013; Mtshweni, 2019; Osterman, 2000; Sargent et al., 2002). The findings, therefore, suggest that sense of belonging contributes significantly, not only to academic persistence, but to other factors, which may help students cope with the challenges they encounter in the learning environment. High levels of motivation and low levels of academic anxiety may engender students' success (Carsley et al., 2017; Duchesne et al., 2008; Wolters, 2003).

In the context of this study, the results, therefore, highlight that sense of belonging may have cushioned students against severe anxiety, while enhancing students' academic

motivation. In this regard, Glasser (1986) suggests that all forms of motivation are

precipitated by sense of belonging as a basic human need, and that without it, students will

have challenges achieving academic success. This highlights the role of sense of belonging

on academic motivation and students' academic success. This effect is further highlighted by

that sense of belonging had a significant direct effect on academic persistence. Although

previous studies did not determine if sense of belonging would predict academic persistence

via academic motivation and academic anxiety, the findings of this study, nonetheless,

provide new insights. Sense of belonging was found to predict academic persistence via

academic motivation. This finding suggests that for students to persist academically,

institutions of higher learning need to inculcate a sense of community where students feel that

they are part of the learning community. This will, in turn, increase students' levels of

motivation, and therefore lead to persistence. The results revealed that sense of could not

predict academic persistence via academic anxiety. Further, the relationship between sense

of belonging and academic anxiety was found to be negative, this means that increased levels

of sense of belonging resulted in a decline in academic anxiety levels, hence academic

anxiety was not found to predict academic persistence. Moreover, academic anxiety was

found to have a negative relationship with academic persistence, suggesting that reduced

levels of anxiety are associated with high levels of academic persistence whereas increased

levels of anxiety are associated with low levels of academic persistence. In support of the

argument, Duchesne et al. (2008) point out that students with high or chronic anxiety are less

likely to persist academically than students with low or moderate levels of anxiety. The

belongingness hypothesis also states that sense of belonging drives goal-directed activity,

whereas a lack of belonging produces adverse effects (Baumeister & Leary, 1995). The

results, therefore, suggest that sense of belonging for university students is crucial for

cushioning them against anxiety, and consequently, for ensuring their persistence until they

complete their studies. This argument has further been strengthened by Strayhorn (2012), who states that sense of belonging alleviates psychological distress and leads to student retention.

According to scholars, a strong sense of belonging and other domain-related factors have a notable effect on the success of university students (Furrer & Skinner, 2003). A multitude of factors may determine if students develop a sense of belonging towards their university or not. The students' socioeconomic status is one such factor which may influence sense of belonging. Unlike their counterparts, students from low socioeconomic status often report that they do not belong to their university (Horvat & Antonia, 1991; Khan, 2012; Kuriloff & Reichert, 2003; Ostrove & Long, 2007; Pittman & Richmond, 2007; Rubin, 2012; Soria & Stebleton, 2013). For instance, sense of belonging in a student from a low socioeconomic status may be threatened if they cannot afford to pay tuition fees or basic learning necessities, such as a laptop or textbooks. Failure to find belonging, owing to affordability due to one's socioeconomic status may demotivate them and, in turn, force them to dropout of university. The notion that academic persistence and university students' success are influenced by their socioeconomic status is well documented in the literature (Carneiro & Heckman, 2002; Casanova et al., 2018; Mtshweni, 2021; Shah et al., 2012; Van Zyl, 2016; Vignoles & Powdthavee, 2009). Hence, the seventh hypothesis of the study sought to determine if the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' socioeconomic status. Moderation was tested using two groups of students (i.e., students from low socioeconomic status and from middle socioeconomic status). A moderation effect was determined to have occurred when a path coefficient was found to be statistically significant for one group and not for the other

group (on the same path). The findings of this study, therefore, revealed that the socioeconomic status did not have a moderation effect since no path coefficient was found to be statistically significant for one group and not the other. The findings, therefore, indicate that socioeconomic status, although it may have a positive psychological effect and yield persistence desires, it does not consistently determine persistence. This means that students may succeed academically despite their disadvantaged economic backgrounds, and that their socioeconomic status (either low or middle socioeconomic status) may not necessarily influence persistence desires. Thus, demonstrating psychological resilience to academic challenges. These findings are in line with the findings of previous studies (Browman et al., 2017; Engle & Tinto, 2008; Zembrodt, 2019), which demonstrated that students can succeed academically, despite their socioeconomic status. One possibility for students' ability to persist academically despite their socioeconomic status is psychological resilience to academic challenges. This suggest that other than supporting students economically, universities also need to prioritise mental health and initiate student counselling programmes for disadvantaged students. These programmes should focus on identifying and evaluating the needs of disadvantaged students. Further, student counselling centres may consider tailor making long-term individualised psychological support programme for students, as opposed to offering short-term or once-of support interventions. Long-term support programmes may give students an impression that the institution cares about their well-being and thus, increase their sense of belonging and ultimately have a positive influence on their academic persistence. Student counselling, through the support programmes, may also be important for exploring and strengthening students' coping mechanisms that enable them to persist despite their poor socioeconomic backgrounds.

