THE ROLE OF IDENTITY DEVELOPMENT, FUTURE TIME PERSPECTIVE AND

CAREER MATURITY IN FIRST-YEAR STUDENTS' ACADEMIC SUCCESS

by

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SUMMARY

The retention of first-year students and poor throughput rates are problems plaguing higher education globally and South Africa in particular. A significant number of students drop out of university in their first year of study and those who ultimately graduate take longer periods to complete their undergraduate degree. Many first-year students who gain access to higher education are reported to be under-prepared and ill equipped to meet the expectation and the assumption that they should be academically and developmentally prepared to handle the responsibilities associated with higher learning and its unique challenges. First-year students are developmentally at the emerging adulthood stage, where they are generally engaged in a process directed towards their future roles and career aspirations. It was therefore necessary to consider theoretical underpinnings of identity and career development as significant factors at play in students' intrapsychic preparedness and psychological resilience for the task at hand. These two developmental trajectories are significantly influenced by one's time orientation, specifically one's future time perspective. The main aim of this study was to investigate the role of career maturity and future time perspective in the relationship between identity development and the academic success of first-year students at university. Thus, the study firstly aimed to determine whether identity development could significantly predict the academic success of first-year students at university and secondly, it investigated the mediating and moderating roles of both career maturity and future time perspective. This investigation was extended to include gender and race/ethnicity as factors influencing the outcome. From the moderated hierarchical

multiple regression analyses conducted to investigate the possible effect of gender and race/ethnicity on the relationship between identity development and academic success, it became clear that gender did not moderate this relationship whereas race/ethnicity succeeded in moderating the relationship. Calculated correlation coefficients between the relevant variables indicated that only the commitment scale correlated significantly (at the 5% level) with academic success for the total group and the white students. None of the identity styles reflected a significant relationship with academic success for the black learners. An increased number of career maturity variables appeared to be significantly related to academic success for the total group and for the black and white students. Future time perspective appeared to be significantly related to academic success for the total group as well as for the black and white students. None of the identity styles succeeded in predicting a significant percentage of variance in both the black and white students' academic success. Therefore, the role of identity development in predicting academic success remains inconclusive and calls for further exploration. The following career maturity scales moderated the relationship between the normative identity and academic success: decision making moderated this relationship for the black students; career information moderated this relationship for both the black and the white students; and, lastly, integration of self- and career information moderated this relationship for the white students. Career information, integration of self- and career information as well as career planning moderated the relationship between diffuse-avoidant style and academic success for the white students. Lastly, future time perspective moderated the relationship between identity commitment and academic success for the black first-year students and

not for the white students. This appears to be a strange finding as white students are expected to be more future-oriented and goal directed in that these are the associated effects of identity exploration and the development of identity commitments over time; processes that are often associated with Western cultural values.

OPSOMMING

Die retensie van eerstejaarstudente en swak deurvloeikoerse is probleme wat hoër onderwys wêreldwyd en veral in Suid-Afrika teister. 'n Beduidende aantal studente staak hulle studies in hulle eerste jaar en dié wat uiteindelik gradueer, neem langer om hulle voorgraadse studies te voltooi. Volgens berig is baie eerstejaarstudente wat toegang tot hoër onderwys verkry swak voorbereid en nie opgewasse daarvoor om te voldoen aan die verwagting en veronderstelling dat hulle akademies en ontwikkelingsgewys gereed moet wees om die verantwoordelikhede verbonde aan hoër onderwys en die unieke uitdagings wat daarmee gepaard gaan, te behartig nie. In terme van ontwikkeling is eerstejaarstudente by die fase van ontluikende volwassenheid, waar hulle gewoonlik besig is met 'n proses wat op hul toekomstige rolle en loopbaanaspirasies gerig is. Dit was daarom nodig om die teoretiese onderbou van identiteit en loopbaanontwikkeling in aanmerking te neem as beduidende faktore wat op studente se intrapsigiese weerbaarheid en sielkundige veerkragtigheid vir die taak op hande inwerk. Hierdie twee ontwikkelingstrajekte word aansienlik deur die individu se tydsoriëntasie, spesifiek sy/haar toekomstydsperspektief, beïnvloed. Die hoofdoel van hierdie studie was om die rol van loopbaanvolwassenheid en toekomstydsperspektief in die verband tussen identiteitsontwikkeling en die akademiese sukses van eerstejaarstudente op universiteit te ondersoek. Die studie was dus eerstens daarop gerig om vas te stel of identiteitsontwikkeling die akademiese sukses van eerstejaarstudente op universiteit in beduidende mate kan voorspel en het tweedens die bemiddelende en modererende rolle van loopbaanvolwassenheid sowel as toekomstydsperspektief ondersoek. Hierdie

ondersoek is uitgebrei om geslag en ras/etnisiteit as faktore wat die uitkoms beïnvloed, in te sluit. Uit die gemodereerde hiërargiese meervoudige regressie-ontledings wat gedoen is om die moontlike invloed van geslag en ras/etnisiteit op die verband tussen identiteitsontwikkeling en akademiese sukses te ondersoek, het dit geblyk dat geslag nie hierdie verband modereer nie, maar ras/etnisiteit het daarin geslaag om die verband te modereer. Berekende korrelasiekoëffisiënte tussen die relevante veranderlikes het daarop gedui dat slegs die verbintenisskaal vir die hele groep en die wit studente beduidend (op die 5%-vlak) met akademiese sukses gekorreleer het. Geen van die identiteitstyle het vir die swart leerders 'n beduidende verband met akademiese sukses getoon nie. Dit kom voor asof 'n groter aantal loopbaanvolwassenheidsveranderlikes beduidend met akademiese sukses verband hou vir die hele groep en vir die swart en wit studente. Toekomstydsperspektief hou skynbaar beduidend verband met akademiese sukses vir die hele groep sowel as vir die swart en wit studente. Geen van die identiteitstyle het daarin geslaag om 'n beduidende persentasie variansie in sowel die swart as die wit studente se akademiese sukses te voorspel nie. Die rol van identiteitsontwikkeling in die voorspelling van akademiese sukses is dus steeds onbeslis en vereis verdere ondersoek. Die volgende loopbaanvolwassenheidskale het die verband tussen die normatiewe identiteit en akademiese sukses gemodereer: besluitneming het hierdie verband vir die swart studente gemodereer; loopbaaninligting het hierdie verband vir die swart sowel as die wit studente gemodereer; en integrasie van self- en loopbaaninligting het hierdie verband vir die wit studente gemodereer. Loopbaaninligting, integrasie van self- en loopbaaninligting, sowel as loopbaanbeplanning het die verband tussen diffuusvermydende styl en akademiese

sukses vir die wit studente gemodereer. Laastens het toekomstydsperspektief die verband tussen identiteitsverbintenis en akademiese sukses vir die swart eerstejaarstudente, maar nie vir die wit studente nie, gemodereer. Dit skyn 'n vreemde bevinding te wees, omdat daar verwag word dat wit studente meer toekomsgeoriënteerd en doelgerig sal wees deurdat dit mettertyd die geassosieerde uitwerking is van identiteitsverkenning en die ontwikkeling van identiteitsverbintenisse, wat dikwels met westerse kulturele waardes verbind word.

Sleutelterme:
Identiteitsontwikkeling; loopbaanontwikkeling; loopbaanvolwassenheid; toekomstydsperspektief; ontluikende volwassenheid; akademiese sukses; ras/etnisiteit.

DECLARATION

I, Edna Refiloe Seane, declare that the Doctoral Degree thesis that I herewith submit for the Doctoral Degree qualification *Philosophiae Doctor* at the University of the Free State is my independent work and that I have not previously submitted it for a qualification at another institution of higher education.

I hereby declare that I am aware that the copyright is vested in the University of the Free State.

I also declare that all royalties as regards intellectual property developed during the course of and/or in connection with the study at the University of the Free State will accrue to the University.

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Edna Refiloe Seane

31 January 2017

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List of Acronyms and Abbreviations

CAAS	Career Adapt-Abilities Scale
CHE	Council on Higher Education
CDQ	Career Development Questionnaire
FTP	Future Time Perspective
ISI-4	Identity Style Inventory (Version 4)
NSFAS	National Student Financial Aid Scheme
OECD	Organisation for Economic Cooperation & Development
STATS SA	Statistics South Africa
SPSS	Statistical Package for the Social Sciences
ZTPI	Zimbardo Time Perspective Inventory

Chapter 1: Introduction

Background

The retention of first-year students and poor throughput rates are problems plaguing higher education globally. According to a 2013 report by the Council on Higher Education (CHE), first-year students are often viewed to be underprepared and ill-equipped for the unique challenges posed by entry into the tertiary education system (CHE, 2013b). In South Africa, this situation is often compounded by factors relating to the country's socio-political history which denied certain sectors of the population (mostly poor and black) access to education. A report of the Organisation for Economic Cooperation and Development (OECD) states that "*challenges in higher education in South Africa, particularly in the Free State region, are linked to the underperformance of the schooling system which features high drop-out rates and poor learning outcomes. The efficiency of the primary and secondary school education system is low and many youth leave school without adequate skills to enter the labor market or higher education*" (2012, p. 17). According to this report, as seen above, the Free State province (where the present study was conducted) lags behind in the national key education indicators, largely due to high rates of unemployment, poverty and failing schools. The challenge of students' under-preparedness upon entry into higher education poses a huge obstacle for universities to overcome in attempting to improve their throughput rates. Universities face this obstacle because the school system is failing to sufficiently prepare learners entering university-level study (Wilson-Strydom, 2012). According to Thomas (2012)

students from poor backgrounds who are entering higher education are often at risk of poor academic performance and also of dropping out of university before having completed their university studies. Smith and Zhang (2010) identified first-generation students as being at an even higher risk of failure to complete their studies as their transition from high school to university constitutes an enormous leap across economic, social and racial barriers (Govender, 2013). According to Heymann and Carolissen (2011), first-generation students are often defined as those students whose parents have not acquired a graduate degree and therefore have never been to university. They are often the first in their immediate families to earn a bachelor's degree or to enter university. In most cases these students are not knowledgeable about the different funding avenues for higher education and therefore are more likely to drop out of university than those who do not classify as first-generation students (Choy, 2001).

Despite the overall demographic changes to the student population in the South African higher education landscape, low graduation and throughput rates continue to be seen amongst black students, particularly those from poor backgrounds and under-resourced schools (CHE, 2013a). There is great concern about student retention rates, throughput rates and the failure of students to complete their studies within expected time frames as factors that exercise a huge economic impact on the country. The CHE reports that recent studies reveal that only 27% of undergraduate students complete their studies in the minimum prescribed time frames and that only half of students entering higher education will graduate (CHE, 2013a). Prince and Yeld (2012) earlier indicated that 40%

of registered students drop out of their studies in their first year, and only 15% obtain their degrees in the minimum scheduled time.

According to Van Zyl (2015) just under half of those students who persist through their first year of study will ultimately graduate: *"The first year is the biggest hurdle and that is why it is important to focus on new enrollments to make it through first year"* (Van Zyl, 2015, p. 1). To obtain an undergraduate qualification is growing increasingly important in the world despite the mentioned challenge of student retention and the continually escalating costs of higher education to family members and universities (Wright, Jenkins-Guarnieri, & Murdock, 2012). Mthembu, as cited in McGregor (2014) states that the student protests witnessed in South Africa in January 2013 led the state to increase its financial subsidy from approximately R4 billion to R5.1 billion. However, with the most recent "#FeesMustFall" student protests that took place in 2015, where students agitated for a 0% fee increase in 2016 and for free education in general, the projected increase by the state is estimated at R19 billion for universities and a further R37 billion in increased funding for the National Student Financial Aid Scheme (NSFAS), as well as a concession of a 0% fee increase in 2016 (Habib, 2016). These increased contributions constitute a huge investment in higher education by the state. This also implies devastating ramifications if students fail to complete their studies within the expected time frames, with consequent financial impact on the country as a whole and on universities in particular. Furthermore, although some students do indeed complete their studies within the expected time frames, graduates find themselves facing the challenge of unemployment due to an ailing economy (Roodt in Sunday Times, 24 April

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2016). Statistics recently released by Statistics South Africa (Stats SA) reveal that the number of unemployed graduates stood at 17 500 in 2016 (Sunday Times, 24 April 2016). However, it is an undisputed fact that environmental factors are not the only significant aspects weighing in on student retention and throughput rates (Strydom, Kuh, & Mentz, 2010). Literature abounds suggesting that numerous intrapsychic characteristics are related to student success despite adverse environmental conditions (Reid, 2013; Barber, 2012; Yearwood & Jones, 2012). Considering the fact that students are generally engaged in a process directed towards their future life roles and future career aspirations, it would appear reasonable to consider the theoretical underpinnings of identity and career development as significant factors at play in a student's intrapsychic preparedness and psychological resilience for the task at hand. Furthermore, literature suggests that these two developmental trajectories are significantly influenced by the individual's orientation to time and specifically his/her future time perspective or FTP (Zacher, 2014; Bilde, Vansteenkiste, & Lens, 2010; Lens & Tsuzuki, 2007). For first-year students to succeed at institutions of higher learning they need to be developmentally prepared and must possess the necessary skills required to succeed at higher education (Boyd, Hunt, Kandell, & Lucas, 2003). These first-year students are at a stage of life where they are developing self-endorsed identities, making plans for the future and following a certain educational and vocational career path to succeed in life – a period referred to as emerging adulthood (Arnett, 2000, 2004, 2012). This is an extended period of development between adolescence and young adulthood, where identity development takes centre stage. Identity development involves a process of personal exploration that

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leads to the establishment of a coherent set of attitudes, values and beliefs, and represents one of the major challenges facing this stage in which first-year students enter university (Arnett, 2012). Several views on identity development have been expressed by researchers expanding on Erikson's (1980) theory of identity development. For example, Marcia (1966) emphasises exploration and commitment as two crucial dimensions of identity development where the intersection of these produces four identity statuses representing different levels of identity resolution. He focuses on the premise that ideally a person makes commitments after having explored alternatives. In recent empirical research, Berzonsky's model of identity development takes prominence amongst the social-cognitive approaches to identity development since this model focuses on the information-processing style that determines identity development rather than the outcome of that development (Berzonsky, 2008). According to Boyd et al. (2003) identity development provides the foundation to academic success as well as overall success in later life.

Several identity parameters such as race/ethnicity, socio-cultural, and socio-economic status as well as values, aspirations, career and lifestyle preferences contribute to identity development and continue developing beyond secondary school (Pascarella & Terenzini, 2005). Students who have a positive future image of the self are often motivated to achieve academically and to plan actively for the future (Adelabu, 2008). Lens and Tsuzuki (2007) state that planning for the future and developing a personalised identity are seen as important tasks of adolescents and emerging adults globally. When students set future-oriented goals, and explore alternatives and careers, they are in a

better position to succeed at university (Simons, Vansteenkiste, Lens, & Lacante, 2004). Research indicates that future-oriented students tend to be more successful than present-oriented students, both academically and in their careers. The competency and readiness to make critical career decisions is a further challenge facing students upon entering university. This is often supported by the ability to make future plans and to explore alternatives in order to be successful at university. However, first-year students enter university at different levels of identity development, certainty about their future, career aspirations and preparedness to face the challenges of higher education (Berzonsky & Kuk, 2005; Mthethwa, 2013). Although this may be the case, Benson and Johnson (2009) argue that girls at this stage of development develop social-cognitive maturity much earlier than their male counterparts, and are generally given more responsibility and decision-making opportunities than boys. Research has indicated that gender differences often play a role in determining individuals' preparedness for entry to university. Kim and Oh (2012) also indicate, through a survey of existing research, that girls show greater career maturity and readiness to enter university than their male counterparts. Girls are also reported to outperform the opposite sex in academic achievement (McMillan, Frierson, & Campbell, 2010). These differences are supported when looking at the significantly larger number of female students entering South African higher education institutions (CHE, 2013b).

Noteworthy race/ethnic differences have been identified among students entering university in terms of university preparedness and career maturity. These factors define the background from which students come, as well as the contexts within which they

function and therefore need to be understood when considering their preparedness and readiness to enter university (Wilson-Strydom, 2012). Lewin and Mawoyo (2014) emphasise the necessity for higher education institutions to develop an in-depth understanding of the students they admit to the universities, their cultural background, socio-economic status, whether they are first-generation students or not, and the type of schooling background they come from; all factors involved in determining their state of university preparedness. Research indicates that race/ethnicity continues to have implications for success in higher education, with a significant gap between black and white students (Leach, Baker, & Zeigler-Hill, 2011). According to Scott (2010) academic success rates for white students are reportedly higher than those of black students, with white students continuing to enjoy the privileges bestowed upon them by the apartheid dispensation.

Purpose and necessity of the study

As stated above, the retention of first-year students at university is a critical issue facing higher education globally and South Africa in particular. Both internationally and nationally, first-year students drop out of university in their first year of study, exercising a serious financial impact on the country. International research confirms that the first year of study is a testing period for those who have left high school to enter university (cf. Grayson & Grayson, 2003 in Grobler, Lacante, & Lens, 2014). In South Africa, many students enter university developmentally underprepared on account of the inequalities in the education system inherited from the past. It is a well-documented fact that many

students experience difficulties in making the transition from high school to university or higher education (Pascarella & Terenzini, 2008). The individual or personal developmental changes that adolescents and emerging adults undergo, coupled with educational transitions, are extensive and frequently disruptive. Students are often overwhelmed by the expectations of higher education institutions that, upon entering university, they must have the necessary learning and decision-making skills to navigate their many first-year courses. This frequently results in them dropping out of university and thus disrupts their future plans and the success of their future life.

To determine how students' identity development styles, relate to or influence academic success and whether career maturity and future orientation moderate/mediate this relationship will assist professionals who are placed in counselling services to become aware of the developmental obstacles that these students face and in designing proactive interventions to facilitate their transition from high school to university so that they may achieve their academic goals. Secondly, the skills development of developmentally underprepared students will assist in increasing retention and throughput rates, which in turn is beneficial to personal fulfillment, to families and to the state in that the value of education costs is realised. The present investigation hopes to provide useful information pertaining to the skills required for personal and academic success among students with specific relevance to South African higher education institutions and their unique set of innumerable challenges.

General research aims

The following research aims will be investigated.

1.   To determine whether identity development can significantly predict the academic success of first-year students, as well as to determine which specific identity development style is more successful in predicting the academic success of first-year students.

2.   To determine whether future time perspective (FTP) and/or career maturity moderate the relationship between identity development and academic success in first-year students.

Dissertation structure

The outline of the thesis is provided in the diagram below.
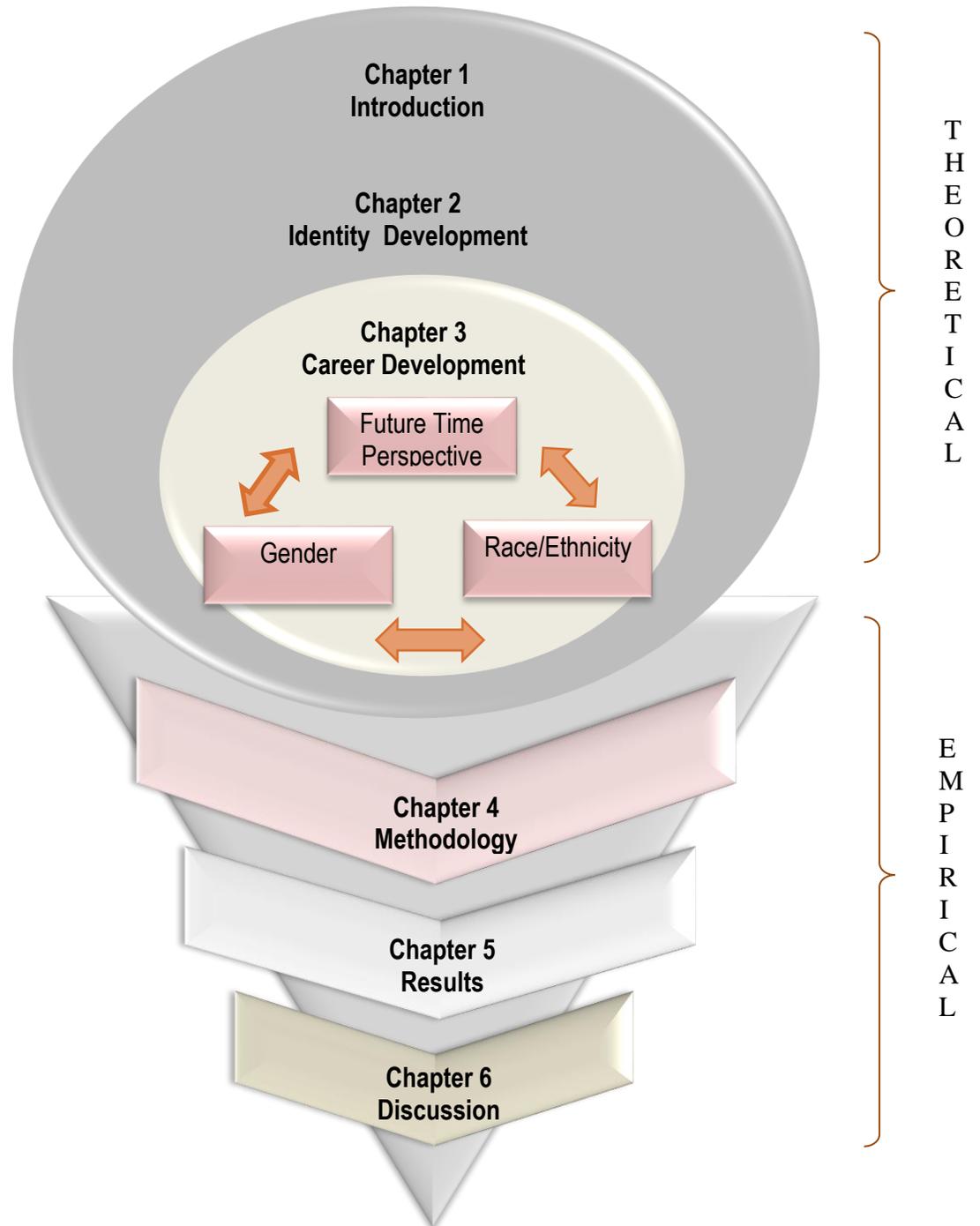
Chapters 2 and 3 of the thesis comprise the study's literature review. These chapters explore the theoretical underpinnings of the concepts of identity development, career development, career maturity/adaptability, as well as the notion of future time perspective (FTP). Chapter 4 outlines the methodology employed in conducting the research, while the results obtained and the discussion thereof are presented in Chapters 5 and 6 respectively.

Given the importance of gender and race/ethnicity as factors that play an important role in the identity development and academic success of first-year students (Phan, 2009a; Adelabu, 2008), these variables will be considered in light of the relationship between the study's independent variable (identity development) and the dependent variable (academic success) prior to investigating the aforementioned objectives.

Chapter 2: Theoretical perspectives on identity development

Introduction

Different approaches have been used to describe identity development during adolescence and the transition to adulthood, a stage Arnett (2000) referred to as emerging adulthood. Identity development is important throughout the lifespan, but comes to ascendency during adolescence and emerging adulthood since this constitutes a critical period where individuals are faced with the challenge of seeking knowledge about themselves in order to integrate aspects of this information into their personal identity (Crocetti, Schwartz, Fermani, & Meeus, 2010). Identity development can be described from an individualistic perspective (i.e. "I am") or guided by a collectivist perspective (i.e. "We are") (Schwartz, Domellan, Ravert, Luyckx, & Zamboanga, 2008).

The term identity is approached from different perspectives to describe personal identity, i.e. either from the psychological perspective with its main focus on goals, values and beliefs as aspects of self-definition, or from the perspective of social/collective identity with its main focus on feelings, beliefs, membership and the roles that people play in society (Vignoles, Schwartz, & Luyckx, 2011). Cote and Levine (2002) regard personal identity and social identity as complementary facets of identity resolution. They maintain that social identity involves an individual's position in social structures, while personal identity constitutes the individual experiences that are rooted in interactions and a subjective sense of continuity that is characteristic of one's personality. Torres, Jones and Renn (2009) claim that identity is commonly understood as one's

personally held beliefs about oneself in relation to one's social group. This can be viewed from the meta-theoretical perspective that the individual and the broader society are interlinked in terms of their feedback and how the individual acts in this broader community, i.e. society. The same stance was put forward by Kroger (2004) who said that one of the many components of identity development among adolescents and young adults when leaving high school and entering tertiary education or the world of work constitutes the process of learning to balance their needs with those of others. According to Vignoles et al. (2011) identity development can be viewed as a number of feedback loops meant to minimise the discrepancy between how one views oneself and the feedback about oneself received from others. Interpersonal feedback is often highly valued and appreciated when it comes from the significant other (Lerner & Overton, 2008). This is of relevance for emerging adults who have to adjust to different environments in terms of how they relate with others whilst having to make their own decisions concerning their career, political ideology, religion and values (Torres et al., 2009; Smith, 2011).

From the Eriksonian perspective identity is defined as follows: "the conscious feeling of having a personal identity is based on two simultaneous observations: the perception of the self-sameness and continuity of one's existence in time and space, and the perception of the fact that others recognise one's sameness and continuity" (Erikson, 1968, p. 50). This definition implies that the picture one has of oneself as a unique individual in the world is connected to one's past, present and future.

Erikson (1968) was the first to illustrate how the social world exists within the psychosocial make-up of each individual. He maintained that the individual cannot be understood apart from his/her social context. According to Duriez, Luyckx, Soenens and Berzonsky (2012), the individual and society are intricately woven and dynamically related in a process of continual change. Individuals frequently rely on the feedback they get from others in the establishment of their identity. Marcia, on the other hand, defined identity as "an internal self-structure encompassing a self-constructed, dynamic organisation of drives, abilities, beliefs and individual history" (Marcia, 1966, p. 159). He proposed that identity develops through four identity stages which he referred to as statuses, namely: diffusion, foreclosure, moratorium and achievement (Marcia, 1966). Marcia (1966) first used semi-structured interviews to assess these statuses, after which he operationalised them in terms of their position on two dimensions: exploration and commitment. Exploration is defined as a way of seeking information and weighing alternatives in different life domains (Marcia, 1966). Identity commitment refers to the process of choosing among alternatives and following through with them. Marcia maintains that it is through identity statuses that an assessment can be made about the current position of the individual in terms of how far he/she has explored different alternatives as well as how committed he/she is to a specific identity. Commitment is what distinguishes successful from unsuccessful identity development (Schwartz et al., 2008).

