

**FACTORS CONTRIBUTING TO ACADEMIC PERFORMANCE OF
STUDENTS IN A PRIVATE UNIVERSITY IN KENYA**

By

FLORAH K. KARIMI

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PROMOTER: PROF E. O. MASHILE

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Student number: 3594-399-8

I declare that FACTORS CONTRIBUTING TO ACADEMIC PERFORMANCE OF STUDENTS IN A PRIVATE UNIVERSITY IN KENYA is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

SIGNATURE
(MRS. FLORAH. K. KARIMI)

DATE

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IN A PRIVATE UNIVERSITY IN KENYA**

BY: Florah K. Karimi
DEGREE: Doctor of Education
SUBJECT: Psychology of Education
UNIVERSITY: University of South Africa
PROMOTER: Prof. E. O. Mashile

SUMMARY

This study aimed at identifying the models that best explain the student-related factors that contribute to the academic performance of students in the university. Students' final high school grade, English Language proficiency, self-regulatory learning strategies and extrinsic goal orientation are observed to generally have direct effects on the academic performance of the students in the university, while attitudes, intrinsic goal orientations, personality traits and age have indirect effects. Student mentors need to understand the factors that contribute to the academic performance of undergraduate students. Further research is also deemed necessary in other universities in Kenya in order to establish whether similar results would be obtained.

Keywords:

Academic performance; Undergraduate students; Prior high school grade; English Language proficiency; Self-regulatory learning strategies; Goal-orientations; Attitudes; Personality traits; and Age.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION TO THE STUDY

Over the years, the demand for higher education in Kenya has tremendously increased. According to a report by the Ministry of Education, Science and Technology (2004), on the Development of Education in Kenya, the total enrolment in the Kenyan universities increased from 3,443 in 1970 to 72,000 in 2003. In addition, the Central Bureau of Statistics (2006) reports a total enrolment of 90,000 in 2005. A comparison of the two reports results in the deduction that enrolment of students in the universities in Kenya has increased by 2,514% over a 35-year period. This is a very high percentage, which can further be interpreted as an annual average growth rate of 71%. A further analysis of the two reports however shows a 25 % growth rate between 2003 and 2005. This can be interpreted as an annual average growth rate of 12.5 %. According to Mutula (2002), higher education remains the fastest growing segment of the education system in Kenya over the last twenty years, with enrolments increasing, on average, by 6.2% per year. A look at the three reports of, namely, the Ministry of Education, Science and Technology (2004), Central Bureau of Statistics (2006) and Mutula (2002) leads to the conclusion that, in general, the growth rate from one year to the next was not constant. In fact, it appears that there was an initial high growth rate of enrolment, followed by a slowly declining rate of enrolment, and thereafter, a reviving of the growth rate of enrolment. This growth pattern is not without explanation.

The initial growth occurred as a result of Kenya gaining independence. According to Mutula (2002), there was rapid expansion of education in Kenya, with heavy budget allocations immediately after the country gained independence. This is further supported by Chapman and Austin (2002), who observe that, in Africa, the initial interest in higher education after independence stemmed from the fact that university education was seen as an avenue for steering development in the emerging nation. However, there was a shift of attention, in the 1980s, by both the donors and the governments, from higher education to

basic education, with greater emphasis on basic literacy and innumeracy (Onyango 1996, Chapman & Austin 2002). According to Onyango (1996), the shift of focus resulted in a drastic decline of the Kenyan government's funding to public universities within the country, which further led to a drop in the rate of enrolment into the universities as students were now expected to share costs with the government in order to meet their fees demands. At present, there has been an increased demand for higher education in Kenya, which has resulted in increased enrolment into universities. Chapman and Austin (2002) identified several factors that led to renewed interest in higher education in the developing world. These factors include increased lower level participation in primary and secondary school levels of education, imbalanced skill levels at workplaces with only a few having attained high levels of education and increased technological nature of international communication requiring advanced levels of education.

The goal of many Kenyans is to receive tertiary education and, more specifically, a first degree in areas of interest or relevance to their career paths. According to Magagula and Ngwenya (2004), developing countries are in need of highly skilled individuals with tertiary educational background. This explains the high increase in the demand for tertiary education especially at the university level. Chacha (2004) points out that over the last four decades; there has been intensified social demand for higher education in Kenya. Job placement is pegged to a higher level of education, rather than other abilities. According to the report by the Ministry of Education, Science and Technology (2004: 22)

The Government recognizes the strategic importance of raising the overall education level of Kenyans within the context of poverty reduction and economic growth. Education is not only a welfare indicator; it is also a key determinant of earnings and, therefore, an important exit route from poverty.

For most organizations and institutions, the higher the educational level, the higher the opportunities for high profile positions, and thus the more the expected salary requirements. With the increase in the cost of living in Kenya, it has become imperative for Kenyans to strive for high profile positions, which are greatly pegged to, first and foremost, "educational papers", and then experience. These high profile positions include managerial, administrative and consultative positions rather than subordinate positions.

This has, therefore, led many, both young and old, to seek for the highest level of education that they can attain.

Two decades ago, the public sector greatly dominated university education in Kenya with students' academic performance in the national high school examinations determining the academic discipline students are absorbed into in the public universities. Due to the limited number of public universities and the inability of the public universities to absorb many students, the public university selection board has put in place a criterion to absorb only the best performing students (Wanjohi 2006). According to Wanjohi (2006), the academic qualification of the best students keeps on rising from one year to the next as the demand for higher education increases. In addition, minimal cut-off grades or points are assigned for the placement of students to various disciplines in the public universities. Table 1.1 shows the relationship between the candidates who sat for the national secondary school examination, those who qualified for university education in Kenya, with an average aggregate grade of C+ and those who were admitted to the public universities of the country from 2001 to 2006, as obtained from statistics records of the Kenya National Examination Council and the Joint Admission Board and reported by the Saturday Nation Newspaper (March 31 2007). The table also shows the cut-off points in each of the years of admission.

Table 1.1 Relationship between completion of secondary school education, qualification for university education and admission into the public universities of the country.

Year	Number of candidates	Number qualified for university education	% qualified for university education	Number admitted into public universities	Cut-off grade for the public universities	% of qualified students admitted into public universities
2001	194,788	42,158	21.6	10,966	B	26.0
2002	198,076	42,721	21.6	10,923	B	25.6
2003	207,730	49,870	24.0	10,263	B	20.6
2004	222,519	58,239	26.2	10,632	B+	18.3
2005	260,643	68,040	26.1	10,218	B+	15.0
2006	243,453	63,104	25.9	10,500*	A-	16.7*

* Assumed approximate number of students who will be admitted into the public universities.

The following conclusions can be drawn from Table 1.1:

1. The number of candidates who sat for the secondary school examination steadily increased from one year of study to the next between 2001 and 2005. However, there was a 6.5% decrease in the number of candidates between 2005 and 2006.
2. The number of students who qualified for university education increased by 50% between 2001 and 2006.
3. The cut-off grade steadily increased from B among the 2001 candidates to an expected A- among the 2006 candidates.
4. The percentage of qualified students who gained admission to the public universities steadily decreased between 2001 and 2005. This implies that there was an increase in the percentage of students who were denied admission into the public universities between 2002 and 2006.

According to the Daily Nation Newspaper (February 29 2008), reporting submissions from the Ministry of Education, among the 276,239 candidates who sat for the 2007 Kenya Certificate of Secondary Education examination, 82,134 of them qualified for university education with a C+ grade and above. This is 29.7% of the candidates, which is the highest percentage of qualified students since the year 1989 (Daily Nation Newspaper February 29 2008). The Daily Nation Newspaper (2008) also reports that 16,000 students will be expected to join the public universities of the country. The latter only represents 19.5% of the qualified students joining the public universities of the country, a relatively small percentage.

As a result of the traditional criterion used to absorb students to the public universities, a high percentage of qualified students are therefore locked out of the Kenyan public universities. Thus, the private universities and parallel programmes of the public universities evolved to meet the university education demands in Kenya (Mutula 2002, Chacha 2004).

Private universities are owned by private investors and are self-sustaining. They greatly depend on tuition fee to sustain their activities. Thus, they charge higher tuition fees than do the regular programmes of public universities, whose programmes are greatly sustained by the government that also subsidizes the students' tuition fee (Chacha 2004). While the

regular programmes of the public universities are greatly sponsored by the government, the parallel programmes are largely self-sustaining (Mwinzi 2002, Wekesa 2006 & Wanjohi 2006). However, the facilities, including the classrooms and faculty members are shared between the students in the regular programmes and those in the parallel programmes of the public universities (Mwinzi 2002), but at different times of the day (Chacha 2004). While students in the regular programmes of the public universities attend classes in the daytime and only on weekdays, those in the parallel programmes attend classes in the evening and on Saturdays (Chacha 2004), as it is assumed that many of them have daytime jobs, which assists them to raise their tuition fees (Mwinzi 2002). Many of the students in the parallel programmes are also adult learners.

The private universities and parallel programmes in the public universities mainly absorbed qualified secondary school students, many of whom have been denied access to the regular public university programmes (Mutula 2002). With the Commission for Higher Education (CHE) in place in Kenya to ensure quality higher education (Commission for Higher Education 2008), measures are in place to ensure that those who join the private universities or even the parallel programmes of the public universities have acquired the approved minimum grades in their secondary school education (Catalogue of the Third Exhibition by Kenyan Universities 2004). Unlike the regular public university admission criterion that only caters for students in the Kenyan educational system, the private universities of Kenya also admit students who have attended other educational systems, such as the United Kingdom system, and those from other countries, who have the necessary admission qualifications (Catalogue of the Third Exhibition by Kenyan Universities 2004). This gives a greater opportunity to more students, in and out of the country, to get access to higher education in Kenya. In spite of the flexibility in the admission criterion of the private universities in Kenya, the quality of students joining the universities has been maintained through constant checks done by the CHE.

A high number of students now seek higher education from within the country and more specifically in the Kenyan private universities. Enrolment statistics from the Ministry of Education, Science and Technology (2004) reveal that in the year 2002, there were 8,887 students enrolled in the Kenyan private universities while in 2003 there were 9,540. The

Commission for Higher Education (2006) reveals a total private universities' enrolment of 10,050 students in 2005.

Despite the expansion in enrolments as a result of the evolvement of private universities, the transition rate from secondary level to university level within the country still remains low at 12% (Ministry of Education, Science and Technology 2004). A report in the Daily Nation Newspaper of February 29, 2008 notes that with expansion of the public universities and the opening of constituent colleges of the public universities in the whole country, the admission of students to the public universities was expected to increase to 16,000 students, while the private universities were expected to admit another 10,000 of qualified students who sat for the 2007 national secondary school examinations, thus giving a total of 26,000 qualified students joining the universities within the country. Noting that the total number of students who sat for the 2007 national secondary school examinations were 276,239, while those who qualified to join the university were 82,134, then only 31.7% of the qualified students and 9.4% of those who sat for the 2007 national secondary school examinations were expected to join the Kenyan universities to pursue their tertiary levels of education. Another report in the Daily Nation Newspaper of March 1, 2006 noted that only an average of 10,000 students make it to the public universities and another 3,000 to the private universities in the country each year. This gives a total of only 13,000 students, which is approximately 15% of the qualified students and 5% of all the candidates who sat for the national examination, considering the 2005 year statistics presented on Table 1.1, making it to the Kenyan universities. An article on the Daily Nation Newspaper (March 2 2005) points out that access to university education remains preserved for a very small percentage of secondary school leavers. This is attributed to improved secondary school enrolment and the slow growth in the tertiary sector. Those who get enrolled into the universities are highly regarded by the societies at large and more specifically, by their immediate communities. In addition, those who make it to be admitted to the private universities are expected to equally excel in their studies, taking into account the cost of education in the private universities and the sacrifices made by their parents and in some cases, their communities at large, to ensure that their fees are paid.

The cost of education in the mainstream public universities remains relatively affordable for the average Kenyans, while that of the private universities is relatively high. A look at the fee structures obtained from the Fourth Exhibition by Kenyan Universities (Commission for Higher Education 2006) reveals that students in the mainstream public universities pay Kenya Shillings (Kshs.) 16,000 (US\$ 213.3), those in the parallel programmes of the public universities pay, on average, approximately Kshs. 100,000 (US\$ 1,333.3), while those in the private universities pay, on average, approximately 175,000 (US\$ 2,333.3) on tuition fee on any given academic year. These amounts however do not include fees paid for other services, such as accommodation, transport and medical covers. Mutula (2002) points out that though the students in the private universities pay a lot of money on fees, they also receive value for their money. According to Mutula (2002), the Kenyan private universities in Kenya have better academic performances, good facilities: libraries and infrastructure, discipline and less interrupted programmes as compared to the Kenyan public universities. This consequently leads parents who can afford the private university fees, to opt for the private, rather than the public universities, for their children, even when their children have qualified for admission to the public universities. Generally, the funding of university education is an expensive endeavor (Mwinzi 2002).

Communities and the government at large attach great value to university education with the hope that graduates will promptly and adequately respond to the national and socio-economic demands of the society (Mwinzi 2002). Of concern is whether the students in the universities, and more specifically in the private universities where the cost of education is much higher than that in the public universities, are adequately meeting the expectations of those who have sacrificed so much financially to see them acquire a degree. What guarantee is there that qualifying for admission to the university implies success in their degree course? Are there some mitigating factors that contribute to success in one's academic performance at the university? Mwinzi (2002) points out that if Kenya is to achieve industrialization, poverty eradication and sustainable development by the year 2020, it is necessary to ensure that no obstacles interfere with the quality of education offered.

While various studies have been carried out to determine the factors that influence primary and secondary education in Kenya (Litondo & Ndwiga 2001, Parajuli 2001, Ministry of Education, Science and Technology 2004), a look at various databases, which include the Academic Search Premier, African Journal of Learning, ERIC, Emerald, SAGE and ProQuest Education Journals, reveal that studies on the factors contributing to academic performance of students in the private universities in Kenya have not been given much attention. However, one cannot downplay the role of the CHE in constantly monitoring the quality of education in universities in Kenya and more specifically in the private universities of the country. To ensure quality enhancement in the universities, the CHE constantly makes checks in the private universities, assessing quality in the areas of “curriculum, teaching and academic programmes, research and scholarship, staffing, students, physical facilities, equipment and learning materials and academic environment” (Kaberia 2006: 11). The CHE, however, does not assess the academic performance of the students in the university, a role that the various universities should constantly be handling for purposes of knowing how to assist students enhance their individual academic performance. This study aimed at looking at the interplay of various factors and their contributions to the academic performance of undergraduate students of Kenyan private universities, using Daystar University as a case study.

1.2 BACKGROUND OF THE STUDY

University education, which is the highest level in tertiary education, aims at providing students with high quality education, with a view of adequately equipping them for the job market and making them relevant in knowledge and skills to the demands of the market. This is further supported by the mission of the Ministry of Education, Science and Technology in Kenya, which has as part of its mandate, “to provide, promote and co-ordinate lifelong education, training and research for Kenya’s sustainable development” (Catalogue of the Third Exhibition by Kenyan Universities 2004: 6). In his opening speech at the Third Exhibition by Kenyan Universities on August 25, 2004, the then Minister of Education, Science and Technology, Saitoti, pointed out that the collaboration between the university and industry is crucial for the development of university education and the country at large (Catalogue of the Third Exhibition by Kenyan Universities 2004).

While the Ministry of Education, Science and Technology in Kenya aims at having available primary education for all children, this is not its focus at higher levels of learning. Promotion to secondary schools depends greatly on one's academic performance on nationally approved primary school achievement examinations, while promotion to the university depends greatly on performance on nationally and internationally approved secondary school achievement examinations. Therefore, the higher the academic performance, the greater the chances of acquiring higher levels of education.

There are seven Kenyan public universities and twenty three Kenyan private universities in Kenya (Commission for Higher Education 2008). Sixteen of the twenty three private universities have a religious orientation, of which Daystar University is one. Daystar University was granted its charter by the government of Kenya in 1994 (Daystar University Catalogue 2003-2007) and was one of the first five earliest private universities to receive full accreditation in the country (Commission for Higher Education 2001). It is therefore considered to be more established than most of the other private universities in the country. Daystar University is also the only university in the country that has an existing parents/sponsors association that closely interacts with the university (Nguru 2006).

Daystar University is a Christian-based liberal arts university whose mission is to provide Christian-based higher education, training and research for the expansion of God's kingdom in the world and to provide broad biblically based education programmes that develop men and women to serve in a variety of supportive and leadership roles in the African church and society (Daystar University Catalogue 2003-2007). Daystar University has two main campuses, one in the Nairobi City, which is the capital of Kenya, and the other in the Athi River Town, which is 38 kilometers east of the Nairobi City (Daystar University Catalogue 2003-2007).

The Daystar University caters for both full-time and part-time students. The full-time students are catered for in both the Athi River and Nairobi campus, while the part-time students are catered for in Nairobi campus alone. The Nairobi campus full-time programme was introduced in August 2006 and therefore is a relatively new programme.

The full-time students attend classes during the day and are therefore not expected to be formally working. Parents, guardians or even sponsoring bodies pay for the tuition of the majority of the full-time students. Majority of them are adolescents and have recently completed their high school education. They have little or no experience at all in working. In addition, most of them are not married and greatly depend on others for their financial support and general upkeep (Daystar University Application Documents). The full-time programme of the university consists of undergraduate, diploma and pre-university students. The pre-university students are students who fail to meet the minimal requirement for admission to the undergraduate programme by one grade, that is, they had an aggregate grade of C (plain) or its equivalent, and thus undergo an eight-months pre-university programme, set by the university to equip them with the necessary skills that would enable them to prove their capability of joining the undergraduate programme through their performance on university-based examinations. Students who attain an aggregate grade of a C+ in the university-based pre-university examinations would then be admitted into the undergraduate programme of the university. The part-time programme of the Nairobi Campus comprised of both undergraduates and postgraduates students. They attend their classes in the evenings and on Saturdays after the normal working hours, as it is assumed that they work in the daytime in order to raise their own fees, and thus cannot be full-time students. The majority of the part-time students are self-sponsored and have other financial responsibilities, which include meeting their own upkeep and catering for the financial needs of their family members. They are aged over 20 years and thus are considered adults. Majority of the part-time students are married and have dependants. Many of the part-time undergraduate students have been out of school for some years.

Several degree courses are offered at the undergraduate level. These courses include the

1. Bachelor of Art degree courses in Biblical and Religious Studies, Communication, Community Development, Language and Literature, Psychology and Social Work. However, it should be noted that although students taking Community Development, Psychology and Social Work finally graduated with a Bachelor of Arts degree, their courses were considered to be in the social sciences.

2. Bachelor of Education degree courses in science and art based subjects, which were considered to relate to the social sciences
3. Bachelor of Commerce degree courses in Accounting, Business Administration and Management, Marketing, Management Information Systems and Logistics and Purchasing, all of which were considered to be business-based courses.
4. Bachelor of Science degree courses in Applied Computer Science and Economics, both of which were science-based courses. (Daystar University Catalogue 2003-2007).