As stated previously, sense of belonging and academic persistence may be influenced by several factors in the institutional environment. One of the factors, which has been found

to have an influence on sense of belonging and academic persistence is the generation status of university students (Engle & Tinto, 2008; Ishitani, 2006; Lippincott & German, 2007; Martinez et al., 2009; Oldfield, 2007; Rendón, 1992; Soria & Stebleton, 2012), that is whether they are first-generation or continuing-generation students. Additionally, the generation status of students may have an effect on their levels of academic anxiety and academic motivation (Noel et al., 2021; Thibodeaux & Samson, 2021). Hence, the eighth hypothesis determined if the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' generation status.

Moderation was tested using two groups of students (i.e., first-generation students and continuing generation students). A moderation effect was determined to have occurred when a path coefficient was found to be statistically significant for one group and not for the other (on the same path). The findings of this study revealed that the generation status of students had a moderating effect since the path coefficients between sense of belonging and academic motivation were found to be statistically significant for first-generation students and statistically insignificant for continuing-generation students. The results indicate that the generation status of students play a role in their academic success. In particular, the results confirm that first-generation students have varying levels of sense of belonging compared to continuing-generation students, who often come to university with satisfactory levels of belonging. The results further suggest that the relationship between sense of belonging and academic motivation is more important for first-generation students since the path between sense of belonging to academic motivation was found to be statistically significant for these group of students.

Due to lack of generational knowledge and social capital about university (Soria &

Stebleton, 2012), first-generation students have to supported during their transition to university for them to find belonging and be motivated to commit to their studies. The forms of support for first-generation students could include for example, orientating them in the university culture and customs, and the provision of counselling for curbing anxieties associated with being the first-generation to attend university in their families. Often, first-generation students require additional support to master the learning content, and sometimes to understand the language of teaching and learning. Therefore, universities should consider recruiting learning assistance professionals to offer additional support to first-generation students (Stebleton & Soria, 2013). These professionals could focus on, among other things, writing or speaking skills (Stebleton & Soria, 2013), as well as identifying other learning challenges that first-generation students present with. Such initiatives could prepare students academically, boost confidence and motivate them, and help them identify with the learning community.

Academic anxiety has been reported to have an effect on academic persistence (Iris, 2011). According to Carsley et al. (2017), academic anxiety may undermine chances of persisting academically. However, social support may lessen anxiety levels in students (Bolognini et al., 1996), hence the study sought to determine if perceived social support will significantly moderate the relationship between academic anxiety and academic persistence in a moderated mediation model. The hypothesis was tested with students from low socioeconomic status and middle socioeconomic status since the socioeconomic status of students has been reported to influence academic anxiety. The results of this study, with both groups (i.e., students from low socioeconomic and those from middle socioeconomic status) revealed that perceived social support did not moderate the relationship between academic anxiety and academic persistence. The results further indicate that the socioeconomic status did not play any role in this regard since there were no differences between the groups.

Furthermore, the results suggest that perceived social support did not have any significant role on students' levels of anxiety and academic persistence. Moreover, academic anxiety was found not to influence academic persistence. Students with notable levels of anxiety require support (Russell & Topham, 2012). However, the findings of this study suggest that students may not have had high levels of academic anxiety, and therefore, may not have regarded social support as important, despite their socioeconomic status. The minimal levels of academic anxiety and interpretation of social support as less important by students may be due to feelings of sense of belonging to their institution. Sense of belonging to the institution may have buffered against academic anxiety or feelings of anxiety (Lester et al., 2013), and thus, led to a lesser need for social support.

5.3. Contribution of the study

This study provided an understanding of the psychosocial factors, which are important for students' academic success. In particular, the study demonstrated the relationship between psychosocial factors and background factors (i.e., socioeconomic status and generation status), and how these contribute towards the academic persistence of undergraduate university students. In addition, the study suggested some strategies that institutions of higher learning could adopt to improve retention and graduation rates.

The study investigated several factors. However, of these factors, sense of belonging was considered to take precedence and therefore regarded as the important factor, which influences all other factors. This study has proven that sense of belonging is important in the sense that it was found to predict academic persistence directly and indirectly via academic motivation. Moreover, sense of belonging was found to predict academic motivation and academic anxiety, while significantly mediating the relationship between academic anxiety and academic persistence, and the relationship between perceived social support and

academic persistence. Moreover, the findings of this study have shown that sense of belonging significantly moderates the relationship between academic motivation and academic persistence. This means that the study was able to demonstrate the importance of sense of belonging on students' persistence desires and how sense of belonging can interact and boost other factors to predict academic persistence. Although all other factors are important for academic success, this study placed greater emphasis on sense of belonging; because without it, chances of academic success are minimal. The benefits of sense of belonging have been widely documented in literature; nonetheless, not much is understood in terms of the importance of sense of belonging in educational environments (Slaten et al., 2016). This indicates a gap in the literature and in terms of practical institutional strategies that could be implemented to engender belonginess in students. This study, therefore, contributes towards documenting sense of belonging as a basic need for students' persistence and educational success.