According to Marcia (1966) those with identity achievement status show a high level of exploration and strong commitment. Individuals who find themselves in the

foreclosure status have low levels of exploration and are high on commitment. Those who have moratorium status show high levels of exploration and low commitment, and, lastly, those with diffusion status have low levels of both exploration and commitment. According to Luyckx, Goossens, Soenens and Beyers (2006), this gives the impression that when an individual is at the achievement status phase, his/her identity development should be complete. However, identity development is a process that continues throughout the lifespan and commitments can be made at different times in the course of development (Luyckx, 2006).

Berzonsky (1990) considered identity development in terms of how individuals process identity-relevant information rather than to regard identity as a fixed developmental outcome. He introduced three styles of processing identity-relevant information which somewhat correspond with Marcia's statuses (Smits, 2009). He later added commitment as an identity dimension and not a style that measures the strength of commitment during the revision of the identity measuring instrument (Berzonsky, 2004, 2011). He referred to these styles as: the information-oriented style, the normative style and the diffuse-avoidant style (Berzonsky, 1990). Individuals employing the information-oriented style actively engage in cognitive processing activities in order to be able to make informed choices (Berzonsky & Ferrari, 2009). Those who use a normative style rely on the prescriptions of significant others and tend to be rigid or conservative (Smits, 2009). In contrast, individuals who employ the diffuse-avoidant style tend to procrastinate when making decisions or even avoid making them until they are forced to do so by situational demands (Berzonsky & Neimeyer, 1994). In recent years,

Berzonsky's (1990) model of identity development has assumed the most prominent place in research on the identity construction process (Duriez et al., 2012).

From a collectivist or societal perspective, racial/ethnic identity has been defined on the basis of Phinney's model which states that racial/ethnic identity refers to the extent to which an individual/adolescent has established certain identifications with his/her race group (Phinney, 1990). Currently the most widely used definition is the one developed by Phinney, where she maintains that "ethnic identity is a dynamic multi-dimensional construct that refers to one's identity or self as a member of an ethnic group" (Phinney, 2003, p. 63). From this perspective, an individual chooses an identity within the context of a subgroup that shares a common ancestry and similar culture. She further regards ethnic identity as the foundation that eventually leads to the development of a social identity based on race/ethnic group membership. Phinney and Ong (2007) purport that ethnic identity is not static or a fixed categorisation of individuals in different social contexts, but one that varies according to what one was in the past and what he/she wishes to be in the immediate or distant future. Before the introduction of a democratic dispensation in 1994, although black South Africans were in the majority they were treated as a minority grouping and as such formed a black identity which was strengthened during the struggle against apartheid (Stevens & Lockhart, 1997). Due to a shared political consciousness in apartheid South Africa, many black youths developed a collective identity (Norris et al., 2008).

Crocetti, Rubini and Meeus (2008) differentiate between individualism and collectivism as societal cultural patterns of belief, attitudes, self-definitions, norms and

values in terms of racial/ethnic identity formation. In their view, individualism reflects cultural patterns that promote independence, whereas collectivism reflects patterns that foster interdependence. This view was formerly proposed by Kilpatrick (1974) in Thom and Coetzee (2012), who pointed out that adolescents and emerging adults who are raised in societies undergoing change, such as South Africa, experience a dual identity crisis (i.e. a personal as well as a cultural identity crisis). He further maintains that the ideal situation would be to develop a unique personal identity without rejecting one's cultural heritage (Thom & Coetzee, 2012). Research has revealed that African Americans, Hispanic Americans and Asian Americans tend to be more collectivistic, show greater conformity and place more value on tradition due to their minority status in America (Hartung, Fouad, Leong, & Hardin, 2010). Though the same may be true for black South African adolescents and emerging adults, Norris et al. (2008) claim that with the socio-political change in South Africa, there has been a growing shift among many black adolescents towards individualistic ideals and towards the acculturation process proposed by Berry (2005). Phinney (1990) juxtaposed her model of identity development on that of Marcia's (1966) identity status. She also maintained that individuals go through the process of exploring their ethnic identity before they claim to have achieved this identity (Crocetti et al., 2008). Recent dynamic views of identity development emphasise the ongoing evaluation of one's current commitments and, if unsatisfactory, resuming the exploration process which may contribute to a feeling of personal continuity over time (Luyckx et al., 2006).

This chapter provides a brief review of identity development theories with reference to their historical foundations and current views on the subject. Since Erikson is regarded as the pioneer of identity theory and research (Schwartz, Cote, & Arnett, 2005), a review of his 1968 epigenetic theory of identity development across the lifespan will serve as the starting point. Building on Erikson's identity development stages, Marcia's (1966) seminal work will follow, with an explanation of how the latter defined the dimensions underlying the identity formation process operationally (Schwartz, 2001). Berzonsky's (1990; 2003) conceptualisation of Erikson's theory from a cognitive perspective will also be highlighted with reference to the current view of Luyckx et al. (2006). Lastly, the chapter will provide a discussion of racial/ethnic identity formation with relevance to culture.

Theories of identity development

The literature review that follows will focus on theories that explain how adolescents and emerging adults (Arnett, 2004) develop a stable, meaningful identity that will enable them to maintain a sense of time orientation and will provide them with a personal frame of reference for decision making, problem solving and interpreting experiences and self-relevant information (Duriez, Smits, & Goossens, 2008). The starting point will be a brief description of the psychosocial development theories of Erikson (1968) and Marcia (1966), Berzonsky's (1990) social-cognitive model, as well as Phinney's racial/ethnic identity development theory (1990; 2000).

Psychosocial development theories

      Theories of identity development are largely based on the pioneering work of Erik Erikson (1968). According to Erikson (1968; 1980) identity formation refers to a process of personal exploration that leads to the establishment of a coherent set of attitudes, values and beliefs and represents one of the major challenges encountered by adolescents and young adults; a phase that Arnett (2000; 2004) refers to as "emerging adulthood". Erikson (1968) presented a theory of psychosocial development that continues throughout the lifespan. He founded his theory of identity development on an epigenetic principle and proposed an eight-stage model of psychosocial development in which "a degree of success in earlier stages best facilitates success in later stages of development" (Wilson, 2011, p. 20). Erikson (1980) maintained that identity is built upon the individual's childhood identifications with their parents' image, values and beliefs, and that it is only during the adolescent stage (i.e. the fifth stage of identity versus identity confusion) that he/she is able to choose from those childhood identifications and discard others. Erikson (1980) also postulated that greater focus should be placed on this stage of development, where the adolescent or emerging adult has to establish who he/she is through the processes of exploration and commitment in trying to discover his/her identity. He also proposed that identity versus identity confusion is a critical adolescent developmental task, where individuals are confronted with a number of challenges and have to make important decisions that greatly impact on various domains of their current and future lives (Luyckx, 2006). This process of exploration and commitment is seen as a continuous synthesis of past experiences, present meanings and the future direction of a

person's life (Li, 2005). Arnett (2004) also proposed that it is during late adolescence or emerging adulthood that the processes of exploration and commitment reach their climax in developing a stable identity. Erikson (1980) furthermore claimed that it is during late adolescence or emerging adulthood that individuals are relatively free from adult responsibilities and that they can reflect on themselves, explore different careers, values and lifestyle alternatives, and negotiate crises about who they are or what they want their future self to be (Luyckx, 2006). Emerging adulthood is a stage of possibilities where many alternatives still seem possible and where individuals believe that their future lives may turn out well (Arnett, 2004).

Although many researchers have attempted to operationalise Erikson's theory of identity development for empirical research, James Marcia (1966) deserves mention as a pioneer in this regard. Marcia (1966) first built on Erikson's (1968; 1980) theory of identity development through his operational definitions of the dimensions *exploration* and *commitment*, both of which underlie the identity formation process. He provided a further contribution by offering a testable model (Schwartz, 2001). Marcia's (1966) identity status paradigm further considered the dimensions of exploration and commitment as being crucial to the development of identity. During exploration, the individual weighs a number of alternatives before committing to a particular set of beliefs, ideologies or values. Commitment occurs when an individual has established who he/she is as someone who is distinct from others. Marcia differed from Erikson in that the adolescent stage not only involves identity resolution or identity confusion, but also includes the extent to which an individual has explored and committed to a number of life

domains including politics, occupation, religion and ideology, amongst others (Marcia, 1966). According to Marcia the intersection of these processes produces the four identity statuses, namely achievement, foreclosure, moratorium and diffusion, all of which represent the different levels of identity resolution. Identity achievement refers to the state where an individual has gone through the process of exploration and has made a commitment to a certain ideology or lifestyle. During this process of exploration, the individual weighs alternatives before committing to a particular alternative, be it a career, political ideology, religion or set of values. Vleiorosa and Bosma's (2005) focus fell on exploration, which they referred to as a problem-solving endeavour to establish information about one's environment and oneself in order to make important life choices. According to Grotevant (1987), in a 2005 paper by Luyckx, Goossens, Soenens, Beyers and Vansteenkiste, identity exploration involves five factors that function together over time as one tries to establish a commitment. These factors include beliefs that help shape and guide the exploration process, testing hypotheses about certain behaviours which the individual plans to undertake, the amount of energy that the individual invests when trying to commit to a chosen endeavour, and, lastly, the degree to which other behaviours may seem either attractive or discourage further exploration. Other processes that drive exploration include feedback from significant others like parents, peers or partners (Schwartz, 2001).

Marcia (1966) further purports that even when an individual has made a commitment, this may change relative to social conditions or an individual's identity interests. Erikson (1980) also acknowledged that not all adolescents get to negotiate this

process successfully at the same time. However, commitments made after a period of exploration, in the case of achievement status, present an internalisation of self-regulatory mechanisms and a more stable or adaptive mode of psychosocial functioning (Bosma & Kunnen, 2001). Bosma and Kunnen (2001) further argue that commitment is a process rather than an outcome, because we continue to evaluate what we have committed to, depending on the outcome of that evaluation. Achievement is often regarded as the most mature status because it is associated with balanced thinking (Berzonsky, 2004), effective decision making and stable interpersonal relationships (Berzonsky & Kuk, 2005).

According to Meeus, Iedema, Maassen and Engels (2006) only moderate gender and age differences are documented in the identity development literature. In the interpersonal domains research indicates that women are inclined to exhibit higher identity achievement scores while men are found to identify more with identity diffusion and foreclosure during this process of identity development (Lewis, 2003). Another view is that during adolescence and emerging adulthood the transition from less mature identity statuses (i.e. foreclosure and diffusion) to more mature identity statuses (i.e. achievement and moratorium) occurs earlier for females than for males, and that females might be expected to score higher on in-depth commitment and exploration than males (Meeus, 2010). Earlier research by Pulkkinen and Kokko (2007) also reported that identity diffusion and moratorium significantly decrease with age, and that foreclosure and achieved identity increase with age in both males and females. According to Luyckx et al. (2006) both achievement and foreclosure statuses indicate the making of commitment, with achieved status characterised by the degree to which individuals have

explored prior to making a commitment, whereas with foreclosure status commitments are made without any prior exploration. In recent studies on identity development, Luyckx et al. (2006) expanded the concept of exploration by making a distinction between exploration *in breadth* and exploration *in depth*. Exploration in breadth describes the process by which individuals explore various alternatives that may agree with their values, goals and beliefs. Exploration in depth describes a process by which individuals take time to gather information about their current commitments (Luyckx et al., 2006).

Foreclosure is when an individual has made a commitment without having explored alternatives. This status is often found in adolescents or young adults who are strongly influenced by significant others during their upbringing. These individuals carry family traditions and lead their lives as is expected of them. They tend to conform to the expectations of others regarding their future, for example, allowing an authoritarian parent to determine a career path (Berzonsky, 2004; Smits, Soenens, Luyckx, Berzonsky, & Goossens, 2008). Foreclosed individuals accept others' decisions without questioning the validity thereof (Louden, 2005). They often rely mainly on others' strategies and guidance in decision making and problem solving. Foreclosure is also associated with a degree of rigidity, closed-mindedness and a relatively conflict-free, idealised relationship with the parents (Marcia, 1966). In terms of autonomy, Orlofsy, Marcia and Lesser (1980) found foreclosed individuals to score high in the need for social approval. According to Kroger (2007) as well as Jackson, Dunham and Kidwell (1990), individuals with this status often show attachment to their current circumstances and find change threatening. These individuals adopt someone else's standards, rules, career choices and

religious beliefs without first questioning these ideals. They are also inclined to employ external loci of control during problem solving since they are found to be following in their parents' career paths without having done any research or questioning whether those careers are suitable or indeed something they would like to do.

According to Schwartz et al. (2005) emerging adulthood for many people represents the moratorium status, since this is a period when exploration of alternatives takes place without assuming a permanent commitment. Individuals in this status are found to be more open to new experiences since they like to experiment (Louden, 2005). These individuals are seen to be high in exploration and low in commitment. The moratorium status describes a stage when adolescents are still actively exploring alternatives and have not yet made a commitment. It is during this stage that individuals engage in problem-solving behaviour aimed at producing information about themselves or their environment in order to make important life choices, in this case particularly those that will impact on their academic performance (Berzonsky, 2004). During this stage, individuals often show greater instability in, for example, courses of study, church attendance, or trying out different social roles (Marcia, 2002). In relationships, they often struggle to commit themselves to a particular individual (Berzonsky & Kuk, 2005), and these individuals often move from one occupation to another or find it easier to make changes in their lives. However, this status is necessary for commitment regarding identity development (Berman, Schwartz, Kurtines, & Berman, 2001).

Those who find themselves having diffuse status neither explore nor commit. These are individuals who neither engage in exploration of alternatives, nor commit to a

particular ideology, career, religion or set of values (Marcia, 1980). They are aware of possibilities but are unable to choose a particular direction and may be socially isolated or withdrawn, and are at risk of maladaptive behaviours and low academic outcomes. According to Kroger (2007) individuals with diffuse status are likely to experience difficulty in adapting to any environment that demands of the individual to engage in exploration of alternatives as a requirement for establishing stable commitments over time. Berzonsky, Rice and Neimeyer (1994) suggest that diffusions show the lowest sense of personal integration and continuity over time. They are also reported to procrastinate in terms of decision making or avoid engaging in issues that need commitment (Berzonsky, 2004). They lack the basic structure that often holds individuals together and affords them direction in making meaningful choices and in following a consistent life path. Since identity statuses are often regarded as representing different levels of sophistication and that the degree of identity achievement is agreed to increase with age, it can be assumed that individuals enter tertiary education institutions at different identity status levels and at different levels of sophistication (Ramdin, 2011).

The social-cognitive model

In 1999 Van Hoof (cited in Ramdin, 2011) opined that further research was needed on identity statuses in order to make measurement possible. This was done by Berzonsky (2003) who proposed a social-cognitive model focusing on the styles employed by individuals in processing identity-relevant information. He conceptualised identity as a self-theory based on a social-cognitive perspective. Berzonsky (2004)

focused on how adolescents/individuals process identity-relevant information rather than on a fixed developmental outcome. He viewed identity as a self-constructed concept and argued that greater emphasis should be placed on the cognitive strategies and structures that individuals employ in viewing the world and in reacting to whatever assumptions they make. According to the social-cognitive model, individuals differ in the way they approach the task of constructing or re-constructing a sense of identity (Berzonsky, 2004). These differences play a role in how effectively they deal with various functions such as coping with personal problems, processing information and maintaining a coherent sense of self. In Berzonsky's view, adolescents and emerging adults form a sense of identity through cognitively constructing the self through the experiences of their social relations and the environments that regulate and govern their lives. He therefore referred to this theory as a self-theory (Berzonsky, 2004). According to Berzonsky (2004) individuals make distinct choices about who they think they are and therefore differ in their preferred identity exploration processes and strategies. Thus, adolescents differ in the way they search for and evaluate these choices. Berzonsky also proposed that the cognitive style used by an individual will influence how he/she interprets and makes sense of identity-relevant information. The processing style therefore impacts on the way individuals deal with or avoid making identity-relevant choices. Berzonsky (1990; 2004) proposed three identity information-processing styles, namely information-oriented, normative and diffuse-avoidant styles. As already mentioned, commitment was also added as a further dimension to measure the strength of the commitment that the individual has made. These represent differences in the strategies individuals employ in

dealing with daily life choices, solving problems and in making decisions that affect identity development (Berzonsky, 2004). Although Berzonsky's model differs from that of Marcia, certain similarities and associations have been confirmed by empirical research (Smits, 2009). According to Berzonsky (2004) individuals employing the information-processing style are similar to Marcia's individuals who reflect achievement and moratorium statuses. These individuals are often open to ideas relevant to personal identity, they have good problem-solving skills, are self-reflective and actively seek and evaluate self-relevant information (Zimmerman, Biermann, Mantzouranis, Genoud, & Crocetti, 2010). According to Erygit (2010) this style incorporates high self-exploration, cognitive complexity, openness to new information and focused problem-solving strategies. Adolescents who employ this information-oriented style are often highly autonomous, confident about the judgements they make about themselves and others, and are more likely to be well-adjusted individuals since they easily revise their conceptions when confronted with information that is dissonant with their conception of self (Smits, 2009). The information-oriented style has been associated with rational processing of information, open-mindedness, and having the life-management skills to structure and manage the time that is needed to deal with academic demands (Berzonsky & Kuk, 2005). These researchers provided evidence that individuals' academic achievement is affected by their identity processing styles. Lange and Byrd (2002) demonstrated that individuals who are committed to aspects of their identity were more likely to feel competent in planning and implementing effective study strategies. It can thus be argued that individuals who cognitively use the information-processing style are likely to show

good adjustment within the tertiary environment and to perform well academically (Ramdin, 2011). This was also supported by a study conducted by Berzonsky and Kuk (2005) where they assessed the relationship between identity processing styles and academic performance among first-year Caucasian students in a college in New York. This study found that students employing the information-processing style tended to perform the best on all developmental scales, including academic performance. A comparative study on the identity status of South African and American university students by Low, Alcande and Hill (2005) indicated that South African participants were more strongly represented in the achievement status category and less prominently represented in the other statuses when compared to their American counterparts.

Those individuals who are normatively oriented, similar to Marcia's foreclosed status, are low on exploration (Boyd et al., 2003). They tend to adopt the ideas, values and ideologies of significant others without any prior exploration, and are often closed to information that seems to threaten adopted values and belief systems (Boyd et al., 2003). Normative individuals hold firm convictions about their religion, academic life, political ideologies and personal identity, and may have a rigid information-processing attitude towards their academic work. Their academic purpose is thus externally based (Berzonsky & Kuk, 2000). They are prone to early cognitive closure and do not allow any information to threaten their firmly set standards and beliefs. According to Ramdin, (2011) university students with this orientation were found to have a clear sense of academic direction but were less tolerant and scored lower on academic autonomy than their information-oriented counterparts.

Luyckx, Soenens, Vansteenkiste, Goossens and Berzonsky (2007) found that diffuse-avoidant individuals use strategies that display low levels of information processing, low persistence and maladaptive coping strategies. It can therefore be argued that university students who are diffuse-avoidant will not achieve academically and that those who use other styles will show better academic achievement.

Race/Ethnic identity theory

Berzonsky (2004) further indicates that identity development is related to how individuals interpret their own existence and understand who they are relative to others. This brings the question of racial/ethnic identity development into play, since identity involves how people see themselves in relation to others – what Erikson (1980) calls continuity and sameness over time. While identity development is often regarded as a complex developmental task for adolescents and young adults, the issue of race or ethnicity further complicates this process, especially when belonging to a marginalised ethnic group (Moore, 2008).

Timble and Dickson (2000, p. 500) maintain that there are "widely discrepant definitions and measures of ethnic identity which make generalisations and comparisons across studies difficult and ambiguous". As already stated the most prominently used definition in psychology is that of Phinney (1990), which states that ethnic identity refers to the extent to which an individual has established a certain level of identification with his/her race group. She further views ethnic identity as a representation of the exploration and consideration of the subjective meaning of one's ethnic group and the extent to which

one has emotionally attached oneself to one's group (Phinney & Ong, 2007). Watson and McMahon (2004) viewed ethnic identity as typically focusing on the worldview, beliefs and traditions that are associated with individuals with a common cultural heritage. Developmental theorists like Erikson (1980) suggested that an individual's identity is strongly influenced by the relationship one has with other people and the feedback that one receives from others. Seaton, Scottham and Sellers (2006) maintain that racial/ethnic identity constitutes an integral part of individuals' sense of "who they are" relative to others in society. Racial/ethnic identity develops over time and, once developed, is generally stable across a number of situations that a person may encounter (Berry, 2005).

Phinney (1989; 1990) reported that black adolescents and emerging adults in several studies conducted on European-American, African-American, Mexican-American, and Latino students in the USA seemed to develop a stronger racial/ethnic identity than the white students, and that this may account for potential differences in the making of life decisions or in choosing a career. In contrast, South African adolescents and emerging adults are exposed to a variety of cultures that differ in terms of customs, religion, political affiliation, values, norms, languages as well as behavioural rules, and therefore form their ethnic identity based on changes occurring within the socio-cultural context (Solomontos-Kountouri & Hurry, 2008). Furthermore, Fadjukoff (2007) and Luyckx et al. (2006) suggest that engagement in the exploration process is more likely to take place in cultures and environments that encourage differing points of view and where individual choice is allowed and respected. All racial/ethnic identity development

theories agree that individuals go through certain stages before they commit to a particular racial/ethnic identity.

In her research with adolescents, Phinney (1992) established a three-stage model of identity development which she likened to Marcia's (1980) theory of identity statuses. These stages explain the process through which individuals come to understand their ethnicity and make decisions about the role it plays in their lives (Moore, 2008). She refers to the first stage as 'unexamined ethnic identity' or diffuse identity status, similar to Marcia's (1980) definition, i.e. lacking exploration and consequently resulting in diffusion or foreclosure. Initially, individuals start by not engaging in any contemplation about their group membership or commitment, or they accept their ethnicity as based on others' opinions (Phinney, 1992). This is then followed by 'ethnic identity search' which is likened to the moratorium status with its focus on exploration. Engagement in the identity exploration process occurs in cultures which allow individuals exposure to differing points of view and varying choices (Adams & Marshall, 1996; Berzonsky & Adams, 1999; Luyckx et al., 2006). Lastly, 'ethnic identity achievement' indicates healthy identity development since, at the achievement stage, individuals have a clear understanding and commitment to their ethnic identity (Osterman, 2000; Moore, 2008). An achieved racial/ethnic identity is related to positive outcomes such as academic achievement and positive attitudes about one's race/ethnic group, which in turn are associated with better psychological functioning (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). A considerable amount of research among African-American youth suggests that ethnic identity has implications for academic achievement. When

individuals' ethnic identity is in question, certain negative behavioural outcomes which include poor motivation to achieve, poor academic performance and school rejection are experienced (Lewis et al., 2012). Chavous et al. (2003) in their research amongst African-American students confirmed that students with a strong race/ethnic group identity and who demonstrated pride in their identity showed positive attitudes and persistence towards their academic life. Phinney (1992) also described four components of racial/ethnic identity, i.e. self-identification; affirmation and belonging; behaviours and practices; and ethnic identity achievement. Self-identification refers to the ethnic label that one assumes or describes oneself with. Positive feelings and pride about one's ethnicity demonstrate affirmation and belonging, whereas behaviours and practices involve the cultural practices of the group. Lastly, ethnic identity achievement refers to the degree to which one has established and committed to one's ethnicity (Moore, 2008).

According to Chavous (2005) individuals who associate their ethnic group with positive academic achievement often assimilate this in their identity development structure, and are thus expected to view academic achievement as an important aspect of group belonging. It can be argued that the consistent links between ethnic identity and the indices of well-being and self-esteem generally indicate that individuals who have considered the positive meaning of their ethnic identity have higher levels of self-esteem and general well-being (Schwartz et al., 2008).

Summary

In summary, this chapter focused on the different identity development models which have been built on Erikson's (1968) identity development theory. All researchers quoted in this chapter share an understanding that adolescents and emerging adults face a need to develop a stable and meaningful identity structure that enables them to maintain a sense of self-continuity across time and situations and that offers them a personal frame of reference for decision making, problem solving and interpreting experiences and self-relevant information (Duriez et al., 2012). Erikson (1968) and Marcia (2007) postulate that individuals in the identity development stage are confronted with developmental tasks which require a synthesis of past experience, present meanings and future direction. Arnett (2000) referred to this distinct developmental period as emerging adulthood. At this period of exploration and commitment making, these individuals often experiment with different roles when trying to establish the one that appears to be more appropriate before committing to it (Luyckx et al., 2006). It is during the emerging adulthood years that individuals earnestly explore various possibilities relating to future work and to the worldview, and start to make important initial adult choices about their career, lifestyle, morals, values, political ideology and religion (Arnett, 2004). Many psychological factors that include personal goals, life planning, decision making and commitments are responsible tasks for emerging adulthood, especially during the university years and upon entry to the world of work (Arnett, 2004).

Since adolescence and emerging adulthood constitute a period in life when individuals are confronted with the tasks of developing self-endorsed identities, planning

for their future and deciding about their future career paths (Boyd et al., 2003), the next chapter will focus specifically on how career development, with specific reference to time orientation and career maturity/adaptability, may contribute to the achievement of these goals.

Chapter 3: Career development

Introduction to career development

This chapter provides an overview of the career development theories, related to the main movements underlying the concepts career maturity/adaptability, future time perspective and academic success of adolescents and emerging adults. The role of career maturity/adaptability and future time perspective and their impact on identity development and the academic success of adolescents and emerging adults will be explored. Lastly, the influence of gender and culture, as well as race/ethnicity on academic success will be highlighted.

Due to universal changes in the career landscape involving major economic, social, technological and organisational shifts, one of the most important and most stressful decisions facing individuals involves their choice of a career and their planning towards the future (Colakoglu, 2012). Over the years certain prominent career development theories have attempted to offer explanations for career behaviours and career choices – each casting light on particular perspectives on the processes involved (Watson & Stead, 2006). As an example, Holland's theory focused on the individual and environmental factors, i.e. identity and demographic factors that could be responsible for influencing career choice (Watson & Stead, 2006). His theory placed emphasis on the importance of the degree of congruence between the person and his/her environment, to the extent that he postulated that individuals seek out environments that will allow them

to exercise their skills and abilities in their career choice and development processes, and in so doing are enabled to express their attitudes and values (Leung & Chen, 2007). Earlier studies conducted by Watson and McMahon (2004) among South African and Australian adolescents and which examined the adolescent's ability to match his/her personal characteristics with his/her occupational aspirations, were met with criticism since it was frequently found that such matches did not exist because no emphasis was placed on how these aspirations were formed. It is for this reason that Watson and McMahon (2005) structured their view according to what children learn about themselves and the world of work and how this learning process evolves. Subsequently, empirical research conducted by Hirschi (2011) revealed that a clear career identity relates positively to career choices that are congruent with one's interests.