The minimum mean entry grade to the undergraduate programme is a C+ (plus) in the Kenya Certificate of Secondary Education (KCSE), which is considered to be equivalent to a Division 2 in the Kenya Certificate of Education (KCE), 2 Principal passes in A-level, over 5 Credits in the International General Certificate of Secondary Education (IGCSE) and 50% from other countries' secondary examination systems. Applicants who have a mean grade of C in KCSE, which is considered to be equivalent to a Division 3 in KCE, 1 Principal in A-level and 4 credits in the IGCSE, would be considered for the eight-months pre-university programme or a two-year diploma programme. Upon successful completion of their pre-university or diploma programmes and acquisition of a mean grade of a C+ (plus), these students would be eligible to join the undergraduate programme. Applicants who have a mean grade of C in KCSE, which is considered to be equivalent to a Division 3 in KCE, 1 Principal in A-level and 4 credits in the IGCSE are eligible for mature-age entry into the undergraduate programme if they are above 23 years of age and have done additional relevant academic courses (Daystar University Catalogue 2003-2007).

To assess the academic performance of a student, both Continuous Assessment Tests (CATS) and final examinations are given to the students. In some cases, projects are given to the students, to determine their performance, especially in practically oriented courses (Daystar University Catalogue 2003-2007). A panel moderates the final examination, which in many cases carries the higher percentage of the final grade, in order to establish its validity and reliability. The grading is also moderated in order to ensure fairness in the grading process (Daystar University Examination Procedure Document 2001).

The grading system of the university involves the Grade Point Average system on a scale of 0.00 to 4.00 points. A student with a Cumulative Grade Point Average (Cum GPA) of less than 2.00 points is considered to be an underachiever and receives a cautioning letter on a semester basis from the university's administration as long as his/her Cum GPA remains below 2.00 points. He/she is given two other chances to raise his/her Cum GPA to 2.00 points, failure to which he/she would be discontinued from his/her programme of study prematurely. Such a student will not be able to graduate unless he/she raises his/her Cum GPA to 2.00 points. Students generally have a maximum of seven academic years in the undergraduate programme. They are expected to meet their programme requirements in addition to ensuring that their Cum GPA is 2.00 and above. On the other hand, a student with a Cum GPA of above 3.50 is considered to be an overachiever and receives a congratulation letter from the university's administration if his/her Semester GPA (Sem GPA) is over 3.60 in any given semester in which he/she takes a minimum of 15 credit hours. Such a student is expected to graduate with honours if his/her Cum GPA is still above 3.50 points by the time he/she completes his/her programme requirements (Daystar University Catalogue 2003-2007). For one to graduate with a Bachelor's degree, the student is required to complete a minimum of 129 credit hours as well as obtain a Cum GPA of 2.00 points and above (Daystar University Catalogue 2003-2007). It is on successful completion of 32 credit hours that one is considered to be in second year, 64 credit hours that one is considered to be in the third year and 96 credit hours that one is considered to be in the fourth year (Daystar University Catalogue 2003-2007).

It is important to note that, other than identifying the students who are underachievers, those who are overachievers and the overall performance of students in any given semester, very little has been done to specifically analyze academic performance in detail and to establish the factors that influence the academic performance of undergraduate students the Daystar University. It is for this reason that the researcher aims at creating awareness on the academic performance of students at the Daystar University with the view that the study would act as a basis of greater attention being given to such studies in the university.

1.3 PROBLEM STATEMENT

The mission of the universities in Kenya is to educate students in a holistic manner in order to facilitate the intellectual and personal development of its students (Tam 2002). It is expected that those who have acquired the minimum aggregate grade for entry into the universities, as approved and monitored by CHE, are capable of adequately handling university level education. This implies that, holding all other factors constant, but mental ability, students who are admissible to the university are expected to equally excel in their academic performance in the university. However, it would be presumptuous to believe that the mental competence of an individual is the main determinant of academic performance at the university level.

A small percentage (approximately 5%) of the overall number of students who complete secondary school education make it to be immediately admitted into the Kenyan universities to pursue degree courses that are hoped to enable them to become more established and useful members of society. These students are considered to be ‘the cream of the society’ because very few make it to this level. They are considered to be a prestigious group in the society. However, despite having the necessary qualifications for entry into university, and thus expected to equally perform well in their academics, some students appear to be struggling in their studies in the universities, and thus perform below expectation. According to Cheruiyot (2001) and Mwinzi (2002), public universities in Kenya are experiencing a high rate of dropout, deferment of studies and very stressful conditions. They attributed this to finance-related issues that Mwinzi (2002) considers to be negatively impacting on the students’ academic performance.

Students in private universities appear to get value for money because the institutions have good teaching and learning environments (Mutula 2002; Ngure 2005). Mutula (2002) points out that, private universities provide a favourable environment for academic excellence. According to Ngure (2005), there is good lecturer-student interaction, examinations are moderated and closely monitored, continuous assessment tests are regularly given and the libraries are well stocked, giving the students an excellent learning environment. In addition, the Commission for Higher Education closely monitors quality in the private universities. However, one question that would linger in one’s mind is how

adequately students utilize the provided environment in order to ensure that they perform well in their university education. This is a question that is of concern to the universities and to the students' sponsors, who sacrifice so much financially to see that the students complete their degree programmes, attain good paying jobs and even begin their own businesses, thus becoming useful members of society. Parents and other guardians would be expected to be greatly psychologically affected by unexpectedly low performances of students due to the high expectations they have for the students acquiring the highest cadre of job opportunities in the market place and thus earning high salaries, which would not only make the individuals self-sufficient, but also help them meet the needs of their communities and society at large.

It would be of interest to establish whether all students perform well in their undergraduate studies considering the fact that joining the university is credited by good performance in high school. Data from Daystar University on the academic performance of undergraduate students over the last 5 years showed that approximately 5% of the students performed below expectation on a semester basis (Daystar University Probation Documents). This implies that there are factors that interact with students' academic ability to determine their academic performance at the university level.

Of great concern to this study is that minimal measures have been put in place within the Kenyan universities, and more specifically, within the private universities in the country to bridge the gap between the academic performance of students in high schools and their subsequent academic performance in the universities. In order to make this possible, there was need to first establish how various variables affect the academic performance of students in the private universities in Kenya, and more specifically, at the Daystar University.

A lot of research has been done in the world, especially in the developed countries, to determine the factors that contribute to academic performance at the universities. However, very little had been done in Kenya, which is a developing country and whose cultural orientation may be very different from any other country's, to establish the dynamics of academic performance within the universities. More specifically and also noting that the

whole concept of private universities in Kenya has recently gained recognition, there is a need to assess the private sector's effectiveness in meeting the academic expectations of the society. No research had yet been carried out in the private universities of the country, to assess the interplay of various factors on students' academic performance.

1.4 PURPOSE OF THE STUDY

The main purpose of this study was to explore the possible factors that contribute to the academic performance of students in private universities in Kenya, using Daystar University as a case. The study aimed at identifying the factors that had greatest effect on students' academic performance, establishing the factors that significantly influenced academic performance among students in the groupings of gender, international students' status, campus of study, year of study and type of course major . More specifically, the study sought to establish the interplay that exists between various factors and the academic performance of students at the university, with a view of advocating for relevant measures to be taken to assist students to achieve optimum results from their academic programmes in the university.

1.5 RATIONALE OF THE STUDY

There is need for stakeholders to understand the factors that interact with academic performance at the university level in order for them to look into ways of enhancing the academic performance of students at this level. The findings of the study are expected to provide insight to private university stakeholders, and more specifically, to the administrators, student advisors and the teaching fraternity, on the factors that have potential of contributing to students' academic performance in the universities. The findings of the study are also expected to provide insight to high school teachers on how best to prepare their students for transition to tertiary levels of education. Noting that the Parents' Association of the Daystar University is an active body within the university, the study would further provide insight and direction to the parents and sponsors, on their role in enhancing the academic performance of students in the university.

The study is expected to provide insight to university students on how various factors can impact on their academic performance. The students would therefore be equipped with the necessary information that would enable them to make wise decisions on how to adjust their lives at the university for the enhancing of their academic performance.

On a wider spectrum, the study is expected to contribute to the body of knowledge of the effect of various factors on the students' academic performance in tertiary education.

1.6 RESEARCH QUESTIONS

The study aimed at answering the main question

“What model best explains the contributions of various factors in predicting the academic performance of undergraduate students in the university?”

In an attempt to answer the main question of the study, the following questions were addressed:

1. What are the factors that significantly influence the academic performance of undergraduate students in Daystar University?
2. How do the identified factors influence academic performance of students in Daystar University?
3. What model best depict the interaction of factors that contribute to the academic performance of undergraduate students of the university, and specifically of students in the categories of gender, international students' status, campus of operation, year of study and course major type?

1.7 RESEARCH DESIGN

A research design is a conceptual structure that a researcher applies to the collection, measurement and analysis of data that is meant to be used in the investigation of his/her study problem (Cooper & Schindler 2003; Kothari 2004). The research design consists of a description of the population of the study focusing on its sample, the techniques and procedures that would be used in the gathering of the information from the sample and the methods that would be used in the processing of the information obtained and its analysis (Kothari 2004). A study without a well thought out research design has the potential of

being inefficient or finally leading to conclusions that are inaccurate and/or misleading. According to Kothari (2004), research designs facilitate the smooth flow of the research operations, thus making the research efficient, maximizing on the acquired information and yet minimizing on wastage of time, effort and money. Therefore, the importance of a research design in the current study could not be downplayed.

This study was predictive in nature, seeking to test the hypothesized model of the study. Consequently, I utilized the structural modeling techniques to establish the model that best explained the contributions of various factors in predicting the academic performance of undergraduate students in the university. Therefore, the study employed quantitative research methods, which are distinctly characterized by, among other characteristics, making deductions, testing hypothesis, and utilizing inferential statistical analysis (Johnson & Onwuegbuzie 2004), all of which were employed in the current study.

1.7.1 Sampling techniques

Stratified random sampling techniques were employed in selecting the sample of undergraduate students who would be utilized in the study. The undergraduate students' population was divided into two strata, namely, the Nairobi part-time students' stratum and the Athi River full-time students' stratum. All the students attending classes in two randomly selected class timeslots, one timeslot from the Nairobi campus stratum, and the other from the Athi River Campus stratum were selected to participate in the study. Thus, a total of 641 students from the Athi River Campus, that is, 68.4% of the students in the Athi River campus who enrolled for that Block's study period and 238 students from the Nairobi campus, that is, 94.4% of the students in the part-time Nairobi campus programme who enrolled for that Blocks study period, were expected to participate in the study. However, only 37.2% of the students in the Athi River campus and 54.0% of the students in the Nairobi campus responded to the questionnaire of the study.

1.7.2 Data Collection Instruments

The study made use of both primary and secondary data.

The primary data was directly obtained from the students, using a questionnaire. The questionnaire consisted of items that addressed the students' demographic data on age, gender, international students' status, year of study, campus of operation and course major of the student. In addition, the students were also expected to include their student identity number, since there was need for this information to give linkage to the secondary data of the study. Other items that were included in the questionnaire addressed students' characteristics, as self-reported by the respondents, in the construct areas of attitudes, goal orientations, self-regulatory learning strategies and personality traits. The items of the various construct areas were obtained from standardized tests. The student characteristics' items were closed-ended and provided on a 5-point Likert scale that consisted of the responses of 'Strongly Disagree', 'Disagree', 'Neutral', 'Agree' and 'Strongly Agree', given to positively and negatively phrased statements. The initial questionnaire consisted of 60 items on the students' characteristics.

The secondary data was obtained from university documents which included admission and academic performance records of each of the students who responded to the questionnaire and provided their student identity numbers. The data that was extracted from the various reports included students' final high school grades, English Language proficiency grades and the students' cumulative Grade Point Average (Cum GPA) by the end of the Block study period of the year 2007. It was necessary to establish this data from secondary sources due to the assumption that students would be reluctant to willingly and objectively respond to items that involve their academic performance.

The initial questionnaire consisting of 60 items on the students' self-reported characteristics were first examined for face validity by a faculty member in the area of Education, English Language and Literature. Items that were ambiguous were then further refined. The revised version was pre tested among 27 students in the Nairobi full-time programme since the students from this programme were not part of the study. Internal consistencies of the various items of the different construct areas were established using the alpha coefficient indices. Adjustments were made to the questionnaire and more specifically to items that were ambiguous and those that had low reliability coefficients.

The final version of the questionnaire consisted of 59 items drawn from the construct areas of attitudes, which included self-efficacy and locus of control beliefs; goal orientations, which included intrinsic and extrinsic goal orientations; self-regulatory learning strategies, which included metacognitive regulation, resource management and cognitive learning and personality traits, which include agreeableness, extraversion, neuroticism, conscientiousness and openness-to-experience.

1.7.3 Data Collection procedures

Copies of the final version of the questionnaire were distributed to the various classes by a research assistant one day after notification to the various lecturers of the classes that were to be used in the study. The lecturers then administered the questionnaire to all the students in their classes and gave the responses back to the research assistant thereafter. The students were not forced to respond to the questionnaire, although they were encouraged to respond to it. In order to increase the likelihood of the students providing their student identity numbers without feeling threatened or uneasy, the students were informed that their responses would only be used for research purposes and that their responses would be treated with confidentiality and would not be used to victimize them in any way.

A retest of the same questionnaire was carried out among the students who provided their identity on the prior test. Two research assistants were given the retest questionnaires to directly administer to the students who had previously provided their identity in the previous test session.

1.7.4 Data analysis

Descriptive analyses were carried out in order to determine the means and standard deviations of the variables of the study. One-way Analyses of Variance (ANOVA) were also used to establish significant differences in the means of the groupings of gender, international students status, year of study, campus of operation and types of course major at significant levels of $p \leq 0.05$. In addition, bivariate correlation analyses were carried out

to provide an indication of the significance of the relationships of the variables of the study at $p \leq 0.05$.

In order to test the hypothesized model for goodness of fit in the various groupings of gender, international students' status, year of study, campus of operation and types of course major, the structural equation modeling (SEM) techniques, and more specifically, the Analysis of Moments Structures (AMOS) programme, was used. The choice of employing the SEM techniques in this study was made due to their ability to determine the relative strength of each of the variables of the study and to test models of functional relationships between the various manifested and latent variables and the criterion variable (Saenz et al. 1999). On the other hand, the AMOS programme was utilized in the study because of its ability to easily visualize structural equation models in graphical forms (Garson 2006). The hypothesized model was fed into the AMOS programme for data in each of the groupings of gender, international students' status, year of study, campus of operation and types of course major. Graphical presentations were made of the observed and latent variables and the hypothesized paths. Parameter estimates were also calculated using the AMOS programme in order to establish the regression weights, covariances and variances of the hypothesized model. The goodness of fit indices of chi-square (χ^2), the root mean square error of approximation (RMSEA), the closeness of fit measure (PCLOSE) and the comparative fit index (CFI) were utilized in making judgments on the models that best explained the contributions of various factors in predicting the academic performance of undergraduate students in the university at $p \leq 0.05$.

The research design for the entire study is comprehensively discussed in Chapter 3 of this study.

1.8 ASSUMPTIONS OF THE STUDY

The study made the following assumptions:

1. Excellent teaching and learning environment is maintained within the university.

2. By virtue of the students attaining the minimum admission requirements to enter the university, they have satisfactory abilities to tackle the requirements of their academic programmes in the university.
3. The procedures involved in the administration of the questionnaire by both the research assistants and lecturers of the various classes were carefully followed.
4. The students' personal data, as accessed from university documents, was an accurate representation of the students' personal information.
5. The information given by the students in the questionnaires was accurate.
6. The average scores of the students, obtained from the two English Language proficiency courses of reading and writing, were sufficient measures of the students' verbal ability.

1.9 LIMITATIONS OF THE STUDY

1. The researcher, being a staff in the admissions and records department of the university, was not able to directly administer the questionnaire to the respondents as a result of possible bias. The researcher therefore made use of research assistants, who were trained on the administration of the questionnaire, and the lecturer of the various participating classes, who were provided relevant instructions, to administer the questionnaire.
2. Academic performance records are considered to be sensitive and confidential and thus students would not readily reveal their performance to others. This necessitated the use of secondary data, in the form of university documents, in an attempt to establish the students' academic performance.
3. There was need in this study to link students' responses in the questionnaire to their academic performance, as obtained from academic records. Therefore, the respondents were expected to reveal their student identities when responding to the questionnaire. This had potential of either discouraging the students from responding to the questionnaire well or even revealing their identity. In order to minimize these negative effects on the responses, the researcher reassured the students that the data provided would only be used for study purposes and would be treated confidentially. In addition, the research initially made use of a large sample in data collection so as to be able to filter out those who did not

reveal their identity, without necessarily affecting the adequacy of the sample size.

4. The students were suspicious of the retest despite being reassured that their responses were only going to be used for research purposes and that the retest was meant to verify their responses. Thus there was poor response on the retest.

1.10 DEFINITION OF TERMS

Accreditation: Granting of approval of having met certain standards to operate as an institution.

Credit hour: A one credit-hour course is a course offered for 1 hour each week for a period of 16 weeks, which is the expected duration of a semester. A student therefore encounters 16 contact hours with the instructional process.

Full-time student: A student who attends classes in the daytime and thus on a full-time basis. He/she is considered to be regular students of the university.

International students: Non-Kenyan students who are enrolled to study in the university, many of who are in the country on a temporary student visa.

Local students: Kenyan students who are enrolled to study in the university

Orientation programme: A programme set by the universities geared towards introducing different aspects of the university life to the students. It is aimed at enhancing students' initial understanding of the university and assisting the students to make the necessary adjustments to their lives in the university based on the expectations of the university.

Parallel programmes: A wing of the public universities which is greatly sustained by the students' fees.

Part-time student: A student who only attends classes in the evening and on Saturdays, presumptuously because he/she works in the daytime.

Private universities: Universities that are not government-funded, but that have been approved by the Commission for Higher Education for the provision of university education in Kenya and are regularly monitored, receiving re-inspection certificates, to ensure that they keep high

education standards. They are privately run and sustained, mainly through the students' fees.

Public universities: Universities that have been established by an Act of Parliament and which are largely financed by the public fund of the government thus requiring of minimal fees from the students.

Religious orientation: A strong inclination to religious backup, in terms of their admission requirements, practices or even beliefs.

Selection board: A body, consisting of representatives from the various public universities, that meets annually to select students to pursue degree courses in the various public universities.

Self-sponsored students: Students who pay their own fees and who do not have any other financial support. They mainly work in the daytime in order to raise their fees.

Student mentors: Individuals who assist students through guiding them on issues that contribute to their lives and specifically to their academic performance. They set the examples for the students to follow through being role models to the students, individuals students would want to follow after due to being high performers in their academics or even advisors to the students. Student mentors include lecturers, high school teachers, student advisors and counselors, parents and sponsors and even fellow students who are excelling in their academics.

1:11 DESCRIPTION OF CHAPTERS

The thesis was divided into six chapters as follows:

Chapter One: Introduction

This chapter provides background information to the study. It justifies the need for the study, providing the purpose of the study, outlining the specific areas that the study intends to look at as well as defining terms that are in use in the study.

Chapter Two: Theoretical review of factors contributing to academic performance of university students

Through reviewing literature, this chapter discusses what has already been done in the area of the study, with a view of establishing gaps and providing a theoretical base to the study. The chapter also provides the conceptual framework for the study.

Chapter Three: Methodology of the study

This chapter describes how the researcher carried out the research. The chapter describes the research design, the sample, the instruments that were used, the data collection procedures and the data analysis procedures that were employed in the study.