One of the challenges facing institutions of higher learning in South Africa and globally is student dropout (Mtshweni, 2021). Therefore, understanding the importance of sense of belonging may not only assist researchers, but institutions of higher learning as well to address concerns of student dropout (Slaten et al., 2015). One of the highest priorities of institutions of higher learning is to retain students and ensure high graduation rates. Sense of belonging, in this regard, enables the advancement of these goals for institutions of higher learning by increasing students' levels of commitment towards their learning environments. This means that universities need to focus on creating environments that foster sense of belonging. This is because sense of belonging has a knock-on effect on academic persistence through well-being. Strayhorn (2012) argues that belonginess may minimise distress and lead to retention. To foster a sense of belonging, universities may consider extracurricular activities for students, which have been found to increase sense of belonging towards the

learning environment (Dotterer et al., 2007; Shochet et al., 2007). Sporting events, art festivals, student unions and representative councils are some of the activities, which could be help enhance feelings of belonging. Extracurricular activities may also increase familiarity with the educational environment and lessen academic anxiety in the process.

Research has found that race and ethnicity are linked to sense of belonging (Hotchkins et al., 2021; Hunter et al., 2019; Murphy & Zirkel, 2015; Rainey et al., 2018). This means that universities need to foster environments that are racially and ethnically inclusive (Museus et al., 2015), to promotes a sense of belonging in students. This is particularly important for institutions of higher learning in South Africa, where previously racial and ethnic groups were considered to unequal during apartheid. Accommodating different racial and ethnic groups may also be particularly important for HWIs in South Africa, which are still perceived as untransformed. Scholars are of the view that institutional cultures in HWIs alienate and exclude Black students' identities in South Africa (Bazana & Mogotsi, 2017). Such institutional cultures may be detrimental to students' sense of belonging. Therefore, institutions that prioritise racial and ethnic inclusivity may be important for increasing a sense of belonging in historically marginalised and first-generation students who often have challenges in terms of adapting to the culture of the university. The study thus, contribute towards highlighting the fundamental role of sense of belonging in the lives of university students and on their academic persistence, and ultimately their academic success.

The findings of a study by Banjes et al. (2020) reported a very low utilisation of mental healthcare facilities among first-year undergraduate students in South Africa. The first year is a critical phase where students require additional study support. Sense of belonging in this regard, is crucial for students' mental health (Strayhorn, 2012). The study makes some contribution by highlighting the importance of sense of belonging on students'

135

mental health in institutions of higher learning. The mental health of university students has gained prominence in recent years. The study, therefore, recognises this, and advocates that more mental health professionals be recruited to cater for the mental health needs of students in institutions of higher learning. The researcher in this regard, suggests that universities should, where necessary, revise institutional policies to promote the recruitment of additional mental health professionals. Further, these policies should advocate and urge students to consider counselling during their transition as first-entering students and beyond the transition period.

The recent findings of a multinational study revealed that South Africa is among the countries that score low on mental health well-being (Newson et al., 2021). This, therefore, suggests a significant prevalence of mental health challenges among the general population in South Africa. Mental health challenges, including students' mental health came into sharp focus since the outbreak of the Coronavirus disease-2019 (COVID-19). Studies have reported mental health challenges associated with COVID-19 among university students (Blignaut et al., 2021; Gopalan & Linden-Carmichael, Lanza, 2022). Among other things, students' mental health challenges may have been exacerbated by remote learning, which comes with social isolation and being away from the learning community. These factors may have impacted negatively on their feelings of belonging towards their institutions (Blignaut et al., 2021). The absence of meaningful social interactions with fellow students and the teaching staff reduces their sense of belonging and negatively influences academic persistence (Lee & Choi, 2011). Therefore, to address mental health challenges among students and improve retention, universities should focus on strengthening intervention strategies to counteract COVID-19 related mental health issues and cultivate a sense of belonging among students. Indeed, sense of belonging is an important factor that should be considered when devising intervention strategies to curb mental health issues among students

because feeling like one is not an integral part of the institution makes it difficult for students to cope with their studies.

Murphy et al. (2020) and Strayhorn (2012) argue that that sense of belonging provides a buffer against stress and depression and also help students to engage meaningfully in their educational context. Thus, contributing towards academic success by ensuring good mental health among students. A study conducted among South African undergraduate students during the COVID-19 pandemic found that completing a degree was moderated by a sense of belonging and not perceived social support (Blignaut et al., 2021). These findings are in line with the findings of this study, which show that sense of belonging is more crucial for university students than perceptions of social support. This means that although it is important to support students, "increased support will not be effective unless students' sense of belonging is enhanced" (Blignaut et al., 2021, p. 12). Therefore, with universities adopting the hybrid model of teaching and learning, there is a dire need to find new ways of increasing and maintaining sense of belonging among students. For instance, other than the formal student-lecturer teaching engagements, students should be encouraged to form their own groups without the lecturer's participation or involvement. Such groups can enable students to engage freely, support each other, and share common experiences without feeling that they are being monitored. In addition, these groups play an important role in that they increase participation and collaboration, diffuse feelings of isolation, and foster a sense of belonging (Thomas et al., 2014).