Furthermore, Gottfredson's (2005) theory of circumscription and compromise describes how an individual's aspirations develop over time through a process of elimination and compromise. Gottfredson (2005) purported that career choice is a process requiring a high level of cognitive proficiency. This theory focuses on variables such as socio-economic status, race, gender and intelligence; all factors which may inhibit or bolster an individual's career aspirations (Gottfredson, 2005). For example, in some African and Asian cultures accomplishments are measured by the level of success in educational achievements or by social status, as well as by prevailing stereotyping of certain careers over others (Leung & Chen, 2007). Gottfredson also claimed that for individuals to make realistic and achievable choices, they have to develop the ability to compromise between the self and the social and cultural environment. During

adolescence, the struggle to understand who they are could cause confusion and uncertainty about which career to choose. Tsaousides and Jome (2008) also found that this process of compromise may contribute to dissatisfaction and discontent, which may discourage individuals from making reasonable choices. Although there is limited empirical research related to Gottfredson's theory, Juntunen (2006), Eren (2012), as well as Cochran and colleagues (i.e. Cochran, Eugene, Stevenson, Johnson, & Crews, 2011) have argued that this particular theory remains a good working model for the career counselling of adolescents and emerging adults in their occupational aspirations.

Donald Super's "Life-Span, Life-Space" theory of career development is the most well-known and well-researched theory involving development over the life course (Super, 1990). This theory is often referred to as the self-concept theory of career development and holds that career choice and development are essentially processes of developing and implementing one's self-concept. In comparison with other career development theories, this theory stands out in its focus on career development beyond the adolescent years, and as such has received the most attention and support from empirical research (Savickas, 2006). Super viewed processes of exploration as occurring along a developmental continuum of career maturity, indicating a level of readiness to make career decisions (Porfeli & Skorikov, 2010). The maturation process is regarded to advance through five stages, namely growth, exploration, establishment, maintenance, and disengagement. In each stage an individual is expected to successfully manage career-related developmental tasks that are appropriate to his/her specific chronological age (Savickas, 2006). For example, at the stage of exploration adolescents and emerging

adults have to cope with the career-related development tasks of, firstly, crystallisation, followed by the tentative taking of specific career choices and following through with these. Crystallisation is a cognitive process that involves an understanding of one's interests, values and skills, and enables the individual to pursue goals that are consistent with this understanding (Savickas, 2006). However, although Super's theory has enjoyed prominence, other career theories have evolved, new theories are continually being proposed and the world of work continues to undergo dramatic and irreversible changes (Amundson, 2005; Patton & McMahon, 2006).

According to Arnold and Randall (2010) these shifting trends or developments have resulted in the involvement of a broader variety of knowledge, skills, experiences and attitudes among individuals in the phase of career identity development. Individuals have to rely heavily on their career-related capabilities and dispositions in order to succeed and adapt effectively in often turbulent working environments (Converse, Pathak, DePaul-Haddock, Gotlib, & Merbedone, 2012). Over the years, preparation for one's vocational or future career has generally been regarded as one of the most important developmental tasks of adolescence or emerging adulthood (Erikson, 1968; Super, 1990; Savickas, 2006). Although career development is viewed as a lifelong process, attention is always strongly focused on the adolescent or emerging adulthood stages since these constitute unique periods of an individual's development characterised by career decision making and planning for the future (Arnett, 2000, 2010). Arnett (2010) further explains that it is during emerging adulthood that individuals engage in serious exploration of various future work and worldview possibilities and start to make

important initial adult choices about career, lifestyle, morals, values and political ideology. This is also a period where identity development in the career domain is of crucial importance, bearing in mind the emphasis placed on career preparation from ages 14-24 (Stringer & Kerpelman, 2010).

This period sees exploration of different possibilities in the career domain and the emerging adult's commitments become more integrated into their sense of identity (Berzonsky & Luyckx, 2008). This view is also supported by Ashton (2013) who states that emerging adulthood is characterised by numerous changes and a great deal of exploring and trying to achieve a balance between new life roles and the making of independent decisions. Other research has also shown that adolescents and emerging adults develop an early sense of career maturity/adaptability as they pass through the exploration stage of career development, where considerable time and effort is spent reflecting on occupational interests and preferences (Houle, 2010). According to Lerner and Lerner (2006) the developmental-contextual view of career development in young adults is facilitated by the adaptive, continuous and dynamic person's interactions, all of which promote valued behaviours and beliefs over time. Savickas further maintains that career development can be seen as a holistic, dynamic and lifelong process which allows individuals to construct meaning in determining the most appropriate expression of their life roles. During an individual's development, an array of experiences is accrued, all of which promote the foundational attitudes, beliefs and competencies necessary for planning a future, making career decisions and exploring the self and occupations that will shape the future career (Savickas, 2009). These attitudes, beliefs and competencies

are a representation of the core dimensions of career adaptability, which is an important component of Savickas' career construction theory (2009).

There is great concern about the preparedness of emerging adults to make effective career decisions and to deal effectively with the challenges of the world of work (Ashton, 2013). In recent career development research, a number of constructs have been identified that refer to the capacity to cope with vocational developmental tasks during adolescence and emerging adulthood (Hirschi, 2009; Bledsoe & Kenney, 2005). These significant tasks include the notions of career adaptability, career choice readiness, career maturity, career success and future plans (Hirschi, 2011).

For the purposes of this study, the constructs related to the theories proposed by Super and Savickas (representing the largest portion of relevant empirical research), namely career maturity/adaptability, will be discussed in greater depth.

Career maturity/adaptability

In recent career development research, the two constructs of career maturity and career adaptability have been used to refer to one's capacity to cope with vocational developmental tasks during adolescence and emerging adulthood (Birol & Kiralp, 2010; Janeiro, 2010). These constructs are often used interchangeably as the underlying processes of career choice readiness during adolescence and emerging adulthood (Janeiro, 2010). Donald Super (1990) maintained that for an individual to make a sound career choice, he/she had to display a certain level of career maturity. The term 'career maturity' originated as a construct derived from Super's (1957; 1990) career development theory of vocational

behaviour. This construct of career or vocational maturity has been studied over a period of more than fifty years by Super himself (Savickas, 2006), where he describes individuals' career-related behaviours in developmental terms, maintaining that career choice should be viewed as an unfolding, ongoing process rather than a one-off event (Super, Savickas, & Super, 1996). When exploring Super's theory, Savickas (2006) proposed the term career adaptability, which refers to the individual's readiness to cope with the changes brought about by the work environment and to the balance that one is able to achieve between different roles (Savickas, 2005). This has been regarded as the most important contribution in the area of career development since the developmental nature of this process reflects general human development principles over time (Watson & Stead, 2006).

Career maturity has been defined as an individual's readiness and capacity to deal with the age-related tasks associated with career decision making (Super, 1990; Savickas, 2006). Career maturity is central to an individual's developmental understanding of career behaviour and is one of the most researched aspects in the career domain. Some researchers suggest that career maturity is regarded as a collection of behaviours that are required to identify, choose, plan and execute career goals (Coertse & Schepers, 2004). A basic understanding of how to identify occupational preferences based on knowledge of the self and work is regarded as influential in positive career development and career decision-making processes (Maietta, 2010).

It can therefore be assumed that a career-mature person or an individual who shows high levels of career maturity will be capable of making appropriate decisions and choices for achieving his/her future goals, which will include academic goals. According

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to Dhillon and Kaur (2005) the stronger the career maturity, the greater the probability of that individual being able to make wise and realistic decisions regarding career/vocational choice. In educational settings, it can also be concluded that these individuals are likely to attain higher achievement than those with lower levels of career maturity.

The importance of career maturity among adolescents and emerging adults has been investigated by many researchers who have highlighted the relationship between career maturity and certain constructs associated with effective career development (Coertse & Schepers, 2004). For example, significant positive relationships have been reported between career maturity and academic performance (Rojewski, Wicklein, & Shell, 2005). Individuals who are regarded as possessing higher levels of career maturity are likely to be successful in their career decision-making endeavours, academic performance and job satisfaction, since they frequently think about career alternatives, relate their present behaviours to future goals, and acknowledge the demands of reality (Savickas, 2006).

Super's (1957) model of career maturity encompasses affective and cognitive dimensions. The cognitive dimension represents career choice competencies such as career decision-making skills and having a fund of occupational information (Savickas, 2007). Individuals with high career maturity levels are regarded as sufficiently knowledgeable in applying career information when crystallising career field preferences. These individuals are also competent in the application of decision-making skills to solve both educational and career choice challenges. Savickas (2007) describes the affective

dimension as attitudes towards career planning and exploration. Career-mature individuals are willing to plan ahead and to explore and obtain the resources necessary for career planning, whereas individuals with low levels of career maturity will often struggle to make sound career choices since they frequently lack career confidence and are inhibited in their approach to the future.

Current literature, however, appears to be supporting a shift away from the concept of 'career maturity' towards one of 'career adaptability', since this is believed to be more representative of the overall career development process. This move was initially proposed by Savickas (1997; 2006) where he regarded both career maturity and career adaptability as important characteristics of the lifelong process of career development. He defines career adaptability as "*a multi-dimensional construct that characterizes individuals' psychosocial readiness and resources for coping with current and imminent vocational development tasks, occupational transitions and work traumas*" (Savickas & Porfeli, 2011, p. 357). Crews (2006), on the other hand, linked aspects of career maturity and career adaptability, reducing them to the same construct (career maturity). He defined career maturity as one's readiness to make realistic decisions and cope with predictable and unpredictable life changes and life roles. Individuals who understand who they are and where they are going in the future are more likely to possess sound judgement and make realistic decisions affecting all aspects of their lives (Savickas, 2009).

Juntunen (2006) and Eren (2012) regard career adaptability as a construct which is more reflective of the knowledge used by society and an optimal state because individuals are able to respond effectively to societal demands and challenges which may

be predictable or unpredictable. It is important to understand the way in which adolescents and emerging adults deal with the challenges of transitioning from high school to tertiary educational institutions as well as those of the ever-changing and volatile socio-economic and technological environment of the 21st century, which constantly impacts on their career plans and decisions (Murphy, Blustein, Bohlig, & Platt, 2010). One's level of career adaptability is also said to predict professional and life satisfaction (Maggiori, Johnson, Krings, Massouri, & Rossier, 2013). Walker (2010) maintains that the dynamic relationship that exists between the individual and his/her environment is often influential in the behaviour that produces a mature and successful individual. According to Savickas and Porfeli (2011) individuals with high levels of career adaptability are generally both cognitively and emotionally ready to cope with predictable and unpredictable tasks brought about by changes in work situations and work roles.

Career adaptability can be conceptualised using developmental dimensions similar to those that describe career maturity, namely planning, exploring and deciding (Savickas, 2009). Machado and Machado (2010) also maintain that career maturity and career adaptability both incorporate the developmental tasks and strategies involved in the exploration, commitment and execution of career plans. In Super's view, these developmental tasks involve: (a) awareness of the need to plan; (b) decision-making skills; (c) knowledge of the self and the world of work and the use of information resources; (d) general career information; and (e) reality orientation. On the other hand, according to Savickas (2006), career adaptability is constituted by the following four

dimensions or syndromes of attitudes, beliefs and competencies: (a) becoming concerned about the future career; (b) taking control in preparing for the vocational/career future; (c) displaying curiosity by exploring possible selves and future scenarios; and (d) strengthening the confidence to pursue one's aspirations or ambitions (Savickas, 2009; Omar & Noordin, 2013).

Flowing from this, *career concern* emphasises preparation and planning for a future career, and what the future career will look like (Creed, Fallon, & Hood, 2008). This awareness of one's future career encourages future planning by linking present activities to the desired future (Fouad & Bynner, 2008). Furthermore, *career control* is concerned with the responsibility that the individual takes in constructing his/her future career, with this process relying on the individual's own decision (Savickas, 2009). Individuals who feel in control of their lives employ different strategies to influence the different environments they find themselves in and engage more fully in career exploration activities (Blustein, Kenna, Gill, & De Voy, 2008; Duffy, 2010).

Career curiosity reflects the ability of the individual to explore and find information that is related to the establishment of a career, this often being expressed in the exploration of one's knowledge, skills and abilities in applying career information-seeking strategies (Savickas, 2009). Career curiosity thus assists individuals to form a realistic image of themselves and their career options. Lastly, *career confidence* denotes the ability to strive for success by overcoming any obstacles in pursuing one's career aspirations (Savickas, 2009). In Savickas' opinion, people with strong career confidence

are more likely to engage in difficult career-related problem solving and master vocational tasks and occupational transitions with ease.

The above-mentioned tasks and competencies emphasise the link between career maturity and career adaptability. Thus, for adolescents and emerging adults to be successful in their transition from high school to work, they need to have future plans as well as a fund of occupational information deemed necessary in making career-related decisions, they need to explore their environment and adapt to it, and they need to be confident (Hirschi, 2010).

By their very definition, the concepts of career maturity and career adaptability imply one's future orientation, i.e being concerned about the future, preparing and planning for the future, as well as being curious about the future. It is therefore reasonable to assume that an individual's orientation towards time and specifically his/her future time perspective (FTP) plays a pivotal role in these processes. Furthermore, there is abounding literature to suggest that developmental trajectories are significantly influenced by biographical factors such as gender and culture (Savickas, 2009; Luyckx, Lens, Smits, & Goossens, 2010). The following section focuses on these three factors (FTP, gender and culture) as core contributors to the career maturity/adaptability of the adolescent and emerging adult.

Future time perspective (FTP)

The concept of time perspective is a major component of career decision making and career adaptability; both of which are main tasks of adolescence and emerging

adulthood where one is preparing for a future career and planning for future adult roles (Luyckx et al., 2010). Time perspective is characterised by a sense of continuity between the past, present and future, as well as optimism about the achievement of future goals and a sense of connectedness between events across time zones (Savickas, 2006; Lens & Tsuzuki, 2007). Time perspective is an unconscious cognitive structure that individuals implement at the time of decision making about short- or long-term goals and actions (Zimbardo & Boyd, 2008). Taber (2013) claims that future time perspective (FTP), which is characterised by planning, career decision making and achievement of future goals, has received greater attention in the current career development literature than the other forms of time perspective.

A study by Savickas, Silling and Schwartz (1984), reported in Taber (2013), confirmed that FTP as a component of career maturity/adaptability plays an important role in career decision making in emerging adults, and is negatively related to career indecision. Ferrari, Notta and Soresi (2010) also reported that adolescents and emerging adults with an orientation towards the future presented with less career indecision and showed higher scholastic achievement. Similar results were also reported by Janeiro (2010) who suggested that FTP was an important determinant of career planning in his study amongst adolescents and emerging adults.

In the academic setting, orientating oneself to time and work is also an important component of an individual's mental regulation, which is related to academic success (Pavelkova, 2013). According to McInerney (2004) a sense of future purpose is crucial in motivating individuals to engage in activities perceived to be instrumental in achieving

their valued future goals. One such activity is engagement in tertiary education studies, where certain individuals show a clear understanding and view of the future outcome of their studies. A body of research has shown that individuals who value their future educational and professional careers show a more optimal learning pattern (Husman & Lens, 1999). Therefore, FTP can be seen to provide an important basis for setting personal goals, planning life events, exploring future options and carrying out major decisions like the choosing of a career (Eren, 2009).

In the early literature, as cited in Lens and Tsuzuki (2007), Lewin (1951) regarded the ability to "mind-travel" to the past and to the future as a unique human characteristic, and made the observation that an individual's behaviour does not rely entirely on the present circumstances but also upon the future as well as the past. Carstensen (2006) suggests that the perception of time plays a fundamental role in the selection and pursuit of social goals, with important implications for emotion, cognition and motivation. Time perspective can be considered as a lens through which individuals look at their lives. It reflects how individuals view their past, present and future, and is therefore important in many domains of human activity (Urbanaviciute & Silva, 2012). During career planning and career decision making numerous past events, their present interpretation and future expectations have to be explored. Existing literature by Zimbardo and Boyd (2008) suggests that people differ in the way they focus on the past, present and future. Zimbardo, Keough and Boyd (1997) also assert that time perspective is a factor that influences individuals in many ways. For example, one's perspective of time may lead to risky behaviour such as reckless driving and the abuse of drugs. Some studies have

suggested that the more future-oriented adolescents or emerging adults are, the less they engage in risky sexual behaviour (Abousselam, 2005). Zimbardo and Boyd (2008) identified five time dispositions that individuals may depict to varying degrees, namely past-negative, past-positive, present-hedonistic, present-fatalistic, and future-oriented. Past-negative time perspective denotes a pessimistic and negative view of the past, which may be based on negative life experiences. The past-positive perspective reflects a positive and sentimental view of the past. Present-hedonistic time perspective entails living in the moment, and seeking immediate gratification and pleasure. Given the nature of present-hedonistic individuals, as students they may show signs of not being dedicated to their academic goals and might be inclined to procrastination and poor performance (Zimbardo & Boyd, 2008). The present-fatalistic view reflects a sense of hopelessness towards the future and an inability to connect future behaviour to future outcomes. These are often people who are prone to depression and aggression. Those with FTP reflect a concern with the achievement of goals, planning for the future, delaying gratification and with an avoidance of time wasting (Zimbardo & Boyd, 2008). Future time perspective has been found to positively influence career choice readiness, decisiveness and career planning (Ferrari et al., 2010).

When setting goals for the future, as is required in career decision making and academic endeavours, goals that take less time to achieve are sometimes regarded as having a greater impact on motivation, whereas long-term or future goals often represent important incentives for present action, only when those current tasks are seen as instrumental for the achievement of future goals (Taber, 2013). This could be the case in

situations where individuals devote time to study for an immediate test in order to pass, without having planned their time and hours devoted for studying. This is also true in the case of academic performance, where efficient time management may lead to better academic performance (Grobler, 2005). Individuals with a long FTP often persist in tasks that would be achieved in the future because their experience of a given chronological time interval is shorter than those with a short FTP (Lens & Tsuzuki, 2007). Research also indicates that when set goals are clear and specific, higher levels of achievement are attained than when goals are unclear and distant (Locke & Lathan, 1990). Individuals often place a certain value on particular goals that are to be achieved in the future. Although the incentive value of a certain goal may decrease due to the length of its temporal delay, this often has a smaller impact on individuals with a long FTP, when the incentive value of anticipated goals is higher (Lens, 2006). For example, when an individual with a long FTP studies to be a medical practitioner, the seven-year period may be seen as closer in time due to the incentive value placed on that career, whereas the opposite will be true for individuals with a short FTP (Simons et al., 2004). Many studies have shown that in educational settings, individuals with a long FTP often realise positive outcomes in terms of their studies because they seem to be strongly engaged in their work, more motivated and they manage their time more effectively (Bilde et al., 2010).

According to Zimbardo and Boyd (2008) the temporal distances between goals can vary, from very short to very long, e.g. planning for the immediate future or studying to become a professional in future. Certain individuals may even extend some goals

beyond one's lifetime, e.g. planning for one's funeral and going to heaven thereafter, what Zimbardo and Boyd (2008) refer to as a transcendental time perspective. This clearly indicates that the motivational value of distant anticipated goals will be higher for people with a longer FTP.

Future time perspective also emphasises the notion that the sense of an individual's purpose for the future serves as a motivational driving force for individuals to engage in activities that are perceived as being instrumental for future outcomes (McInerney, 2004). Some individuals are able to anticipate the consequences and outcomes of their present behaviour. They understand the relationship between their current actions and the achievement of future-anticipated goals, whereas others rather live in the present, enjoy the moment, and do not anticipate any future consequences of their present behaviour. Current researchers of FTP often refer to individuals' future anticipation as the notion of instrumentality, which refers to the perceived instrumental value of the current behaviour (Lens, 2006). Instrumentality is then referred to as the perception that one's completion of a task or goal may be the driving force in assisting individuals' future goal attainment (Shell & Husman, 2008). The work of Shell and Husman (2008), Lens (2006), as well as Simons, Dewitte and Lens (2004) on students' motivation to learn, indicates that students who perceive the importance of the instrumentality of a present task for future goals are more motivated to persist in their academic learning. Shell and Husman (2008) further regard FTP as the integration of the chronological future into the present life-space of an individual through a motivational goal-setting process. Lens and Tsuzuki (2007) maintain that goals are representations of

the future, although individual differences are found in their extension into the future. Some individuals live with a short FTP and concern themselves with the here and now of their chronological future, whilst those with a long FTP are often motivated by outcomes in the rather distant future. This is often seen in educational settings where students are motivated by the future attainment of an educational degree in terms of applying their minds and putting greater effort into their studies. Lens and Tsuzuki (2007) further maintain that the development and realisation of an educational career requires realistic goal setting in the near and distant future. Therefore, individuals' ability to schedule and plan their lives becomes a major mental regulation exercise which is based on how these individuals perceive time. Ferrari et al. (2010) confirm that future-orientated adolescents and emerging adults demonstrate higher levels of career decision making and higher levels of academic achievement.

According to Harry (2011) career scholars are increasingly interested in understanding the psychosocial attributes and dispositions that females use in constructing their careers with reference to the African context. Numerous studies have investigated how variables such as gender and culture influence career development and subsequent career success (Heslin, 2005).

Gender and career maturity/adaptability

Gender role socialisation is central to any discussion of career development among emerging adults (Arnett & Tanner, 2011). According to Shapiro, Ingols and Blake-Beard (2008), boys and girls are often socialised to enter into gender-congruent

work roles. Although recent research into the relationship between gender and career adaptability is reportedly limited and somewhat inconclusive, research by O'Connell, McNeely and Hall (2008), as well as Havenga (2012) and Rocha (2012) found a significant relationship between career adaptability and gender. However, certain studies have found no significant relationship between gender and career adaptability (Maggiori et al., 2013). In terms of gender differences, a study by Ferreira (2012) showed that women tend to be more adaptable than men. They also tend to show more purpose in their career planning than men (Zhang, 2010). This finding was also reported by Hartung, Porfeli and Vondracek (2008) who found that female adolescents and emerging adults scored higher than their male counterparts on the construct of career maturity. Further research by Gutman and Schoon (2012) has also suggested that adolescent males tend to show greater uncertainty with regard to their career aspirations than their female counterparts, and they tend to rely on encouragement from their parents. In South Africa in recent years, females have been found to show higher career aspirations in furthering their education towards various careers that were previously denied to them, and have also shown greater enthusiasm in being educated as compared to their male counterparts (Harry & Coetzee, 2013; Havenga, 2012). Naidoo and May (2006) purport that the interaction between gender and cultural values on occupational choice, occupational satisfaction and occupational success among women, specifically the career development of women from various cultural and socio-economic groups, has not been sufficiently explored and they recommend further research on these groups.

Culture and career maturity/adaptability

Cultural factors might exert an influence on the career choices that individuals make since the decision-making structures, norms and values related to career planning differ across cultures (Thomas, 2012). The preferences and needs that individuals have are often influenced by the cultural values and norms acquired during the socialisation process (Gunkel, Schlager, Langella, Peluchelte, & Reshetnyak, 2013). However, only a few studies have examined the influence of cultural values on the career development processes of various cultural groups (Tsaousides & Jome, 2008). Research by Fisher and Chalmers (2008) compared individualistic and collectivistic cultures in career planning and found that individualistically oriented individuals were able to rely on their own ability to plan and make choices, as opposed to those from collectivistic cultures. Individuals from collectivistic cultures were found to rely more strongly on familial and societal expectations. Career adaptability is therefore positively related to individualism since individuals from less collectivistic cultures more freely adjust to changes than those whose decision making relies on various individuals, e.g. family members, friends and significant others (Gunkel et al., 2013; Motulsky, 2010). Cultural values are reported to have an impact on the career choices of race/ethnic groups. Tsaousides and Jome (2008) conducted a study among different race/ethnic groups (specifically minority groups) to investigate whether culture moderated the relationship between interest congruency and job satisfaction. The findings revealed that interest congruency was more predictive of job satisfaction in societies with individualistic value orientations than those with collectivistic value orientations. Fouad (2008) found that cultural values emerged as a

typical category in his qualitative analysis of the career development of Asian Americans. Although culture has been found to have a significant impact on the career development of different cultural groups, these studies have received a great deal of criticism in terms of the assessment instruments that were used to establish its impact.

In South Africa there have been many attempts to address the cultural issues inherent in career assessment tools, with the main focus falling on the question of the cultural validity of instruments which were formulated around Western norms in the testing of national career groups (Watson & Stead, 2006). Watson, Duarte and Glavin (2005) argued that the concept of cultural specificity in South African career assessment instruments has not been adequately addressed and is in need of serious attention. The current situation in South Africa is such that the most commonly used instruments to measure career maturity/adaptability are the Career Development Questionnaire (CDQ) and the South African form of the Career Adapt-Abilities Scale or CAAS (Langley, Du Toit, & Herbst, 1992; Maree, 2012). Both these instruments were found to yield positive results in terms of determining how individuals take responsibility for influencing their personal career development in terms of planning for the future, exploring future possibilities and the extent to which individuals believe they can realise their future career goals (Maree, 2012). Savickas and Porfeli (2011) indicated that the CAAS-International has been widely validated in thirteen countries, including South Africa, though they cautioned that further investigations should be carried out among South African populations since this measuring instrument had not been standardised for the latter. Maree (2012) concluded that CAAS-South Africa shows similar performance to

the CAAS-International and can thus be confidently used by researchers and practitioners in this country. Savickas and Porfeli (2011) claim that countries vary in the degree to which they encourage the formation of career adaptability due to the different demands and opportunities they provide for the development and expression of those resources. For example, adaptability may be regarded as less important amongst the members of collectivistic cultures than those of individualistic cultures, who seem to foster its development among adolescents and emerging adults. It can therefore be concluded that culture plays a significant role in career maturity/adaptability.

Summary

The literature reviewed in this chapter provided a concise overview of the most prominent career development theories explored, and the related concepts of career maturity/adaptability as being of significance in the establishment of future careers and career successes. It furthermore focused on the role of future time perspective (FTP), gender and culture as pivotal factors in the career maturity/adaptability processes, with attention given to how these trajectories impact on academic success and indeed all areas of adolescents' and emerging adults' future lives.