Chapter Four: Descriptive and Correlation Analyses of the variables of the study

This chapter presents descriptive analysis of the attributes of the study while seeking to determine significant effects of various factors on the academic performance of undergraduate students of the university. The chapter also identifies significant relationships between the variables of the study.

Chapter Five: Path models of factors contributing to students' academic performance

This chapter utilizes the collected data in developing the models that best depict the contributions made by various factors to the academic performance of undergraduate students. Using structural equation modeling techniques and confirmatory factor analysis, the chapter confirms the models that would best fit the data of the study, determining the significance of the direct and indirect effects of various variables in the study.

Chapter Six: Conclusions and Recommendations

This is the last chapter of the study. The chapter provides conclusions to the findings of the study, giving their implications on the academic success of undergraduate students of the Daystar University and making recommendations on the way forward and possible future studies.

CHAPTER TWO

THEORETICAL REVIEW ON FACTORS CONTRIBUTING TO ACADEMIC PERFORMANCE OF UNIVERSITY STUDENTS

2.1 INTRODUCTION TO ACADEMIC PERFORMANCE IN HIGHER EDUCATION

Performance is observed to be the direct outcome of learning. It is the main indicator that learning has occurred. Driscoll (2005:1) describes learning as a “persisting change in performance or performance potential that results from experience and interaction with the world”. Therefore, for learning to be observed, there must be demonstration through performance on related tasks. Though performance heavily depends on learning, low performance may not necessarily reflect inadequacy in learning. According to Bandura (2001), it is possible to learn a task and yet perform poorly in it. Other factors, other than the learning process, have potential of influencing performance on tasks.

In an academic setting, performance can be referred to as ‘academic performance’. Academic performance, as demonstrated using scores on tests, has over the years been used to determine the competence of a student in a course. Gagne (1985) points out that there are five main categories of learning outcomes. They are verbal information, intellectual skills, cognitive strategies, attitudes and motor skills. All these outcomes are of importance to the learning process and different learning tasks would require of the demonstration of various learning outcomes.

The Grade Point Average (GPA) is a measure of a student’s average academic performance across the courses being offered in any given semester (McKenzie, Gow & Schweitzer 2004, Zeegers 2004). It incorporates all the learning outcomes expected of a student in his/her semesters’ courses. The cumulative (Cum) GPA represents a student’s overall performance in the duration of time of the programme of study. It is used as a measure of a student’s average academic performance in the duration of time he/she has been taking a certain programme of study. It is an average score of all the course scores obtained in the various semesters the student has attended in his/her programme of study.

According to Yang and Lu (2001), a student's undergraduate Cum GPA is the most important predictor of graduate performance. Thus, the Cum GPA can be considered to be an important measure that impacts not only a student's undergraduate studies, but also his/her future disciplines of study. Zeegers (2004) considers the value of the GPA to include all the various assessment procedures encountered by a student in his/her programme of study, as opposed to his/her success in only one particular assessment procedure. At the Daystar University, as is the case in many other universities, the value of the GPA is obtained from one's overall performance on various assessment procedures. The assessment procedures include continuous assessments, which consist of tests and assignments, participation in class activities, term papers, group activities, presentations and projects, and students' End of Semester examinations (Daystar University Catalogue 2003-2007). Zeegers (2004) also points out that the GPA is a more generally used measure of academic success, and thus allows it to be compared with other studies where measurement of academic achievement is one of the study variables. It is for the above reasons that this study has made use of the GPA as the measure of academic performance.

The Cum GPA is derived from all the semester grades of a given student. At the Daystar University, it is the average score of all the grade points obtained by the student in the courses he/she has attempted in relation to the credit hours covered by the student (Daystar University Catalogue 2003-2007). Every course in the university is allocated credit hours of coverage. Credit hours are considered to be the weekly contact hours assigned to a course for the fulfillment of the requirements of the course in a given semester. According to the Daystar University Catalogue, a one credit-hour course is a course offered for one hour every week for a period of 16 weeks, which is the duration of a regular semester. In other words, a one credit-hour course in any given semester involves 16 contact hours with the instructional process. Therefore, a three credit-hour course is considered to consist of 48 (3 times of 16) contact hours with the instructional process. The Daystar University courses range from one credit-hour to 6 credit-hour courses. Letter grades are assigned to students' courses, depending on the scores obtained by a student in any given course. The scores range from 0-100% while the letter grades range from A to F as shown on Table 2.1 and obtained from the Daystar University 2003-2007 Catalogue.

Table 2.1 *Students grading system*

Scores	Letter grade per credit hour	Grade points per credit hour	Significance of performance
91-100%	A	4.0	Superior
81-90%	A-	3.7	Superior
76-80%	B+	3.3	Superior
71-75%	B	3.0	Average
66-70%	B-	2.7	Average
61-65%	C+	2.3	Average
56-60%	C	2.0	Average
51-55%	C-	1.7	Below Average
46-50%	D+	1.3	Below Average
41-45%	D	1.0	Below Average
40%and below	F	0.0	Unacceptable for credit

Table 2.1 further demonstrates the conversion of letter grades to grade points per credit hour. The grade points per credit hours are further used to compute semester grade points for every course taken in any given semester in relation to the allocated credit hours, and subsequently, to compute the Cum GPA.

One can assume that by virtue of qualifying to join the university, students would equally be able to interact with the course material and therefore perform well in their academics at the university. This assumption is based on the fact that admission to the university is greatly pegged on the students' prior high school academic performance as determined by the grades or marks obtained in their final national or international secondary school examinations. Thus, only those who acquire an average minimum score of C and above, or its equivalence, gain access to the Daystar University for the undergraduate programme (Daystar University Catalogue 2003-2007). However, the assumption that performance in undergraduate programmes is directly proportional to performance in the final high school examination has not been proved so. A look at the academic performance of Daystar University undergraduate students over the last 5 years reveals that approximately 5% of the students perform below average on a semester basis, that is, they have a cumulative Grade Point Average (Cum GPA) of less than 2.00, which is equivalent to less than C (plain) or less than 56% (Daystar University, Probation Documents 2003-2007 & Daystar University Catalogue 2003-2007). This implies that prior performance in final high school examinations, which is the criteria for admission into tertiary institutions, is not of sole importance in determining the academic performance of students at the latter level. Other

factors appear to interact with students' academic ability to determine their performance at the university level. These factors may differ from those observed at the high school level.

According to Cobb (2003), several external sources contribute to the success of students at lower levels of education, and more specifically at the primary and high school levels. These factors could be spelt out as follows:

1. The teacher controls and is responsible for the learning process at the lower levels of learning. In addition activities performed by the student and assessments are developed to monitor and evaluate progress towards the accomplishment of a task. The teachers take ownership of how the students learn the information, structuring the learning environment and motivating the students through extrinsic reward and verbal gratification.
2. External sources, namely, the parents, teachers and administrators establish the goals and objectives of the students at lower levels
3. Students are given minimal opportunities to regulate their own learning. According to Cobb (2003), evidence of lack of self-regulation is found in the transition from high external involvement in the lower levels to complete autonomy of learning experienced at tertiary levels of education.

Isaacson and Fujita (2006) on the other hand observe the transition from high school to tertiary levels of education to put higher demands on the student learner rather than external forces. According to Isaacson and Fujita, the transition involves a move from the declarative knowledge emphasis in high school to higher level thinking skills, which are typical at tertiary levels of education. Isaacson and Fujita point out the following aspects that define the aspects of tertiary level education and that differ from those that define high school levels of education:

1. Successful tertiary level students recognize that their lecturers expect more than the memorization of declarative knowledge from them
2. Successful tertiary level students use accurate metacognitive knowledge monitoring while studying, as a way of assessing their mastery of the required material.

3. Successful tertiary level students have a variety of self-regulatory learning strategies that they can choose from to match their levels of learning to the demands of the performance task.
4. Successful tertiary level students are able to self-monitor their understanding and the demands of the performance task during evaluation and to adjust their demonstration of the learning accordingly.

In an attempt to provide parents of undergraduate students with a better understanding of the transition of students from high school to tertiary education, Appleby (2005) provides the following differences between high schools and tertiary education as shown on Table 2.2.

Table 2.2: Differences between high schools and tertiary education

High Schools	Tertiary education
Academic expectations of students are not high	Tertiary education students have higher academic expectations
Good grades can be obtained with minimal effort.	Minimal effort would usually result in poor grades.
Teachers are usually accessible.	Faculty is usually only available during their office hours and by appointment to address the students' concerns.
Parents, teachers and counselors give advice and often make decisions for students.	Students have to learn to rely on themselves and begin to experience the results of their own good and bad decisions.
Parents are expected to help students in times of crises.	Students have more freedom and have to take responsibility for their own actions.
There are least interruptions from schoolwork.	There are possibilities of many distractions from their academics

In general, Appleby (2005) describes tertiary level students as expected to be responsible adult human beings. According to him, tertiary level students need to make a transition from childhood to adulthood, from high school to tertiary education and from being passive learners to being active learners. The aspects of the teacher and availability of physical facilities, though necessary, are not as critical as the students' own initiative in determining their academic performance in the tertiary level (Cobb 2003, Appleby 2005, Isaacson & Fujita 2006). Students are therefore expected to take personal initiatives and be more responsible for their academic achievement in the university. Yip and Chung (2005) found differences in the study strategies that contribute to success in high schools and those that contribute to success at the university. This is attributed to different emphasis

and academic demands in the high schools and the universities. Therefore, for optimum results to be achieved, it is necessary to have a successful transition of students from high school to the university. It is important that institutional policies and practices are oriented towards developing an environment by which students' responsibility and active participation in their own university experience is promoted (Tam 2002).

In order to make a smooth transition from high school to the university, and thus make adjustments to the existing practices of students in the university, it is first and foremost important to understand the factors that contribute to academic performance at the university, most of which are student-related. Several factors have been identified as contributing to the academic performance of students at the tertiary level of education. They include self-efficacy (Abouserie 1995, Saenz, Marcoulides, Junn & Young 1999, Carroll & Garavalia 2004, Facey-Shaw & Golding 2005, Mulhall, Flowers & Mertens 2005), anxiety, stress and health (Driscoll 2005, Saenz et al. 1999, Exner 2002), study habits and skills (Glass, Maxwell, McLeen & Slegers 1997, Saenz et al. 1999, Hall 2000, Exner 2002), social integrations (Saenz et al. 1999, Tam 2002), academic support (Exner 2002), orientation and adjustment to the university (Exner 2002), one's choice of courses (Exner 2002), attitudes (Glass et al. 1997, Silins & Murray-Harvey 2000) prior academic performance (Hall 2000, Salahdeen & Murtala 2005), interaction with lecturers (Tam 2002), students' background (Alexander 2000), motivational levels (Glass et al. 1997, Alexander 2000, Exner 2002, Anderson 2004), international students' status (Saenz et al. 1999), financial support (Mwinzi 2002), teaching strategies (Gravett & Geysler 2004), age (Abouserie 1995, Hall 2000), gender (Stoeger, Ziegler & David 2004) and intellectual capabilities (Glass et al. 1997, Anderson 2004).

A study carried out by Smith and Naylor (2001) among 94,485 archived United Kingdom university students' records of 1993 to 1994, using regression analysis to investigate the determinants of degree performance shows that gender, course taken, prior performance, marital status, age, full-time/part time students' status, citizenship and accommodation contribute to academic performance at a level of significance of $p \leq 0.01$. They also observe interactions between the students' characteristics which further contribute to their academic performance. Significant negative effects are observed among both the male and

female students who were unemployed, those who studied on a part-time basis and students who studied mathematics, science, computing, languages and education. On the other hand, significant positive effects are observed among male and female students who had good high school grades especially in chemistry, mathematics and physics, those who were accommodated at home, those who were above 24 years of age, those who were married and those who studied biological science, literature and humanities. While significant effects were observed among male students, and not female students, studying agriculture, architecture, law and politics, significant effects were observed among female students, and not male students, studying creativity and those who had good high school grades in the English subject. Smith and Naylor's (2001) study was however mainly confined to student characteristics as obtained from university records and did not consider other variables, which would be associated with students' internal nature, which would be obtained from direct observation of the students or self-assessments through interviews or even questionnaires. In addition, the data of interest in their study is outdated since it involved records that are more than fifteen year old. Current circumstances and the dynamics of education in the world may be reflecting differences in results.

On the other hand, Carroll and Garavalia (2004) consider both the students' characteristics and self reported constructs in an attempt to identify the factors that contribute to the academic performance of students at the university. They propose four key factors that influence students' academic performances. These are self-efficacy, assigned goals, self-goals and abilities. Carroll and Garavalia's (2004) model did not consider the students' characteristics of gender, age and international students' status, to be significant contributors to academic performance in the university; rather they considered the three characteristics to have an influence on attention, memory and motivation thus indirectly contributing to academic performance. This is just one of many other models of academic performance that attempts to explain the contribution of various factors to academic performance. The next session will, in more details, look at other proposed models of factors contributing to the academic performance of students in the universities.

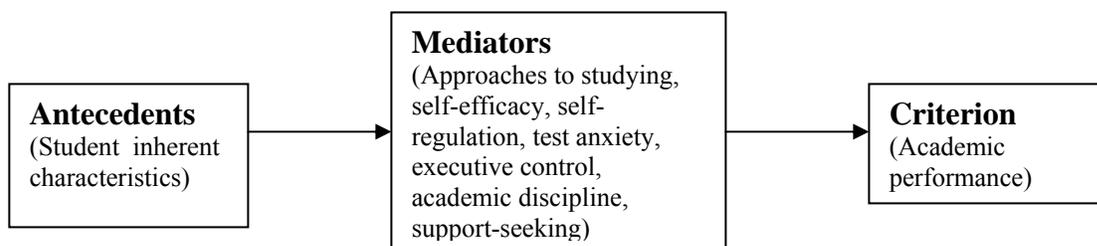
2.2 MODELS OF THE FACTORS CONTRIBUTING TO ACADEMIC PERFORMANCE OF STUDENTS IN THE UNIVERSITIES

In an attempt to enhance understanding on the factors that contribute to the academic performance of students, Zeegers (2004) proposes models that make use of three types of variables. These are namely:

1. Antecedents, which are variables that involve students' characteristics. They are independent variables that are not necessarily influenced by others. They include students' inherent background information, such as, age, gender and international students' status.
2. Mediators, which are variables that may be influenced by other factors. According to Zeegers (2004), they include students' approaches to studying, self-efficacy, self-regulation, test anxiety, executive control, study choice and tertiary entrance scores.
3. Criterion, which in Zeegers' (2004) study refers to a student's academic performance. It is the outcome measure that is predicted by the other variables in the model.

The model type proposed by Zeegers (2004) is demonstrated in Figure 2.1

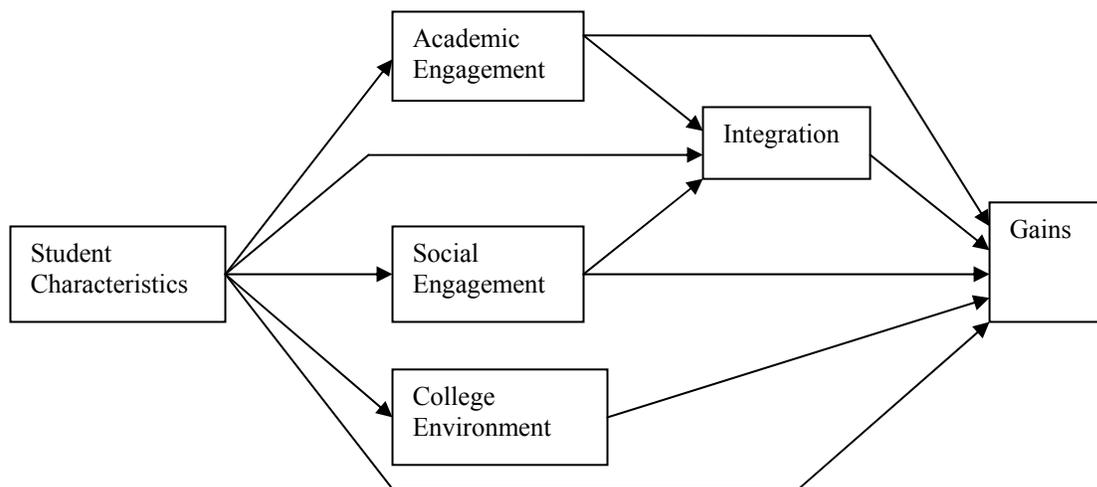
Figure 2.1 Zeegers' (2004) proposed model type of academic performance



Several studies have attempted to articulate the variables that influence the academic performance of students in the university. The principles behind other proposed models (Pike & Kuh 2005, Sulaiman & Mohezar 2006, Ofori & Charlton 2002, Mckenzie, Gow & Schweitzer 2004) are similar to those proposed by Zeegers (2004). According to Ofori and Charlton (2002), various factors either have direct or indirect effects on the criterion, which in this case is academic performance. Relationships between variables and the criterion would be considered to be indirect if they are being mediated through other

variables. Ofori and Charlton (2002) observe that students' age, for instance, is mediated through both support seeking and entry qualifications, in relation to academic performance. In addition, they observe internal control beliefs to be mediated through support-seeking in relation to academic performance. Zeegers (2004), through path analysis, found gender to have a direct effect on the academic performance of third year students, implying that the antecedents can also have direct effect on the criterion. The two latter studies reveal that antecedents can either have direct or indirect effects on the criterion. Mediators can also mediate each other, thus having an effect that is not direct on the criterion, when passed through another mediator. This type of model is supported by Pike and Kuh's (2005) model, which proposes that student inherent characteristics (antecedents) have direct effects on academic engagement, social engagement and college environment (mediators) which further impact on gains (criterion), which in this case refer to gains in learning and intellectual development. In addition, it proposes that the students' inherent characteristics directly impact on gains (criterion) and that academic and social engagements (mediators) influence integration into college environments (mediator) which then impact gains (criterion) as shown on Figure 2.2.

Figure 2.2 Pike and Kuh's (2005) proposed model on academic performance



A closer look at Zeegers' (2004) final model shows that, among the first year students, one's international status ($\beta = 0.27$), that is, whether or not they are citizens of Australia; English proficiency ($\beta = 0.21$); surface approach to learning ($\beta = 0.16$) and the deep

approach to learning ($\beta = 0.15$) have direct effects on achievement. According to the model, which accounts for 17% of the variance in academic performance among first year students, older first year students were more likely to adopt deeper approaches to learning, thus giving an indirect effect of age on achievement. He however observes gender to have no significant direct or indirect effect on achievement. Conversely, Zeegers' (2004) final path model for third year students, which explains for 27% of the variance of academic achievement among third year students of science depicts English language proficiency ($\beta = 0.26$), surface approach to learning ($\beta = -0.25$), self-efficacy of academic skills ($\beta = 0.17$), gender ($\beta = 0.14$) and the deep approach to learning ($\beta = 0.12$) as having direct effects on academic performance. Zeegers' (2004) final models for both the first and third year science students reveal the variables that contribute to academic performance as varying from one year of study to the next. While self-efficacy and gender are not significantly important to the academic performance of first year students, they are of significant importance to the academic performance of third year students. In addition, while surface approaches to learning have positive effects on first year students, they have negative effects on third year students. According to the study, international students' status directly affects academic performance in the first year of study but not in their third year of study. According to Zeegers (2004), international students' status has indirect effects on the academic performance of third year students when mediated through approaches to learning.