Sense of belonging is multidimensional and can be fostered in numerous ways. To increase sense of belonging among students, universities should not be prescriptive by only determining suitable strategies to promote students' sense of belonging. Blignaut et al. (2021) argue that using only a top-down approach to entrench belonging poses a limitation for students who should be empowered to suggest ways that could help them develop a sense

137

of belonging towards their university. This is because perspectives for developing a sense of belonging that emerge from students provide a space for them to explore new things that they have initiated themselves, in turn, this is likely to sustain their interest in the study programmes (Blignaut et al., 2021). This may also enhance their sense of belonging to their institution and promote their integration into the institution. Student initiated activities such as fundraising and sporting events are some of the practical examples of activities that they can engage in to enhance their sense of belonging to the learning community.

Sense of belonging continues to play a crucial role as a predictor of mental health even during the pandemic, and therefore highlighting the importance of fostering an inclusive climate of learning (Gopalan & Linden-Carmichael, Lanza, 2022). The hybrid method of teaching further encourages universities to devise multiple strategies to foster sense of belonging. Crawford et al. (2019) suggest that university staff members should work collaboratively to develop a pedagogy of care to promote mental well-being among students. This approach should include partnerships between university's mental health practitioners and academics to develop a curriculum that promotes mental well-being (Blignaut et al., 2021; Henning et al., 2018). For example, before engaging in the curriculum at the start of the semester, student counselling webinars could be arranged at departmental level, or even at course level to equip students with various techniques of managing the learning content and the associated academic stressors. One-on-one counselling sessions should also be encouraged for students who need further support. Pedagogical counselling is likely to increase students' sense of belonging, and in turn, help students identify with the institution through a feeling that the institution cares about their well-being. This argument is supported by the findings of previous studies, which found that sense of belonging was negatively associated with adverse mental health outcomes, while also improving the learning experience and ensuring student retention (Gopalan & Linden-Carmichael, Lanza, 2022;

Thomas et al., 2014). This affirms the importance of sense of belonging on students' educational success and overall mental health.

Inclusive education is important for students' well-being. Therefore, to boost students' sense of belonging, students should be included in activities that have been traditionally reserved for academics, such as community engagement projects. Recruiting students to be a part of community engagement projects is not only imperative for integrating theoretical and practical knowledge (Oliveira et al., 2020), but for expanding students' social networks within the learning community and their interaction with members of the faculty as well. Therefore, to help foster belongingness, all institutionally funded community engagement projects, should, before being approved, prove that they have included a specific number of students on a rotational basis, who would participate in the projects. This will ensure students' integration into the institutional community and strengthen their relationship with faculty members. As a result, this could also help in terms of reinforcing a sense of belonging to the university among students, and ultimately, contribute to a positive learning experience and mental health. This means that managers who are in charge of university community engagement projects need to revise community engagement policies to include students in these projects.

This study contributes to the literature by highlighting the imperative role of sense of belonging among students. Hence, universities and institutional policy makers are drawn to the findings of this study, which shed some light on how sense of belonging as a basic human need can be infused within the curriculum and be fostered among students to help them integrate into the institutional environment even beyond contact learning. The study has further demonstrated that sense of belonging is an important need for students, and that institutions of higher learning should invest their time and resources to help students realise the fundamental role of belongingness. The study also holds relevance for the current

139

educational context, where students require additional institutional support to navigate the challenges associated with studying during the pandemic. Moreover, the study makes a contribution to the body of knowledge by arguing that sense of belonging is a crucial factor without which students may have little chances of success and experience adverse mental health challenges. Thus, highlighting the importance of students' mental health and also inviting universities to initiate long term objectives to help students find belongingness towards their learning institutions and the university community.

Students' mental health is linked to their academic success. Indeed, Bean and Eaton (2000) affirm this by positing that students' academic persistence is precipitated by psychological factors. According to the scholars, students' behaviour is psychologically motivated (Bean & Eaton, 2000). This suggests that the psychological state or mental health of students, is, to a greater extent, important for their functioning at university. In line with the theoretical framework of the study, the study, therefore, has demonstrated the importance of psychological factors or mental health on students' academic success, and thus, further encourages institutions of higher learning to prioritise the mental health needs of university students.

Other than the sense of belonging to the university, the study has highlighted the crucial role of academic motivation and academic anxiety in predicting academic persistence. This, therefore, suggests that institutions of higher learning should consider factors that will help students stay motivated, while simultaneously averting academic anxiety. Some of the institutional practices that could assist in this regard, are institutional, course orientation and student mentorship programmes. Mentorship programmes are important because where students need support, mentors could provide guidance on the challenges they experience. Such guidance may help avert anxiety and motivate students. Mentorship, in this regard, could be offered by members of the academic staff or former students within the same study

programme or faculty.