Secondly, the literature indicated that the process of career development, which involves psychological, cultural and economic ingredients over time, results in outcomes which are crucial in vocational behaviour, decision-making ability and career maturity/adaptability (Sirohi, 2013). The chapter also succeeded in showing that individual differences in time perspective manifest in behavioural differences. Those with

a present-oriented time perspective tend to value immediate consequences, e.g. the thrill of risky driving, whereas those who are future-oriented are likely to show greater investment in education and career planning as future-oriented tasks (Skorikov, 2007; Savickas, 2009).

Several studies have been conducted on the influence of individual variables such as self-concept, career aspirations, identity status and gender on career maturity/adaptability, with some of these revealing the potential to generate variance in career maturity/adaptability, and others showing difference in terms of gender (Hasan, 2006; Salami, 2008). Gender differences have been reported in terms of career maturity, with females scoring higher than their male counterparts in the construct of career maturity (Hartung et al., 2008). Women were also shown to display greater levels of purpose in career planning than men (Zhang, 2010). The impact of cultural values on the career choices of different race/ethnic groups was also highlighted, specifically the differences between individualistic and collective cultures, and attention was paid to how criticism against South African career assessment instruments has been mitigated (Watson & Stead, 2006; Tsaousides & Jome, 2008).

The next chapter deals with the methodology employed in obtaining and analysing the data of this study.

Chapter 4: Methodology

Introduction

The main aim of this study was to investigate the role of career maturity and future time perspective (FTP) in the relationship between identity development and the academic success of first-year students at a South African university. Literature (Ramdin, 2011; Low et al., 2005; Chavous, 2005; Flores-Crespo, 2007; Rust, 2007; Devos & Torres, 2007) indicates that there is a significant relationship between identity development and academic success. In a study with high school students, Berzonsky and Kuk (2005) specifically provided evidence that individuals' academic achievement is affected by their *identity processing styles*, with the latter also serving as the measure of identity development in this study. Berzonsky and Kuk (2005) reported that the information-oriented identity style correlated positively with academic achievement, while the diffuse-avoidant style correlated negatively with academic achievement. This relationship can, however, be influenced by several variables, e.g. socio-economic status, self-esteem, adjustment and self-efficacy (Weiser & Riggio, 2010; Merril & Buboltz, 2015; Fairclough, 2005; Berzonsky & Kuk, 2005). In this study the role of career maturity and FTP were selected for further investigation. The mediating or moderating roles of both career maturity and FTP were investigated. This investigation was extended to include the possible role of gender and ethnicity as factors influencing the outcome.

This chapter discusses the methodology employed in conducting the study. Initially, after recapping on the main objectives of the study, the research design is

illustrated. This is then followed by a discussion of the sampling procedure, a presentation of the research participants' descriptive statistics, the data collection procedure, ethical considerations and the psychometric properties of the measuring instruments utilised. Finally, the chapter is concluded with a detailed explanation of the study's specific research questions and the statistical procedures employed to answer these.

Main objectives of the study

The main objectives of the study were as follows:

- The first objective was to determine whether identity development can significantly predict the academic success of first-year students at a South African university.

- The second objective was to determine whether future time perspective and/or career maturity moderate/mediate the relationship between identity development and academic success in first-year students.

Given the importance of both gender and race in possibly influencing research results with relevance to identity development, career maturity, FTP and academic success (Phan, 2009a; Adelabu, 2008; Grobler et al., 2014), it was deemed important to consider these two variables with respect to the relationship between all the independent variables (identity styles) and academic success before investigating the aforementioned objectives.

Research design

A non-experimental cross-sectional survey-type research design utilising self-report measures was selected to investigate the research questions at hand. Self-report survey designs continue to be the most widely used methodology in the social and behavioural sciences because of their utility. The main benefits of these self-report survey designs constitute their flexibility, time and cost efficiency, as well as their potential to collect data from a large number of people simultaneously (Fan et al., 2006). Since much research conducted in the domain of the social sciences relies on self-report information, there has been extensive research regarding the validity of self-reported data, and researchers have established that increased accuracy is reported when individuals understand the questions, when a strong sense of anonymity prevails and when there is reduced fear of reprisal (Sallis & Saelens, 2000). However, self-report surveys also present with certain disadvantages. These include the possibility of response bias, sources of error such as common method bias and minimal control over extraneous variables (Wilcox, 2005). Bearing this in mind, the reliability of the various scales was investigated. For this purpose, Cronbach α-coefficients were calculated using the SPSS software (SPSS Incorporated, 2011) in order to determine the internal consistency of each scale. These results are presented in the discussion of the measuring instruments.

Sampling procedure

A purposive sampling technique was adopted in sampling the study's participants. Due to the focus of the study, only first-year students were included. In order to include

first-year students as participants in this study, permission was obtained from the university's acting dean of students. These first-year students were from the 23 university halls of residence, including city residences (for commuter students). In order to obtain the sample for this study, the researcher approached students during the residence meetings held in their respective residences, and requested their participation. Seven hundred and thirty-six (N=736) of the possible 7476 first-year students agreed to participate in the study. According to De Vos (2002) a sample size of 4.5% of the population can be considered representative when working with populations of 10 000 or more individuals. The current sample constitutes 9.8% of the population investigated and can therefore be considered an acceptable sample size. In an attempt to prevent comparisons between students with differing workloads and academic developmental levels, it was decided to apply certain exclusion criteria. The following groups were excluded from the study:

(a)   Students who were not first-time registered students (N=55);

(b)   Students not registered for the minimum number of credits to complete their degree within the minimum time period (120 credits per year) (N=75); and

(c)   Students who had not matriculated during the previous year (N=90).

In addition to the application of the above-mentioned criteria, a number of incomplete questionnaires (N=10) were also excluded. The final sample consisted of 506 first-year students. The sample consisted of both male and female, black and white students, with an average age of 18.7 years. The sample distribution in terms of gender and race/ethnicity is shown in Table 1.

Table 1

Frequency distribution for the sample according to gender and race/ethnicity

| Ethnicity | Gender | | | | Total | |
| | Male | | Female | | | |
	N	%	N	%	N	%
Black	125	35.9	223	64.1	348	68.8
White	35	22.6	120	77.4	155	30.6
Missing					3	0.6
Total	**160**	**31.8**	**343**	**68.2**	**506**	**100.0**

Three black students neglected to indicate their gender and consequently were indicated as missing in the statistics provided in Table 1. Just over two thirds of the sample (68.2%) indicated being female and the majority of the sample (68.8%) identified with the black race/ethnic group, while white males (7%) were least represented in the sample. It is important to note here that the total population of registered first-year students reflected the following characteristics: 61.1% indicated being female while 77.2% identified with the black race/ethnic group. White males were also the least represented in the population, reflecting a mere 10.4% representivity.

In the section below specific attention is given to the procedures that were followed to obtain the data as well as to the associated ethical considerations.

Data collection procedures and ethical considerations

The questionnaires were administered during the students' free time and after their residence meetings in the late afternoons and early evenings. Clear instructions on how to complete the different questionnaires were provided by the researcher. It was emphasised to participants that, since there were no right or wrong answers to the

questions asked, the questions were to be answered as honestly as possible. For purposes of measurement, participants were asked to indicate their student numbers. These student numbers were used to link the psychometric data with academic performance. The time allowed for completion of the questionnaires was approximately 90 minutes. The questionnaire booklet also contained a biographical information section (probing race, gender, age, matriculation year) and questions pertaining to their year of study in order to ascertain whether they were indeed in their first year of study at the particular university. At the end of each administration session all questionnaire booklets were collected by the researcher. The participants who submitted incomplete questionnaires (N=230) were excluded from the study. These included students who had commenced their studies through a bridging programme which allows students to complete the first year over a two-year period before they are allowed full access to the second year of study. Furthermore, questionnaire booklets with incomplete information and incorrect student numbers were also rejected. Thus, completed questionnaires containing all the relevant information were included in the study, which brought the sample to 506. Three students failed to indicate their gender but were included in all further analyses (see table above).

According to Annexure 12 of the Ethical Rules of Conduct for Practitioners registered under the Health Professions Act of South Africa (Act No. 56 of 1974) (Department of Health, 2006), it is required that the researcher obtains permission from the host institution/organisation prior to conducting research with the selected participants. Permission to conduct this study was granted by the university that served as the host institution. The ethical considerations were further met by ensuring that the aims

and procedures involved in the research were explained to the participants prior to obtaining their informed consent. Anonymity and confidentiality were assured by asking participants to use their student numbers and not their names. It was emphasised that participation was voluntary and that withdrawal from participation at any point would not hold any negative consequences for participants.

Measuring instruments

In order to conduct the present study, it was necessary to measure the relevant variables, namely the independent variable, the dependent variable and the intervening variables. In this case the following approach was used: identity development (represented by the four identity styles) constituted the independent variable and academic success the dependent variable, while career maturity and FTP acted as intervening variables (mediator/ moderator variables).

The Identity Style Inventory (ISI-4) was used to measure the independent variable (identity development). To measure the dependent variable (academic success) the participants' June and November academic results were obtained from the university's records with prior granted permission. The following instruments were used to measure the intervening variables: for career maturity, the Career Development Questionnaire (CDQ); and for future time perspective, the Zimbardo Time Perspective Inventory (ZTPI). Each of the measuring instruments will be discussed in more detail.

Identity Style Inventory (ISI-4): Revised version (Berzonsky, Soenens, Luyckx, Goossens, Dunkel, & Papini, 2011)

Since measurements of identity are grounded in the identity statuses and identity styles of Marcia and Berzonsky respectively, the revised version of the Identity Style Inventory (ISI-4) developed by Berzonsky et al. (2011) was used to assess participants' identity styles as a measure of their identity development. This inventory consists of 33 items which probe the following dimensions of identity: information-oriented style (7 items), normative identity style (8 items), diffuse-avoidant style (9 items), and identity commitment as an ideological subscale (9 items). All the items are framed in the present tense and make reference to one's current identity processing style. The items are rated on a five-point Likert-type scale with categories ranging from 1 (strongly disagree) to 5 (strongly agree). Smits et al. (2008) demonstrated that the ISI-4 scales had acceptable internal consistency estimates after one-week, test-retest reliability and adequate convergent validity with measures of identity status and identity content emphasis. Test-retest reliability coefficients of 0.86, 0.71, 0.76 and 0.77 have been reported in previous studies (Berzonsky et al., 2011; Smits et al., 2008). Cronbach α-coefficients for the information-oriented style, the normative style, the diffuse-avoidant style and commitment were 0.78, 0.74, 0.79 and 0.84 respectively in a longitudinal study that determined college students' time perspective and identity development (Luyckx et al., 2010). In the current study, Cronbach α-coefficients ranged from 0.679 to 0.750 for the total group, from 0.670 to 0.734 for the black students and from 0.709 to 0.848 for the white students (see Table 2).

The Career Development Questionnaire (CDQ) (Langley, Du Toit, & Herbst, 1992)

This questionnaire was used to measure career maturity, which refers to the degree of an individual's readiness to make effective career decisions. The motivation for the choice of this instrument to measure career maturity was informed by Crews (2006) who linked aspects of career maturity and career adaptability and reduced them to one construct, i.e. career maturity (see Chapter 3 for a detailed exposition of the constructs of career maturity/adaptability). The bilingual (English and Afrikaans) questionnaire under discussion was developed by Langley et al. (1992) and was standardised for the South African population, for Zulu, Afrikaans and English speaking high school pupils, as well as first-year students. The questionnaire consists of five subscales probing different dimensions of career maturity, namely *self-knowledge* (measures the testee's knowledge of the importance of life roles, work values and occupational interests), *decision making* (measures the ability to make effective decisions), *career information* (measures knowledge of the world of work), *integration of self-knowledge and career information* (measures the ability to integrate relevant information on the self and the world of work), and lastly, *career planning* (measures the ability to make a career decision and to implement a career plan) (Langley et al., 1992).

Each subscale consists of 20 questions and the entire questionnaire thus consists of 100 items. Satisfactory reliability coefficients and validity indices were reported for all groups whilst the CDQ was being developed. The internal consistency and reliability coefficients reported in the manual for the five 20-item subscales range between 0.66 and

0.83 respectively (Langley et al., 1992). According to De Bruin and Bernard-Phera (2002), in a study among grade 12 learners from a poor socio-economic background in South Africa, the construct validity of this instrument reflected the following coefficients: self-knowledge (0.75), decision making (0.65), career information (0.75), integration of self-knowledge and career information (0.62) and career planning (0.83). In a later study in a mixed race/ethnicity South African group of grade 11 and 12 learners, all CDQ scales yielded acceptable internal consistency, except the self-information scale with α-coefficients ranging from 0.54 to 0.81 across four language groups, i.e. Afrikaans, English, English/Afrikaans and English/Sesotho (Grobler et al., 2014). The current study reflected reliability coefficients which ranged from 0.710 to 0.770 for the total group, from 0.654 to 0.746 for the black students, and from 0.763 to 0.830 for the white students (see Table 2).

Zimbardo's Time Perspective Inventory (ZTPI) (Zimbardo & Boyd, 1999)

This inventory is used to determine individuals' orientation to time. The original form of the ZTPI is comprised of different factors relating to time perspective, namely past-positive, past-negative, present-hedonistic, present-fatalistic and future. However, for purposes of this study only the future time perspective scales were used. The shortened version of this measurement consists of 21 items which are rated on a five-point Likert-type scale ranging from 1 (very untrue) to 5 (very true). In a study conducted by Adelabu (2008) on FTP, hope and ethnic identity among African-American adolescents at Wheelock college, a composite score for internal consistency as well as

internal scores across gender and grade level revealed Cronbach α-coefficients ranging from 0.620 to 0.710. Although this inventory was standardised on an American population and has been repeatedly redefined through factor analyses (Abousselam, 2005), the ZTPI has been successfully administered in South Africa (Kritzas & Grobler, 2007) with the following α-coefficients having been reported: 0.680 for FTP and 0.510 for present time perspective. In the current study α-coefficients were 0.656 for the black students, 0.733 for the white students, and 0.675 for the total group (see Table 2).

Table 2

Reliability of the individual scales of the measuring instruments

Scales of the measuring instruments	α-coefficients		
	Total group	Black	White
Identity Style Inventory:			
Information-oriented (IF)	0.738	0.723	0.775
Normative (NT)	0.679	0.670	0.709
Diffuse-avoidant (DF)	0.750	0.706	0.848
Commitment (CT)	0.734	0.734	0.732
Career Development Questionnaire:			
Self-information (SI)	0.710	0.654	0.800
Decision making (DM)	0.770	0.733	0.830
Career information (CI)	0.764	0.746	0.796
Integration (I)	0.746	0.724	0.774
Career planning (CP)	0.716	0.682	0.763
Zimbardo's Time Perspective Inventory:			
Future Time Perspective (FTP)	0.675	0.656	0.733

From Table 2 it is evident that coefficients ranged from 0.675 (FTP) to 0.770 (decision making) for the total group. For the black students' coefficients varied between 0.654 (self-information) and 0.746 (career information), while for the white students'

coefficients ranged between 0.709 (normative) and 0.848 (diffuse-avoidant). Once rounded off to the nearest decimal point, all coefficients demonstrated a value of 0.7 or higher. According to Lance, Butts and Michels (2006), a coefficient of 0.7 in social science studies indicates acceptable internal reliability of measurements. All dimensions thus yielded reasonably acceptable internal consistency of measurements, and consequently it was decided to include all the dimensions in further analyses.

Academic success

Academic performance was measured using participants' June and November academic results. These were obtained from the university's records with prior granted permission. Given the wide range of disciplines for which first-year students were enrolled, it was impossible to make direct comparisons of their academic achievement. Consequently, the extent of their academic success was measured by determining the number of credits they had attained (the sum of their June and November results) and dividing this number by the number of credits for which they had originally registered. Thus, the student who had attained all the credits for which he/she was registered, would have a value (proportion) of 1.0. In order to facilitate the processing of the data this value was then multiplied by 100 so that it could be expressed as a percentage. Consequently, their academic success is reflected by a value ranging from 0 to 100.

To prevent comparisons between a student who had registered for only 32 credits and had attained all these credits (i.e. attaining a value of 100), and another student who had registered for 120 credits and attained only 100 of them (i.e. attaining a value of 83),

only students who had registered for a minimum number of credits, i.e. 120 credits (Government Gazette, 2007), were included in the sample as stated earlier.

The research hypotheses that were investigated in the study will now be discussed.

Research hypotheses

The following research hypotheses were formulated:

- The four identity development styles can predict a significant percentage of the variance in the academic success of first-year students.
- Career maturity and/or future time perspective (FTP) may act as intervening variables (mediator or moderator) in the relationship between the identity development and academic success of first-year students.

Although it was not the main focus of the study, the moderating role of gender and race/ethnicity in the relationship between identity (independent variable) and academic success (dependent variable) was also investigated. Should it be found that they moderated this relationship, the analyses would be performed for the group as a whole.

To investigate these hypotheses, a specific statistical method was employed. This method is subsequently discussed.

Statistical procedure

Hierarchical regression analyses were conducted in order to examine the first formulated hypothesis (Howell, 2013). In this case the independent variables were the identity development scales (information-oriented, normative, diffuse-avoidant and commitment), whereas academic success acted as the dependent variable. The process entailed the following: initially, the total variance of academic success that can be explained by all four identity styles combined was determined and then the unique contribution of each individual identity style to the variance in academic success was determined. The percentage of variation in the dependent variable explained by variation in the independent variables is indicated by R^2 (coefficient of determination).

The hierarchical F-test was used to determine whether a particular independent variable's contribution to the R^2 value was statistically significant. In determining the significance of an increase in R^2, it was also necessary to examine the effect size of the contribution made by a particular independent variable. The effect size provides an indication of the contribution to R^2 in terms of the proportion of unexplained variance of the full model. According to Cohen, Manion and Morrison (2000) the following guideline (f^2) can be used in regression analyses: *0.01* = small effect; *0.15* = medium effect; and *0.35* = large effect size.

The second hypothesis was investigated by means of moderated hierarchical regression analyses (Howell, 2013). This statistical procedure was used to investigate the

possible mediator or moderator effect of career maturity and FTP on the relationship between identity development and academic success among first-year students. A mediating variable refers to the situation where the relationship between a predictor (independent variable) and a criterion/independent variable may be explained by their relationship with a third variable, namely the mediator. On the other hand, a moderating variable influences the direction and/or strength of the relationship between the predictor and the criterion variables (Baron & Kenny, 1986; Field, 2013). It is important to note that before we can test for a mediating relationship we first need to show that there is a significant relationship between: (a) the independent variable and the mediator; (b) between the dependent variable and the mediator; as well as (c) between the independent variable and the dependent variable (Howell, 2013). In cases where no significant relationship was found to exist, no mediating effect was investigated.

In an attempt to determine whether the intervening variable(s) act as mediators or moderators in the relationship between the dependent and independent variables, different steps in the hierarchical regression procedure were executed. In the initial step, the analyses of single variables were considered. For example, only one of the identity development scales was initially added to the regression equation to determine the unique contribution of this variable before subsequently adding each career maturity scale to the equation separately (while omitting the identity development scale) in order to determine the specific, unique contribution that each career maturity scale made to the regression equation. During the second step, both the independent and the intervening variables (e.g. one of the identity development scales and one of the career maturity scales) were added

to the equation. In this way, the significant **proportional** contribution of each of the predictor variables to the prediction of the criterion variable (academic success) was determined.

In the third step the product between the independent variable (identity development) and career maturity (each scale independently), in the prediction of academic success, was investigated. When considering the product between two variables, the possibility of multicollinearity needs to be addressed (Howell, 2013). To achieve this, the deviation scores of the relevant variables were calculated, following which the product of the two sets of deviation scores was determined. The specific analysis procedure is consequently discussed in further detail:

Step 1 gives an indication of whether a specific identity style reflects a significant direct relationship with students' level of academic success. The following may be deduced by subsequently adding the indicated variables:

- If the calculated β-coefficient for the specific identity scale (e.g. commitment) is significant in step 1, but becomes non-significant in step 2 (after adding one of the career maturity scales, e.g. self-information), the deduction can be made that self-information acts as a mediator variable in the specific relationship (between commitment as an identity style and students' academic success).

- If the calculated β-coefficient for self-information as intervening variable proves to be significant in step 1, but becomes non-significant in step 2, this is indicative of confounding variables (Gravetter & Wallnau, 2000).

- A significant β-coefficient for product term correlations (step 3) is indicative of a significant interaction which, in turn, is indicative of a moderator effect (Howell, 2013).

The 5% level of significance was used throughout. Due to the low power of data that is typically encountered in moderated regression analyses, a relaxed criterion was used to evaluate the statistical significance of the moderating effect ($p \leq 0.1$) (Aguinis, 1995).

Statistical techniques

Statistical analyses of the data were performed by means of quantitative techniques. The reliability of the various scales was investigated by means of calculating Cronbach α-coefficients to determine the internal consistency of each scale, using the SPSS software (SPSS Incorporated, 2011). These reliability coefficients appear in Table 2.

Inter-correlations were obtained by calculating Pearson's product-moment correlation coefficients for the total group and the two race/ethnic groups (see Table 5 for these results). The results of the hierarchical multiple regression analyses with the different dependent and independent variables are presented in the tables in Chapter 5.

Summary

This chapter described the research methodology utilised in conducting this non-experimental cross-sectional survey. The main aim of this study was to investigate the role of career maturity and FTP in the relationship between identity development and the academic success of first-year students at a South African university. The research design utilised was illustrated, as well as the sampling procedure followed. The chapter furthermore discussed the descriptive statistics obtained for the research participants, the data collection procedure and ethical considerations, as well as the measuring instruments utilised. The two research questions and the statistical analyses employed to respond to these were presented.

The next chapter presents the results of detailed statistical analyses and provides the necessary statistical evidence for answers to the stated research questions.

Chapter 5: Results

Introduction

The results reflected in this chapter and discussed in Chapter 6 relate to the two main hypotheses of this study, namely:

- Identity development can predict a significant percentage of the variance in the academic success of first-year students; and

- Career maturity and/or future time perspective (FTP) may act as intervening variables (mediator or moderator) in the relationship between the identity development and academic success of first-year students.

As stated previously, given the importance of both gender and race/ethnicity in possibly influencing the relationship between identity styles and academic success (Adelabu, 2008; Grobler et al., 2014), it was deemed important to firstly control for this moderating effect.

Moderating effect of gender and race

Moderated hierarchical multiple regression analyses were conducted to investigate the possible effect of gender (1a) and race/ethnicity (1b) on the relationship between identity development and academic success, the results of which appear in Table 3. In order to include categorical data in the analysis, dummy variables were created. For both gender and race/ethnicity (i.e. only two categories), a single dummy variable was

created with 1 and 0 as the two distinct categories (gender: male = 1, female = 0; Race: black = 1, white = 0). For this analysis, academic success was the dependent variable, while the respective scales of the identity styles were used as independent variables. The first column of Table 3 indicates the respective identity style scales, given that the analysis for each of the independent variables was performed separately. The results are presented below:

Table 3
Moderation effect of gender and race/ethnicity in the relationship between identity development and academic success of first-year students

Identity Development Style	Model	R	R^2	Adjusted R^2	Change statistic				
					R^2 change	F change	df1	df2	Sig F Change
Information	1	0.055	0.003	0.001	0.003	1.519	1	499	0.218
	1a	0.085	0.007	0.003	0.004	2.072	1	498	0.151
	1b	0.156	0.024	0.020	0.021	10.887**	1	498	0.001
Normative	1	0.007	0.000	-0.002	0.000	0.025	1	499	0.874
	1a	0.066	0.004	0.000	0.004	2.177	1	498	0.141
	1b	0.143	0.020	0.017	0.020	10.448**	1	498	0.001
Diffuse	1	0.042	0.002	0.000	0.002	0.886	1	499	0.347
	1a	0.076	0.006	0.002	0.004	1.994	1	498	0.159
	1b	0.149	0.022	0.018	0.021	10.646**	1	498	0.001
Commitment	1	0.091	0.008	0.006	0.008	4.203*	1	499	0.041
	1a	0.107	0.011	0.007	0.003	1.538	1	498	0.216
	1b	0.179	0.032	0.028	0.024	12.343**	1	498	0.000

** $p \leq 0.01$
* $p \leq 0.05$
Model 1: Identity style entered
Model 1a: Product between gender and identity style entered
Model 1b: Product between race/ethnicity and identity style entered

From Table 3 it is clear that gender does not succeed in moderating the relationship between any of the identity development styles and academic success. However, it is also clear from Table 3 that race/ethnicity does indeed moderate the relationship between all the identity development style variables (identity styles) and academic success. The latter can be deduced from the fact that for race/ethnicity (model 1b), the product-moment is consistently significant at the 1% level. Change statistics for these four identity development styles with race/ethnicity as moderator are indicated as follows:

Information-oriented: $\Delta R^2 = 0.021$; $F_{(1;498)} = 10.887$; $p = 0.001$

Normative: $\Delta R^2 = 0.020$; $F_{(1;498)} = 10.448$; $p = 0.001$

Diffuse-avoidant: $\Delta R^2 = 0.021$; $F_{(1;498)} = 10.646$; $p = 0.001$

Commitment: $\Delta R^2 = 0.024$; $F_{(1;498)} = 12.343$; $p = 0.000$

These results suggest that race/ethnicity does indeed moderate the relationship between identity development and academic success for first-year students. These findings therefore necessitate that the following analyses, i.e. for the two race/ethnic groups, be done separately. This procedure was also performed with the analysis following on this one. The following section describes the findings for the two research hypotheses that were examined.

Relationship between identity development and academic success

The first hypothesis aimed to determine whether the identity development of first-year students could be used to predict a significant percentage of the variance in their academic success. For this purpose, hierarchical regression analyses were conducted with the four identity styles (identity development) as the independent variables, and academic success as the dependent variable.

The results of the descriptive statistics calculated (means, standard deviations, skewness, kurtosis and correlation) will be presented prior to outlining the results and discussion of the hierarchical regression analyses. It was deemed necessary to calculate these descriptive statistics in order to examine the normality of the data as well as to investigate the inter-correlations between the variables involved.

Table 4 provides the means, standard deviations, skewness and kurtosis of the variables, while Table 5 presents the inter-correlations. According to Kahane (2008) the cut-off score for skewness is $|2|$ and for kurtosis is $|4|$. If the obtained values deviate (greater or less than) from these points, the normality of the distribution emerges as being ambiguous.