Another study that shows the differences between the variables that influence academic performance in the various years of study is that of Harackiewicz, Barron, Tauer and Elliot (2002). Harackiewicz et al. (2002) carried out a longitudinal study among 471 psychology major students, of a Midwestern university, from their first year of study to graduation. Their model reveals that students who adopt performance-approach goals achieve higher grades in their introductory psychology course, while students who adopt work-avoidance goals achieve lower grades. They also observe ability ($\beta = 0.33$), high school percentile ($\beta = 0.33$), type of instructor ($\beta = 0.09$) and gender ($\beta = 0.09$) to have direct effects on performance in the introductory psychology course. According to Harackiewicz et al. (2002), women have higher grades than men do in the course. This latter finding differs from that of Zeegers (2004) whereby no significant gender differences were observed in

the first year scores of the science students. However, the study supports Zeegers' (2004) third year model in relation to the significance of the direct effect of gender on academic performance. Another model of Harackiewicz et al. (2002) reveals performance-approach goals ($\beta = 0.15$), work-avoidance goals ($\beta = -0.12$), mastery goals ($\beta = -0.09$) and gender ($\beta = 0.22$) to have direct effects on semester GPA of the students. The model still supports the view that women attain higher scores than men. The model also proposes that students with intrinsic or mastery oriented goals, which are characterized by the use of effective task strategies, a belief of one's ability to improve, a preference for challenging tasks, and feelings of satisfaction when effort leads to personal success (Carroll & Garavalia 2004), greatly adopt the deep approaches to learning and this negatively influences their first semester GPA. This is in contrast with Zeegers'(2004) model that identifies the deep approach to learning as having significant positive effect on the first year performance of science students. Further development of Harackiewicz's et al. (2002) models reveal that mastery goals ($\beta = 0.13$) and gender ($\beta = 0.21$) have direct effects on a students' subsequent GPAs, even as measured at the end of their academic program. This implies that women perform better than men in terms of their academics and that mastery-goal are of greater importance to a student later in their academic pursuit. Harackiewicz et al. (2002) consider this model to account for 8% of the variance in the subsequent GPAs.

Another study that attempts to explain the contributions made by various variables to academic performance is that of McKenzie, et al. (2004). Their study included 1193 first-year Australian university students and sought to relate previous academic performance, motivation and self-regulatory learning strategies to end-of-semester grades, using a structural equation model. The final model, which involved 682 first year students, proposes learning strategies to mediate the effect of locus of control, learning and performance goals, task value and conscientiousness on the first semester's academic achievement and subsequently affect academic achievement in the second semester of the first year students. In addition, the model proposes previous performance, introversion and agreeableness to directly affect achievement in the students' first semester and subsequently contribute to performance in the second semester. The final model proposes previous performance to be the most important predictor of academic performance in the first semester, accounting for 16.8% of the variance, followed by the self-reported self-

regulatory learning strategies, 4.8%, introversion and agreeableness, which are both measures of personality, 3.2% and 0.81% respectively. The model suggests that there are still other variables that account for the variance in academic performance in the first year of the students and in other years of study.

Another path model of factors influencing academic performance is proposed by Ofori and Charlton (2002). Ofori and Charlton (2002) carried out their study among 315 students taking a pre-registration diploma course in nursing at a university in the Northwest of England. According to Ofori and Charlton (2002), the model accounts for 24% of the variance in students' academic performance. The model shows support-seeking and entry qualifications as variables that have direct impact on academic performance. According to them, a student who seeks more support and has higher entry qualifications is more likely to have better performance than one who seeks for less academic support and has lower entry qualifications. The effect of support-seeking on academic performance is observed to be the highest in the proposed model, explaining for 30% of the variance on academic performance. Ofori and Charlton (2002) observe support-seeking to increase with the level of academic worry and with increasing internality of control beliefs. In addition, the lower the outcomes expected, the lower the academic performance. The model depicts strong self-efficacy as leading to higher academic performance and to fewer academic worries. According to the model, the relationship of age and academic performance is positively mediated through support-seeking. The relationship between internal control beliefs, which are motivational attributes, and academic performance is also positively mediated through support seeking. According to the model, the stronger the internal control beliefs, the more the support sought and in turn, the higher the academic performance. Age and previous academic performance are however observed to be negatively mediated through entry qualifications. The model proposes that older students' and low entry grades negatively impact on their academic performance.

Differences have been observed between the results of the various studies with regard to the factors that predict academic performance of undergraduate students. However, the factors that stand out as contributors to academic performance of the students are ability, which includes English Language proficiency; motivation, which include measures of

attitudes, drives, and learning strategies; learning approaches; personality traits; international student status; prior academic performance; gender and age. These variables either have direct or indirect effects on academic performance. They are further discussed in the subsequent sessions.

2.3 ABILITY AND ACADEMIC PERFORMANCE

Ability is the key determinant to academic performance. It is the foundation to academic performance (Nonis & Wright, 2003). Jensen (1998) found cognitive ability to be the strongest predictor of academic performance.

Verbal abilities have been found to greatly impact on academic performance. Eeden, Beer and Coetzee's (2001) study among 224 first year undergraduate students of engineering, technology and other sciences in South Africa reveals a significant effect of verbal ability on academic performance. This study however does not reveal any significant effect of non-verbal reasoning ability on first-year academic performance. Thus verbal abilities appear to be stronger predictors of academic success in the first year of study than do non-verbal abilities. This latter view is also depicted by Zeegers (2004) who identifies language proficiency as a factor directly impacting the academic performance of students in the first and third year of study. He identifies language proficiency as an important predictor of academic performance, even in science-related courses. Thus, language proficiency, as a measure of verbal ability, can be considered as a significant determinant of academic performance in the university. It is therefore necessary for undergraduate students to seek for language proficiency in the medium of instruction used in their institution of learning.

Ability on its own is not a sufficient determinant of academic performance in the university (Nonis & Hudson 2006). Jensen (1998) reports the relationship between cognitive ability and academic performance to reduce with students' progression in the education system. This implies that the relationship between cognitive ability and academic performance is weaker at the university level than it is at either the primary or secondary school level. The interplay between academic performance and other factors appears to increase as a student progresses from primary to secondary school levels and to tertiary levels of education institutions. Harackiewicz et al. (2002) observe that, whereas

ability directly contributes to academic performance of first year psychology students, its direct effect reduces in progressive years of study in the university. This shows that other factors appear to contribute to academic performance as one progresses from one year of study to the next. Nonis and Wright's (2003) study among college students reveals that personal internal variables become as important as ability in determining academic performance at the tertiary level of education. Personal variables identified as interacting with ability include motivation and time spent studying (Nonis & Hudson 2006).

Noting that the effect of ability on academic performance reduces as other variables come into play, this study will endeavor to establish the effect of other variables on the academic performance of students in the university.

2.4 PRIOR HIGH SCHOOL PERFORMANCES AND UNDERGRADUATE ACADEMIC PERFORMANCE

Studies have shown a relationship between high school performance and performance in the university. According to Karemera, Reuben and Sillah (2003) and Salahdeen and Murtala (2005), high school grades are good predictors of performance at the university. In addition, Ofori and Charlton's (2002) path model of factors influencing academic performance of nursing students identifies entry qualifications as having a direct impact on academic performance.

Several studies have looked at the effects of high school performance on the academic performance of undergraduate students. Studies done by Hall (2000), Eeden, Beer and Coetzee (2001) and Robbins, Allen, Casillas, Peterson and Le (2006) among first year undergraduate students concur with regard to the positive and significant effect of high school performance on academic performance. Performance on specific high school subjects is also found to enhance first year undergraduate students' academic performance. Eeden et al.'s (2001) study among 224 first year students of the engineering, science and technology departments of a university in South Africa, using a three stepwise regression analysis reveals high school marks in Science, English and Mathematics to positively relate to their academic performance at the university. Thus, performance on specific high school courses appears to influence performance of undergraduate students. The latter

study was carried out among students pursuing mainly science related courses. It would be interesting to establish what specific high school subjects have an effect on performance in specific undergraduate courses. Tickell and Smyrnios (2005) establishes that good performance in high school accounting courses predicts good performance at all levels of undergraduate accounting students' programme.

Although many studies have looked at the relationship between high school performance and first year students' academic performance very few studies have addressed the effect of prior high school academic performance on the academic performance of students in higher years of study. According to Harackiewicz et al. (2002), high school performance has the highest significant effect on the academic performance of undergraduate students in the short term. However, as a student progresses with his/her studies, the effect of high school performance on academic performance reduces and tends to become indirect, being mediated through the short term measures. McKenzie et al. (2004) further observe that while prior high school performance is the greatest predictor of academic performance in students' first semester in the university, this is not the case in the second semester of study. The effect of prior high school academic performance weakens in the second semester of study. Other factors come into play at higher levels. The latter conclusion is also supported by Zeegers' (2004) path analysis models among 1st and 3rd year students. The models depict prior high school academic performance as being the single largest direct predictor of academic performance in the 1st year of studying sciences but not in the 3rd year of study. Zeegers' (2004) study fails to adequately look at the effect of high school academic performance on the academic performance of students in the 3rd year of study, instead it emphasizes on the positive effect of previous cumulative undergraduate GPAs on the 3rd year students' academic performance. Tickell and Smyrnios' (2005) study also provides further support to the latter study by depicting the prior year's aggregate academic performance as a significant and positive predictor of the following year's academic performance. Thus, it could be assumed that good high school examination grades would result in good 1st year undergraduate grades; good 1st year grades will result in good 2nd year grades; good 2nd year grades would result in good 3rd year grades; and consequently, good 3rd year grades would result in good 4th year grades.

It is clear from literature presented earlier that prior performance is not the only variable that interacts with academic performance of undergraduate students. Ofori and Charlton (2002) point out that, although students' entry qualifications have direct effects on students' academic performance, their effects are not as great as those of support-seeking. According to Ofori and Charlton (2002), students' learning strategies, one of which is support-seeking, could compensate for the effects of low entry requirements on the academic performance of students.

The studies above reveal that prior high school performance is one of the highest contributors to academic performance in the 1st year of study. However, in higher years of study, other factors appear to significantly interact with academic performance, thus reducing the effect of high school performance on academic performance.

2.5 AGE AND ACADEMIC PERFORMANCE

Recent trends in the enrolment of students in the universities reflect an increased presence of older, mature-aged adult students returning to take their undergraduate degree courses (Eppler, Carsen-Plentl & Harju 2000, Cantwell, Archer & Bourke, 2001, Keith, Byerly, Floerchinger, Pence & Thornberg 2006). According to Cantwell et al. (2001), there has also been an increased acceptance of non-traditional qualifications to undergraduate programmes.

Two unique types of students are currently found in the universities. They are the traditional students, who join the university immediately after high school and range from 18-23 years of age and non-traditional students, who are above 24 years of age and join the university several years after completing their high school education, using non-traditional modes of entry (Eppler et al. 2000 & Cantwell et al. 2001). The entry academic requirements of non-traditional students may be much lower than those of their traditional counterparts. Cantwell et al. (2001) observe that over the past decade there has been an increased shift in the age of students and their mode of entry into undergraduate programmes of universities. They attribute this shift to equity that has provided second chances to those who, for various reasons, including poverty, gender discrimination and early school leaving, did not have the opportunity to enter the university directly after high

school. Two unique age sets therefore exist in the universities. They are the adolescents and the adults (Banks & Thompson, 1995). While many of the traditional students in the university are adolescents, the non-traditional students are mainly adults. Academic differences are observed between the adolescents and the adult learners.

A study carried out by Salahdeen and Murtala (2005), among 54 students of Lagos State University Medical School in Nigeria, shows that students who are aged less than 19 years outperform those who are aged over 19 years in their first year of study. This difference may be attributed to initial adjustment problems of older students in their first year of study (Salahdeen & Murtala 2005). On the other hand, other studies endorse that older students outperformed their younger counterparts in their academics (Darkenwald & Novak 1997, Eppler et al. 2000, Cantwell et al. 2001 & Keith et al. 2006). Hall (2000) is of the opinion that being over 25 years of age is a good predictor of academic performance in the universities. The inconsistency in the results of the studies created interest in the current study determining the relationship between age and academic performance. As pointed out by Salahdeen and Murtala (2005), the difference in favour of the younger students may only be experienced in the students first year of study due to adjustment related issues, which, when overcome, place the older students in a more advantageous position than their younger counterparts.

A study carried out by Richardson (1995) among 38 non-traditional students and 60 traditional students of Brunel University points out that non-traditional students perform better than traditional students on meaning-oriented examinations but perform worse than traditional students on reproducing examinations. In essence, there are academic differences across age groups. Distinct features are observed between the adolescents and the adults in relation to their academics. These distinctions are both in the areas of cognition and psychosocial aspects, which likewise affect their academics.

There appear to be mediators between age and academic performance that render the effect of age on academic performance indirect. One study that shows the indirect effect of age on academic performance is that of Ofori and Charlton (2002). According to Ofori and Charlton (2002), support-seeking positively mediates the effect of age on academic

performance while entry qualification negatively mediates the effect of age on academic performance. Thus the older the student the more support-seeking they are and thus the higher their academic performance. Conversely, many of the older students may be non-traditional students who enter the university with lower grades than would the traditional students. Lower entry grades have been found to negatively impact academic performance especially in the first year of study. Zeegers' (2004) model proposes age to indirectly affect academic performance through the deep learning approaches practiced by older students.

Age has been identified as having both direct and indirect effects on academic performance. Indirect effects result from the presence of mediators that subsequently affect academic performance. A look at some of the identified age-related differences among students, as shown on Table 2.3, may provide a base for the investigation of the relationship of age and academic performance.

Table 2.3 Age-related differences in undergraduate students' academics

	Age-related differences	Source
1.	There is more satisfaction with peer relationships among the adolescents than among the adults. This is of key importance to the development of good self concepts among the adolescents and further contributes to their academic performance.	Hunt (1997)
2.	Many adult learners are also workers, employers, spouse and parents. They are more diverse than their younger counterparts in their motivations, needs, expectations and experiences in education.	Richardson (1998), Little (2002)
3.	Adult learners are more able to articulate learning goals than their younger counterparts are.	Socrates Grundvit Action (2002)
4.	Adult learners are more autonomous, self-directed and relevance-oriented in their learning as compared to their younger counterparts.	Socrates Grundvit Action (2002)
5.	Learning in adulthood is a process of change and enrichment of one's own knowledge, skills and values, influencing their everyday environment, where as that of their younger counterparts is career oriented and a way to form new social relationships. The older students tend to be intrinsically motivated while their younger counterparts tend to be more extrinsically motivated with regard to their academics. The older students endorse a mastery orientation while their younger counterparts endorse a performance orientation to learning.	Eppler et al. (2000), Socrates Grundvit Action (2002).
6.	Adult students significantly utilize time-management strategies and exhibit learning strategies that are perceived to be more desirable than those of young students in enhancing academic performance.	Richardson (1998), Eppler et al. (2000), Little (2002)
7.	Fluid intelligence abilities, which include abilities such as information processing speed, holding of many items in the 'working memory' and rapid access to previously learned information, begin to deteriorate in early adulthood. However, crystallized intelligence abilities, which relates to experience, accumulated knowledge and a persons interaction with the environment, steadily increase up to the end of middle adulthood. Thus, crystallized intelligence appears to be the key intelligence in operation in adult learners. This implies that, before the late adulthood stage, aging does not negatively impact on the ability of one to respond to learning situations despite its effect on the speed of learning.	Richardson (1998), Bee and Bjorklund (2004), Gravett (2005)
8.	Older students are more prone than their younger counterparts to absenteeism and drop out of school due to conflicting commitments, such as family and work. They suffer reduced time for studying more than their younger counterparts due to family and work related responsibilities and tend to take a less academic load than do their younger counterparts.	Eppler et al. (2000), Little (2002)
9.	Traditional students are more susceptible than their older counterparts to learned helplessness, as measured by irrational beliefs.	Eppler et al. (2000)

The age differences presented on Table 2.3 demonstrate age as a possible determinant of the academic performance of students in the universities. The studies on Table 2.3 depict age as having an indirect effect on academic performance when mediated through ability, goal orientation, locus of control, and learning strategies, thus the need to confirm the effects of age on academic performance through the current study.

2.6 GENDER AND ACADEMIC PERFORMANCE

Gender is a commonly referred to variable in academic performance studies. Inconsistencies have however been observed in studies on the relationship between gender and the academic performance of undergraduate students.

One study that shows no significant direct or indirect effects of gender on the academic performance of undergraduate students in their first year of study is that of Zeegers (2004). However, his study shows direct effects of gender on academic performance in the third year of study. Nonetheless, the effects depicted by Zeegers (2004) among the third year students places gender at the second least significant predictors of academic performance. Another study that illustrates direct effects of gender on academic performance is that of Harackiewicz et al. (2002). Harackiewicz et al.'s (2002) models depict gender as the least significant direct contributor to the academic performance of students taking the psychology course, but as the most significant direct contributor to the students' overall semester academic performance. Harackiewicz et al. (2002) study considers psychology female students as being significantly better than their male counterparts in their first year of study. This latter finding gives further support to Cantwell et al.'s (2001) study that points out that generally, female students outperform male students in their academics in the university. Cantwell et al. (2001) goes further to suggest that female students are more likely to obtain good grades in even subjects that are predominantly male-dominated science subjects. A study carried out by Sikhovari (2005) at the University of Venda in South Africa reveals that the achievement motivation of female students in the schools of Management Sciences & Law, Mathematics & Natural Sciences, Environmental Sciences and Human & Social Sciences is significantly higher than that of their male counterparts. These latter findings are further echoed by Siebert, Litzenberg, Gallagher, Wilson, Dooley and Wysocki (2006), who observe a high tendency of women to be positively motivated to achieve in Agricultural Economic classes of the university. Sikhovari (2005) also points out significantly positive correlations between academic performance and motivation of students. Thus, with high levels of achievement motivation, female students have potential to equally perform as well or better than their male counterparts in their academics.

On the contrary, Salahdeen and Murtala's (2005) study reveals that at post-school levels, male students are well ahead of their female counterparts in virtually every area of study. Salahdeen and Murtala (2005) considered the phenomenon of males outperforming females at the post-school levels to be a cultural rather than a genetic issue. In other words, the better academic performance of male students at higher levels of education may be related to non-ability factors, which have to do with one's environment and culture. Several cultural factors contribute to the poorer performance among female students than among their male counterparts in the university. One is the perception that male students should be more successful scholars than the female students, which has detrimental effects on the academic performance of female students (Stoeger et al. 2004). Another is family responsibilities, which are more for the female students than for their male counterparts and negatively impacts the academic performance of the female students (Stoeger et al. 2004). Female students' assessment of women's roles in the society also contributes to the low academic expectations of female students, thus negatively impacting their academic performance (Debold 1995, Dianne 1995).

In essence, the inconsistencies observed in the findings with regard to the relationship between gender and academic performance of undergraduate students could greatly be attributed to cultural aspects and students' motivation.