This study has highlighted the role of background factors on the academic persistence of students. For instance, student's generation status significantly predicted academic persistence. Further, the study tested a hypothesis that the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' generation status. The generation status was found to be a significant moderator. The path analysis results revealed that the path from sense of belonging to academic motivation was statistically significant for first-generation students and statistically insignificant for continuing-generation students. The results, therefore, indicate that first-generation students, compared to continuing-generation students, require additional support to enhance their feelings of belonging and motivational needs in the learning environment. These findings are supported by the findings of previous studies which found that first-generation students tend to report low levels of sense of belonging and academic motivation during their studies (Hamshire et al., 2018; Haslam et al., 2008; Hernandez, 2018; Laubscher-Kelly et al., 2018; Ostrove & Long, 2007; Raisley, 2021; Stebleton et al., 2014; Thibodeaux & Samson, 2021), thus highlighting the importance of supporting first-generation students so that they could identify with their institution, develop a sense of belonging, and be motivated to persist academically.

5.4. Implications for practice

The aim of this study was to investigate the role of psychosocial factors on the academic persistence of undergraduate university students. The study has highlighted the role played by the psychosocial factors, as well as the importance of these factors on the persistence of university students. Among the findings of the study, sense of belonging was

found to be imperative for ensuring the retention of university students. This is because sense of belonging was found to directly and indirectly predict academic persistence, while serving as a significant mediator of the relationship between academic anxiety and academic persistence, and of the relationship between perceived support and academic persistence. Further, sense of belonging was found to moderate the relationship between academic motivation and academic persistence. Moreover, sense of belonging indirectly and significantly predicted academic persistence via academic motivation. The findings of this study have shown that without sense of belonging, students' prospects of succeeding at a university will be minimal. This is because students need to identify with their university, feel that they are a part of the university, that they matter to the university, and that the institution prioritises their needs. Essentially, these feelings have a bearing on whether students continue with their studies until graduation, or drop out before completing their studies. Cashmore et al. (2014) argue in this regard that the lack of belongingness may spark feelings of social isolation, alienation, as well as loneliness, thus prompting students to drop out of university.

Students are likely to drop out or transfer to another institution if their feelings of belonging are not satisfied (Strayhorn, 2012). Institutions of higher learning, therefore, should prioritise belonging by creating environments that support students to develop feelings of belonging towards their learning environments. For example, to foster belonging, all university academic departments should consider having a student support portfolio, which focuses on, amongst other things; crisis support, student-based needs analysis, as well as allocation of personalised tutors or mentors to students (Cashmore et al., 2014). Supporting students at departmental level should also include holding seminars coordinated by the department for students to reflect on their academic experiences. Such seminars could also serve as a platform to identify students' needs through a group dialogue and tutor or mentor

feedback.

Students encounter several challenges, not only during their transition to university; but throughout their studies. Academic departments should, therefore, establish relationships with students and establish mechanisms that enable departments to identify students who are at-risk of dropping out. Students who are identified to be at-risk, depending on the presenting challenges, should be referred to the relevant centres of the university, such as the student mental health centre, financial support centre, and so on. This means that departmental support portfolios should enter into a Memorandum of Understanding (MoU) with other relevant institutional centres to facilitate support queries and enable adequate support for such students. Such forms of support may be important for enhancing students' levels of belonging to their institution.

The transition to university is associated with several challenges, which may breed feelings of anxiety, especially among first-generation students and students from economically disadvantaged backgrounds (Gerdes & Mallinckrodt, 1994; Jean, 2010; Jones et al., 2008; Lippincott & German, 2007; Noel et al., 2021; Xu et al., 2021). This means that students need to be supported emotionally for them not to suffer from academic related distress or anxiety. Universities, therefore, need to assist first-generation students and economically disadvantaged students by making funding and specialised mental health services available to them. Financial support and mental health support have been reported to be effective for student retention (Clark, 2021; Hossler et al., 2009). This implies that institutional policies should be revised where necessary to accommodate students who are at-risk of dropping out due to background factors. Through his seminal model of institutional departure, Tinto (1993, 1975) highlights the role of background factors in predicting dropout. This means that universities should not only focus on increasing enrolments but should strive to identify suitable forms of support for students from various backgrounds as well. This is

important, especially for students in the South African context, who are mostly from disadvantaged backgrounds (Bathmaker & McLean, 2017; Statistics South Africa, 2019b) and who require additional forms of support to further their studies.

5.5. Implications for theory

This study was guided by Bean and Eaton's (2000) psychological model of student retention. According to the model, students' decisions to persist or drop out of university are psychologically motivated. Psychological activities (e.g., distress and avoidance behaviour) explain students' departure decisions. Bean and Eaton (2000) acknowledge in this regard the complexity of psychological behaviour as a determinant of dropout or persistence. For instance, these scholars argue that students may persist, owing to multiple psychological factors such as attitude and behaviour, efficacy beliefs, or locus of control. Psychological factors as determinants of persistence, have also been acknowledged by Strayhorn (2012), who argues that failures of the environment to ensure a psychological fit may result in distress and ultimately, dropout. However, if there is a psychological fit between the environment and the student, retention is likely. This study investigated the effect of psychosocial factors on academic persistence, and the theoretical models guiding the study were fundamental in shedding light on the psychological mechanisms involved in ensuring retention.