Table 4

Means, standard deviations, skewness and kurtosis of the relevant variables

Group	Variables	Mean	SD	Skewness	Kurtosis
Total	Academic success	84.50	20.87	-1.45	1.48
	Information	25.36	3.56	-.88	.59
	Normative	25.58	5.69	-.17	-.17
	Diffuse	20.97	6.78	.53	.06
	Commitment	38.82	5.33	-.88	.16
	Self-information	15.38	3.24	-.71	.91
	Decision making	15.52	3.48	-.99	1.07
	Career information	14.63	3.73	-.57	-.41
	Integration	15.64	3.53	-.83	.87
	Career planning	14.42	3.31	-.46	-.47
	FTP	43.16	5.99	-.36	-.12
Black	Academic success	82.51	21.25	-1.28	1.05
	Information	25.47	3.60	-.95	.77
	Normative	25.23	5.97	-.10	-.29
	Diffuse	20.83	6.60	.50	.03
	Commitment	39.23	5.37	-1.06	.65
	Self-information	15.08	3.09	-.62	1.67
	Decision making	15.17	3.35	-.99	1.59
	Career information	14.20	3.68	-.42	-.55
	Integration	15.28	3.35	-.83	.40
	Career planning	14.04	3.16	-.41	-.47
	FTP	43.57	6.00	-.48	.08
White	Academic success	88.97	19.33	-1.89	3.46
	Information	25.11	3.45	-.72	.26
	Normative	26.37	4.94	-.21	.07
	Diffuse	21.29	7.19	.57	.08
	Commitment	37.89	5.13	-.55	-.66
	Self-information	16.06	3.46	-1.04	.30
	Decision making	16.30	3.64	-1.19	.68
	Career information	15.60	3.65	-1.01	.48
	Integration	16.46	3.80	-1.05	1.94
	Career planning	15.27	3.49	-.73	-.18
	FTP	42.25	5.89	-.12	-.38

From both the skewness and kurtosis indices it is clear that the data for the various variables for the total group, and the two race/ethnic groups separately, are normally distributed. None of the skewness and kurtosis values exceed the cut-off scores.

Inter-correlations were obtained by calculating Pearson's product-moment correlation coefficients, the results of which are reflected in Table 5.

Table 5 *Correlation coefficients of the relevant variables for the total group and the two race groups*

Group	Variables	Academic success									
		IF	NT	DF	CT	SI	DM	CI	I	CP	FT
	Academic success	.06	.01	-.04	.09*	.12**	.13**	.09	.15**	.15**	.11*
	Information	-	.05	-.22**	.35**	.20**	.23**	.19**	.16**	.20**	.50**
	Normative		-	.34**	.02	-.01	-.06	-.08	-.09*	-.15**	.16**
Total	Diffuse-avoidant			-	-.39**	-.35**	-.41**	-.27**	-.32**	-.36**	-.13**
N=506	Commitment				-	.44**	.45**	.28**	.30**	.31**	.38**
	Self-information					-	.68**	.46**	.49**	.49**	.17**
	Decision making						-	.54**	.58**	.57**	.20**
	Career information							-	.59**	.66**	.12**
	Integration								-	.68**	.05
	Career planning									-	.11*
	Future Time Perspective										-
	Academic success	.06	-.04	-.06	.05	.07	.05	.02	.13*	.11*	.12*
	Information	-	.10	-.21**	.41**	.26**	.28**	.25**	.26**	.25**	.50**
	Normative		-	.31**	.05	-.01	-.09	-.08	-.10	-.16**	.22**
	Diffuse			-	-.36**	-.33**	-.38**	-.26**	-.30**	-.35**	-.11*
Black	Commitment				-	.42**	.44**	.27**	.29**	.30**	.42**
N=351	Self-information					-	.66**	.37**	.43**	.44**	.24**
	Decision making						-	.49**	.57**	.56**	.25**
	Career information							-	.52**	.64**	.19**
	Integration								-	.65**	.15**
	Career planning									-	.16**
	Future Time Perspective										-

Table 5 (contd.)

Correlation coefficients of the relevant variables for the total group and the two race groups

Group	Variables	Academic success									
		IF	NT	DF	CT	SI	DM	CI	I	CP	FT
	Academic success	.07	.09	-.01	.25**	.16*	.23**	.18*	.15	.17*	.17*
	Information	-	-.08	-.25**	.19*	.10	.15	.07	-.01	.12	.49**
	Normative		-	.40**	-.04	-.06	-.05	-.16*	-.12	-.20*	.04
	Diffuse			-	-.47**	-.41**	-.50**	-.32**	-.38**	-.42**	-.16*
White	Commitment				-	.57**	.54**	.38**	.38**	.43**	.24**
N=155	Self-information					-	.71**	.61**	.58**	.53**	.07
	Decision making						-	.60**	.58**	.56**	.16*
	Career information							-	.69**	.67**	.03
	Integration								-	.70**	-.11
	Career planning									-	.06
	Future Time Perspective										-

**p≤0.01

*p≤0.05

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The results provided in Table 5 clearly indicate that only the commitment scale of the revised version of the ISI-4 correlated significantly (at the 5% level) with academic success, and then also only for the total group and the white students. None of the other identity styles emerged as being significantly related to academic success for these two groups and none of the identity styles reflect a significant relationship with academic success for the black students.

An increased number of the career maturity variables appeared to be significantly related to academic success for the total group and for the white and black students separately. For the total group, four of the five career maturity variables, namely self-information, decision making, integration and career planning were significantly (at the 1% level) related to the academic success of the first-year university students. For the white students, self-information, career information and career planning were significantly (at the 5% level) related to academic success, while decision making reflected a significant relationship at the 1% level. For the black students, only integration and career planning appeared to be significantly (at the 5% level) related to academic success.

Future time perspective appears to be significantly related to academic success (at the 5% level) for the total group as well as for the black and white students separately.

Table 6 provides the results of the hierarchical regression analyses with academic success as dependent variable for the black first-year students.

Table 6

Contributions of identity development styles to R^2 for the black first-year students with academic success as criterion

Variables in analysis	Variable omitted	R^2	Contribution to R^2: full minus reduced model	F	f^2
1. info+norm+dif+com		0.007			
2. info+norm+dif	Commitment	0.007	1 – 2 = 0.000		
3. info+norm+com	Diffuse	0.007	1 – 3 = 0.000		
4. info+dif+com	Normative	0.006	1 – 4 = 0.001	0.345	-
5. norm+dif+com	Information	0.005	1 – 5 = 0.002	0.691	-

Key:info=information;norm=normative;dif=diffuse;com=commitment
** $p \leq 0.01$
* $p \leq 0.05$

Firstly, it is clear that the identity development styles in combination explained 0.7% ($R^2 = 0.007$) of the variance in black students' academic success. The calculated R^2 value is not significant at least at the 5% level [F_4; 344 = 0.629; $p = 0.642$]. Furthermore, none of the identity development styles individually succeed in predicting a significant percentage of the variance in the black first-year students' academic success.

Table 7 presents the results of the hierarchical regression analyses with academic success as dependent variable for the white first-year students.

Table 7

Contributions of identity development styles to R² for the white first-year students with academic success as criterion

Variables in analysis	Variable omitted	R^2	Contribution to R^2: full minus reduced model	F	f^2
1. info+norm+dif+com		0.085			
2. info+norm+dif	Commitment	0.015	$1 - 2 = 0.070$	11.398**	0.08
3. info+norm+com	Diffuse	0.075	$1 - 3 = 0.010$	1.628	
4. info+dif+com	Normative	0.082	$1 - 4 = 0.003$	0.488	
5. norm+dif+com	Information	0.083	$1 - 5 = 0.002$	0.326	

Key:info=information;norm=normative;dif=diffuse;com=commitment
** $p \leq 0.01$
* $p \leq 0.05$

Table 7 shows that the four identity styles in combination explained 8.5% (R^2 = 0.085) of the variance in white first-year students' academic success. This calculated R^2 value is significant on the 1% level [F_4; 150 = 3.475; p = 0.010]. When the contribution of the individual identity development styles is examined, it is clear that one of the scales, namely commitment, makes a significant contribution at the 1% level. Commitment exclusively explained 7.0% [F_3; 151 = 11.398; $p \leq 0.01$] of the variance in white first-year students' academic success. The effect size (f^2 = 0.08) is small, and indicative of a result with low practical importance and therefore receives no further discussion.

The role of career maturity and future time perspective in the relationship between identity development and academic success

The second hypothesis aimed to determine whether career maturity and future time perspective succeed in mediating/moderating the relationship between identity development and academic success. Unlike with the case of a mediating effect, a moderating effect on the relationship between the independent variable (identity development) and the dependent variable (academic success) can be investigated in the absence of a statistically significant relationship between the latter two sets of variables. To determine this, moderated hierarchical multiple regression analyses were calculated and the results for the two race/ethnic groups are presented in the following table and discussed thereafter. All continuous independent variables were centred (standardised) before interactions were calculated.

To limit the number of tables, results for the black and white first-year students, for the same variables, are shown in a single table. The black students' results are presented in normal font, while the white students' results are presented in bold and italics.

The results of the calculation to determine the possible role of self-information on the relationship between the information-oriented identity style and academic success, for the two race/ethnic groups, is provided in Table 8.

Table 8

Hierarchical multiple regression of academic success as dependent variable, information-oriented identity style as independent variable and self-information as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R^2	Adjusted R^2
	B	Std. error	β						
1 (Constant)	73.487	8.118		9.053	0.000	1.261	0.060	0.004	0.001
	80.047	*11.526*		*6.945*	*0.000*	*0.601*	*0.063*	*0.004*	*-0.003*
Information	0.354	0.316	0.060	1.123	0.262				
	0.353	*0.456*	*0.063*	*0.775*	*0.439*				
2 (Constant)	69.479	8.877		7.827	0.000	1.251	0.085	0.007	0.001
	68.209	*12.937*		*5.272*	*0.000*	*2.204*	*0.168*	*0.028*	*0.015*
Information	0.261	0.326	0.044	0.800	0.424				
	0.263	*0.454*	*0.047*	*0.580*	*0.563*				
Self-information	0.423	0.380	0.062	1.113	0.266				
	0.877	*0.450*	*0.157*	*1.948*	*0.053*				
3 (Constant)	69.765	9.372		7.444	0.000	0.835	0.085	0.007	-0.001
	66.913	*12.996*		*5.149*	*0.000*	*1.823*	*0.188*	*0.035*	*0.016*
Information	0.254	0.336	0.043	0.754	0.451				
	0.328	*0.458*	*0.058*	*0.717*	*0.474*				
Self-information	0.419	0.383	0.061	1.093	0.275				
	0.865	*0.450*	*0.155*	*1.920*	*0.057*				
Information x SI	-0.009	0.096	-0.005	-0.097	0.923				
	-0.131	*0.128*	*-0.083*	*-1.029*	*0.305*				

**   p ≤ 0.05
*   p ≤ 0.10

Table 8 indicates that there were no significant relationships between information-oriented identity style and academic success for the black or white first-year students. Consequently, it was not possible to investigate a mediator effect for this relationship. It is also evident from Table 8 that for the black first-year students (b = -0.009; t = -0.097; p = 0.923) as well as the white first-year students (b = -0.131; t = -1.029; p = 0.305), self-information did not significantly moderate the relationship between the information-oriented identity style and academic success.

Table 9 provides the results of the calculation aimed at determining the possible moderating role of decision making in the relationship between the information-oriented identity style and academic success for the two race/ethnic groups.

Table 9

Hierarchical multiple regression of academic success as dependent variable, information-oriented identity style as independent variable and decision making as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R^2	Adjusted R^2
	B	Std. error	β						
1 (Constant)	73.487	8.118		9.053	0.000	1.261	0.060	0.004	0.001
	79.482	*11.526*		*6.945*	*0.000*	*0.702*	*0.068*	*0.005*	*-0.002*
Information	0.354	0.316	0.060	1.123	0.262				
	0.378	*0.451*	*0.068*	*0.838*	*0.404*				
2 (Constant)	71.315	8.664		8.232	0.000	.890	0.072	0.005	-0.001
	64.704	*12.363*		*5.234*	*0.000*	*4.310*	*0.232*	*0.054*	*0.041*
Information	0.288	0.329	0.049	0.875	0.382				
	0.194	*0.446*	*0.035*	*0.436*	*0.664*				
Decision making	0.255	0.354	0.040	0.721	0.471				
	1.189	*0.423*	*0.224*	*2.808*	*0.006*				
3 (Constant)	72.070	9.153		7.874	0.000	0.614	0.073	0.005	-0.003
	64.887	*12.414*		*5.227*	*0.000*	*2.889*	*0.233*	*0.054*	*0.035*
Information	0.266	0.340	0.045	0.782	0.435				
	0.178	*0.451*	*0.032*	*0.395*	*0.693*				
Decision making	0.247	0.356	0.039	0.693	0.489				
	1.199	*0.426*	*0.226*	*2.816*	*0.006*				
Information x DM	-0.021	0.083	-0.015	-0.259	0.796				
	0.036	*0.116*	*0.025*	*0.311*	*0.757*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

It is apparent from Table 9 that for the black first-year students (b = -0.021; t = -0.259; p = 0.796) as well as for the white first-year students (b = 0.036; t = 0.311; p = 0.757), decision making did not moderate the relationship between the information-oriented identity style and academic success.

Table 10 provides the results of the calculation aimed at determining the possible moderating role of career information in the relationship between the information-oriented identity style and academic success for the two race/ethnic groups.

Table 10

Hierarchical multiple regression of academic success as dependent variable, information-oriented identity style as independent variable and career information as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	*t*	*p*	*F*	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	73.487	8.118		9.053	0.000	1.261	0.060	0.004	0.001
	79.482	*11.526*		*6.945*	*0.000*	*0.702*	*0.068*	*0.005*	*-0.002*
Information	0.354	0.316	0.060	1.123	0.262				
	0.378	*0.451*	*0.068*	*0.838*	*0.404*				
2 (Constant)	73.483	8.482		8.663	0.000	0.629	0.060	0.004	-0.002
	66.347	*12.695*		*5.226*	*0.000*	*2.913*	*0.192*	*0.037*	*0.024*
Information	0.354	0.327	0.060	1.084	0.279				
	0.308	*0.446*	*0.055*	*0.690*	*0.491*				
Career inf.	0.000	0.320	0.000	0.001	0.999				
	0.955	*0.422*	*0.180*	*2.260*	*0.025*				
3 (Constant)	75.202	8.906		8.444	0.000	0.555	0.069	0.005	-0.004
	67.356	*13.044*		*5.164*	*0.000*	*1.973*	*0.194*	*0.038*	*0.019*
Information	0.282	0.346	0.048	0.816	0.415				
	0.268	*0.462*	*0.048*	*0.579*	*0.563*				
Career inf.	0.021	0.322	0.004	0.065	0.948				
	0.953	*0.424*	*0.180*	*2.249*	*0.026*				
Information x CI	-0.053	0.083	-0.036	-0.639	0.523				
	0.042	*0.117*	*0.029*	*0.355*	*0.723*				

**	$p \leq 0.05$
*	$p \leq 0.1$

As can be seen in Table 10, career information did not moderate the relationship between the information-oriented identity style and academic success for the black first-year students (b = -0.053; t = -0.639; p = 0.523) or the white first-year students (b = 0.042; t = 0.355; p = 0.723).

Table 11 provides the results of the calculation aimed at determining the possible moderating role of integration of self- and career information in the relationship between the information-oriented identity style and academic success for the two race/ethnic groups.

Table 11

Hierarchical multiple regression of academic success as dependent variable, information-oriented identity style as independent variable and integration as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	73.487	8.118		9.053	0.000	1.261	0.060	0.004	0.001
	79.482	*11.436*		*6.950*	*0.000*	*0.702*	*0.068*	*0.005*	*-0.002*
Information	0.354	0.316	0.060	1.123	0.262				
	0.353	*0.456*	*0.068*	*0.838*	*0.404*				
2 (Constant)	66.444	8.691		7.645	0.000	3.034	0.131	0.017	0.012
	67.157	*13.181*		*5.095*	*0.000*	*2.046*	*0.162*	*0.026*	*0.013*
Information	0.171	0.325	0.029	0.527	0.598				
	0.379	*0.448*	*0.068*	*0.846*	*0.399*				
Integration	0.766	0.350	0.121	2.189	0.029				
	0.747	*0.407*	*0.147*	*1.838*	*0.068*				
3 (Constant)	67.841	9.105		7.451	0.000	2.109	0.134	0.018	0.009
	70.694	*13.471*		*5.248*	*0.000*	*1.871*	*0.189*	*0.036*	*0.017*
Information	0.120	0.340	0.020	0.353	0.724				
	0.256	*0.458*	*0.046*	*0.558*	*0.578*				
Integration	0.769	0.350	0.121	2.196	0.029				
	0.722	*0.406*	*0.142*	*1.775*	*0.078*				
Information x I	-0.046	0.088	-0.029	-0.520	0.603				
	0.138	*0.113*	*0.101*	*1.228*	*0.221*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

Table 11 indicates that integration of self- and career information did not moderate the relationship between the information-oriented identity style and academic success for the black first-year students ($b = -0.046$; $t = -0.520$; $p = 0.603$) or the white first-year students ($b = 0.138$; $t = 1.228$; $p = 0.221$).

Table 12 provides the results of the calculation aimed at determining the possible moderating role of career planning in the relationship between the information-oriented identity style and academic success for the two race/ethnic groups.

Table 12

Hierarchical multiple regression of academic success as dependent variable, information-oriented identity style as independent variable and career planning as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	73.487	8.118		9.053	0.000	1.261	0.060	0.004	0.001
	79.482	*11.526*		*6.945*	*0.000*	*0.702*	*0.068*	*0.005*	*-0.002*
Information	0.354	0.316	0.060	1.123	0.262				
	0.378	*0.451*	*0.068*	*0.838*	*0.404*				
2 (Constant)	68.076	8.670		7.852	0.000	2.149	0.111	0.012	0.007
	68.459	*12.577*		*5.443*	*0.000*	*2.386*	*0.174*	*0.030*	*0.018*
Information	0.212	0.325	0.036	0.651	0.516				
	0.271	*0.450*	*0.049*	*0.603*	*0.547*				
Career planning	0.645	0.370	0.096	1.741	0.083				
	0.897	*0.445*	*0.162*	*2.014*	*0.046*				
3 (Constant)	69.779	9.245		7.548	0.000	1.525	0.114	0.013	0.005
	69.787	*13.069*		*5.340*	*0.000*	*1.632*	*0.177*	*0.031*	*0.012*
Information	0.155	0.342	0.026	0.454	0.650				
	0.231	*0.463*	*0.041*	*0.500*	*0.618*				
Career planning	0.635	0.371	0.095	1.710	0.088				
	0.872	*0.451*	*0.157*	*1.931*	*0.055*				
Information x CP	-0.047	0.087	-0.030	-0.535	0.593				
	0.052	*0.135*	*0.032*	*0.388*	*0.699*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

As displayed in Table 12, it is evident that career planning did not moderate the relationship between the information-oriented identity style and academic success for either the black (b = -0.047; t = -0.535; p = 0.593) or white (b = 0.052; t = 0.388; p = 0.699) first-year students.

Table 13 provides the results of the calculation aimed at determining the possible moderating role of FTP in the relationship between the information-oriented identity style and academic success for the two race/ethnic groups.

Table 13

Hierarchical multiple regression of academic success as dependent variable, information-oriented identity style as independent variable and future time perspective as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	73.487	8.118		9.053	0.000	1.261	0.060	0.004	0.001
	79.482	*11.526*		*6.945*	*0.000*	*0.702*	*0.068*	*0.005*	*-0.002*
Information	0.354	0.316	0.060	1.123	0.262				
	0.378	*0.451*	*0.068*	*0.838*	*0.404*				
2 (Constant)	64.582	9.455		6.831	0.000	2.291	0.114	0.013	0.007
	66.650	*12.991*		*5.131*	*0.000*	*2.389*	*0.175*	*0.030*	*0.018*
Information	0.024	0.363	0.004	0.066	0.947				
	-0.133	*0.514*	*-0.024*	*-0.259*	*0.796*				
FTP	0.397	0.218	0.112	1.820	0.070				
	0.607	*0.301*	*0.185*	*2.016*	*0.046*				
3 (Constant)	63.327	10.110		6.264	0.000	1.565	0.116	0.013	0.005
	69.175	*13.612*		*5.082*	*0.000*	*1.720*	*0.182*	*0.033*	*0.014*
Information	0.053	0.373	0.009	0.142	0.887				
	-0.213	*0.530*	*-0.038*	*-0.402*	*0.688*				
FTP	0.406	0.220	0.115	1.845	0.066				
	0.606	*0.302*	*0.185*	*2.006*	*0.047*				
Information x FTP	0.015	0.042	0.020	0.354	0.724				
	-0.045	*0.070*	*-0.053*	*-0.634*	*0.527*				

**	$p \leq 0.05$
*	$p \leq 0.10$

Table 13 indicates that FTP failed to significantly moderate the relationship between the information-oriented identity style and academic success for the black first-year students ($b = 0.015$; $t = 0.354$; $p = 0.724$) and the white first-year students ($b = -0.045$; $t = -0.634$; $p = 0.527$).

Table 14 provides the results of the calculation aimed at determining the possible role of self-information in the relationship between the normative identity style and academic success for the two race/ethnic groups.

Table 14

Hierarchical multiple regression of academic success as dependent variable, normative identity style as independent variable and self-information as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	86.055	4.946		17.399	0.000	0.541	0.039	0.002	-0.001
	78.342	*8.604*		*9.105*	*0.000*	*1.557*	*0.101*	*0.010*	*0.004*
Normative	-0.140	0.191	-0.039	-0.736	0.462				
	0.399	*0.320*	*0.101*	*1.248*	*0.214*				
2 (Constant)	78.465	7.468		10.506	0.000	1.189	0.083	0.007	0.001
	62.051	*11.481*		*5.405*	*0.000*	*3.029*	*0.196*	*0.039*	*0.026*
Normative	-0.137	0.191	-0.039	-0.720	0.472				
	0.442	*0.317*	*0.111*	*1.394*	*0.165*				
Self information	0.498	0.367	0.073	1.355	0.176				
	0.944	*0.447*	*0.169*	*2.113*	*0.036*				
3 (Constant)	75.889	7.677		9.899	0.000	1.492	0.113	0.013	0.004
	62.545	*11.639*		*5.374*	*0.000*	*2.036*	*0.198*	*0.039*	*0.020*
Normative	-0.097	0.192	-0.027	-0.505	0.614				
	0.437	*0.319*	*0.110*	*1.372*	*0.172*				
Self- information	0.603	0.374	0.088	1.612	0.108				
	0.922	*0.454*	*0.165*	*2.030*	*0.044*				
Normative x SI	0.084	0.058	0.080	1.446	0.149				
	0.025	*0.087*	*0.024*	*0.292*	*0.771*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

Table 14 indicates that no significant relationship was found between normative identity style and academic success for first-year students of both race/ethnic groups. Consequently, it was not possible to investigate a mediator effect for this relationship. From Table 14 it is evident that self-information did not significantly moderate the relationship between the normative identity style and academic success for either the black first-year students ($b = 0.084$; $t = 1.446$; $p = 0.149$) or the white first-year students ($b = 0.025$; $t = 0.292$; $p = 0.771$).

Table 15 provides the results of the calculation aimed at determining the possible moderating role of decision making in the relationship between the normative identity style and academic success for the two race/ethnic groups.

Table 15

Hierarchical multiple regression of academic success as dependent variable, normative identity style as independent variable and decision making as intervening variable

Model	Unstandardised coefficients		Standardised coefficients						
				t	p	F	R	R^2	Adjusted R^2
	B	Std. error	β						
1 (Constant)	86.055	4.946		17.399	0.000	0.541	0.039	0.002	-0.001
	79.551	*8.451*		*9.414*	*0.000*	*1.286*	*0.091*	*0.008*	*0.002*
Normative	-0.140	0.191	-0.039	-0.736	0.462				
	0.357	*0.315*	*0.091*	*1.134*	*0.259*				
2 (Constant)	80.754	7.491		10.780	0.000	0.715	0.064	0.004	-0.002
	58.208	*10.928*		*5.327*	*0.000*	*5.100*	*0.251*	*0.063*	*0.051*
Normative	-0.124	0.192	-0.035	-0.645	0.520				
	0.399	*0.308*	*0.102*	*1.299*	*0.196*				
Decision making	0.322	0.341	0.051	0.942	0.347				
	1.241	*0.417*	*0.234*	*2.974*	*0.003*				
3 (Constant)	79.951	7.478		10.691	0.000	1.611	0.118	0.014	0.005
	57.544	*11.031*		*5.217*	*0.000*	*3.471*	*0.254*	*0.065*	*0.046*
Normative	-0.086	0.192	-0.024	-0.450	0.653				
	0.408	*0.309*	*0.104*	*1.322*	*0.188*				
Decision making	0.324	0.340	0.051	0.954	0.341				
	1.267	*0.421*	*0.239*	*3.008*	*0.003*				
Normative x DM	0.098	0.053	0.099	1.842*	0.066				
	-0.041	*0.080*	*-0.041*	*-0.512*	*0.609*				

| ** | p ≤ 0.05 |
| * | p ≤ 0.10 |

It is evident from Table 15 that upon investigation of the interaction effect in model 3, decision making significantly moderated the relationship between the normative identity style and academic success for the black first-year students ($b = 0.098$; $t = 1.842$; $p = 0.066$). However, decision making did not significantly moderate this relationship for the white first-year students ($b = -0.041$; $t = -0.512$; $p = 0.609$).