2.7 INTERNATIONAL STUDENTS' STATUS AND ACADEMIC PERFORMANCE

Studying out of one's country is now a common phenomenon in the world (Andrade 2006). All over the world, universities are now admitting foreign students to study in their institutions. The term 'international students', is commonly used to describe students who have enrolled in institutions of higher education on a temporary student visa (Andrade 2006). Andrade (2006) regards adjustment, which is the fit between students and their academic environment, as being of greatest importance to the success of international students in the university. Two main adjustment areas for international students are academic and social adjustments (Saenz et al. 1999, Andrade 2006).

In relation to academic performance, Zeegers (2004) observes significant direct effects of international students' status in the 1st year of study in favour of the local students but not

in the 3rd year of study. These observations may be attributed to academic and social adjustment issues experienced more in the 1st year of study than in the 3rd year of study. Zeegers (2004), however, observes indirect effects of international students' status on academic performance in the 3rd year of study, especially when mediated through the learning approaches. In addition, Andrade (2006) considers international students to have better critical thinking skills than their local counterparts. He observes local students rather than international students to prefer collaborative learning and peer-support in their learning. It therefore appears that on its own, international students' status would not contribute to academic performance unless mediated by other variables, which include academic and social adjustment issues and learning approaches adopted by the students.

One academic adjustment area that is of key to the academic performance of international students is that of language proficiency. International students who are admitted to universities where the medium of instruction is different from that used in their previous education systems suffer language deficiencies that consequently affect their academic performance (Eeden et al. 2001, Andrade 2006). It is therefore necessary that international students improve on their proficiency in the medium of instruction used in their institute of higher learning for the enhancement of their academic performance (Eeden et al. 2001). Andrade (2006) specifically considers communicative tasks in reading and writing to be important to academic performance in the university. He points out that, difficulties in international students' comprehension of the lecturers' language vocabulary contributes to their poor academic performance. In addition, some of the international students find themselves language handicapped and thus need to first learn the formal language used in the university in an attempt to adapt to the academic life of the university (Saenz et al. 1999, Lassegard 2006).

On social adjustment, high self concepts among the international students are an important variable contributing to academic performance. In situations whereby international students are the minority group, there is need for them to enhance their academic self concept for the enhancement of their academic performance in the university (Cokley 2000). Cokley (2000) regards the relationship between the students and faculty as being vital in building academic self-concept. Good and close interaction between the

international students and other students and the faculty increases their academic self-concept, thus minimizing the difference between their academic performance and that of the local student of the university (Saenz et al. 1999, Cokley 2000, Andrade 2006). Saenz et al. (1999) also observe participation in the life of the campus as important in improving the self-concept of the international students and consequently improving their academic performance.

Low academic performance observed among minority groups is also partially attributed to stress. The main cause of stress among minority students is the need to make adjustments in behaviour and values in order to adapt to another culture (Saenz et al. 1999, Andrade 2006).

It is clear that international students' status contributes to academic performance but mainly when mediated through other variables that include learning approaches, language proficiency, and motivation. All these variables are identified as important to the enhancement of the international students' academic and social adjustment, which is important for purposes of improving their academic performance.

2.8 MOTIVATION AND ACADEMIC PERFORMANCE

Motivation is the driving force that catalyses and maintains behaviour (Richter 2001 & Mwamwenda 2004). Thompson (2004: 451) defines motivation as 'the super highway to learning'. Motivation contributes to academic performance and is inevitable for the academic success of undergraduate students. Nonis and Hudson (2006) observe academic performance to be a multiplicative function of both ability and motivation.

Models have been developed to portray the relationship between motivation and academic performance. These models have involved motivational variables that are observed to influence the academic performance of undergraduate students. Tuckman's (1999) triplicate model considers motivation to consist of three generic motivational factors. These are *attitudes* or beliefs that people hold about themselves, their capabilities and the factors that account for their outcome; *drives* or the desire to attain an outcome based on the value people place on it; and *strategies* or techniques that people employ to gain the

outcomes they desire. This latter view supports that of Abry (1998) that regards metacognitive strategies of planning, monitoring and utilization of feedback, locus of control and self-efficacy, which are motivational variables, as predictors of the academic success of undergraduate students. Abry and Tuckman (1998), on the other hand, developed a causal model that reflects self-efficacy to represent attitudes; intrinsic values, test anxiety and goal orientations to represent drives and self-regulation to represent strategies. In addition, Robbins et al.(2006) considers the need to belong to reflect a drive motivation; academic goals, performance goals and mastery goals to reflect goal motivations and self-efficacy and outcome expectations to reflect expectation motivations. According to Robbins et al., self-worth, drives, goals and expectations are factors associated with the adjustment and outcomes of undergraduate students.

This study specifically looks at students' expectations, which are students' attitudes towards their academic success; drives, which include intrinsic and extrinsic goals and strategies adopted by the students in their learning process as motivational constructs, possibly associated with academic performance. Due to their observed nature as predictors of the choice of learning strategies that students adopt, both attitudes and goals are addressed in details in this section. Smith (2001) considers attitudes, and specifically self-efficacy and attributions, which refer to the locus of control and goals to constitute self-motivation. Therefore, strategies, though believed to be motivational constructs, will be addressed separately due to their extensiveness and their dependency on attitudes and goals.

2.8.1 Attitudes

Attitudes contribute to academic performance (Facey-Shaw & Golding 2005). Two attitudes found to influence academic performance are self-efficacy and locus of control (Tuckman 1999).

Self-efficacy refers to the belief or lack of belief in one's personal capability to master a situation (Smith 2001). It is the confidence in one's ability to perform a task (Bandura 2001, Hunt 1997, Langley 2004). It is the judgment students make about their capability to

accomplish a specific future task (Alderman 1999). Self-efficacy relates to the willingness to undertake challenging tasks, persist at tasks and successfully perform them (Harrison, Rainer, Hochwarter & Thompson 1997). Smith (2001) points out that the belief that one can perform a require task to produce a specific outcome increases one's self-confidence leading to situation-specific efficacy. According to her, belief in one's own efficacy influences the choice of tasks and amount of effort made, both of which relate to self-regulatory learning strategies, and also influences one's persistence at a task, which closely relates to conscientiousness, which is a personality trait that measures how organized and persistent one is in pursuing particular tasks (Buchanan 2001). According to Wilson and Corpus (2005), increasing the students' belief in their own capability to achieve, perform and apply skills could cause them to experience a sense of control over their learning.

Several factors are found to influence self-efficacy. According to Bandura (1997), Carroll and Garavalia (2004) and Mwamwenda (2004) these factors include mastery experiences, identifying with people similar to oneself, managing task demands successfully, social persuasion that one has the capability to succeed in given activities and inferences from somatic and emotional states that indicate one's personal strength. According to Carroll and Garavalia, high achieving students have greater self-efficacy than low achieving students. It is therefore important that parents, teachers and the community develop students' self-concept and self-worth so as to make them valued individuals and thus positively impact on their academic performance (Lingren 1995)

Several studies have shown positive relationships between self-efficacy and academic performance (Andrew 1998, Stajkovic & Luthans 1998, Harackiewicz et al. 2002, Ofori & Charlton 2002, Carroll & Garavalia 2004, Facey-Shaw & Golding 2005). Tuckman (1999) observes indirect effects of self-efficacy on academic performance, when mediated through students' goals. Other studies, however have found no significant relationship between self-efficacy and academic performance of undergraduate students. One such study is that of Zeegers (2004) that observes no significant relationship between self-efficacy and academic performance of 1st year students. However, his study regards self-efficacy as having positive direct effects on the academic performance of 3rd year students. Liddell and

Davidson (2004) also observe no relationship between self-efficacy and the academic performance of final (6th) year medical students of Monash University in Australia. The latter two studies reveal the possibility of an interaction between self-efficacy and year of study, which may result in differing results with regard to the impact of self-efficacy on academic performance. According to Liddell and Davidson (2004), self-efficacy increases with learning. Thus, it is expected that as students progress from one year of study to the next, their self-efficacy increases. This latter observation by Liddell & Davidson (2004) may provide sufficient explanation as to why Zeegers' (2004) study shows no impact in the 1st year of study and significant positive effects in the 3rd year of study. McKenzie, Gow and Schweitzer (2004) further explain that students in their 1st year of study may not yet have formed an accurate perception of their own ability to perform in the university. Liddell and Davidson (2004) however goes on to point out that increased confidence could actually represent undesirable changes such as emotional hardening, in which students become more confident and less sensitive to their academic performance. The latter explanation fits to explain why self-efficacy was not a variable accounting for the academic performance of final year students. It therefore appears that self-efficacy would impact on academic performance differently depending on one's year of study. This study will seek to establish the differential effect of self-efficacy on academic performance in the various years of study.

Interactive effects have also been experienced between self-efficacy and other variables, which may influence the academic performance of undergraduate students. One such effect is considered in Cassidy and Eachus' (2000) study that demonstrates a positive correlation between academic self-efficacy and internal locus of control beliefs, deep and strategic study approaches and self-confidence. The study further reveals a negative correlation between academic self-efficacy and external locus of control beliefs and surface and apathetic study approaches all of which strongly relate to motivation. Ofori and Charlton's (2002) study reveals stronger self-efficacy to lead to higher outcome expectations and fewer academic worries. Carroll and Garavalia's (2004) study also identifies self-efficacy as an important determinant of students' goal-orientation, behaviour and ultimately performance. They observe self-efficacy to affect students' choice of activities, amount of effort expended and levels of persistence in times of difficulty, all of which are aspects of

students' learning strategies. Driscoll (2005) also observes students with little confidence in their abilities to display helplessness when faced with high performance goals. On the other hand, students with high confidence in themselves seek challenges and demonstrate persistence towards the task when faced with similarly high performance goals. Other studies have shown self-efficacy to be a mediator of academic performance. One such study is that of Diaz, Glass, Arnkoff and Tanofsky-Kraff (2001), which depicts trait anxiety, test anxiety and communication apprehension to negatively impact on self-efficacy and thus academic performance. Ofori and Charlton (2002) also observe high entry qualifications to positively impact on students' self-efficacy beliefs and thus academic performance.

It is therefore clear that self-efficacy is an important variable to reckon with in academic performance. Self-efficacy is observed to have both direct and indirect effects on academic performance, and in some cases, to be a mediator to academic performance. The impact of self-efficacy on academic performance is also found to vary from one year of study to the next. This study sought to investigate the direct and indirect effects of self-efficacy on academic performance.

A second attitude that is identified as contributing to academic performance is the locus of control beliefs. The locus of control beliefs, which refer to the attributions of causality, are associated with academic performance (Cassidy & Eachus 2000). Cassidy and Eachus (2000) consider individuals to attribute success or failure to either internal or external factors. Attributions of successes or failures to internal factors are considered to be internal control beliefs while attributions of successes or failures to external factors are considered to be external control beliefs. According to Cassidy and Eachus (2000), students who attribute success to internal factors are likely to expect future success. However, students who attribute failure to internal factors may expect future failure unless they consider themselves capable of and actively address these internal factors. Conversely, Cassidy and Eachus (2000) observe that attributing success to external factors would make future success unpredictable and render the student powerless to address what he/she perceives to be an uncontrollable factor. Ofori and Charlton (2002) observe older students to have stronger internal control beliefs than younger students.

Interactive effects have been observed between the locus of control and other variables associated with academic performance. Cassidy and Eachus (2000) observe significant positive correlations between the internal locus of control beliefs and deep and strategic study approaches and self-confidence. They also observe significant positive correlations between external locus of control beliefs and surface and apathetic study strategies and significant negative correlations between external locus of control beliefs and deep and strategic study approaches. According to Cassidy and Eachus' (2000) study, students with internal locus of control beliefs will tend to embrace more of deep learning approaches while students with external locus of control beliefs will tend to embrace more of surface learning approaches. This may result from the fact that the more students believe that their learning can be attributed to forces in their control, the more likely they are to be motivated to learn (Smith 2001). Ofori and Charlton (2002) also observe the positive relationships between internal control beliefs and academic performance to be mediated through support-seeking, which is associated to students' self-regulatory learning strategies.

The current study sought to establish the relationships that exist between attitudes, which are specifically, self-efficacy and locus of control, and academic performance of undergraduate students in Kenya. It should be noted at this point that high self-efficacy appear to positively correlate with internal locus of control while low self-efficacy appear to positively correlate with external locus of control. This implies that students who have high self-efficacy also tend to attribute their success and failures to factors within themselves while those with low self-efficacy attribute their success and failures to factors out of their control.

2.8.2 Drives

One potential source of the drive to perform is the incentive value of the performance (Tuckman 1999). Value beliefs refer to the students' interest in the subject and their views about the use and importance of the subject. Tuckman (1999) points out that, incentive theories of motivation suggest that people will perform an act when its performance is likely to result in some outcome they desire or that is important to them. Enhancing the

intrinsic value of studying, and therefore a student's drive to engage in a given task, affects one's goals and self-efficacy, thus influencing performance (Abry & Tuckman 1998, Liddell & Davidson 2004, Erez 2005). Tuckman (1999) regards the incentive value of a task as an important determinant of the choice of tasks a student opts for. He holds the opinion that individuals do tasks that they positively value and avoid those that they negatively value. In other words, value as a drive dictates goal orientations and students' learning strategies.

Test anxiety, which is also a manifestation of drives, is identified as having a negative impact on academic achievement (Tuckman 1999). The negative effect of test anxiety on academic performance is greatly mediated through self-efficacy, which then influences academic performance.

According to Locke and Latham (2002), goals are the immediate regulators of behaviour and greatly determine academic performance. They direct effort towards relevant actions (Schunk 2001, Smith 2001) individuals' attention to relevant task features, behaviours to be performed and potential outcomes (Schunk 2001). Schunk (2001) also considers goals to have potential to affect how people process information. According to Carroll and Garavalia (2004), goals influence students' choice of achievement tasks and selection of learning of problem-solving strategies, thus influencing performance. They energize events and enhance persistence and strategy development (Erez 2005). Goals can be divided into assigned goals and self-set goals (Carroll & Garavalia 2004). Assigned goals reflect goals placed upon the student by others, they are extrinsic in value. On the other hand, self-set goals are intrinsic in value. It is therefore difficult to separate values from goals since values appear to dictate goals. Carroll and Garavalia (2004) categorize goals and specifically the goal to achieve into two main categories, namely, intrinsic oriented goals and extrinsic oriented goals.

Intrinsic or mastery oriented goals are characterized by the use of effective task strategies, a belief of one's ability to improve, a preference for challenging tasks, and feelings of satisfaction when effort leads to personal success. Intrinsic motivation is associated with activities that are their own reward. They occur when one has passion for performing a

task. They involve freely choosing to perform a task for the pleasure of it. Autonomy, which is considered to be a sense of internal self-control of one's capability, is a requirement for intrinsic motivation. Outcomes of intrinsic motivations include interest in learning, positive attitudes towards learning, viewing errors as informational, attribution of failure to lack of effort rather than lack of ability, academic engagement and effort, perseverance in the face of challenges, risk-taking and seeking for assistance when stranded (Richler 2001, Pintrich & Schunk 2002, Begetto 2004, Carroll & Garavalia 2004). According to Carroll and Garavalia (2004), intrinsic motivations are developed early in childhood and children who perceive themselves as being academically competent generally develop mastery goal orientations.

Extrinsic oriented goals focus on social approval and reinforcement as the main criterion for judging success (Pintrich 1999). In the absence of internal control, one is externally controlled. This leads to extrinsic motivation. Extrinsic motivation results from assigned goals which are placed on one by others. It occurs when one performs a task because of an external force such as money, reward or punishment or because of an internal force such as the value system, belief, guilt and ego gratification (Glass et al. 1997, Carroll & Garavalia 2004). Pintrich (1999) considers extrinsic goal orientations to be involved in judging success according to how good a grade is and the pleasing of others, especially teachers and parents. According to Carroll and Garavalia (2004), children with low perceived ability are likely to develop extrinsic goal orientations. Performance goals orientations are important to extrinsic motivations. Performance-approach goals, which focus on attaining favourable judgment of competence relative to others and performance-avoidance goals, which focus on avoiding unfavourable judgments are concepts related to performance goal orientations (Harackiewicz et al. 2002). Students with performance-approach goals focus more on achievement behaviours for the purpose of demonstrating their ability. They aim at proving to others that they are the best and obtaining recognition. They defined competence in relation to others (Pintrich & Schunk 2002, Begetto 2004). On the other hand, students with performance-avoidance goals focus on avoiding ridicule and are more concerned with protecting their self-worth at all costs. These students are more likely to engage in activities such as cheating, avoiding help when they needed it and withdrawing efforts. They are more likely to view errors as indicators of lack of ability. These students

experience high levels of anxiety, they exert less effort, place less value on tasks, give up when faced with difficulties. They demonstrate lower levels of achievement (Pintrich & Schunk 2002, Urdan, Ryan, Anderson & Gheen 2002, Begetto 2004). Therefore, it is inevitable to point out at this point that both levels of anxiety and value systems should be considered as components of goal orientations.

University students experience more of extrinsic than intrinsic motivation (Glass et al. 1997). Extrinsic motivations have short-term results that are not sustainable in the long run (Glass et al. 1997, Johnson 1999). High quality learning is associated with intrinsic motivation (Deci & Ryan 1992), and fully internalized extrinsic motivation, which includes the performance-approach goals (Begetto 2004). Schunk (1995) considers extrinsic goal orientations to be potentially able to exert powerful motivational effects. He further points out that intrinsic goal orientation enhances both self-efficacy and self-regulation. Extrinsic motivations that have not been internalized have a negative effect on students' learning (Carter 1996, Simons, Dewitte & Lens 2000, Carroll & Garavalia 2004, Driscoll 2005, Wilson et al. 2005). According to Carroll and Garavalia (2004), children with low-perceived ability are likely to develop extrinsic motivation and focus more on social approval and reinforcement. Two extrinsic motivations that are not internalized and exist in students, especially at the adolescence age, are approval from peer and parents. According to Bogenschneider (1997), parental involvement and approval from peer are potential predictors of school success regardless of ethnicity, parental education, family structure or gender. For success in higher education, there is need for adolescents to have a balance between approval from peers and parental involvements in their lives.

Both mastery and performance goal orientations influence academic performance. Studies have shown mastery goal orientations to positively impact on the academic performance of undergraduate students (Cobb 2003, Carroll & Garavalia 2004, Yip & Chung 2005). However, there are indications of no significant effects of mastery goal orientation on academic performance (Harackiewicz et al. 2002). Harackiewicz et al., however, considers mastery goals as depicting interest and enjoyment in class. On the other hand, performance-approach goals are observed to have positive effects on academic performance (Harackiewicz et al.2002), while performance-avoidance goals are depicted

as having negative effects on interest and academic performance (Harackiewicz et al. 2002). While mastery goal orientations increase interest, interest on its own would not result in academic performance. There is need for a combination of both mastery and performance-approach goals to be able to yield favourable academic results (Eppler et al. 2000, Harackiewicz et al. 2002). According to Harackiewicz et al. (2002), mastery oriented goals appear to play an important role in promoting optimal motivation by fostering initial and continued interest in course work, while performance-approach goals promote optimal motivation by fostering academic achievement in undergraduate courses. Therefore, the presence of one goal orientation should not be mistaken to be the absence of the other, as it is possible for an individual to operate with both intrinsic and extrinsic goal orientations.