The theoretical models provide some insight on the psychology of student retention. Furthermore, the models serve as useful guides for conceptualising theory relevant to the South African context. Although the theoretical models that guided the study were developed internationally, they, nonetheless, served as important guides or baseline models for researchers seeking to develop theoretical models of retention in South Africa, particularly, from a psychological perspective. This is important since there are limited psychological

144

models of retention relevant to the South African context. To understand the phenomenon of academic persistence, researchers should consider developing context-appropriate theoretical models to aid their understanding of the phenomenon of academic persistence from a local context.

5.6. Recommendations for future studies

Based on the findings of this study, the researcher proposes the following recommendations for future studies.

First, the study was conducted at a comprehensive university (i.e., a university offering vocational and academic programmes) in South Africa. Therefore, the findings may not be generalisable to traditional universities (i.e., universities offering academic programmes only). The researcher recommends in this regard, that future studies be conducted at a traditional university to shed light on the role of psychosocial factors in predicting academic persistence. Comparing the findings from comprehensive and traditional universities may be important for policy development on student support in South African institutions of higher learning.

Second, this study utilised a quantitative research design to understand the influence of psychosocial factors on academic persistence, future research should, thus, consider using a qualitative research design or mixed methods research design to understand students' experiences and how these psychosocial factors influence academic success. The use of qualitative research or mixed methods research design may help deepen understanding and answer some of the questions that may otherwise, not be answered quantitatively. The use of mixed methods research designs can provide pragmatic advantages when exploring complex research questions (Driscoll et al., 2007). Thus, not limiting information that may be solicited from the research participants.

Third, Bean and Eaton (2000) and Tinto (1993) posit that background factors play a role in the academic success of university students. This is acknowledged in the current study hence the role of socioeconomic status and generation status were explored. Nonetheless, future research should consider exploring more background factors such as students' previous schooling and residential area, which have been found to have an effect on students' academic success (Maree, 2015; Myburgh, 2019).

Fourth, other than background factors, a number of psychosocial factors play a role in predicting university students' success. Therefore, future studies may consider exploring additional psychosocial factors such as stress, adjustment and self-efficacy, which have been reported to have an influence on the academic success of university students (Bean & Eaton, 2000; Mtshweni, 2021; Zajacova et al., 2005). These may shed light on factors that are more important in predicting academic persistence and, therefore, encourage universities to support students better during their studies. Further exploring the additional factors may lead to refined models of academic persistence, which could be important for understanding retention issues in institutions of higher learning.

Fifth, the academic persistence scale had a low reliability coefficient. This may have affected the statistical power of the instrument. Future studies may consider using a different tool to measure academic persistence. In addition, researchers may consider persistence-based tasks to operationalise and quantify this variable. Alternatively, research can measure performance-based outcomes since performance is related to academic persistence (Lens et al., 2005).

Sixth, the level of academic persistence may differ per semester and year of study. Therefore, future studies may consider comparing the level of academic persistence per semester and year of study. The findings from such studies may determine the level of

support required for students per semester and year of study.

Last, the theoretical models that underpinned this study were developed internationally, specifically in the USA. Therefore, future research should consider developing psychological models of academic persistence relevant for the South African context and other developing countries. Locally developed models may help institutions of higher learning, institutional administrators and researchers to understand dropout and retention rates from a more informed and contextually relevant perspective. This could be helpful in terms of formulating strategies for reducing the rates of retention locally.

5.7. Limitations of the study

This study has several limitations. First, the instrument used to measure academic persistence had a poor Cronbach's alpha. Therefore, the reliability of the instrument may have been affected. Second, the study used a cross-sectional survey, this means that the data were collected at a single point in time without making a follow-up. Thus, cause and effect was not established in this study. Hence, the findings of this study should be interpreted within the context in which the study was conducted. Third, the study used self-report measures for data collection. Self-report measures are susceptible to response bias. The findings, therefore, should not be generalised to other university contexts or other student population groups. Fourth, the study did not collect data on the years in which students are enrolled. This information may have been useful to determine which students were in a critical period to dropout based on years of enrolment. Fifth, the survey did not collect data on the programmes in which students were enrolled (i.e., academic or vocational). Such data may have been useful for establishing which students are likely to persist or not based on the programmes for which they are enrolled. Last, the researcher used convenience sampling. Convenience sampling is likely to be biased and not representative of the entire population

(Etikan et al., 2016). Hence, the findings should be interpreted within the context of the study, and not other student population groups.