The nature of this moderator effect was investigated by determining the relationship between the normative identity style and academic success for the black first-year students who respectively showed low and high scores on the moderator variable (decision making). For this, two separate regression lines were determined – one for black first-year students who scored high on decision making (at or higher than the 75th percentile, N=97, or a score of 18 or higher), and a regression line for those students who obtained low scores on decision making (at or lower than the 25th percentile, N=88, or a score of 13 or lower). The regression lines are graphically represented in Figure 1.
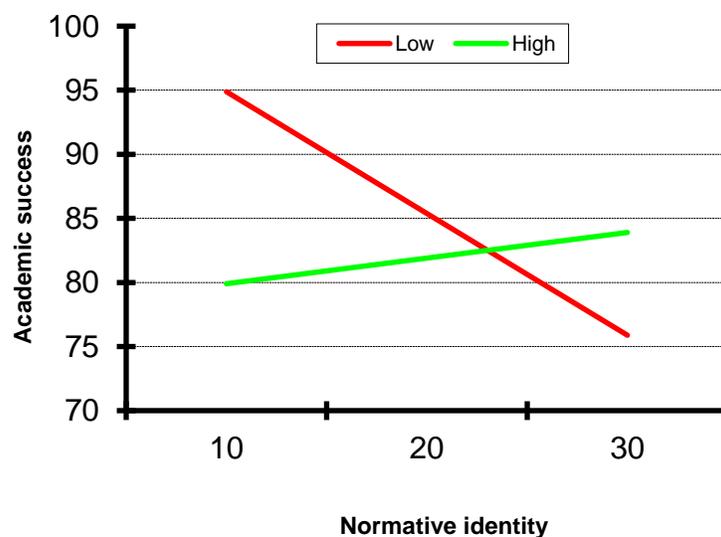
Figure 1:   Regression lines for black first-year students scoring low and high on decision making, with the normative identity style as a predictor of academic success

As seen in Figure 1, a relatively steep decline is found in the slope of the regression line (slope = -0.95) for the black first-year students with low levels of decision making. Therefore, black first-year students with weak decision-making skills will experience a decline in academic success with an increase in normative identity style. For the black first-year students with strong decision-making skills (the uppermost 25%), a slight increase (0.2) was seen in the gradient of the regression line. This indicates that for the black first-year students with strong decision-making skills, an increase in academic success was seen when they reported a stronger normative identity style.

Table 16 provides the results of the calculation aimed at determining the possible moderating role of career information in the relationship between the normative identity style and academic success for the two race/ethnic groups.

Table 16

Hierarchical multiple regression of academic success as dependent variable, normative identity style as independent variable and career information as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	86.055	4.946		17.399	0.000	0.541	0.039	0.002	-0.001
	79.551	*8.451*		*9.414*	*0.000*	*1.286*	*0.091*	*0.008*	*0.002*
Normative	-0.140	0.191	-0.039	-0.736	0.462				
	0.357	*0.315*	*0.091*	*1.134*	*0.259*				
2 (Constant)	84.956	6.884		12.340	0.000	0.296	0.041	0.002	-0.004
	59.403	*11.479*		*5.175*	*0.000*	*3.897*	*0.221*	*0.049*	*0.036*
Normative	-0.137	0.192	-0.039	-0.715	0.475				
	0.483	*0.313*	*0.124*	*1.542*	*0.125*				
Career inf.	0.071	0.310	0.012	0.230	0.818				
	1.078	*0.424*	*0.204*	*2.542*	*0.012*				
3 (Constant)	84.368	6.873		12.276	0.000	1.204	0.102	0.010	0.002
	51.062	*12.359*		*4.132*	*0.000*	*3.654*	*0.260*	*0.068*	*0.049*
Normative	-0.136	0.191	-0.038	-0.713	0.476				
	0.643	*0.325*	*0.164*	*1.983*	*0.049*				
Career inf.	0.121	0.311	0.021	0.390	0.696				
	1.324	*0.444*	*0.250*	*2.981*	*0.003*				
Normative x CI	0.089	0.051	0.093	1.737*	0.083				
	-0.145	*0.083*	*-0.149*	*-1.750**	*0.082*				

**	p ≤ 0.05
*	p ≤ 0.10

In model 3 an investigation of the interaction effect between variables provides evidence, as presented in Table 16, that for the black first-year students (b = 0.089; t = 1.737; p = 0.083) as well as for the white first-year students (b = -0.145; t = -1.750; p = 0.082), career information significantly moderated the relationship between the normative identity style and academic success.

The nature of this moderator effect was investigated by determining the relationship between the normative identity style and academic success for the black first-year students who respectively scored low and high on the moderator variable (career information). For this, two separate regression lines were determined – one for first-year students who scored high on career information (at or higher than the 75th percentile, N=113, or a score of 17 or higher) and one for those students who scored low on career information (at or lower than the 25th percentile, N=87, or a score of 11 or lower).

Figure 2 provides a graphic representation of the regression lines for the black first-year students.
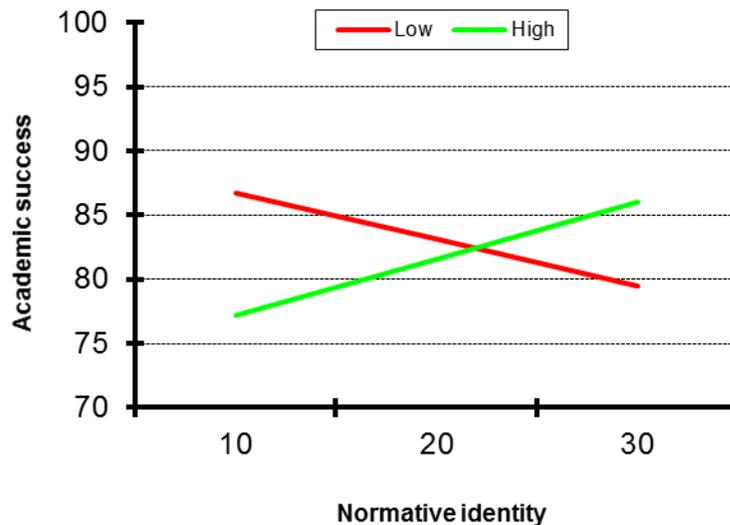
Figure 2:   Regression lines for black first-year students scoring low and high on career information with normative identity style as a predictor of academic success

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Figure 2 shows a relatively steep decline in the slope of the regression line (slope = -0.36) for the black first-year students with low levels of career information. Therefore, black first-year students with low levels of career information will experience a decline in academic success if they have a stronger normative identity style. For the black first-year students with high levels of career information (the uppermost 25%) an increase (slope = 0.44) is seen in the gradient of the regression line. This, in turn, indicates that for the black first-year students with rich career information there is an increase in academic success when a stronger normative identity style is reported.

For the white first-year students the moderator effect was investigated by determining the relationship between the normative identity style and academic success for those who respectively scored low and high on the moderator variable (career information). For this, two separate regression lines were determined – one for first-year students who scored high on career information (at or higher than the 75th percentile, N=58, or a score of 18 or higher) and one for those students who scored low on career information (at or lower than the 25th percentile, N=37, or a score of 13 or lower). These regression lines for the white first-year students are graphically represented in Figure 3.
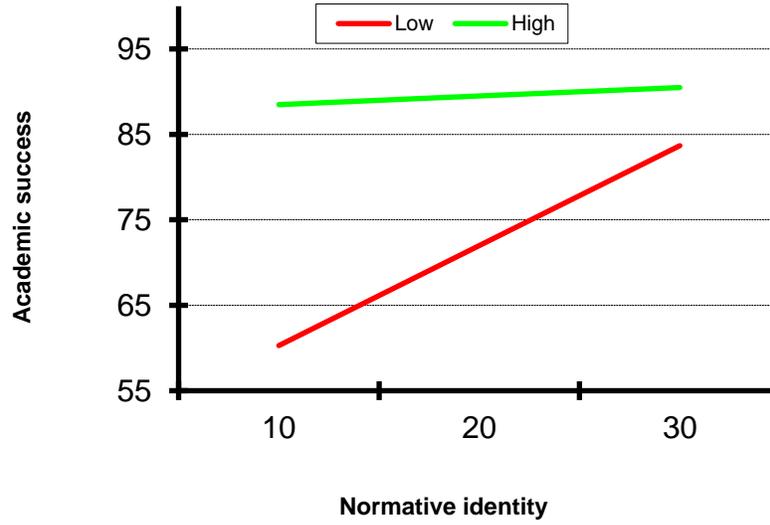
Figure 3:   Regression lines for white first-year students scoring low and high on career information with normative identity style as a predictor of academic success

As shown in Figure 3, it is clear that for the white first-year students with low levels of career information a sharp increase is seen in the slope of the regression line (slope = 1.17). Therefore, white first-year students with low levels of career information experience an increase in academic success when a stronger normative identity style is shown. For the white first-year students with high levels of career information (the uppermost 25%), a very slight increase is seen in the slope of the regression line (slope = 0.1), thus indicating that for the white first-year students with rich career information, there is a slight increase in academic success when a stronger normative identity style is shown. Furthermore, as shown in Figure 3, for students who reported a weak normative identity style, a large difference in academic success was found between the groups with high and low career information.

Table 17 provides the results of the calculation aimed at determining the possible moderating role of integration of self- and career information in the relationship between normative identity style and academic success for the two race/ethnic groups.

Table 17

Hierarchical multiple regression of academic success as dependent variable, normative identity style as independent variable and integration as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	86.055	4.946		17.399	0.000	0.541	0.039	0.002	-0.001
	79.551	*8.451*		*9.414*	*0.000*	*1.286*	*0.091*	*0.008*	*0.002*
Normative	-0.140	0.191	-0.039	-0.736	0.462				
	0.357	*0.315*	*0.091*	*1.134*	*0.259*				
2 (Constant)	72.741	7.513		9.683	0.000	3.019	0.131	0.017	0.011
	64.072	*11.398*		*5.621*	*0.000*	*2.657*	*0.184*	*0.034*	*0.021*
Normative	-0.095	0.191	-0.027	-0.499	0.618				
	0.434	*0.314*	*0.111*	*1.382*	*0.169*				
Integration	0.796	0.340	0.126	2.343	0.020				
	0.816	*0.408*	*0.161*	*2.001*	*0.047*				
3 (Constant)	71.966	7.513		9.578	0.000	2.831	0.155	0.024	0.016
	57.740	*11.840*		*4.876*	*0.000*	*2.893*	*0.233*	*0.054*	*0.036*
Normative	-0.077	0.190	-0.022	-0.405	0.686				
	0.496	*0.314*	*0.127*	*1.581*	*0.116*				
Integration	0.828	0.340	0.131	2.437	0.015				
	1.088	*0.432*	*0.214*	*2.519*	*0.013*				
Normative x I	0.082	0.053	0.083	1.559	0.120				
	-0.147	*0.081*	*-0.153*	*-1.812**	*0.072*				

** $p \leq 0.05$

* $p \leq 0.10$

Upon investigation of the interaction effect in model 3, it is evident from Table 17 that integration significantly moderated the relationship between normative identity style and academic success for the white first-year students (b = -1.147; t = -1.812; p = 0.072). Integration, however, did not succeed in significantly moderating the relationship between the normative identity style and academic success for the black first-year students (b = 0.082; t = 1.559; p = 0.120).

For the white first-year students the moderator effect was investigated by determining the relationship between normative identity style and academic success for those who respectively scored low and high on the moderator variable (integration). For this, two separate regression lines were determined – one for first-year students who scored high on integration (at or higher than the 75th percentile, N=56, or a score of 19 or higher) and one for those students who scored low on integration (at or lower than the 25th percentile, N=38, or a score of 14 or lower). The regression lines are graphically represented in Figure 4.
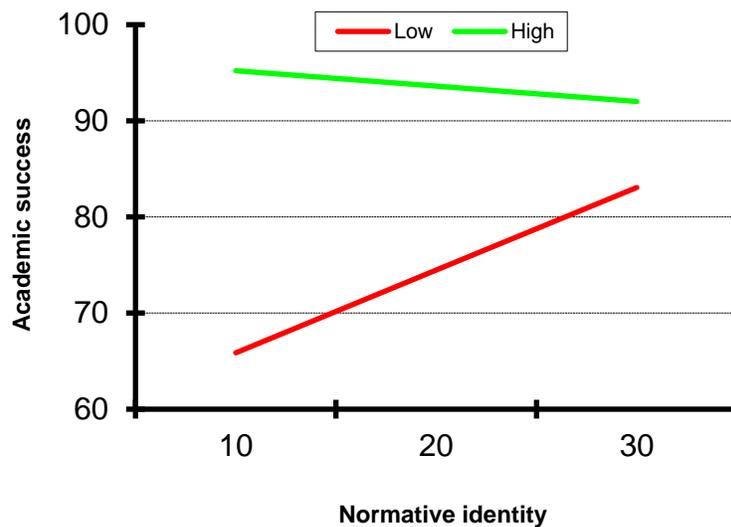
Figure 4:   Regression   lines   for   white   first-year   students   scoring   low   and   high   on
              integration with normative identity style as a predictor of academic success

Figure 4 clearly demonstrates that for the white first-year students with low levels

of integration, an increase was seen in the slope of the regression line (slope = 0.86).

Therefore, the white first-year students with low levels of integration experienced an

increase in academic success when they had a stronger normative identity style. For the

white first-year students with high levels of integration (the uppermost 25%), a very

slight decrease was seen in the slope of the regression line (slope = -0.16). This in turn

indicates that for the white first-year students with high levels of integration, there was a

slight decrease in academic success when a stronger normative identity style was shown.

Figure 4 further illustrates that for students with a weaker normative identity style, there

was a large difference in academic success between the groups with high and low

integration scores. In such cases, the white first-year students with high levels of

integration demonstrated greater academic success than the white first-year students with

low levels of integration.

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Table 18 provides the results of the calculation aimed at determining the possible moderating role of career planning in the relationship between normative identity style and academic success for the two race/ethnic groups.

Table 18

Hierarchical multiple regression of academic success as dependent variable, normative identity style as independent variable and career planning as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	B						
1 (Constant)	86.055	4.946		17.399	0.000	0.541	0.039	0.002	-0.001
	79.551	*8.451*		*9.414*	*0.000*	*1.286*	*0.091*	*0.008*	*0.002*
Normative	-0.140	0.191	-0.039	-0.736	0.462				
	0.357	*0.315*	*0.091*	*1.134*	*0.259*				
2 (Constant)	75.058	7.662		9.797	0.000	2.030	0.108	0.012	0.006
	59.184	*11.905*		*4.971*	*0.000*	*3.526*	*0.211*	*0.044*	*0.032*
Normative	-0.083	0.193	-0.023	-0.432	0.666				
	0.509	*0.317*	*0.130*	*1.606*	*0.110*				
Career planning	0.681	0.363	0.101	1.875	0.062				
	1.072	*0.448*	*0.194*	*2.393*	*0.018*				
3 (Constant)	74.483	7.622		9.720	0.000	2.002	0.131	0.017	0.009
	54.753	*12.504*		*4.379*	*0.000*	*2.794*	*0.229*	*0.053*	*0.034*
Normative	-0.061	0.193	-0.017	-0.317	0.751				
	0.601	*0.326*	*0.154*	*1.841*	*0.068*				
Career planning	0.699	0.363	0.104	1.927	0.055				
	1.184	*0.458*	*0.214*	*2.585*	*0.011*				
Normative x CP	0.083	0.060	0.075	1.391	0.165				
	-0.105	*0.092*	*-0.095*	*-1.147*	*0.253*				

** $p \leq 0.05$
* $p \leq 0.10$

As is shown in Table 18, career planning did not significantly moderate the relationship between normative identity style and academic success for the black first-year students ($b = 0.083$; $t = 1.391$; $p = 0.165$), or for the white first-year students ($b = -0.105$; $t = -1.147$; $p = 0.253$).

Table 19 provides the results of the calculation aimed at determining the possible moderating role of FTP in the relationship between the normative identity style and academic success for the two race/ethnic groups.

Table 19

Hierarchical multiple regression of academic success as dependent variable, normative identity style as independent variable and future time perspective as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	B						
1 (Constant)	86.055	4.946		17.399	0.000	0.541	0.039	0.002	-0.001
	79.551	*8.451*		*9.414*	*0.000*	*1.286*	*0.091*	*0.008*	*0.002*
Normative	-0.140	0.191	-0.039	-0.736	0.462				
	0.399	*0.320*	*0.101*	*1.248*	*0.214*				
2 (Constant)	68.663	8.837		7.770	0.000	3.077	0.132	0.017	0.012
	56.696	*13.585*		*4.173*	*0.000*	*2.934*	*0.193*	*0.037*	*0.024*
Normative	-0.242	0.194	-0.068	-1.247	0.213				
	0.330	*0.312*	*0.084*	*1.060*	*0.291*				
FTP	0.458	0.194	0.129	2.368	0.018				
	0.558	*0.261*	*0.170*	*2.133*	*0.034*				
3 (Constant)	68.765	8.854		7.767	0.000	2.085	0.133	0.018	0.009
	58.020	*13.844*		*4.191*	*0.000*	*2.041*	*0.197*	*0.039*	*0.020*
Normative	-0.258	0.200	-0.073	-1.291	0.198				
	0.313	*0.314*	*0.080*	*0.997*	*0.320*				
FTP	0.463	0.194	0.131	2.383	0.018				
	0.537	*0.265*	*0.164*	*2.026*	*0.045*				
Normative x FTP	0.010	0.029	0.019	0.343	0.732				
	0.026	*0.050*	*0.043*	*0.531*	*0.596*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

It is evident from Table 19 that FTP did not significantly moderate the relationship between the normative identity style and academic success for the black first-year students ($b = 0.010$; $t = 0.343$; $p = 0.732$), or for the white first-year students ($b = 0.026$; $t = 0.531$; $p = 0.597$).

Table 20 provides the results of the calculation aimed at determining the possible moderating role of self-information in the relationship between the diffuse-avoidant identity style and academic success for the two race/ethnic groups.

Table 20

Hierarchical multiple regression of academic success as dependent variable, diffuse-avoidant identity style as independent variable and self-information as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	B						
1 (Constant)	86.367	3.767		22.926	0.000	1.151	0.057	0.003	0.000
	89.033	*4.939*		*18.027*	*0.000*	*0.001*	*0.002*	*0.000*	*-0.007*
Diffuse	-0.185	0.172	-0.002	-1.073	0.284				
	-0.006	*0.219*	*0.001*	*-0.028*	*0.978*				
2 (Constant)	78.744	8.062		9.768	0.000	1.148	0.081	0.007	0.001
	67.136	*11.078*		*6.060*	*0.000*	*2.423*	*0.176*	*0.031*	*0.018*
Diffuse	-0.120	0.183	-0.037	-0.660	0.510				
	0.207	*0.237*	*0.077*	*0.874*	*0.384*				
Self-information	0.416	0.389	0.061	1.069	0.286				
	1.079	*0.490*	*0.193*	*2.201*	*0.029*				
3 (Constant)	78.661	8.079		9.737	0.000	0.787	0.082	0.007	-0.002
	68.241	*11.059*		*6.171*	*0.000*	*2.368*	*0.213*	*0.045*	*0.026*
Diffuse	-0.112	0.186	-0.035	-0.601	0.548				
	0.237	*0.237*	*0.088*	*1.000*	*0.319*				
Self-information	0.417	0.390	0.061	1.069	0.286				
	1.027	*0.489*	*0.184*	*2.098*	*0.038*				
Diffuse x SI	0.016	0.058	0.015	0.266	0.790				
	0.092	*0.062*	*0.120*	*1.490*	*0.138*				

| ** | $p \le 0.05$ |
| * | $p \le 0.10$ |

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As is evident from Table 20, no significant relationship exists between diffuse-avoidant identity and academic success for both the black and white first-year students. Consequently, it was not possible to investigate a mediator effect for this relationship. The results in Table 20 indicate that self-information did not significantly moderate the relationship between the diffuse-avoidant identity style and academic success for either the black ($b = 0.016$; $t = 0.266$; $p = 0.790$) or the white ($b = 0.092$; $t = 1.490$; $p = 0.138$) first-years.

Table 21 provides the results of the calculation aimed at determining the possible moderating role of decision making in the relationship between the diffuse-avoidant identity style and academic success for the two race/ethnic groups.

Table 21

Hierarchical multiple regression of academic success as dependent variable, diffuse-avoidant identity style as independent variable and decision making as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	B						
1 (Constant)	86.367	3.767		22.926	0.000	1.151	0.057	0.003	0.000
	89.407	*4.883*		*18.311*	*0.000*	*0.009*	*0.008*	*0.000*	*-0.006*
Diffuse	-0.185	0.172	-0.002	-1.073	0.284				
	-0.020	*0.217*	*-0.008*	*-0.094*	*0.925*				
2 (Constant)	81.795	7.977		10.253	0.000	0.786	0.067	0.005	-0.001
	55.115	*11.387*		*4.840*	*0.000*	*5.486*	*0.259*	*0.067*	*0.055*
Diffuse	-0.139	0.186	-0.043	-0.747	0.456				
	0.377	*0.242*	*0.140*	*1.555*	*0.122*				
Decision making	0.239	0.367	0.038	0.650	0.516				
	1.585	*0.479*	*0.299*	*3.311*	*0.001*				
3 (Constant)	82.439	7.981		10.329	0.000	1.150	0.100	0.010	0.001
	58.004	*11.914*		*4.869*	*0.000*	*3.882*	*0.268*	*0.072*	*0.053*
Diffuse	-0.106	0.188	-0.033	-0.564	0.573				
	0.372	*0.243*	*0.138*	*1.532*	*0.128*				
Decision making	0.190	0.368	0.030	0.516	0.606				
	1.446	*0.507*	*0.272*	*2.852*	*0.005*				
Diffuse x DM	0.072	0.053	0.075	1.369	0.172				
	0.041	*0.049*	*0.070*	*0.834*	*0.406*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

It is evident from Table 21 that decision making failed to moderate the relationship between the diffuse-avoidant identity style and academic success with any significance for both the black first-year students ($b = 0.072$; $t = 1.369$; $p = 0.172$) and the white first-year students ($b = 0.041$; $t = 0.834$; $p = 0.406$).

Table 22 provides the results of the calculation aimed at determining the possible moderating role of career information in the relationship between the diffuse-avoidant identity style and academic success for the two race/ethnic groups.

Table 22

Hierarchical multiple regression of academic success as dependent variable, diffuse-avoidant identity style as independent variable and career information as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	86.367	3.767		22.926	0.000	1.151	0.057	0.003	0.000
	89.407	*4.883*		*18.311*	*0.000*	*0.009*	*0.008*	*0.000*	*-0.006*
Diffuse	-0.185	0.172	-0.002	-1.073	0.284				
	-0.020	*0.217*	*-0.008*	*-0.094*	*0.925*				
2 (Constant)	86.315	6.677		12.927	0.000	0.574	0.057	0.003	-0.002
	68.886	*9.722*		*7.049*	*0.000*	*2.913*	*0.192*	*0.037*	*0.024*
Diffuse	-0.185	0.179	-0.057	-1.032	0.303				
	0.156	*0.226*	*0.058*	*0.691*	*0.491*				
Career inf.	0.003	0.320	0.001	0.009	0.992				
	1.074	*0.445*	*0.203*	*2.412*	*0.017*				
3 (Constant)	86.377	6.712		12.869	0.000	0.385	0.058	0.003	-0.005
	72.766	*9.905*		*7.346*	*0.000*	*3.168*	*0.243*	*0.059*	*0.041*
Diffuse	-0.188	0.181	-0.058	-1.034	0.302				
	0.130	*0.225*	*0.048*	*0.579*	*0.563*				
Career inf.	0.001	0.321	0.000	0.003	0.998				
	0.919	*0.449*	*0.174*	*2.046*	*0.043*				
Diffuse x CI	-0.005	0.051	-0.006	-0.105	0.916				
	0.110	*0.058*	*0.152*	*1.892**	*0.060*				

** $p \leq 0.05$

* $p \leq 0.10$

Upon investigation of the interaction effect in model 3, it is evident from Table 22 that for the white first-year students ($b = 0.110$; $t = 1.892$; $p = 0.060$), career information significantly moderated the relationship between the diffuse-avoidant identity style and academic success. For the black first-year students ($b = -0.005$; $t = -0.105$; $p = 0.916$) career information, however, did not significantly moderate this relationship.

The nature of this moderator effect was investigated by determining the relationship between the diffuse-avoidant identity style and academic success for the white first-year students who respectively scored low and high on the moderator variable (career information). For this, two separate regression lines were determined – one for first-year students who scored high on career information (at or higher than the 75th percentile, N=58, or a score of 18 or higher) and one for those students who scored low on career information (at or lower than the 25th percentile, N=37, or a score of 13 or lower). The regression lines are graphically represented in Figure 5.

Figure 5: Regression lines for white first-year students scoring low and high on career information with diffuse-avoidant identity style as a predictor of academic success

As shown in Figure 5, it is evident that a decrease was seen in the slope of the regression line (slope = -0.31) for the white first-year students with low levels of career information. Therefore, white first-year students with poor career information experienced a decrease in academic success when there was an increase in diffuse-avoidant identity style. However, for the white first-year students with high levels of career information (the uppermost 25%), an increase was seen in the slope of the regression line (slope = 0.57). This in turn indicates that for the white first-year students with rich career information, there is an increase in academic success when a stronger diffuse-avoidant identity style is shown. Figure 5 further illustrates that for students who reported low diffuse-avoidant identity style, there were no significant differences in academic success between the groups with high and low career information. Differences were only shown when there was an increase in diffuse-avoidant identity style.

Table 23 provides the results of the calculation aimed at determining the possible moderating role of integration of self- and career information in the relationship between diffuse-avoidant identity style and academic success for the two race/ethnic groups.

Table 23

Hierarchical multiple regression of academic success as dependent variable, diffuse-avoidant identity style as independent variable and integration as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R^2	Adjusted R^2
	B	Std. error	β						
1 (Constant)	86.367	3.767		22.926	0.000	1.151	0.057	0.003	0.000
	89.407	*4.883*		*18.311*	*0.000*	*0.009*	*0.008*	*0.000*	*-0.006*
Diffuse	-0.185	0.172	-0.002	-1.073	0.284				
	-0.020	*0.217*	*-0.008*	*-0.094*	*0.925*				
2 (Constant)	72.119	7.523		9.586	0.000	2.967	0.130	0.017	0.011
	71.680	*10.321*		*6.945*	*0.000*	*1.895*	*0.156*	*0.024*	*0.011*
Diffuse	-0.068	0.180	-0.021	-0.381	0.703				
	0.151	*0.233*	*0.056*	*0.649*	*0.518*				
Integration	0.774	0.354	0.122	2.184	0.030				
	0.855	*0.440*	*0.168*	*1.945*	*0.054*				
3 (Constant)	71.875	7.539		9.534	0.000	2.112	0.134	0.018	0.009
	72.810	*10.236*		*7.113*	*0.000*	*2.622*	*0.223*	*0.050*	*0.031*
Diffuse	-0.043	0.184	-0.013	-0.235	0.814				
	0.208	*0.232*	*0.077*	*0.895*	*0.372*				
Integration	0.769	0.355	0.121	2.168	0.031				
	0.777	*0.437*	*0.153*	*1.778*	*0.077*				
Diffuse x I	0.031	0.049	0.035	0.641	0.522				
	0.105	*0.052*	*0.162*	*2.00***	*0.047*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

An investigation of the interaction effect in model 3 provides evidence, as presented in Table 23, that for the white first-year students ($b = 0.105$; $t = 2.000$; $p = 0.047$) integration significantly moderated the relationship between the diffuse-avoidant identity style and academic success. Integration, however, did not moderate the relationship between diffuse-avoidant identity style and academic success for the black first-year students ($b = 0.031$; $t = 0.641$; $p = 0.522$).