Interactive effects have been observed between goal orientations and other variables that are associated to academic performance. Female students are more likely than their male counterparts to adopt mastery goal orientations (Harackiewicz et al. 2002). Harackiewicz et al. (2002) also regards students high in competitiveness as being more likely to adopt performance goals than mastery goals. Older non-traditional students are also found to be more likely to adopt higher mastery goal orientations and lower performance orientation goals than their younger traditional counterparts (Eppler et al. 2000).

It is therefore important to recognize the contributions made by goals to the academic performance of students. However, goals are considered to be effective in impacting on academic performance only when accompanied by appropriate learning and motivational strategies (Carroll & Garavalia 2004). Smith (2001) considers self-efficacy, attributions and goal orientations to be most important motivations determining self-regulatory learning strategies and thus academic performance. The next session will look at the effect of learning strategies on academic performance.

2.9 SELF-REGULATORY LEARNING STRATEGIES AND ACADEMIC PERFORMANCE

The learning strategies that people employ with a view of getting a desired outcome are critical to motivation. Strategies that impact on academic performance include self-observing, self-judging, self-testing, self-reacting, self-evaluating, monitoring, goal setting,

strategic planning and strategy implementation (Zimmerman 1998, Tuckman 1999, Locke & Latham 2002, Langley 2004, Yip & Chung 2005, Isaacson & Fujita 2006), all of which can be considered to be self-regulatory learning strategies. Zimmerman (2000) defines self-regulation as the systematic effort to direct thought, feelings and actions towards the attainment of one's goals. While Pintrich (1999) defines self-regulated learning as the strategies that students employ to regulate their cognition and to control their learning. According to Schunk (2001) self-regulatory learning results from students' self-generated thoughts and behaviours that are systematically oriented towards attaining learning goals. Smith (2001) reiterates Zimmerman's observation that self-regulatory learning is fundamental to lifelong learning and that it is a process in which the learner exercises control over his or her thinking, effects and behaviours as one acquires knowledge and skills. Self-regulatory learning strategies assume students to be active rather than passive recipients of information, thus exercising control over their goal attainments (Schunk 2001). According to Smith (2001), self regulated learners have clearly defined goals; they determine what they need to master and control their learning environment by reducing distractions; they ensure that they put their learning plans to action, seeking help where necessary, monitoring their progress and evaluating their progress towards the learning goal; they then make the necessary adjustments to their cognition and regulatory learning strategies until they attain their learning goals. The latter observation is further alluded to by Isaacson and Fujita (2006) who point out that, students skillful at academic self-regulation also understand their strengths and weaknesses as learners as well as the demands of their tasks. They approach learning with a variety of strategies that may apply to their goals and they understand when and how to implement their plans. These students also know whether or not they have mastered the required academic tasks.

According to Chen (2002), the categories of self-regulatory learning strategies are:

1. Metacognitive self-regulation, which includes planning, monitoring and regulating activities (Pintrich 1999). Smith (2001) considers metacognitive regulation to be a key component of self-regulation. She defines metacognitive awareness as the conscious selection and use of learning and critical thinking strategies. According to Chen (2002), planning involves setting educational goals and outcomes. He considers analyzing tasks while self-monitoring to help

students focus their attention and discriminate between effective and ineffective performance thus revealing inadequate learning strategies. The latter observation is further supported by Isaacson and Fujita (2006) who found metacognitive knowledge monitoring, which is related to self-regulatory learning strategies, to also relate to academic success.

2. Regulation of physical and social environments, which includes study environment management and help seeking respectively. Smith (2001) refers to the regulation of physical and social environments as resourcefulness. Resourcefulness is considered as the control and management of one's physical surroundings for the optimization of performance and social resources, which include teachers, peers and other adults (Smith 2001, Pintrich 1999, Ruban, McCoach, McGuire & Reis 2003). According to Chen (2002), managing one's study area requires locating a place that is quiet and relatively free of visual and auditory distractions so that one can concentrate. He also considers the seeking of academic support to be a valuable self-regulating, proactive learning strategy in addition to providing social interaction that is healthy for students. Both the academic support seeking and peer learning can therefore be considered to be dimensions of managing one's social environment. Support seeking involves going out of one's way to seek assistance in a course (Aleven, Stahl, Schworm, Fischer & Wallace 2003). Peer learning, on the other hand, is also referred to as collaborative learning. It involves learning in groups rather than alone (Soller 2001). According to Soller (2001), collaborative learning encourages students to ask questions, justify their opinions, articulate their reasoning and reflect upon their knowledge.
3. Time management, which includes the scheduling, planning and managing of one's study time. Smith (2001) and Pintrich (1999) considered time management to be an aspect of physical resource management.
4. Effort regulation, which is the tendency of one to maintain focus and effort towards a goal despite potential distraction. According to Alderman (1999), effort regulation can be used to build learning skills gradually and to help students handle many distractions in and outside of school. Thus, even with the

stresses of life, a student with excellent effort regulation skills would be expected to excel in his/her studies.

Although Chen (2002) suggests the latter categories of self-regulatory learning strategies, the instrument for his study categorized learning strategies as cognitive and metacognitive measures and the resource management strategies as found in the Motivated Strategies for Learning Questionnaire (MSLQ) of the National Center for Research to Improve Postsecondary Teaching and Learning that was constructed by Pintrich, Smith, Gracia, & McKaechie (1991). The resource management strategies were sub-divided into time and study environment, effort regulation, peer learning and help seeking. The instrument used by Chen (2002) was in support of Pintrich's (1999) model of self-regulatory learning strategies, which describes the general categories of self-regulatory learning strategies as:

1. Cognitive learning strategies, of which rehearsal, elaboration and organization strategies are of great importance.
2. Metacognitive and self-regulatory strategies, which involves planning activities, which includes setting goals; monitoring thinking and academic behaviour and regulating strategies for the enhancement of academic performance.
3. Resource management strategies, which involve the management and control of one's time, effort, study environment and people including teachers and peers.

Self-regulatory learning strategies are found to enhance the academic performance of undergraduate students (Tuckman 1999, Ofori & Charlton 2002, Chen 2002, McKenzie, et al. 2004, Zeegers 2004, Yip & Chung 2005). Yip and Chung (2005) observe significant differences between the study aids and self-test strategies employed by high academic achievers in the matriculation period and those employed by undergraduate students in the university. Yip and Chung (2005) attribute these differences to the objectives of university education, which emphasize the need for students to build good learning attitudes, and to reflect and think of the knowledge they obtain. Critical and independent thinking is therefore more vital than merely receiving information at the tertiary level of education. Ofori and Charlton's (2002) path model of factors influencing the academic performance of nursing students depicts the seeking of academic support as positively impacting

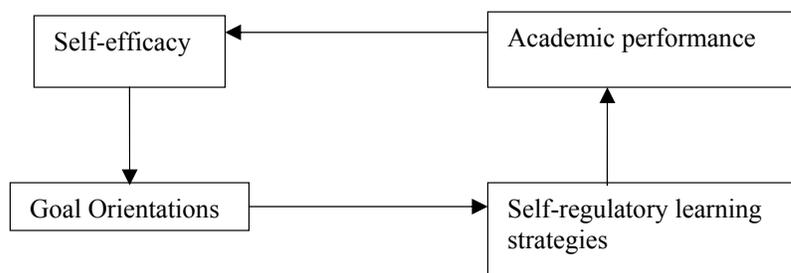
academic performance. They observe high achievers to use more self-regulatory strategies, to control their physical environment in order to meet their needs, to seek for help when needed and to use appropriate time management skills. Cobb (2003) also identifies time and study environment management as variables positively accounting for variance in the academic performance of undergraduate students taking web-based courses. According to Yip and Chung (2005), study strategies that include behaviours of the kind of, information organization and time scheduling contribute to academic performance. Students who experience repeated academic failure often use self-handicapping strategies such as procrastination or deliberately not trying, so as to convey the idea that the tasks, rather than lack of ability, are the reasons for low academic performance (Midgely & Urdan 1995). McKenzie et al. (2004) observe students who manage their time effectively, those who regulate the amount of effort they expend on tasks, those who self-monitor their comprehension, those who draw linkages between their reading and lecture materials and those who effectively organize their course materials to perform much better than those who do not. Negative relationships were however observed between peer learning and academic performance in a lecture type of learning environment (Ofori & Charlton 2002).

Various results have been obtained from studies seeking to explain the effects of learning strategies on the academic performance of undergraduate students. A positive relation is observed between self-efficacy and self-regulation strategies, both of which positively relate to academic performance (Pintrich 1999). Tuckman (1999) observes goal setting strategies to yield best results on low self-efficacy students, group outcome strategies to yield best results on middle self-efficacy students and non-induced strategies to yield the best results on high-self-efficacy students. Tuckman's study reveals an interactive effect between learning strategies and self-efficacy. The latter study is further supported by Schunk (2001) who considers self-regulatory learning strategies to contribute to self-efficacy beliefs. According to Schunk (2001), indicators of success, as a result of employing self-regulatory learning strategies, communicate to the students that they are capable of performing well, thus enhancing the students' level of self-efficacy. Zeegers (2004) identifies self-regulatory learning strategies as having indirect effects on the academic performance of third year students when mediated through self-efficacy. Pintrich (1999) considers the adoption of intrinsic rather than extrinsic goal orientations, self-

efficacy and task value beliefs to facilitate self-regulatory learning strategies. Pintrich (1999) perceives extrinsic goal orientations as hindrances to self-regulatory learning strategies. Carroll and Gravaia (2004) observe self-efficacy, which is an attitude of self's competence, to influence academic performance when mediated through choice of activities, amount of effort and level of persistence, all of which are components of self-regulatory learning strategies. According to Stone (2000), self-efficacy leads to the implementation of self-regulatory learning strategies, which further result in academic achievement. Ofori and Charltons (2002) also reveal support seeking, which is also a component of self-regulatory learning strategies to mediate between internal locus of control, which is an attitude of internal control beliefs, and academic performance. Self-regulatory learning strategies are also found to mediate between goal orientations (Carroll & Gravaia 2004, Erez 2005), learning approaches (Richardson 1998, Zeegers 2004), agreeableness and conscientiousness personality traits (McKenzie et al. 2004) and the academic performance of undergraduate students in the university. According to McKenzie, Gow and Schweitzer (2004) factors that influence learning strategies include conscientiousness, valuing of tasks, internal locus of control, extrinsic performance goals and intrinsic mastery goals. Pintrich (1999) observes strong positive relations between mastery goals and the use of cognitive and other self-regulatory strategies of learning. He also observes negative relations between extrinsic goal orientations and the use of cognitive and other self-regulatory learning strategies.

In essence, both self-efficacy and self-regulatory learning strategies appear to influence each other. While self-efficacy is shown through previous studies to have an influence on goal orientations, goal orientations in turn influence learning strategies, which in turn influence academic performance. According to Schunk (2001), self-regulatory learning strategies only influence self-efficacy after the performance results are attained and not before. Thus, self-regulatory learning strategies contribute to academic performance, which in turn contribute to self-efficacy, which in turn influences goal orientations, which in turn influence self-regulatory learning strategies and the cycle is repeated as conceptualized on Figure 2.3.

Figure 2.3: Conceptualized relationship between motivation and academic performance



In general, close relationships have been observed between self-regulatory learning strategies and attitudes, goals and personality traits. Self-regulatory learning strategies have also been identified as being central to academic performance. The study will seek to test the effects of the strategies on the academic performance of students in the universities in Kenya, in addition to establishing interactive effects of the relationships of other identified factors. This would better assist institutions of higher education in Kenya to enhance the academic performance of undergraduate students.

In conclusion, Smith (2001) points out that a self-regulated learner is motivated to learn and has confidence in his or her ability to learn (*has high self-efficacy*); is aware of his or her strengths and weaknesses and is in control of his or her learning taking responsibility of the learning outcomes (*has an internal locus of control*); and desires to master the material rather than perform to the minimum requirement (*exercises deep learning approaches*). Deep learning approach is therefore considered to be an important aspect of self-regulatory learning. According to Zeegers (1999) and Leung, Li, Fang, Lu & Lu (2006), learning approaches consist of motives and learning strategies, both of which were earlier discussed. While deep learning approaches relate to intrinsic goal orientations and good learning strategies, surface leaning approaches relate to extrinsic motivation and poor learning approaches. The following session therefore reviews literature on learning approaches, which should from an early stage be considered to include both goal orientations and learning strategies.

2.10 LEARNING APPROACHES AND ACADEMIC PERFORMANCE

Learning approaches refer to the processes of obtaining knowledge and skills by means of studying, instruction and experience, prior to the outcome of learning (Cilliers & Sternberg 2001, Fourie 2003). Fourie (2003) adopts two main learning approaches, which are given extensive attention by Biggs, Kember and Leung (2001). They are namely deep and surface approaches to learning. Other approaches identified include the achieving approach (Leung et al. 2006), strategic approach and apathetic approach (Cassidy & Eachus 2000). The achieving approach involves maximizing the chances of obtaining good grades. Thus, depending on what engagements result in optimal results, students would adopt the most appropriate approach. Zeegers (2002) considers the achieving approach to be a component of the deep approach to learning. On the other hand, the strategic approach refers to the study organization; time management; alertness to assessment demands; and intention to excel, all of which are related to motivation and specifically, the self-regulatory learning strategies. The apathetic approach relates to a lack of direction and interest, both of which are also associated to the self-regulatory learning strategies.

Deep approaches to learning refer to the intention to understand related ideas, which relates to intrinsic motivation; the use of evidence; and involvement in active learning, the latter two being inclined to cognitive learning strategies (Cassidy & Eachus 2000, Fourie 2003). Students who adopt a deep approach to learning are actively interested in the learning material (Fourie 2003, Leung et al. 2006), which Pintrich (1999) considers to be the indicative of the use of cognitive learning strategies. According to Fourie (2003) and Leung et al. (2006), the latter students base their conclusions on evidence and rational arguments and have intrinsic motives. On the other hand, surface approaches to learning refer to intentions to reproduce information, involvement in passive learning and fear of failure (Cassidy & Eachus 2000, Fourie 2003). Students who adopt a surface approach to learning perceive tasks as externally influenced, which relates to external locus of control beliefs (Cassidy & Eachus 2000). Fourie (2003) and Leung et al. (2006) also consider the latter students to seek to meet the demands of tasks with minimal effort and to tend to be unreflective on the purpose or strategies of learning. Therefore, the learning approaches appear to encompass the locus of control, goal orientations and learning strategies, all of which have been reviewed in previous sections.

Deep learning approaches rather than surface learning approaches are advocated for in tertiary education. The European Commission (2000) observes a paradigm shift in higher education from the traditional passive forms of learning to active learning, which is facilitated by electronically based information and includes diverse teaching methods and aids. This shift results in the facilitation of self-directed learning rather than the direct transmitting of knowledge. According to Fourie (2003), over the past two decades, there has been a move towards teaching methods that promote deep rather than surface approaches to learning. Fourie (2003) attributes this shift to the fact that students who adopt deep approaches to learning are considered to have better and desirable qualities of learning outcomes than those who adopt a surface approach to learning. Fourie (2003), however points out that the students' approaches to learning are still undervalued in many higher institutions of learning. According to him, it is assumed that students who enter universities have already learned how to study and are employing appropriate study approaches in their education. A study carried out by Leung et al. (2006) to establish the learning approaches adopted by Construction Engineering students in Hong Kong and Mainland China, using the Biggs' Study Process (SPQ), reveals that students from Hong Kong adopt more of surface approaches to learning while those from the Mainland China adopt more of the deep approaches to learning. This is an indication that even though deep approaches to learning are considered to be of great importance in tertiary education, they are not necessarily employed and encouraged.

One way of assessing the impact of the learning approaches on higher education is by observing their impact on academic performance. Various studies have depicted surface approach to have a more significant effect on academic performance than the deep approach to learning (Cassidy & Eachus 2000, Fourie 2003, Zeegers 2004). The observed significant effects of surface approach on academic performance are all negative while those of deep approach are either positive (Zeeger 2004) or in some cases, not there at all (Cassidy & Eachus 2000, Fourie 2003). According to Fourie (2003), the adoption of the surface approach increases from one year of study to the next, however, it is likely that students employ less of deep approaches to their learning as they progress through their university education. Fourie (2003) provides several explanations to why students would

employ less deep approaches as they progress in their studies. They include time management, workload, assessment and teaching approaches.

According to Fourie (2003), effective time management is of great importance to academic performance. Managing of time, workload and learning can be challenging for students fresh from high school, those who are working and those who have been out of school for a while. Without good management of time, students can be forced to adopt a surface approach to learning in order to be able to cope with the ever increasing amount of work. In addition, Fourie (2003) reports on evidence of positive correlations between work-overload and memorizing and between demanding courses and bad teaching and poor performance on examinations. According to McKenzie et al. (2004) students with heavy workloads and restricted time to complete their work tend to adopt strategies that are needed for high achievement rather than those needed for deep understanding of the material.

Perception of assessment is reported to possibly be the most significant influence on the students' learning approaches. According to Fourie (2003), assessments that encourage reproductive forms of learning lead more to the adoption of surface approaches to learning rather than deep approaches. McKenzie et al. (2004) also observe the nature of assessment to have an influence on the relationship between goals and strategies, both of which are composites of learning strategies.

The quality of teaching and the attitude of teachers also influence students in their choices of approaches to learning. According to Fourie (2003), good teaching should encourage deep approach to learning. Gravett and Geysler (2004) consider teaching approaches that engage students rather than those in which the learners are least involved in the learning process to encourage students to adopt a deep approach to learning, by which students seek to understand the content. They consider the deep approach to learning to result in high quality of the learning outcomes. Cilliers and Sternberg (2001) also advocate for students to be exposed to a wide variety of methods such as group work, projects and role-play, which would optimize their learning. According to Fourie (2003), students are not being challenged enough to develop their abilities to reason independently. Fourie (2003) deems

it necessary to discourage rote-learning approaches in academic work at the tertiary levels of education.

Interactive effects have been found between learning approaches and other variables that are associated with academic performance. Adult learners are observed to be more likely to exhibit the deep approaches to learning than their younger counterparts who are direct from high schools (Richardson 1998, Zeegers 2004). The younger students exhibit more of the surface approaches to learning, which are more focused on reproduction of information and which do not necessarily seek to gain insight into the material to be learned (Richardson 1998, Zeegers 2004). Deep approaches to learning are observed to reduce as students progress from one year of study to the next (Fourie 2003, Zeegers 2004). Deep approaches to learning are positively correlated with self-efficacy (Cassidy & Eachus 2000, Zeegers 2004), internal locus of control (Cassidy & Eachus 2000), English proficiency (Zeegers 2004) and good self-regulation learning strategies (Zeegers 2004). On the other hand, surface approaches to learning positively correlate with test anxiety (Zeegers 2004), external locus of control (Cassidy & Eachus 2000) and poor self-regulatory learning strategies (Zeegers 2004). A study carried out by Zhang (2003), reveals a significant relationship between personality and learning approaches. According to Zhung (2003) conscientiousness and openness-to experience are good predictors of the deep approach to learning, while neuroticism is a good predictor of the surface approach to learning. Smith (2001) also observes a very close association between the learning strategies and learning approaches. In fact, learning approaches incorporate learning strategies in addition to other motivation indicators. Therefore, learning approaches cannot be separated from attitudes, goal orientations and learning strategies, they are reflections of the latter three motivation factors.