5.8. Conclusion

This study investigated to role of psychosocial factors on the academic persistence of undergraduate students. These included sense of belonging, academic motivation, academic anxiety, and perceived social support. Other background factors which were suspected to influence academic persistence were investigated in this study. These are the socioeconomic status of students as well as their generation status. The study demonstrated that the inclusion of background factors in the regression model increases the total variance explained by predictor variables, thus demonstrating the role of background factors in influencing academic persistence. Further, students' generation status was found to predict academic persistence, and to be a significant moderator in the model, which sought to test the hypothesis which stated that the relationship between sense of belonging, academic motivation, academic anxiety and academic persistence, with sense of belonging predicted to have a significant indirect effect on academic persistence via academic anxiety and academic motivation, would be moderated by the participants' generation status. The findings, therefore, encourage institutions of higher learning to take into cognisant background characteristics of students on their admission to university, and tailor make forms of support relevant for addressing the needs of students. Pertinent to this study, the results indicate that first-generation students should be supported to cope with the transition to the university and be familiarised, through institutional programmes, of the different aspects of the university. Further, first-generation students should be offered counselling, which will help them cope with being the first-generation to attend university in their families. This may help reduce their levels of anxiety and acclimatise them to university life with ease.

The findings also show that sense of belonging and academic motivation significantly predicted academic persistence. This means that institutional mechanism should be put in place to foster feelings of belongingness in institutions of higher learning. Universities should, therefore, initiate programmes that are important for helping students identify with the university. Extracurricular activities and student organisations could be helpful in this regard. In terms of enhancing academic motivation, universities should consider formalising academic mentorship programmes to help encourage and motivate students to persist academically. Career guidance has been reported to be linked to academic success (te Wierik et al., 2015) and, therefore, universities may consider offering career guidance to students as a way of enhancing student motivation.

Overall, the study provided crucial insights on the role of psychosocial factors on academic persistence and, ultimately, the success of university students. Further, the study suggests some interventions, which could be adopted by institutions of higher learning to respond to the alarming rates of student dropout in institutions of higher learning in South Africa. It is envisaged that the implementation of the suggested strategies will not only help improve retention rates, but will also transform the institutions of higher learning to be responsive to students' needs, and therefore, enable them to successfully deliver on their mandate of providing quality and inclusive education.

5.9. Summary of the chapter

The chapter discussed the findings of the study in relation to the hypotheses formulated. The chapter also outlined the contribution of the study, implications for practice; focusing on, among other things, institutional policy and strategies, which institutions of higher learning could adopt to help students cope better during their studies. The chapter also discussed the study implications for theory, and made recommendations for future studies,

outlined the study limitations, and provided a conclusion.

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List of appendences

Appendix A: College of Human Sciences Ethical Clearance

UNISA | university of south africa

COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

23 March 2021

NHREC Registration # : Rec-240816-052
CREC Reference # : 51416387_CREC_CHS_2021

Dear Mr B. V. Mtshweni

Decision:
Ethics Approval from 23 March 2021 to 23 March 2026

Principal Researcher: Mr B. V. Mtshweni (51416387@mylife.unisa.ac.za)
Supervisor/s: Dr F.T. Silinda (silinft@unisa.ac.za)

Title: *The effect of psychosocial factors on the academic persistence of undergraduate university students*

Degree Purpose: PhD

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for five years.

The *Low risk application was reviewed on the 23 March 2021* by College of Human Sciences Research Ethics Committee, in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.

7. No fieldwork activities may continue after the expiry date (23 March 2026). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number 51416387_CREC_CHS_2021 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,

Signature :

Prof. Ilse Ferns
CHS Ethics Chairperson
Email: fernsi@unisa.ac.za
Tel: (012) 429 8210

Signature : PP

Prof K. Masemola
Exécutive Dean : CHS
E-mail: masemk@unisa.ac.za
Tel: (012) 429 2298

Appendix B: Information letter

Dear student,

My name is Bongani Mtshweni, a PhD candidate at the University of South Africa, and I am conducting a study on the experiences of university students on psychosocial factors and academic persistence. The psychosocial factors that I am investigating are; sense of belonging, academic motivation, academic anxiety and perceived social support. To do this, I am conducting a survey among undergraduate students using questionnaires developed for this purpose. The purpose of the study is to investigate the effect of psychosocial factors and academic persistence. The study will also propose a psychological model of academic persistence.

I am writing to request your participation in the research study. Participation in the study involves completing questionnaires with items about your university experience as a student. The permission to conduct the study and ethical clearance were requested and obtained from the Department of Psychology Ethics Committee, College of Human Sciences Research Ethics Review Committee and Research Permission Sub-committee of the Senate Research, Innovation, Postgraduate Degrees and Commercialisation Committee.

Please take note that the information you provide will be kept strictly confidential and will be analysed on group level. The information you provide, through the research findings, may influence policy change, assist with rates of retention and improve students' university experience through adequate psychological support.

If you have any questions about the study, please contact Bongani Mtshweni at 51416387@mylife.unisa.ac.za or Dr Fortunate Silinda at silinft@unisa.ac.za

Your time and participation in the study is highly valued. Thank you!

To take part in the survey, please click on the link provided below:

https://unisapsychology.qualtrics.com/jfe/form/SV_8df7saEjcR9TtAy

Kind regards,

Bongani Mtshweni

Appendix C: Consent form

I, the participant, understand that the consent I am about to give is for a PhD research study conducted by Mr. Bongani Mtshweni under the supervision of Dr. Fortunate Silinda, a chair of the Department of Psychology at Unisa.