The nature of this moderator effect was investigated by determining the relationship between the diffuse-avoidant identity style and academic success for the white first-year students who respectively scored low and high on the moderator variable (integration). For this, two separate regression lines were determined – one for first-year students who scored high on integration (at or higher than the 75th percentile, N=56, or a score of 19 or higher) and one for those students who scored low on integration (at or lower than the 25th percentile, N=37, or a score of 14 or lower). The regression lines are graphically represented in Figure 6.
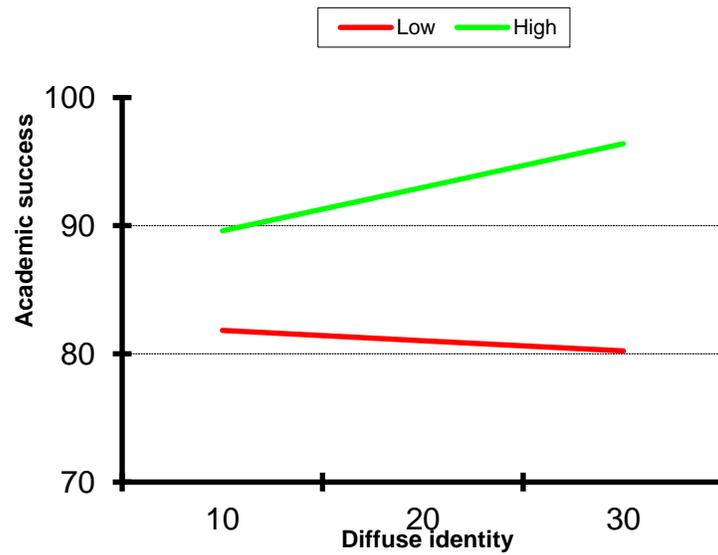
Figure 6:   Regression lines for white first-year students scoring low and high on integration with diffuse-avoidant identity style as a predictor of academic success

From Figure 6 it is evident that for the white first-year students with low levels of integration, a slight decrease was seen in the slope of the regression line (slope = -0.08). Therefore, white first-year students with low levels of integration experienced a slight decrease in academic success with an increase in diffuse-avoidant identity style. However, for the white first-year students with high levels of integration (the uppermost 25%), an increase was seen in the slope of the regression line (slope = 0.34). White first-year students with high levels of integration therefore experienced an increase in academic success as an increase in diffuse-avoidant identity style was shown. Figure 6 illustrates that for students who reported low diffuse-avoidant identity style, a minor difference in academic success was found between the groups with high and low

integration. A significant difference was found only when there was an increase in diffuse-avoidant identity style.

Table 24 provides the results of the calculation aimed at determining the possible moderating role of career planning in the relationship between the diffuse-avoidant identity style and academic success for the two race/ethnic groups.

Table 24

Hierarchical multiple regression of academic success as dependent variable, diffuse-avoidant identity style as independent variable and career planning as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	86.367	3.767		22.926	0.000	1.151	0.057	0.003	0.000
	89.407	*4.883*		*18.311*	*0.000*	*0.009*	*0.008*	*0.000*	*-0.006*
Diffuse	-0.185	0.172	-0.002	-1.073	0.284				
	-0.020	*0.217*	*-0.008*	*-0.094*	*0.925*				
2 (Constant)	74.973	7.687		9.753	0.000	2.022	0.107	0.012	0.006
	67.828	*10.663*		*6.361*	*0.000*	*2.577*	*0.181*	*0.033*	*0.020*
Diffuse	-0.076	0.184	-0.024	-0.414	0.679				
	0.203	*0.236*	*0.075*	*0.858*	*0.392*				
Career planning	0.650	0.383	0.097	1.699	0.090				
	1.102	*0.486*	*0.199*	*2.268*	*0.025*				
3 (Constant)	73.966	7.772		9.517	0.000	1.612	0.118	0.014	0.005
	69.099	*10.599*		*6.519*	*0.000*	*2.908*	*0.234*	*0.055*	*0.036*
Diffuse	-0.034	0.190	-0.010	-0.178	0.859				
	0.233	*0.235*	*0.087*	*0.992*	*0.323*				
Career planning	0.684	0.385	0.102	1.779	0.076				
	1.050	*0.483*	*0.190*	*2.175*	*0.031*				
Diffuse x CP	0.049	0.055	0.049	0.891	0.373				
	0.109	*0.058*	*0.149*	*1.867**	*0.064*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

Upon investigation of the interaction effect in model 3, as presented in Table 24, it is evident that for the white first-year students ($b = 0.109$; $t = 1.867$; $p = 0.064$) career planning significantly moderated the relationship between the diffuse-avoidant identity style and academic success. Career planning, however, did not moderate the relationship between the diffuse-avoidant identity style and academic success for the black first-year students ($b = 0.049$; $t = 0.891$; $p = 0.373$).

The nature of this moderator effect was investigated by determining the relationship between the diffuse-avoidant identity style and academic success for the white first-year students who respectively scored low and high on the moderator variable (career planning). For this, two separate regression lines were determined – one for first-year students who scored high on career planning (at or higher than the 75th percentile, N=28, or a score of 19 or higher) and one for those students who scored low on career planning (at or lower than the 25th percentile, N=35, or a score of 12 or lower). The regression lines are graphically represented in Figure 7.
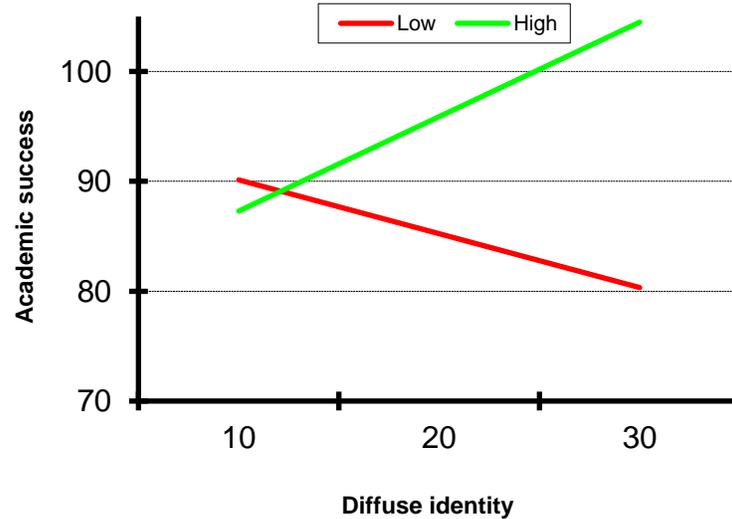
Figure 7:   Regression lines for white first-year students with low and high career planning, with diffuse-avoidant identity style as a predictor of academic success

As illustrated in Figure 7 it is evident that for the white first-year students with low levels of career planning, a decrease was seen in the slope of the regression line (slope = -0.49). White first-year students with low levels of career planning experienced a decrease in academic success as an increase in diffuse-avoidant identity style was seen. However, for the white first-year students with high levels of career planning (the uppermost 25%), an increase was seen in the slope of the regression line (slope = 0.86), thus indicating that white first-year students with high levels of career planning experienced an increase in academic success when there was a stronger diffuse-avoidant identity style. From Figure 7 it is evident that for students who reported low levels of diffuse-avoidant identity style, the difference in academic success between the groups with high and low career planning was less than when there was an increase. A

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significant difference only occurred when there was an increase in diffuse-avoidant identity style.

Table 25 provides the results of the calculation aimed at determining the possible moderating role of FTP in the relationship between the diffuse-avoidant identity style and academic success for the two race/ethnic groups.

Table 25

Hierarchical multiple regression of academic success as dependent variable, diffuse-avoidant identity style as independent variable and future time perspective as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	*t*	*P*	*F*	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	86.367	3.767		22.926	0.000	1.151	0.057	0.003	0.000
	89.407	*4.883*		*18.311*	*0.000*	*0.009*	*0.008*	*0.000*	*-0.006*
Diffuse	-0.185	0.172	-0.002	-1.073	0.284				
	-0.020	*0.217*	*-0.008*	*-0.094*	*0.925*				
2 (Constant)	68.705	9.440		7.278	0.000	2.659	0.123	0.015	0.009
	63.228	*12.919*		*4.894*	*0.000*	*2.390*	*0.175*	*0.030*	*0.018*
Diffuse	-0.147	0.173	-0.046	-0.854	0.394				
	0.057	*0.218*	*0.021*	*0.264*	*0.792*				
FTP	0.387	0.190	0.109	2.039	0.042				
	0.580	*0.266*	*0.177*	*2.184*	*0.030*				
3 (Constant)	68.106	9.628		7.073	0.000	1.804	0.124	0.015	0.007
	58.751	*13.403*		*4.383*	*0.000*	*2.101*	*0.200*	*0.040*	*0.021*
Diffuse	-0.136	0.176	-0.042	-0.772	0.441				
	0.148	*0.230*	*0.055*	*0.645*	*0.520*				
FTP	0.395	0.192	0.111	2.060	0.040				
	0.633	*0.269*	*0.193*	*2.356*	*0.020*				
Diffuse x FTP	-0.008	0.026	-0.018	-0.327	0.744				
	-0.045	*0.037*	*-0.104*	*-1.227*	*0.222*				

**   p ≤ 0.05
*   p ≤ 0.10

Future time perspective failed to significantly moderate the relationship between the diffuse-avoidant identity style and academic success for both the black first-year students (b = -0.008; t = -0.327; p = 0.744) as well as the white first-year students (b = -0.045; t = -1.227; p = 0.222).

Table 26 provides the results of the calculation aimed at determining the possible role of self-information in the relationship between identity commitment and academic success for the two race/ethnic groups.

Table 26

Hierarchical multiple regression of academic success as dependent variable, identity commitment as independent variable and self-information as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	P	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	74.265	8.388		8.854	0.000	0.985	0.053	0.003	0.000
	51.713	*11.322*		*4.567*	*0.000*	*10.99*	*0.260*	*0.067*	*0.061*
Commitment	0.210	0.212	0.053	0.993	0.322				
	0.980	*0.296*	*0.260*	*3.314*	*0.001*				
2 (Constant)	71.854	8.698		8.261	0.000	1.040	0.077	0.006	0.000
	51.515	*11.389*		*4.523*	*0.000*	*5.486*	*0.260*	*0.068*	*0.055*
Commitment	0.109	0.233	0.028	0.470	0.639				
	0.933	*0.360*	*0.247*	*2.594*	*0.010*				
Self-information	0.423	0.404	0.062	1.046	0.296				
	0.125	*0.532*	*0.022*	*0.235*	*0.814*				
3 (Constant)	72.415	9.691		7.473	0.000	0.697	0.078	0.006	-0.003
	51.491	*12.338*		*4.173*	*0.000*	*3.633*	*0.260*	*0.068*	*0.049*
Commitment	0.098	0.247	0.025	0.398	0.691				
	0.933	*0.362*	*0.247*	*2.578*	*0.011*				
Self- information	0.418	0.406	0.061	1.030	0.304				
	0.126	*0.562*	*0.023*	*0.224*	*0.823*				
Commitment x SI	-0.009	0.072	-0.008	-0.132	0.895				
	0.000	*0.084*	*0.000*	*0.005*	*0.996*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

Table 26 indicates a significant positive beta (β) coefficient (β=.26) at the 1% level between commitment identity style and academic performance for the white first-year students. No significant relationship exists between commitment and academic performance for the black first-year students. A mediator effect in this relationship could therefore only be investigated for the white and not the black students. As evident in Table 26, self-information did not significantly moderate the relationship between identity commitment and academic success for both the black first-year students ($b = -0.009$; $t = -0.132$; $p = 0.895$) and the white first-year students ($b = 0.000$; $t = 0.005$; $p = 0.996$).

Table 27 provides the results of the calculation aimed at determining the possible role (mediator or moderator) of decision making in the relationship between identity commitment and academic success for the white students and a moderating role for the black students.

Table 27

Hierarchical multiple regression of academic success as dependent variable, identity commitment as independent variable and decision making as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	*t*	*P*	*F*	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	74.265	8.388		8.854	0.000	0.985	0.053	0.003	0.000
	52.751	*11.255*		*4.687*	*0.000*	*10.55*	*0.254*	*0.064*	*0.058*
Commitment	0.210	0.212	0.053	0.993	0.322				
	0.956	*0.294*	*0.254*	*3.247*	*0.001*				
2 (Constant)	73.214	8.557		8.556	0.000	0.693	0.063	0.004	-0.002
	51.480	*11.256*		*4.574*	*0.000*	*6.297*	*0.277*	*0.077*	*0.064*
Commitment	0.144	0.236	0.036	0.611	0.542				
	0.692	*0.348*	*0.184*	*1.988*	*0.049*				
Decision making	0.240	0.379	0.038	0.635	0.526				
	0.691	*0.491*	*0.130*	*1.407*	*0.161*				
3 (Constant)	74.894	9.888		7.574	0.000	0.499	0.066	0.004	-0.004
	51.963	*12.114*		*4.289*	*0.000*	*4.175*	*0.277*	*0.077*	*0.058*
Commitment	0.106	0.262	0.027	0.406	0.685				
	0.695	*0.350*	*0.185*	*1.985*	*0.049*				
Decision making	0.238	0.379	0.038	0.628	0.530				
	0.661	*0.563*	*0.124*	*1.173*	*0.243*				
Commitment x DM	-0.020	0.060	-0.021	-0.340	0.734				
	-0.009	*0.082*	*-0.010*	*-0.110*	*0.912*				

| ** | p ≤ 0.05 |
| * | p ≤ 0.10 |

From Table 27 it is evident that decision making did not significantly moderate the relationship between identity commitment and academic success for the black first-year students ($b = -0.021$; $t = -0.340$; $p = 0.734$) or for the white first-year students ($b = -0.009$; $t = -0.110$; $p = 0.912$). It is also clear from the results in Table 27 that decision making could not be identified as a mediator in the relationship between identity commitment and academic performance for the white first-year students.

Table 28 provides the results of the calculation aimed at determining the possible role (mediator or moderator) of career information in the relationship between identity commitment and academic success for the white students and a moderating role for the black students.

Table 28

Hierarchical multiple regression of academic success as dependent variable, identity commitment as independent variable and career information as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	74.265	8.388		8.854	0.000	0.985	0.053	0.003	0.000
	52.751	*11.255*		*4.687*	*0.000*	*10.55*	*0.254*	*0.064*	*0.058*
Commitment	0.210	0.212	0.053	0.993	0.322				
	0.956	*0.294*	*0.254*	*3.247*	*0.001*				
2 (Constant)	74.226	8.687		8.545	0.000	0.491	0.053	0.003	-0.003
	49.935	*11.482*		*4.349*	*0.000*	*6.008*	*0.271*	*0.073*	*0.061*
Commitment	0.209	0.220	0.053	0.949	0.343				
	0.809	*0.318*	*0.215*	*2.541*	*0.012*				
Career inf.	0.006	0.321	0.001	0.018	0.986				
	0.537	*0.448*	*0.101*	*1.200*	*0.232*				
3 (Constant)	80.325	9.577		8.387	0.000	1.079	0.096	0.009	0.001
	50.747	*12.024*		*4.220*	*0.000*	*3.999*	*0.271*	*0.074*	*0.055*
Commitment	0.050	0.244	0.013	0.205	0.838				
	0.806	*0.320*	*0.214*	*2.522*	*0.013*				
Career inf.	0.048	0.322	0.008	0.149	0.881				
	0.499	*0.478*	*0.094*	*1.045*	*0.298*				
Commitment x CI	-0.088	0.058	-0.089	-1.500	0.135				
	-0.017	*0.073*	*-0.020*	*-0.235*	*0.814*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

Table 28 indicates that career information failed to significantly moderate the relationship between identity commitment and academic success for the black first-year students (b = -0.088; t = -1.500; p = 0.135) and for the white first-year students (b = -0.017; t = -0.235; p = 0.814). It is also clear from the results in Table 28 that career information could not be identified as a mediator in the relationship between identity commitment and academic performance for the white students.

Table 29 provides the results of the calculation aimed at determining the possible role (mediator or moderator) of integration of self- and career information in the relationship between identity commitment and academic success for the white students and a moderating role for the black students.

Table 29

Hierarchical multiple regression of academic success as dependent variable, identity commitment as independent variable and integration as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	74.265	8.388		8.854	0.000	0.985	0.053	0.003	0.000
	52.751	*11.255*		*4.687*	*0.000*	*10.55*	*0.254*	*0.064*	*0.058*
Commitment	0.210	0.212	0.053	0.993	0.322				
	0.956	*0.294*	*0.254*	*3.247*	*0.001*				
2 (Constant)	67.907	8.823		7.696	0.000	2.941	0.129	0.017	0.011
	51.038	*11.542*		*4.422*	*0.000*	*5.495*	*0.260*	*0.067*	*0.055*
Commitment	0.068	0.220	0.017	0.308	0.758				
	0.872	*0.319*	*0.232*	*2.732*	*0.007*				
Integration	0.782	0.354	0.123	2.210	0.028				
	0.298	*0.430*	*0.059*	*0.693*	*0.490*				
3 (Constant)	73.790	9.548		7.729	0.000	2.814	0.155	0.024	0.015
	48.884	*12.211*		*4.003*	*0.000*	*3.748*	*0.263*	*0.069*	*0.051*
Commitment	-0.088	0.241	-0.022	-0.366	0.715				
	0.886	*0.321*	*0.235*	*2.761*	*0.006*				
Integration	0.831	0.354	0.131	2.345	0.020				
	0.380	*0.456*	*0.075*	*0.833*	*0.406*				
Commitment x I	-0.101	0.063	-0.093	-1.592	0.112				
	0.040	*0.073*	*0.047*	*0.551*	*0.582*				

| ** | $p \leq 0.05$ |
| * | $p \leq 0.10$ |

Integration of self- and career information, as evident from Table 29, failed to significantly moderate the relationship between identity commitment and academic success for the black first-year students (b = -0.101; t = -1.592; p = 0.112) as well as for the white first-year students (b = 0.040; t = 0.551; p = 0.582). It is also clear from Table 29 that integration of self -and career information could not be identified as a moderator in the relationship between identity commitment and academic performance for the white first-year students.

Table 30 provides the results of the calculation aimed at determining the possible role (mediator or moderator) of career planning in the relationship between identity commitment and academic success for the white students and a moderating role for the black students.

Table 30

Hierarchical multiple regression of academic success as dependent variable, identity commitment as independent variable and career planning as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	P	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	74.265	8.388		8.854	0.000	0.985	0.053	0.003	0.000
	52.751	*11.255*		*4.687*	*0.000*	*10.55*	*0.254*	*0.064*	*0.058*
Commitment	0.210	0.212	0.053	0.993	0.322				
	0.956	*0.294*	*0.254*	*3.247*	*0.001*				
2 (Constant)	69.578	8.781		7.923	0.000	2.028	0.108	0.012	0.006
	51.064	*11.448*		*4.461*	*0.000*	*5.608*	*0.262*	*0.069*	*0.056*
Commitment	0.095	0.221	0.024	0.427	0.670				
	0.840	*0.326*	*0.223*	*2.574*	*0.011*				
Career planning	0.657	0.376	0.098	1.750	0.081				
	0.399	*0.480*	*0.072*	*0.831*	*0.407*				
3 (Constant)	70.194	9.813		7.153	0.000	1.355	0.108	0.012	0.003
	50.442	*12.241*		*4.121*	*0.000*	*3.722*	*0.262*	*0.069*	*0.050*
Commitment	0.080	0.245	0.020	0.326	0.745				
	0.848	*0.332*	*0.225*	*2.555*	*0.012*				
Career planning	0.658	0.376	0.098	1.749	0.081				
	0.414	*0.492*	*0.075*	*0.841*	*0.402*				
Commitment x CP	-0.009	0.063	-0.008	-0.142	0.888				
	0.012	*0.083*	*0.012*	*0.147*	*0.883*				

**	$p \leq 0.05$
*	$p \leq 0.10$

From Table 30 it is evident that career planning failed to significantly moderate the relationship between identity commitment and academic success for the black first-year students (b = -0.009; t = -0.142; p = 0.888) as well as for the white first-year students (b = 0.012; t = 0.147; p = 0.883). It is also clear from the results in Table 30 that career planning could not be identified as a mediator in the relationship between identity commitment and academic performance for the white first-year students.

Table 31 provides the results of the calculation aimed at determining the possible role (mediator or moderator) of future time perspective in the relationship between identity commitment and academic success for the white students and a moderating role for the black students.

Table 31

Hierarchical multiple regression of academic success as dependent variable, identity commitment as independent variable and future time perspective as intervening variable

Model	Unstandardised coefficients		Standardised coefficients	t	p	F	R	R²	Adjusted R²
	B	Std. error	β						
1 (Constant)	74.265	8.388		8.854	0.000	0.985	0.053	0.003	0.000
	52.751	*11.255*		*4.687*	*0.000*	*10.55*	*0.254*	*0.064*	*0.058*
Commitment	0.210	0.212	0.053	0.993	0.322				
	0.956	*0.294*	*0.254*	*3.247*	*0.001*				
2 (Constant)	64.364	9.854		6.532	0.000	2.294	0.114	0.013	0.007
	40.463	*13.974*		*2.896*	*0.001*	*6.399*	*0.279*	*0.078*	*0.066*
Commitment	0.023	0.233	0.006	0.098	0.922				
	0.847	*0.302*	*0.225*	*2.801*	*0.006*				
FTP	0.396	0.209	0.112	1.896	0.059				
	0.388	*0.264*	*0.118*	*1.474*	*0.143*				
3 (Constant)	59.888	10.145		5.903	0.000	2.579	0.148	0.022	0.013
	44.232	*14.740*		*3.001*	*0.000*	*4.476*	*0.286*	*0.082*	*0.063*
Commitment	0.086	0.235	0.022	0.364	0.716				
	0.827	*0.304*	*0.220*	*2.722*	*0.007*				
FTP	0.426	0.209	0.120	2.041	0.042				
	0.325	*0.275*	*0.099*	*1.180*	*0.240*				
Commitment x FTP	0.049	0.028	0.096	1.767*	0.078				
	-0.040	*0.050*	*-0.067*	*-0.812*	*0.418*				

** $p \leq 0.05$
* $p \leq 0.10$

It is clear from Table 31 that FTP could not be identified as a mediator in the relationship between identity commitment and academic performance for the white first-year students. An investigation of the interaction effect in model 3 indicates that FTP did indeed significantly moderate the relationship between identity commitment and academic success for the black students (b = 0.049; t = 1.767; p = 0.078). However, future time perspective did not moderate the relationship between identity commitment and academic success for the white first-year students (b = -0.040; t = -0.812; p = 0.418).

The nature of this moderator effect was investigated by determining the relationship between identity commitment and academic success for the black first-year students who respectively scored low and high on the moderator variable (FTP). For this, two separate regression lines were determined – one for first-year students who scored high on FTP (at or higher than the 75th percentile, N=97, or a score of 48 or higher) and one for those students who scored low on FTP (at or lower than the 25th percentile, N=85, or a score of 39 or lower). The regression lines are graphically represented in Figure 8.
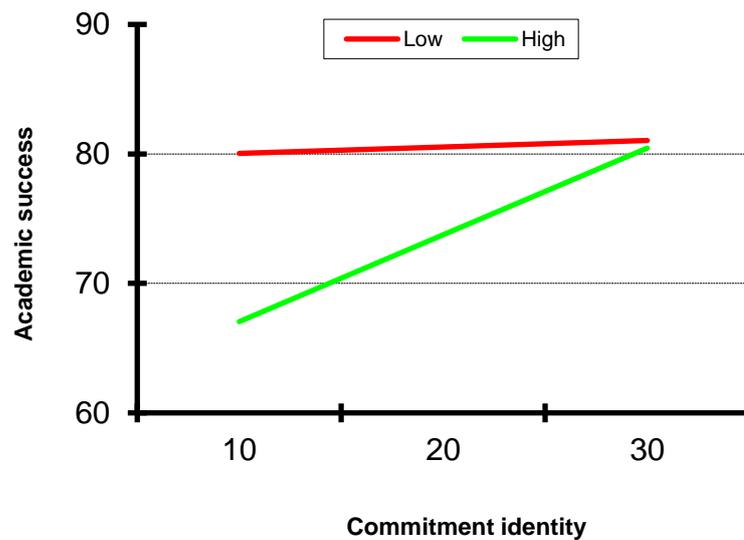
Figure 8:   Regression lines for black first-year students scoring low and high on FTP
with identity commitment as a predictor of academic success

As shown in Figure 8, it is clear that a slight increase was seen in the slope of the regression line (slope = 0.05) for the black first-year students with low levels of FTP. Therefore, black first-year students with low FTP experienced an increase in academic success with an increase in identity commitment. Additionally, for the black first-year students with high FTP (the uppermost 25%), an increase was seen in the regression line's slope (0.67), thus indicating that for the black first-year students with high FTP, there was an increase in academic success as identity commitment grew stronger. Furthermore, as shown in Figure 8, for students who reported low identity commitment, a large difference in academic success was seen between the groups with high and low FTP. In such cases, the black first-year students with high FTP demonstrated greater academic success than the black first-year students with low FTP.

Summary

A number of significant results were reported in this chapter. The 5% level of significance was used throughout. Due to the low power of data that is typically encountered in moderated regression analyses, a relaxed criterion was used to evaluate the statistical significance of the moderating effect ($p \leq 0.1$) (Aguinis, 1995). Firstly, the moderated hierarchical multiple regression analyses conducted to investigate the possible effect of gender and race/ethnicity on the relationship between identity development and academic success indicated that the latter moderated this relationship while gender did not. Correlation coefficients of the relevant variables for the total group and the two race/ethnic groups indicated that only commitment showed a significant correlation with academic success (at the 5% level) for the total group and for the white students, and all the other identity development styles did not show any correlation with academic success for both race/ethnic groups.