2.11 PERSONALITY AND ACADEMIC PERFORMANCE

Personality traits are identified as contributors to academic performance (Eeden et al. 2001, McKenzie et al. 2004, Petrides, Chamorro-Premuzic, Frederickson & Furnham 2005). Personality traits are categorized in several ways. However, Petrides et al. (2005) consider the Eysenckian model and the five-factor model of personality to be the most established

personality taxonomies. The Eysenckian model, which seeks to explain personality traits based on *why people differ*, provides three basic dimensions of personalities, namely, psychoticism, extraversion and neuroticism. Conversely, the five-factor model seeks to describe *how people differ*. The five-factor model provides five basic dimensions of personalities, namely, extraversion, neuroticism, agreeableness, conscientiousness and openness-to-experience. According to Buchanan (2001), extraversion reflected one's preference for particular social situations. People high in extraversion are considered to be energetic and seek out for the company of others. The agreeableness trait is considered to reflect people's tendency to interact with others. Those high on agreeableness are found to be trusting, friendly and cooperative. On the other hand, people high on conscientiousness are observed to be organized and persistent in pursuing goals. Buchanan (2001) further considers neuroticism to reflect one's tendency to experience negative thoughts and feelings and to be prone to insecurity and emotional distress. He however considers openness-to-experience to reflect open-mindedness, imaginativeness, creativity and the seeking out for cultural and educational experiences.

The dimensions of personality traits are found to influence academic performance in varying ways. McKenzie et al.'s study (2004), using the five-factor model, identifies openness-to-experience and neuroticism as factors that have no impact on the academic performance of undergraduate students in their first semester in the university. On the other hand, introversion, which is on the opposite side of the continuum of extraversion, and agreeableness are depicted as being important predictors of academic performance in the first semester of study. According to McKenzie et al. (2004), introverts are less socially preoccupied, concentrate more and are more organized than extroverts, all of which are characteristics that enhance their academic performance. McKenzie et al. (2004) also observe students who exhibit high levels of agreeableness to adjust quickly to new academic environments, to accept and hence complete the requirements of their courses on time and to be less likely to antagonize their lecturers, all of which may influence their academic performance in the first semester of study. Conscientiousness is however observed to indirectly relate to academic performance during the students' first semester of study when mediated through the self-regulatory learning strategies. It is identified as the most important predictor of learning strategies used. According to McKenzie et al. (2004),

high scores on conscientiousness reflect self-control, purposeful and reliable behaviour and strong will power. It is therefore not surprising that conscientiousness would closely relate to good self-regulatory learning strategies, and more specifically, to resource management

McKenzie et al.'s (2004) study was mainly carried out among first year students. However, Petrides et al.'s (2005) study carried out among 14 to 16 year old secondary school students using the Eysenckian model, reveals negative impacts of extraversion and psychoticism on academic performance and none with neuroticism. The two studies appear to agree that neuroticism has no significant effect on academic performance and that extraversion negatively impacts on academic performance. Does this therefore imply that similar results are expected with older students and students in higher tertiary years? It is of interest in this study to establish whether similar results would be obtained with older students and students in higher years of study in the university.

2.12 CONCEPTUAL MODEL OF FACTORS CONTRIBUTING TO ACADEMIC PERFORMANCE IN UNIVERSITIES

Literature reveals that there is need for attention to be given to the smooth transition from high school level to tertiary level of the education system (Tam 2002). This is because the demands made on students' academic performance vary in the two levels of education. Whereas aspects with regard to the teacher and physical facilities are critical to academic performance at the high school level, this is not as critical as students' own initiative at the tertiary level of education. It is for this latter reason that Tam (2002), Appleby (2005) and Yip and Chung (2005) give much emphasis to the need for students to be active learners and take personal responsibility of their academic performance in the university.

Taking personal responsibility of one's academic performance is closely related to the adoption of deep learning approaches, which are a composite of internally directed attitudes, intrinsic goal orientations and the use of appropriate self-regulatory learning strategies, all of which are observed to be critical to the academic performance of students in the university. Other factors that literature has shown to influence the academic performance of students in the university include the students' ability, of which language

proficiency is most critical, students' age, gender, international students' status, prior high school performance and personality traits.

The current study proposes that the student-related factors are most critical in determining the academic performance of students in the university. In particular, based on previous studies the students' abilities, of which language proficiency is most critical; students' age; gender; international students' status; prior high school performance; personality traits, which include extraversion, neuroticism, agreeableness, conscientiousness and openness-to-experience; attitudes, which include self-efficacy and internal locus of control; goal orientations, which include intrinsic and extrinsic goal orientations; and self-regulatory learning strategies, which include cognitive learning, metacognitive and resource management strategies are proposed to be factors that contribute to the academic performance of students in the university.

Based on observations of models for both first year and third year students developed by Zeegers (2004), English Language proficiency is proposed to have direct effects on the academic performance of students in the university. Zeegers' (2004) model depicts English Language proficiency as having the second highest direct effect ($\beta = 0.21$) on the academic performance of first year students and the highest direct effect ($\beta = 0.26$) on the academic performance of third year students in Australia. Another study, which was longitudinal in nature, undertaken by Harackiewicz, Barron, Tauer and Elliot (2002) among psychology major students of Miswestern university also depicts ability ($\beta = 0.33$) and high school grade ($\beta = 0.33$) as having the highest direct effects on the academic performance of the students. Zeegers'(2004) models specifically dealt with science students in their first and third year of study, while Harackiewicz et al.'s (2002) study concentrated on psychology students of all years of study in a longitudinal study. From the two studies, the direct effects of ability, and more specifically, English Language proficiency, which is a significant contributor to ability (Eeden et al. 2001, Zeegers 2004), have been emphasized thus giving support to the current study's proposal of English Language proficiency having direct effects on the academic performance of undergraduate students in a private university in Kenya.

The prior high school grade is also considered to have significantly high direct effects on the academic performance of undergraduate students as depicted in Harackiewicz et al.'s (2002) study. A similar view is also held by McKenzie et al. (2004), whose final model among first year students of an Australian university depicts previous performance as being the most crucial predictor (accounting for 16.8% of the variance) to the academic performance of students in their first semester. Ofori and Charlton's (2002) study model among students in a university in England also depicted the students' entry qualification, which in many cases is obtained from the final high school grade, to be having negative effects on the academic performance of the students. These three studies therefore appear to suggest the need for great attention to be given to the direct effects of entry academic requirements, and in this case, the final high school grades, on the academic performance of undergraduate students of the university, and more specifically in the first year of study.

Adoption of good self-regulatory learning strategies has also been observed to be the distinction between excelling in the university and excelling in lower levels of education (Appleby 2005 and Yip & Chung 2005). Ofori and Charlton's (2002) final model on the factors that influence the academic performance of students in the university depict academic support seeking, which is a self-regulatory learning strategy, as having the highest direct effect (accounting for 30% of variance) on the academic performance of students in tertiary levels of education. Zeegers' (2004) final models for both first and third year students depict surface and deep learning approaches, both of which encompass aspects of learning motives and strategies (Cassidy & Eachus 2000, Fourie 2003 and Leung et al. 2006), to be having significant direct effects on the academic performance of students in the two years of study.

Applying Tuckman's (1999) triplicate model of motivation and observations made by Pintrich (1999) and Zeegers (2004) to the current study and thus to the conceptualized model of the study, attitudes influence goal orientations that consequently influence learning strategies that in turn influence academic performance of undergraduate students. There are fewer models that depict direct effects of self-efficacy, which is an attitude, on the academic performance as compared to those that depict no direct effects of self-efficacy on the academic performance of undergraduate students of the university. Zeegers

(2004) model of the academic performance of third year students depicts self-efficacy as having positive direct effects ($\beta = 0.17$) while his model among first year students depicts no direct effects of self-efficacy on the academic performance of the students. Liddell and Davidson's (2004) study also shows no relationship between self-efficacy and the academic performance of students in their sixth year of study. Carrol and Garavalia (2004) observe self-efficacy to be an crucial predictor of goal orientations and strategies that in turn affect academic performance. Tuckman's (1999) triplicate model of motivation also considers attitudes, which include self-efficacy and locus of control, to influence drives, which include intrinsic and extrinsic goal orientations, which in turn influence self-regulatory learning strategies, which include cognitive, metacognitive and resource management learning strategies. In addition, Smith (2001) regards self-efficacy, locus of control and goal orientations as being important determinants of self-regulatory learning strategies and consequently of academic performance in the university, while Schunk (2001), Locke and Latham (2002) and Erez (2005) consider goal orientations to be the immediate regulators of behaviour and thus learning strategies. The conceptualized model for the current study therefore proposes that attitudes, which include self-efficacy and locus of control, influence goal orientations, which include intrinsic and extrinsic goal orientations, which in turn influence self-regulatory learning strategies, which include cognitive, metacognitive and resource management learning strategies and consequently influence the academic performance of undergraduate students of the university. The conceptualized model of the study therefore proposes that attitudes and goal orientations have indirect effects on the academic performance of students in the university when mediated through self-regulatory learning strategies.

One unique observation made in the review of the various studies on the academic performance of students in the university is the indirect effects of personality traits, and more specifically agreeableness and conscientiousness, on the academic performance of undergraduate students when mediated through the self-regulatory learning strategies (McKenzie et al. 2004). The latter observation led to the inclusion of personality traits, which include extraversion, neuroticism, agreeableness, conscientiousness and openness-to-experience, to the conceptualized model of the study, proposing that personality traits

indirectly affect academic performance, when mediated through the self-regulatory learning strategies.

Age was also found to have indirect effects on the academic performance of students in the university. Ofori and Charlton (2002) observed indirect effects of age on academic performance when mediated through support-seeking, which is a self-regulatory learning strategy and academic entry qualifications. However, Ofori and Charlton (2002) observed that the older students joined the university with lower entry grades than their younger counterparts thus correlating age and academic entry qualifications, a view also shared by Eppler et al. (2000) and Cantwell et al. (2001). Age is therefore proposed to have indirect effects on the academic performance of students in the university when mediated through the self-regulatory learning strategies and to correlate with the prior high school grade, which consequently has direct effects on the academic performance of undergraduate students in the university.

Distinct groups were observed in the population of the study. It was observed that the students could be grouped according to the gender, years of study, international students' status, campus of study and course major types.

Differences were observed in previous studies with regard to the effects of gender on the academic performance of students in the university, with some studies reflecting significant effects of gender on academic performance, where the female students, in most cases, outperforming the male students (Cantwell et al. 2001, Harackiewicz et al. 2002, Zeegers 2004, Sikhovari 2005 and Siebert et al. 2006). One study of Salahdeen and Murtala's (2005) however regards the male students' academic performance as being significantly better than female students at the tertiary levels of education. Although various studies have revealed gender being a contributor to the academic performance of undergraduate students, none of them look at the possible models that best explain the relationships between the factors that contribute to the academic performance of each distinct group of male and female students. The current study proposes to establish, through testing the hypothesized model, the models that best explain the relationships between the factors that contribute to the academic performance of students in each of the

distinct group of male and female students and the possible differences in the models of female and male students.

Studies have also depicted the international students' status as having an effect on the academic performance of undergraduate students in the university. Saenz et al. (1999) and Andrade (2006) found international students to be significantly weaker than their local counterparts in terms of their academic performance. Zeegers (2004) also observed direct significant effects ($\beta = 0.27$) of international students' status on the academic performance of first year students but not among students in the third year of study. No studies, however, has attempted to establish if differences exist with respect to the models that best explained the factors that contribute to the academic performance of local and international students. Thus, the current study proposes to test the hypothesized model of the study among students in the distinct groups of local students and international students in order to establish whether there are similarities in the models that best explain the factors that contribute to the academic performance of the students in the two groupings.

The various models presented in the studies reviewed did not look at the best fitting models of factors contributing to the academic performance of students in the four years of study simultaneously. The models either involved one or two years of study but did not compare the models of the four years of study. From Zeegers' (2004) study, it is clear that indeed differences exist between the models that best explain the factors that contribute to the academic performance of students in their first and third year of study, thus indicative of possible difference in the models of students in all the undergraduate years of study. The current study therefore proposes to compare the models that best explain the factors that contribute to the academic performance of students in the various years of study.

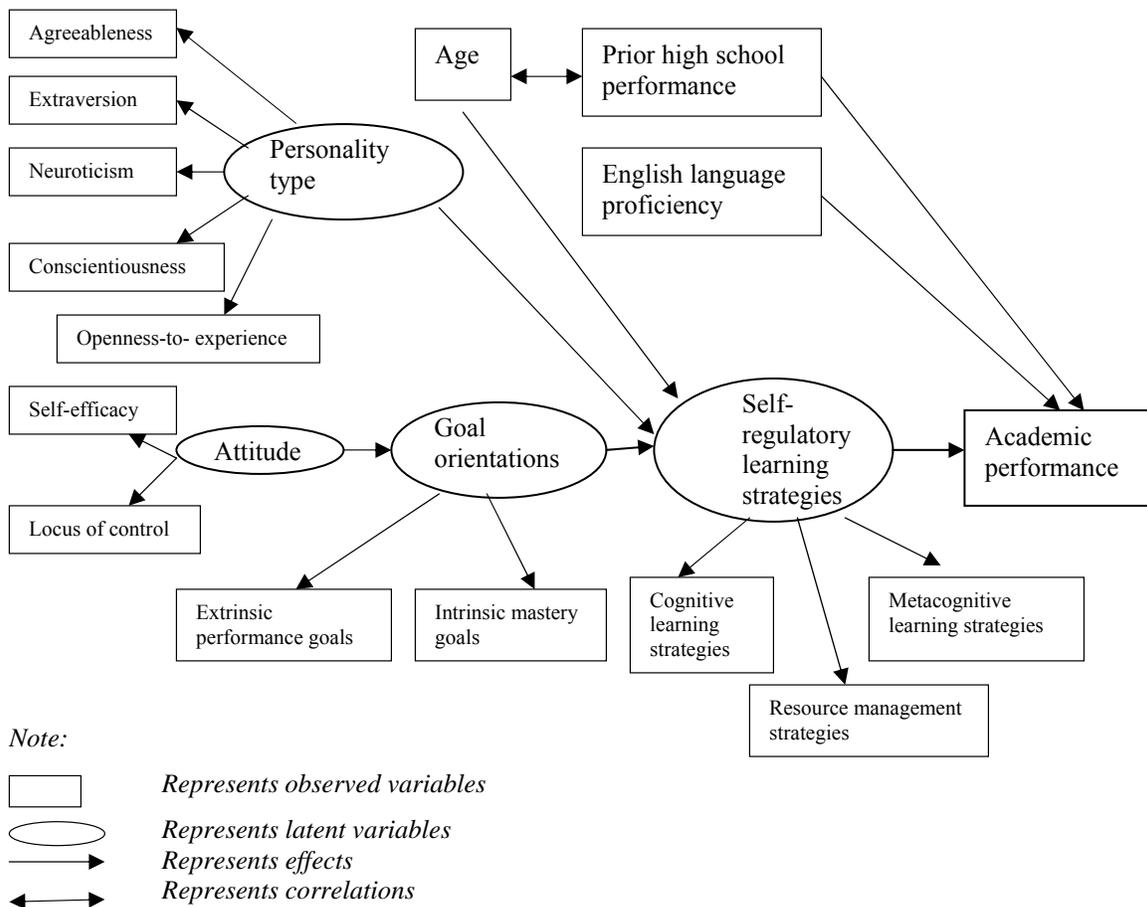
None of the reviewed studies considers models of factors that contributed to the academic performance of students in distinct courses but never make a comparison of the models that would best explain the factors that contribute to the academic performance of students in the various academic disciplines or majors of study. Smith and Naylor's (2001) study, establishes differences in the effects of various courses on the academic performance of students taking the courses. However, their study does not propose models that best

explain the academic performance of students in taking the various courses. The current study therefore proposed to test the hypothesized model in order to establish whether the models that best explain the factors that contribute to the academic performance of the students in the various academic disciplines were unique.

None of the reviewed studies made a comparison of the models that best explained the academic performance of part-time students and those who were full-time students of the university. Through using the distinct groupings of the Nairobi Campus evening students and the Athi River campus full-time day students, the current study proposed to test the hypothesized model of the study among the two categories of students.

The current study therefore proposes that the variables of age, English language proficiency, prior high school performance, attitudes, goal-orientations, self-regulatory learning strategies and personality traits significantly directly or indirectly affect the academic performance of undergraduate students in the university. Taking the discrete exogenous groupings of gender, year of study, international students' status, campus of study and course major types, the study seeks to establish the direct and indirect effects of various variables on academic performance based on the hypothesized model in Figure 2.4.

Figure 2.4: Proposed conceptual model of factors contributing to academic performance



The model presented on Figure 2.4 was tested for best fit among the undergraduate students. More specifically, the model was tested for best fit among male and female students, international and local students, students in the various campuses that were distinguished by age and entry requirements, students in various four years of study and students taking various course majors.

2.13 CONCLUSION

In conclusion, various issues arise from the studies that have been presented. Literature has revealed the greater emphasis on the learner rather than the lecturer as a critical part of learners' learning process at the tertiary education level as compared to any other level of the learner's education system. Active rather than passive learning is advocated for at this level, in addition to critical thinking and self-motivated learning strategies. This does not necessarily downplay the importance of considering the effect of external factors on the

academic performance of students in the tertiary level of education, but rather reveals greater need of assessing the effects of internal factors, thus the rationale behind the extensive availability of literature on internal student-related factors, rather than external factors, contributing to the academic performance of undergraduate students.

Interactive differences are found in relation to the effects of various variables on the academic performance of undergraduate students in the university, from one year of study to the next, from one course major to another and from one university of study to another. The results of different studies have revealed both direct and indirect effects of various factors on the academic performance of students.

Most of the studies reviewed were mainly carried out among first year students. They do not necessarily compare students across years of study or even course majors. The studies were also carried out in mainly developed countries. It would be of interest to establish if similar results would be obtained if the studies were carried out in Kenya, which is a developing country and may be having a different cultural orientation as compared to other countries. In addition, the results and models presented in the various studies vary from one study to the next. This may be a reflection of cultural issues that interact with the variables of the studies thus resulting in differences in the study findings.

The current study considered the internal student-related factors that contribute to the academic performance of undergraduate students in a university in Kenya, namely the Daystar University. The results of the study are therefore expected to provide models that best fit the data obtained from the university, thus enabling recommendations to be made on how to enhance the academic performance of students in the university while providing a basis for further research in other universities in Kenya.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION TO THE STUDY METHODS

It has been pointed out that several external factors contribute to the success of high school students in their academics (Cobb 2003). However, this is not the case at tertiary levels of education. Of great importance to students' success in tertiary levels of education is their ability to take charge and be responsible for their learning (Cobb 2003, Appleby 2005, Isaacson & Fujita 2006). Therefore, internally-driven factors that are student-related, rather than external factors have greatest influence on the academic performance of students at tertiary levels of education and, in particular, in the university, which in the case of this study is in focus. There is therefore need for students to make a smooth transition from high school to tertiary levels of education. Students need to be aware of the academic demands and differences of the of the high school and tertiary levels of education for them to be more prepared to meet the expectations of the tertiary level of education. According to Tam (2002), institutional policies and practices should also be oriented towards developing an environment by which students' responsibility and active participation in their university education is promoted. This cannot take place without an initial understanding of the factors that contribute to the academic performance of students in the university and how these factors relate with each other.