I understand that my participation in the study is completely voluntary and that I may refuse to participate or withdraw my consent to participate without any penalty at any time before submitting my responses. I understand that my identity and responses on the questionnaire will be kept confidential and that only the principal investigator (Bongani Mtshweni) and the supervisor referred above will have access to the information collected during this study. I also understand that the data collected will be reported in aggregate forms and that none of my personal information; name or identity will be published or used in any research reports or publications. I also understand that the collected will be safely stored in a password protected device and that no one other than the principal investigator and the supervisor will have access to the data.

I understand that my participation in this study will involve answering questions about my university experience. I also understand that I will be asked to answer five short questionnaires including a demographic questionnaire, and that the survey will take approximately 15-20 minutes to complete. I understand that participating in the study is voluntary and that in case of discomfort; I may withdraw my consent to participate at any time before submitting my responses and without penalty. I am also aware that there will be no compensation or rewards for participating in the survey.

I understand that I may contact the principal investigator or the supervisor in case I need any form of psychological assistance as a result of participating in the survey, and that investigator will facilitate a referral for me to the Unisa Health and Wellness Centre or to the Higher Education and Training: Health, Wellness and Development Centre.

I am aware that if I have any further questions about the study, or should I wish to be informed about the results of the study, that I may contact Mr. Bongani Mtshweni at 51416387@mylife.unisa.ac.za or the supervisor, Dr. Fortunate Silinda at silinft@unisa.ac.za

Thank you for your participation!

I, the participant, understand that by clicking the 'OK' option below affirm that I am giving my consent to participate in this research study and that I have read and understood the consent form. I also affirm that I am 18 years of age or older and voluntarily agree to take part in the survey.

Click 'OK' to take the survey or 'Decline' to withdraw or turn down the survey.

| OK | Decline |

Appendix D: Questionnaire

The following section enquires about your level sense of belonging at Unisa. Please rate the following statements on how they are true to you based on your university experience.

1. Feel like a part of my university
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true
   - completely true
2. Sometimes I feel as if I don't belong to my university
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true
   - completely true
3. There is at least one lecturer that I can talk to in my university if I have problem
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true
   - completely true
4. Lecturers in my university are not interest in people like me
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true
   - completely true
5. I am included in lots of activities at my university
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true
   - completely true
6. I feel very different from most other students at my university
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true

- completely true

7. I can really be myself at my university
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true
   - completely true

8. I wish I were in a different university
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true completely true

9. I feel proud to belong to my university
   - Not at all true
   - Slightly true
   - Moderately true
   - Very true
   - completely true

The following section measures your level of perceived social support from your family, friends and significant. Please indicate your level of agreement with the following statements.

10. There is a special person who is around when I am in need
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

11. There is a special person with whom I can share my joys and sorrows
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

12. My family really tries to help me
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

13. I get the emotional help and support I need from my family
    - Strongly disagree

- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

14. I have a special person who is a real source of comfort to me
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

15. My friends really try to help me
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

16. I can count on my friends when things go wrong
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

17. I can talk about my problems with my family
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

18. I have friends with whom I can share my joys and sorrows
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

19. There is a special person in my life who cares about my feelings
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

20. My family is willing to help me make decisions
    - Strongly disagree

- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

21. I can talk about my problems with my friends
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

The following scale measures your reasons for attending university. Please indicate the extent to which the following statements correspond to the reasons why you attend university. I attend university………..

22. Because I experience pleasure and satisfaction while learning new things
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

23. Because I think that a university qualification will help me better prepare for the career I have chosen.
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

24. Because when I succeed in my studies, I feel important.
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

25. Because I want to succeed later on.
    - Strongly disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Strongly agree

26. Because it allows me to experience a personal satisfaction.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree
27. Because I want to prove to myself that I can succeed in my studies.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree
28. Because I want to prove to myself that I am capable of completing my university qualification.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree

The following section enquires about your academic experience. Please indicate the extent to which the statements apply to you based on your university experience.

29. My studies are a big burden for me.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree
30. I am worried that I am not able to decide what to study.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree
31. I am in great anxiety when I get poor marks in an assignment.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree
32. I feel nervous I might not be able to complete my work on time.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

33. I worry that I am not able to make proper time for studying.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree

The following section enquires about your university experience. Please indicate how the following statements apply to you based on your university experience.

34. It is important for me to graduate from university.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree

35. I am confident that I made the right decision in choosing to attend university
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree

36. It is unlikely that I will register at this institution next semester.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree

This last section enquires about your demographic information. Please indicate your demographics by giving a response that applies to you.

37. How old are you?

38. What is your gender?

- Female
- Male
- Other

39. What population do you belong to?
- Black
- Coloured
- Indian
- White
- Other

40. Which family's socioeconomic status do you mostly identify with?
- Low socioeconomic status
- Middle socioeconomic status
- High socioeconomic status

41. Select the following statement that best describes the level of education of your parent(s) or guardian(s).
- Both my parents/guardians hold a bachelor' degree or higher
- At least one of my parents/guardians hold a bachelor's degree or higher
- At least one of my parents/guardians has some education after high school
- Neither of my parents/guardians has more than a high school diploma or certificate