A number of career maturity variables indicated a significant relationship (at the 5% level) with academic success. In this instance, for the white first-year students, self- information, career information and career planning correlated with academic success. Integration and career planning appeared to be significant (5% level) with academic success for the black students. Future time perspective was found to be significantly related to academic success (5% level) for the total group as well as for the black and white students separately.

None of the identity development styles succeeded in predicting a significant percentage of variance in both the black and white students' academic success.

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Furthermore, only commitment indicated a 1% significance for the white first-year students but the effect size was small.

To determine whether career maturity or FTP moderated the relationship between identity development and academic success, hierarchical analyses were conducted and the results are indicated as follows:

- Decision making moderated the relationship between normative identity and academic success for the black first-year students as indicated in Table 15.

- Career information significantly moderated the relationship between normative identity style and academic success for both the black and white first-year students, as indicated in Table 16.

- Integration of self- and career information significantly moderated the relationship between normative identity style and academic success for the white first-year students as indicated in Table 17.

- Career information significantly moderated the relationship between the diffuse-avoidant style and academic success for the white first-year students, as indicated in Table 22.

- Integration of self- and career information significantly moderated the relationship between the diffuse-avoidant identity style and academic success for the white first-year students as shown in Table 23.

- Career planning significantly moderated the relationship between the diffuse-avoidant identity style and academic success for the white first-year students, as shown in Table 24.

- Lastly, FTP significantly moderated the relationship between identity commitment and academic success for the black first-year students, as shown in Table 31.

Chapter 6 provides an in-depth discussion of these results contextualised within the existing literature, and describes the limitations of the study as well as recommendations for future research.

Chapter 6: Discussion

Introduction

The main aim of this study was to investigate the role of career maturity and future time perspective (FTP) in the relationship between identity development and the academic success of first-year students at a South African university. The first objective was to determine whether identity development can significantly predict the academic success of first-year students at a South African university. The second objective pertained to whether FTP and/or career maturity moderate/mediate the relationship between identity development and academic success among first-year students at this university. However, given the importance of gender (Jelenic, 2013) and race/ethnicity (Adelabu, 2008; Flores-Crespo, 2007) in exerting a potential influence on the research results pertaining to the relationship between identity development and academic success, it was deemed important to first determine the moderating effect of these two variables (gender and race/ethnicity).

Accordingly, the initial part of this chapter explores the findings of the investigation into the moderating effect of gender and race/ethnicity on the relationship between identity development and academic success. This is followed by an exploration of the research findings pertaining to the two hypotheses reported in Chapter 5 with relevance to the South African context. The theoretical and practical implications of the results are also considered. Conclusions are drawn based on the most salient findings of the current study and limitations are highlighted. Potential avenues for future research are identified.

The moderating effect of gender on the relationship between identity development and academic success

Contrary to the anticipated significance of gender in the relationship between identity development and academic success, the results obtained from the moderated hierarchical multiple regression analysis suggest that gender does not succeed in moderating the relationship between identity development and academic success. These results would appear to support the findings of Seabi and Payne (2013) who, in their study among South African first-year psychology students, reported non-significant interaction effects between identity processing styles and gender on academic achievement. Phan (2009a) also reported no statistical differences between boys and girls when investigating the direct and indirect effects of ethnic identity on students' academic achievement in science and mathematics. Racial/ethnic identity is reported to be integrally related to identity development as conceptualised in this study (Osterman, 2000; Moore, 2008) and it would therefore be reasonable to assume that Phan's findings would also apply to identity development in general. However, the latter assumption requires further investigation. The aforementioned results are, however, contrary to the reported significance of gender as a demographic variable in other studies. In a study conducted by Boyd et al. (2003) in determining the relationship between identity styles and academic success among undergraduate students, gender was indeed found to be a moderating factor. Male students who were diffuse-avoidant in their identity processing style indicated poor academic performance and females who obtained higher scores on information-oriented processing styles performed well academically. Another study by Pittman, Kerpelman and Adler-Baeder (2008) also confirmed the moderating effect of gender between

normative identity style and academic success. Girls who were found to use a normative processing style demonstrated a sense of direction and better academic achievement than their male counterparts. The fact that gender was not found to moderate the relationship between identity development and academic success in the current study would suggest that the role of gender remains inconclusive and requires further investigation in future studies.

The moderating effect of race/ethnicity on the relationship between identity development and academic success

The results of the moderated hierarchical multiple regression analysis suggest that race/ethnicity succeeded in moderating the relationship between identity development and academic success. The analysis revealed significant differences in the relationship between identity development and academic success for the black and white first-year students in this study.

Given the disparities in South African society with respect to historical inequalities along race/ethnic lines, these findings were not unexpected. Numerous studies conducted in the South African context have highlighted the educational and social inequalities which, despite the fall of apartheid in 1994, persist in our communities (Fiske & Ladd, 2005). It is thus not surprising that there are large discrepancies in the relationship between identity development and academic success for the two race/ethnic groups featured in this study. Studies with a specific focus on the moderating effect of race/ethnicity on the relationship between identity development and academic success are limited both internationally and locally, and the current study may therefore be considered novel in this regard. However,

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reminiscent of the South African context, a number of international studies have focused upon the racial/ethnic differences in both academic achievement and identity development. According to Richardson (2012) ethnic minority students at traditionally predominantly white colleges in the USA often receive lower grades, take longer to graduate, and generally struggle with course work. This author identifies student ethnicity as a likely influencing factor on personal identity and ultimately on student success. Altugan (2015) also highlights the significance of students' cultural backgrounds as ethnic, racial, linguistic, social, religious or economic differences can cause a cultural disconnect leading to the weakening of students' motivation to learn. Citing earlier research, Torres (2016) also suggests that racial and cultural differences in academic achievement could be the result of a lack of social and cultural identity and refers to the negative stereotypes which are often associated with minority groups and which cause them to experience a diminished sense of personal identity. He cites the academic achievement differences between blacks and whites as an example of this type of feeling. He also refers to "cultural shock" which often results from being immersed in a culture different from one's native culture when entering college. He maintains that this phenomenon can shape a student's ability to adjust to new academic settings, which may result in academic losses or undesirable classroom behaviours.

In South Africa, due to the sociocultural and socio-political differences among its citizens, the effect of race/ethnicity is still found to play an important role in most spheres of students' lives at university (Duurheim, Mtose, & Brown, 2011) and the results obtained in this investigation may therefore serve as a confirmation of these

persisting differences in our society. The study's findings on the moderating effect of race/ethnicity on the relationship between identity development and academic success therefore necessitated that the consecutive analyses were executed separately for the two race/ethnic groups and the discussion of the results pertaining to the two research objectives are presented accordingly.

Research question 1

To determine whether identity development can predict a significant percentage of the variance in the academic success of first-year students.

Before focusing specifically upon whether identity development could predict a significant percentage of the variance in academic success for the black and white students separately, inter-correlations between all the independent variables utilised in this study (identity styles, career maturity, FTP) and the dependent variable (academic success) were investigated. The results from these inter-correlations served to enhance our holistic understanding of the interplay between variables.

With respect to the inter-correlation between identity development and academic success, only the commitment scale of identity development correlated significantly (at the 5% level) with academic success for the total group and for the white students. None of the other identity styles emerged as significant correlants with academic success for the white students and none of the identity styles (including commitment) reflected a significant relationship with academic success for the black students. These findings are inconsistent with previous studies conducted among

university students (Berzonsky, 2008; Berzonsky & Kuk, 2005; Seabi, 2009; Louden, 2005; Ramdin, 2011) which reported significant relationships between various identity development styles and academic success. In these studies, a number of different identity processing styles were significantly related to academic performance. For example, Berzonsky and Kuk (2005) reported that students who used the information-oriented style indicated higher academic achievement while those with diffuse-avoidant styles often performed poorly in their academic pursuits. According to Schwartz et al. (2008), commitment can be regarded as the driving force behind successful or unsuccessful identity development. Furthermore there is abounding literature to suggest that a commitment identity style is also associated with greater psychological well-being and success in all areas of life, including academic performance (Berzonsky & Kuk, 2005; Luyckx et al., 2010; Cote & Levine, 2002), and one could therefore argue that the significant relationship identified between the commitment style and academic success for the total group and the white students in this study, may suggest that the more committed these students are, the more likely they are to achieve a successful identity and the better they would be expected to achieve academically. This finding with respect to the white students is therefore aligned with prominent current literature, but it raises the question of why this finding was not duplicated for the black students and therefore begs further exploration. The following career maturity scales (CDQ), namely self-information, career information and career planning were found to correlate significantly with academic success among the white students, while the integration of self- and career information and career planning were significantly related with academic success for the black students. These results indicate that white students who are more knowledgeable about

their work-related capabilities, who possess more knowledge about the world of work and who display greater foresight into their planning for their careers and studies are also stronger academic achievers. On the other hand, black students who are better able to match their personal characteristics to occupational requirements and who are also better at devising plans for their careers and studies, performed better academically. It is significant that career planning emerged as a common factor related to academic success for both black and white students and this aspect can therefore be considered jointly when devising intervention programmes to enhance academic performance at this level.

These findings also concur with earlier findings related to the relationship between career maturity and academic achievement among different cultural or race/ethnic groups reported in the CDQ manual and several other studies that used this measuring instrument, where researchers indicated that black South African students generally obtained lower scores than their white counterparts (Langley et al., 1992; De Bruin & Bernard-Phera, 2002). In a longitudinal study with grade 11 and 12 learners from different cultural and schooling environments, Grobler et al. (2014) also reported significantly different career maturity levels among learners from previously advantaged schools (predominantly white) and those from traditionally disadvantaged schools (predominantly black). The predominantly white group indicated higher career maturity levels in general, but the relationship between these levels and academic success was not investigated. Studies conducted by Savickas (2006) among university students also reported a significant relationship between career maturity and academic success that would suggest that those who had a fund of knowledge concerning the world of work, who were able to make effective career decisions,

integrate relevant information concerning the self and careers, and who were able to use this information in their career plans were better able to succeed academically than those who lacked in this regard.

A significant relationship was reported between FTP and academic success for the total group as well as for the black and white students separately. These results offer support for findings reported by Van der Linde, Naudé and Esterhuyse (2010) with South African grade 12 learners where significant positive relationships were reported between FTP and academic performance. These results are also consistent with what is reported in the literature, i.e. that a number of studies have shown that being future-oriented is associated with optimal study outcomes (Bilde et al., 2010). Studies conducted among students by Zimbardo and Boyd (1999; 2008) found that future-oriented students are often strongly engaged in their school work, spend more time studying and obtain better school grades. These findings are supported by previous studies involving high school and university students which found that a positive attitude towards the future relates positively to academic achievement (Phan, 2009b). Studies by Simons, Dewitte and Lens (2004) as well as Phalet, Andriessen and Lens (2004) among college students also found that FTP is related to academic achievement. These researchers found that students who held strong FTP showed more motivation in their school work and developed deep learning strategies which influenced their academic achievement. Students who enter university with hope for academic achievement may be motivated to view the future with a deliberate sense of purpose and conviction to consistently strive for academic excellence (Phan & Deo, 2008). First-year students in this study who therefore held strong views about the future, were more likely to develop interest in their studies and make use of strategies

that would in turn influence their academic achievement (Brown & Jones, 2004; Horstmanshof & Zimitat, 2007).

Results from the hierarchical regression analyses with identity styles as independent and academic success as dependent variables indicated that the four identity styles in combination explained a significant (1% level) proportion of the variance in academic success for the white students, but failed to do so for the black students. One of the scales, namely commitment, made an exclusively significant (1% level) contribution to academic success for the white students, explaining 7.0% of the variance in their academic performance, but failed to make any significant contribution to the prediction of academic success for black students. However, the effect size for the significant results pertaining to the white students proved to be small and of low practical importance.

The results obtained for the black students echo those reported by Seabi and Payne (2013) in their study among South African first-year university students. These authors reported a non-significant relationship between identity processing styles and academic success in their sample. However, they found that the students who used the information-oriented processing style performed significantly better than those who used the diffuse-avoidant style. This study's results for the black students proved to be contrary to those found in studies by Berzonsky and Kuk (2005) among first-year students, who reported that identity processing styles have a significant positive or negative impact on academic achievement. However, the results obtained with respect to the white students would be better aligned with Berzonsky and Kuk's (2005) findings. These authors reported that students who used the information-oriented style

and those with the normative identity style performed better academically than those who used a diffuse-avoidant style. They indicated that students who used diffuse-avoidant styles performed poorly on academic achievement tasks. They were found to lack focus and did not show any interest in their academic activities. Similar findings were also reported by Ramdin (2011) in a study with South African first-year university students.

According to the results of this study, the role of identity development in predicting academic success remains inconclusive and calls for further exploration. In the second research question, additional pathways to academic success were explored.

Research question 2

To determine whether career maturity and/or future time perspective moderate/mediate the relationship between identity development and academic success for first-year students

Due to the fact that, for both race/ethnic groups, the informational, normative and diffuse-avoidant identity styles did not yield a significant relationship with academic success, it was not possible to investigate any mediating effects for the relationship between these styles and academic success. These non-significant relationships have already received discussion in addressing the first research question and do not warrant further explanation. However, due to the significant relationship found between commitment and academic success for the white students, the mediating effect of career maturity and FTP in this relationship were investigated for these students and the results are discussed later.

In an attempt to integrate and simplify extensive findings reported in Chapter 5, each of the identity styles will be considered separately when discussing the moderating effects of each of the career maturity and FTP scales on the relationship between the specific identity style and academic success.

With respect to the information-oriented identity style, which is the information-processing style associated with willingness to consider alternative ideas and the use of effective strategies in managing time to deal responsibly with academic demands, none of the career maturity scales nor FTP emerged as significant moderators in the relationship between this identity style and academic success for both the black and white students.

However, regarding the normative identity style, although self-information, career planning and FTP failed to significantly moderate the relationship between this identity style and academic success for both the black and white students, decision making (i.e. the ability to make effective career decisions) succeeded in moderating this relationship for the black students, and career information (i.e. information about occupations, training facilities and financial support for avenues into the occupational world) emerged as a significant moderator in this relationship for both the black and white students. Integration of self- and career information, which refers to the ability to integrate relevant career information and to use it in decision making, proved to be a significant moderator for the white student population.

The normative style is associated with the holding of firm convictions about religion, academic life, political ideologies and personal identity and these individuals may have a rigid information-processing attitude towards their academic work

(Berzonsky & Kuk, 2000; Boyd et al., 2003). Their academic purpose is thus externally based and they are prone to early cognitive closure. Widely documented literature indicates that due to their rigidity, students who use a normative identity style often open themselves to failure or underachievement in their first year of study when their skills and attitudes do not meet what is required to be successful at university (Berzonsky & Kuk, 2005). This cognitive rigidity may well impact on the decision-making skills associated with career maturity as defined in this study. Given this identity disposition, it would therefore be reasonable to expect that students with high levels of this style and poor decision-making skills will experience a decline in academic success rates. This was the case for black students in the current study. It would appear that poor decision-making skills compounded the negative effects of the cognitive rigidity associated with high levels of the normative style and led to a sharp decline in academic performance for these students. However, black students with strong decision-making skills reported increased academic success with an increase in this normative style. Effective decision-making skills therefore reversed the effect of a strong normative style on academic performance. The latter would probably best be explained by the possibility that the effective decision-making skills complemented the rigid identity style by giving clear and purposive direction to the rigidity experienced, thus resulting in improved academic success. This concurs with literature and previous research that suggests that when students have strong decision-making skills, though rigid about others' expectations concerning their choices (e.g. parents), they will still have direction and be able to succeed in their studies (Smits et al., 2008). Another assertion would be that, irrespective of decision-making skills, normative students often demonstrate high levels of commitment and are strongly focused on

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their studies for fear of disappointing the significant others in their lives (Ramdin, 2011). In this study, black first-year students who displayed low career information levels experienced poorer academic results as their preference for the normative style increased. This would suggest that with poor career information, the more rigid identity style would be associated with lower academic results for black students. However, when they possess more career information, these black students experienced an increase in their academic results as they displayed a stronger normative style. Increased rigidity in identity style combined with higher levels of career information was therefore associated with higher achievement for these students. The opposite was true for the white students. If these white students displayed low levels of career information, their academic results were inclined to improve with higher levels of the normative style. Although studies which investigated the moderating effect of career information on the aforementioned relationship are limited, Berzonsky and Kuk (2005) reported that normative students who possessed realistic career information often obtained high academic grades. However, students who use the normative style are also inclined to limit their information to that given by significant others and do not like ambiguity in dealing with self-relevant information. Their rigidity and set standards often help them to focus and close themselves off to any influences that could derail them. For the white students, this could possibly explain the finding that low levels of career information might lead to improved academic results as the normative style increases – there is less information to distract them from their rigid focus on their academic pursuits. They are also bound to take their studies seriously for the sake of social approval (Smits et al., 2008). Literature concurs that, as a consequence of strong normative

identity, these individuals' academic purpose is more externally based and inflexible, hence they are bound to perform well academically for fear of disappointing important others in their lives (Berzonsky & Kuk, 2000).

In this study, white first-year students with low levels of integration of self- and career information experienced an increase in academic success when they had a stronger normative identity style. Once again, these results would probably best be explained by the singular focus of those with a strong normative identity on academic success without too much interference from additional information related to the self and careers. The academic focus can be regarded as being driven by the normative style rather than by the aspects of integration. Subsequently, with high levels of integration there was a slight decrease in academic success when a stronger normative identity style was shown. These results endorse literature which maintains that when individuals have career knowledge which matches their personal values, they are able to make well-informed decisions, set certain standards and hold strong convictions which they are often able to commit to and which, in turn, influence their academic performance. Other studies confirm this by suggesting that, irrespective of extraneous factors, due to their strong endorsement of social norms and rule-obedient attitudes, normative individuals are at low risk of problem behaviour and will make an effort to achieve academically (Smits et al., 2008; Berzonsky & Kuk, 2005).

When considering the diffuse-avoidant identity style, it was evident that two career maturity scales (self-information and decision making) and FTP failed to moderate the relationship between this identity style and academic success for both the black and white students. However, the remaining career maturity scales (career information, integration of self- and career information and career planning), which

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comprise the ability to plan and implement one's decisions, successfully moderated the relationship between this identity style and academic success for the white students.

The diffuse-avoidant identity style is associated with low cognitive confidence, maladaptive decision-making strategies such as procrastination or avoidance, poor academic involvement and achievement, and high risk-taking behaviour.

This finding appears to be in contradiction with what one would expect from the relevant literature pertaining to the theory of identity development styles. Literature indicates that individuals who use the diffuse-avoidant style have no academic direction, are inclined to procrastinate and take decisions only when they do not have a choice or when they are faced with compelling situations (Luyckx et al., 2006). One would therefore expect these students to be poor academic performers. However, despite exhibiting higher levels of the diffuse-avoidant style the white students in the current study experienced better academic results when they were more knowledgeable about careers, displayed greater integration of relevant self- and career information as well as when they had the ability to make plans and implement them. Studies by Savickas (2006) concerning career maturity reported that students with stronger career maturity are in a better position to succeed academically. This would appear to be the case even when the white students displayed a strong degree of the diffuse-avoidant identity style.

Due to the fact that the commitment scale of identity development reflected a significantly positive relationship with academic success for the white students in this study, both the mediating and moderating effects of all the career maturity scales and

FTP could be investigated for them. This relationship between commitment and academic success was not found to be significant for the black students and therefore only the moderating effect of these intervening variables could be investigated in the relationship between their commitment and academic success. Commitment has been defined as the degree to which adolescents and emerging adults have adhered to choices made about identity-relevant issues (Luyckx et al., 2006). This happens when individuals have actively sought out and evaluated personally relevant information before forming and adhering to self-endorsed identity. As already mentioned, commitment is what tends to separate successful from unsuccessful identity development (Schwartz et al., 2005). In the current, study all the career maturity scales failed to moderate the relationship between commitment and academic success for both the black and white students. Future time perspective, however, emerged as a moderator in this relationship for the black students. For the white students, none of the intervening variables proved to be significant mediators in the relationship between commitment and academic success.

Planning for the future and identity development have been reported as two interrelated developmental tasks challenging adolescents and emerging adults, specifically in the academic domain with its requirement of identity exploration and adherence to established commitments (Luyckx et al., 2006; Arnett, 2004). Although there has been limited research on the moderating effect of FTP on the relationship between commitment identity and academic success in general, and among black students in particular, literature indicates that individuals who have successfully achieved identity development are able to plan for the future and show commitment to

those future plans (Luyckx et al., 2010). Studies conducted in South Africa, Peru and Costa Rica (Kritzas & Grobler, 2007; Herrera & Lens, 2009) with high school and university students found that students with high FTP seem to manage and plan their study time and are committed to staying focused on the task at hand, which ultimately leads to academic success. Another study conducted in South Africa among grade 11 and 12 learners also reported that learners from disadvantaged (predominantly black) schools were found to be more focused on the future than learners from advantaged (predominantly white) schools (Pieterse, 2005). Black students in this study appear to have formed strong self-endorsed commitments and dominant future time perspectives that will allow them to set goals and strategies for meeting their future obligations (Lens & Tsuzuki, 2007). In a comparison between the black and white students in this study, this appears to be a strange finding because one would expect white students to be more future-oriented and goal directed, which goes hand in hand with identity exploration and the development of identity commitments over time; processes which are often associated with Western cultural values (Zimbardo & Boniwell, 2004; Husman & Lens, 1999; Luyckx et al., 2010). On the other hand, black South Africans are reported to have developed a strong collective identity in their adolescence, partly due to a shared political consciousness derived during apartheid (Norris et al., 2008).

Conclusion, recommendations and limitations

A number of career maturity variables appeared to be significantly related to academic success for the total group and for black and white first-year students separately in this study. Self-information, career information and career planning demonstrated a significant relationship with academic success for the white students, while integration of self- and career information as well as decision making demonstrated a significant relationship with academic success for the black students. Future time perspective was also found to correlate significantly with academic success for these students. This calls for a further investigation of the predictive role of these two variables for academic success among first-year students.

Although the information-processing style is reported to be most strongly associated with the time management strategies demanded by academic endeavours, it can be concluded that none of the career maturity scales nor FTP emerged as moderators between this style and academic success for both the black and white students. This therefore calls for thorough future investigation. The white first-year students in this study who showed low levels of career planning and an increase in the diffuse-avoidant identity style experienced a decrease in academic success. However, the white first-year students with high levels of career planning experienced an increase in academic success when they demonstrated a stronger diffuse-avoidant style. This has proven to be an anomaly and calls for in-depth further research.

Lastly, the fact that the black first-year students in this study were found to have stronger self-endorsed identity commitments than their white counterparts calls for more vigorous investigation which might include looking into aspects such as the role of racial/ethnic identity and South Africa's specific socio-political history.

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A number of the study's limitations need to be considered. Firstly, despite the fact that the original sample size (N=736) was at an acceptable level to suggest representativeness and facilitate generalisability of the findings, it is important to consider the possibility of volunteer and sample bias. The white students (23%) may be considered to be underrepresented in the population (N=7476) of all first-year students registered at the relevant university, which has the following distribution: black females (48%), black males (28%), white females (12%) and white males (10%). However, these percentages may be considered to be a true reflection of the demographics of the country at present, but may have accounted for possible sample bias due to inequitable numbers of students represented in terms of race/ethnicity. The fact that only first-year students who were registered for 120 credits were selected in this study complicates the generalisation of these results to all first-year students locally and internationally. Furthermore, the participants in this study originated from a single South African university – once again affecting the generalisability of findings.

Secondly, the narrow use of race/ethnicity (black and white) was not representative of the total first-year population at the university (i.e. black and white are not the only ethnic groups). Bearing the South African population with its diversity in mind, this does not allow for generalisation to other ethnic groups. In future studies, it would be necessary to include all ethnic groups in the study, and to consider the role that culture plays among race/ethnic groups.

Thirdly, with respect to the measurement of time perspective, the present study focused only on FTP and no attention was paid to the present or past time

perspectives. Although other research has also focused exclusively on future time perspectives, the contribution of the other time perspectives (e.g. present and past) might prove to be fruitful in the study of identity development and academic success (Luyckx et al., 2010). The fact that self-report measures (revised version of the ISI-4 and the Zimbardo Future Time Perspective Inventory) were used in this study, may suggest possible reporting bias since students could easily have given false reports of their preference for approaching tasks and dealing with challenges, or could have fallen prey to acquiescence or social desirability (Seabi & Payne, 2013). Although these measures have been used with South African student populations, they were standardised for Caucasian and Western students and not for the diverse South African population. This could hold cultural implications for students in this study in terms of the interpretation and the meaning of terms (e.g. the concept of time), and therefore the results need to be interpreted circumspectly.

Fourthly, identity development is best measured over time and, as such, the current study would have benefited from a longitudinal approach. The current design might have resulted in findings which fall short of giving a true reflection of changes in these students' developmental trajectories (Luyckx et al., 2010). A longitudinal study that would extend beyond the first year of study to include the completion of a degree would yield a more accurate view of academic success and is therefore recommended for future research.

Despite these limitations, the results of this study have broadened existing knowledge about first-year students' psychological functioning in terms of identity development, future time perspective, career maturity/adaptability and how these factors impact on their academic success.

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Appendix 1: Letter of instruction to participants

Dear student

Thank you for taking time to complete these questionnaires. Our goal is to determine the influence of identity development on 1st year student's plans for the future, career maturity and their academic success. It is of vital importance that as first years you get the necessary support to be able to complete your studies within the expected time frames.

The results of this study will help counselling services professionals to pro-actively design interventions to support students in their transition from high school to university in order to realise their academic goals.

Please take note of the following:

♦ Please read all instructions carefully at every section. Each question must be answered by circling the number which you think best describes how you feel.
♦ Please answer honestly. There are no right or wrong answers, only your personal feelings and experiences count.
♦ All information will be kept confidential.
♦ Should there be something you do not understand, please feel free to ask me any questions.

Thank you for your cooperation!

Appendix 2: Biographical questionnaire

Biographical Information

Please fill in your particulars in the blocks provided. Tick with an X where applicable. Make sure that you have the correct student number.

Student Number				1-10
Age in years				11-12
Gender	Male	1		
	Female	2		13
Race	Black	1		
	Coloured	2		
	Asian	3		
	White	4		14
Indicate area in which your school was situated	City / Town	1		
	Township	2		15
Year of matriculation				16-19
Number of registered first year modules				20-21
Main language of tuition / study	English	1		
	Afrikaans	2		22
Please state the name of your residence	_____			23-24