The current study aimed at establishing the contributions made by various student-related factors to the academic performance of undergraduate students in a private university in Kenya. Many studies have been carried out in developed countries with respect to the factors that contribute to the academic performance of undergraduate students. However, very little has been done in the developing counties, and more particularly, in Kenya, to establish the effects of various student-related factors on the academic performance of the undergraduate students.

The current study therefore aimed at establishing the model that best explains the contributions made by various factors in predicting the academic performance of undergraduate students in the Daystar University, which is one of the private universities in Kenya. The study aimed at establishing the factors that significantly influence the academic performance of undergraduate students in the university and how the identified factors influence academic performance of first and foremost, all the undergraduate student, then specifically, students in the categories of gender, year of study, international students' status, campus of study and course major types. The study tested the hypothesized model on Figure 2.4 in order to establish the model that best explained the contributions of various factors in predicting the academic performance of all undergraduate students in the university and more specifically, in the categories of gender, year of study, international students' status, campus of study and course major types.

3.2 RESEARCH DESIGN

The study made use of quantitative research methods, which were characterized by, among other characteristics, a focus on deductions, hypotheses testing, predictions, standardized data collection procedures and inferential statistical analysis (Johnson & Onwuegbuzie 2004). The study incorporated the ex post facto design, which is predictive in nature, in addressing its hypotheses. According to Cooper and Schindler (2003), it is not realistic to manipulate all natural variables, thus the use of the ex post facto design that classifies variables according to their characteristics rather than providing treatments to the subjects involved and having a control group. The variables presented in this study were characteristics, which are natural and thus would yield appropriate results if exposed to the ex post facto design. The ex post facto design has been identified as an effective design in the testing of hypotheses and in predicting the effects of independent variables on dependent variables (Cooper & Schindler 2003). The study included a test-retest design so as to be able to more conclusively determine the model of the study.

The study sought to test the hypothesized model on Figure 2.4, first among all the undergraduate students, and more specifically, among the male and female students,

international and local students, students in the two unique campuses of Athi River and Nairobi evening, students in the various four years of study and students in the course major types related to business, arts, sciences and social sciences, in order to establish the fit of the model on the data of the various groups.

3.3 POPULATION AND SAMPLING DESIGN

The population of study was the undergraduate students of the Daystar University in both the Nairobi and Athi River campuses. Daystar University operates on two main semesters, the January Semester and the August semester, each running for 16 weeks each. However, the university also runs a 10-weeks block/ summer period, which consists of two equal blocks of 5 weeks each, between June and August of any given year. Although the block period is optional in terms of enrolment, two-thirds of the students enroll for courses during the block period rather than taking their holiday then. The block period assists the students to complete their academic programme in a shorter period of time.

The data of the study was collected during a block period, namely the June 2007 block period. In the June 2007 block period the students' undergraduate population was 358 in the Nairobi campus and 936 in the Athi River campus. This gave a total enrolment of 1294 undergraduate students. Out of the undergraduate population in the Nairobi Campus, 106 of them were first and second year students in the full-time programme while 252 were evening part-time students in the four years of study. The Athi River campus consisted only of full-time students in all the four years of study. The students in the Nairobi full-time programme were left out of the study due to the fact that the programme was not fully established. A randomly selected sample of undergraduates in the Athi River campus and the Nairobi campus part-time programme participated in the study.

In order to identify the sample for the study, stratified random sampling techniques were employed. The population of study was divided into two strata, namely, the Nairobi part-time undergraduate students stratum and the Athi River undergraduate students stratum. All the students attending classes in two randomly selected class timeslots, one from each of the two strata, were involved in the study. The use of the class timeslots as the main unit

of selection allowed for students in all the course majors and in the various years of study to participate in the study. This also guarded against the repeating of respondents, since students could only attend one class in any given timeslot. During the block period the available Athi River Campus class timeslots were three per day for the three credit hour courses, each repeated on the five days of the week. On the other hand, the class timeslots available for the Nairobi Campus evening students were two per week; each three credit hour class timeslot was repeated thrice in the week during the block period. The average number of timeslots that any given student could attend in a given week during the block period was 2 three credit hour timeslots. Through random sampling, the third timeslot of the Athi River Campus and the first timeslot of the Nairobi Campus were selected for the data collection purposes. All the students registered for courses in the identified class timeslots were expected to participate in the study. These were 641 students from the Athi River Campus and 238 students from the Nairobi Campus, giving a total of 879 undergraduate students. Thus the percentage of enrolled students who were expected to participate in the study was 68.4% of the enrolled Athi River students and 94.4% of the enrolled Nairobi Campus evening students, which is equivalent to 67.9% of the total undergraduate population during the June 2007 block period. However, only 349 students from the Athi River Campus and 136 students from the Nairobi Campus responded to the questionnaire, giving a total of 485 respondents. This was 37.2% of the enrolled Athi River undergraduate students and 54.0% of the Nairobi Campus evening students, which is equivalent to 37.5% of the total undergraduate population for the June 2007 block period. Out of the 485 students who responded to the questionnaire, only 421 students provided their student identity numbers, which was a vital aspect of the study. They consisted of 299 students from the Athi River Campus (85.6% of the respondents from the Athi River Campus) and 122 from the Nairobi Campus students (89.7% of the respondents from the Nairobi Campus).

The 421 students who provided their student identity numbers were then selected for use in the retest of the questionnaire. However, only 93 (22% of the students expected to be involved in the retest) students responded and provided their student identity to the questionnaire during the retest. This was a low response rate. This could be attributed to the need to have the students' identity provided, the dissuasions that come with repeating a

questionnaire and the suspicion that their information would be used to victimize them; especially considering the fact that this was the second time they were expected to fill in the questionnaire, despite the persuasion given to them by the research assistants on the need to receive their responses this second time.

3.4 DATA COLLECTION TOOLS AND PROCEDURES

Both primary and secondary data was utilized in the study. The primary data was directly obtained from the students, using questionnaires, while the secondary data was obtained from university reports.

3.4.1 Primary Data

Due to the large size of the sample and the perceived sensitivity of the data being provided by the students, thus the perceived reluctance of students to openly give out their responses, the questionnaire was utilized as the data collecting tool for the study. The questionnaire consisted of items that addressed the students' demographic data and other students' characteristics.

3.4.1.1. Demographic data

The demographic profile included age, gender, international students' status, year of study, campus of operation and course major of the student. The questionnaire included the students' identity in form of their student identity numbers.

The questionnaire consisted mainly of closed-ended items. The first item gave an indication of the students' identity number, followed by an item on the students' chronological age. The students were expected to circle the options that relate to them in the successive items. The successive items included:

1. Gender; 'Male' or 'Female';
2. Campus location; 'Nairobi' or 'Athi River';
3. Year of study; '1st', '2nd', '3rd' or '4th'

4. Citizenship; 'Kenyan' or 'Non-Kenyan';
5. Course Major; 'Accounting', 'Applied Computer Science', 'Biblical and Religious Studies', 'Business Administration and Management', 'Communication', 'Community Development', 'Economics', 'Education', English language, 'Logistics and Purchasing', 'Management Information Systems', 'Marketing', 'Psychology' or 'Social Work'.

The other items on students' characteristics addressed the construct areas of attitudes, goal orientations, self-regulatory learning strategies and personality traits. Through a review of existing formal scales of measuring various constructs, the researcher developed the questionnaire for the current study. The researcher developed a closed-ended 5-point Likert scale questionnaire consisting of the options of, 'Strongly Disagree', 'Disagree', 'Neutral', 'Agree' and 'Strongly Agree', that were used to reveal the students' attitudes, goal orientations, self-regulatory learning strategies and personality traits.

The initial questionnaire consisted of 60 items from the construct areas of attitudes, goal orientations, self-regulatory learning strategies and personality traits. The items of the questionnaire were examined for face validity, by an academician; this individual was chosen based on her profession as a faculty lecturer in the Education and English Language disciplines. Items that were ambiguous were either eliminated or reviewed, thus resulting in further refinement of the instrument. The instrument was then pre-tested among 27 randomly selected full-time students of the Nairobi Campus, who were not to be part of the study's sample group. The students ticked the option that best reflected what they believed of themselves. Reliability analysis were carried out involving the various items of the constructs presented and the alpha coefficient indices of the constructs were determined in an attempt to establish the internal consistency of the items as shown on Table 3.1.

Table 3.1 Cronbach alpha coefficients of pretested constructs

Factor	Number of items	Number of valid respondents	Cronbach alpha coefficients
Self-Efficacy	4	27	0.58
Locus of control	4	27	0.64
Intrinsic Motivation	4	27	0.62
Extrinsic Motivation	4	27	0.46*
Metacognitive Regulation	4	27	0.70
Time Environment Regulation	2	27	0.27*
Study Environment Regulation	2	27	0.27*
Effort regulation	4	27	0.57
Peer Learning	4	27	0.70
Support Seeking	4	27	0.04*
Cognitive learning strategies	4	27	0.64
Agreeableness	4	27	0.56
Extraversion	4	27	0.68
Neuroticism	4	27	-0.03*
Conscientiousness	4	27	0.78
Openness to experience	4	27	0.43*
*Resource management (time and study environment, effort regulation, peer learning and support seeking)	16	27	0.68

Note: Resource management is a combination of time and study environment regulation, effort regulation, peer learning and support seeking (Pintrich 1999).

Constructs that revealed very low alpha values were reviewed and, with the aid of the established standardized tests, they were adjusted in order to strengthen their internal consistencies. Adjustments were made to the questionnaire by either removing or rephrasing the items that were ambiguous and those with low reliability coefficients as demonstrated below:

The initial peer learning item 32 was removed from the questionnaire.

The initial support seeking item 34 was revised from “*Even if I have trouble learning the material in my classes, I try to do the work on my own, without help from anyone*” to “*I try to do my coursework on my own without assistance from other students*”.

The initial neuroticism item 50 was revised from “*I am not easily bothered by other people*” to “*Generally, other people’s views about me do not trouble me*”.

The initial neuroticism item 52 was revised from “*I feel contented about who I am*” to “*I generally feel satisfied with whom I am*”.

The initial openness-to-experience item 58 was revised from “*I tend to vote for conservative student leaders*” to “*I tend to vote for student leaders who are conformists*”.

The initial openness-to-experience item 59 was revised from “*I am drawn towards liberal leaders*” to “*I am drawn towards open-minded leaders*”.

In addition, items in the construct areas of time and study environment regulation, effort regulation, peer learning and support seeking were pooled together in order to give the common construct area of resource management strategies (Printich 1999).

The researcher also took note of the possible challenge of the students being reluctant to reveal their identity.

The final version of the questionnaire therefore consisted of 59 items as presented:

3.4.1.2. Attitudes

Attitudes were measured using eight items, four measuring the ‘self-efficacy’ variable and four measuring the ‘locus of control beliefs’ variable. A review of the Motivated Strategies for Learning Questionnaire (MSLQ), which was used by McKenzie, Gow and Schweitzer (2004) and the revised General Perceived Self-Efficacy (Schwartz & Scholz 2000), aided the construction of the eight items under the construct area of attitudes. An internal consistency of $\alpha = 0.93$ on the original self-efficacy items and one of 0.68 on the original locus of control beliefs items is reported of the MSLQ scale. In addition, the General Perceived Self-Efficacy scale reports an internal consistency of between 0.75 and 0.90, based on various studies carried out using the latter scale. Schwartz and Scholz (2000) also report high test-retest reliabilities over one and two year periods and criterion-related validity of the scale, based on five other studies conducted to examine its psychometric properties. Therefore the items presented in the two scales are perceived to strongly measure both self-efficacy and locus of control. Using the two scales of MSLQ and the revised General Perceived Self-Efficacy the researcher constructed the four ‘self-efficacy’ items and four ‘internal locus of control belief’ items for the current study. The items were phrased in both a positive and negative manner so as to guard against random assignment of responses based on established patterns.

On a 5-point Likert Scale, a rating of ‘1’ on the positively phrased items or a rating of ‘5’ on the negatively phrased items reflected very low levels of self-efficacy or a strong

presence of external locus of control beliefs respectively. In a likewise manner a rating of '5' on the positively phrased items or a rating of '1' on the negatively phrased items reflected very high levels of self-efficacy or a strong presence of the internal locus of control beliefs respectively.

The final items that were used were:

Self-efficacy items

1. I believe I will receive good grades this semester.
2. Even if I try hard, I will never improve in my academics. (-ve)
3. I can always manage to solve difficult academic problems if I try hard enough.
4. I am not confident that I can pass in courses that I find difficult to understand (-ve)

Internal Locus of control items

1. The success of my courses depends more on the lecturer than my own effort in the course. (-ve)
2. It is difficult for me to be in full control over the success of the courses I am taking. (-ve)
3. As far as success in my courses is concerned, I am a victim of forces that I cannot control.(-ve)
4. I believe I have control over the success of my courses.

3.4.1.3 Goal Orientations

Two distinct goal orientations that were used in the study were intrinsic and extrinsic goal orientations. The original version of MSLQ, which was reviewed before constructing the items that would measure goal orientation, reveals an internal consistency of $\alpha = 0.74$ among the intrinsic goal orientations items and 0.62 among the extrinsic goal orientation items. This implies that the items adequately measure the constructs of intrinsic goal orientations and extrinsic goal orientations respectively.

Eight items were constructed to reflect both intrinsic and extrinsic goal orientations. Four of the items reflected intrinsic motivation while four items reflected extrinsic motivation. On a scale of '1' to '5', of a positive phrased 'intrinsic goal orientation' item, or 'extrinsic

goal orientation' item, a rating of '1' reflected low intrinsic or low extrinsic goal orientation respectively, while a score of '5' reflected high intrinsic or high extrinsic goal orientation respectively. Conversely, a rating of '5' on a negatively phrased 'intrinsic goal orientation' item, or 'extrinsic goal orientation' item, reflected low intrinsic or low extrinsic goal orientation respectively, while a score of '1' reflected high intrinsic or high extrinsic goal orientation respectively.

The items used to measure the 'intrinsic goal orientations' and the 'extrinsic goal orientations' were:

Intrinsic goal orientations

- 1 I believe that what I am learning in my studies at the university is useful for me to know.
- 2 I enjoy learning new things in my university courses
- 3 I enjoy discussing issues I have learned in my courses outside the class setting.
- 4 I consider my future goals in life to be unrelated to my studies in the university (-ve)

Extrinsic goal orientations

1. One of the reasons I study is to avoid disappointing my family
2. Getting a good grade in my courses is one of the most satisfying thing for me right now
3. Failing in my courses at times makes me feel like a failure in life
4. I want to do well in my courses because it is important to show my ability to my family, friends, employers or others.

3.4.1.4 Self-regulatory learning strategies

The questionnaire consisted of twenty three items that measured various components of self-regulatory learning strategies. The Motivated Strategies for Learning Questionnaire (MSLQ) scale, which was used by Chen (2002) and McKenzie, Gow and Schweitzer (2004) in determining the self-regulatory learning strategies of students provides the Cronbach alpha coefficients on various sub-scales of its original version as follows: metacognitive regulation, 0.79; time and study environment, 0.76; effort regulation, 0.69;

peer learning, 0.76; support seeking, 0.52. Support seeking appears to have the lowest internal consistency; however, its index is not too low to rule out the fact that its items actually measure support seeking.

The current study drew 4 items from the metacognitive regulation subscale of the MSQL. In addition, for purposes of the current study, the items in the construct areas of time and study environment, effort regulation, peer learning and support seeking were pooled together to give a common and more reliable construct known as resource management strategies. Four items from the Revised Biggs Study Processes Questionnaire (RSPQ), which was utilized by Zeegers (2002) and reflected the adoption of cognitive strategies, were also included in the questionnaire. Zeegers (1999) had reported an internal consistency of $\alpha = 0.80$ on the deep approach to learning and 0.50 for the surface approach to learning, which he considers to be consistent with those reported in the original Biggs Study Processes Questionnaire (SPQ).

The self-regulatory learning strategies items of the current study were therefore drawn from both the MSLQ and RSPQ scales. The study questionnaire therefore consisted of four items of the cognitive learning strategies construct, four items of the metacognitive learning strategies construct and fifteen items of the resource management construct.

The items were both positively and negatively phrased in order to avoid randomization of responses by the respondents. A rating of '1' on the positively phrased items reflected poor 'cognitive learning', 'metacognitive regulation' and 'resource management' strategies respectively, while a rating of '5' reflected good 'cognitive learning', 'metacognitive regulation' and 'resource management' strategies respectively. Conversely, a rating of '5' on the negatively phrased items reflected poor 'cognitive learning', 'metacognitive regulation' and 'resource management' strategies respectively, while a rating of '1' reflected good 'cognitive learning', 'metacognitive regulation' and 'resource management' strategies respectively.

The following are the twenty three items that were used in the study:

Metacognitive regulation

1. During class time, I often miss important points because I am thinking of other things. (-ve)
2. When studying for my courses, I set goals for myself in order to direct my activities in each study period.
3. If a course is difficult to understand, I look for ways that will help me understand it better.
4. Before I study new course material thoroughly, I often skim it to see how it is organized.

Resource management

1. I don't find adequate time to spend on my coursework due to other activities. (-ve)
2. I do not find adequate time to review all my notes before my examinations. (-ve)
3. I have a regular place set aside for studying.
4. I usually study in a place where I can concentrate on my course work.
5. When course work is difficult, I either give up or only study the easy parts. (-ve)
6. I often feel so lazy or bored when studying that I quit before I finish what I planned to study. (-ve)
7. I work hard to do well in my courses even if I don't like what I am studying.
8. Even when course materials are uninteresting, I manage to keep working until I finish.
9. I try to contribute to class discussions as much as possible.
10. When studying for my courses, I often set aside time to discuss course materials with a group of students from my classes.
11. Given a choice, I would prefer working on my own to complete course assignments.(-ve)
12. I normally ask lecturers to clarify concepts I don't understand well.
13. I try to do my coursework on my own without assistance from other students
14. I normally discuss my academic progress with lecturers.
15. I try to identify students in my courses whom I can ask for help if necessary.

Cognitive learning

1. I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.

2. I make a point of looking at most of the suggested readings that go with the lectures.
3. I only study seriously what is given in class or in the course outlines (-ve)
4. I generally restrict my study to what is specifically given in class as I think it is unnecessary to do anything extra (-ve)

3.4.1.5 Personality traits

Five variables under the ‘personality traits’ construct areas were addressed. A review of the International Personality Item Pool (IPIP) Five Factor Personality Inventory (Buchanan, 2001) assisted in the development of twenty items, four from each of the five variables of ‘agreeable’, ‘extroversion’, ‘neuroticism’, ‘conscientiousness’ and ‘openness-to-experience’ whose internal consistencies are reported as $\alpha = 0.76, 0.88, 0.83, 0.84$ and 0.74 respectively. The reliability of the items in the five variables was also considered to be acceptable based on correlations with self-reports of relevant behaviours.

The developed questionnaire consisted of 20 items, four from each of the five variables. The items were phrased both positively and negatively. A rating of ‘1’ on the positively phrased items or ‘5’ on the negatively phrased items was indicative of very weak attributes while a rating of ‘5’ on the positively phrased items or ‘1’ on the negatively phrased items was indicative of very strong attributes. The items used to measure the various five variables were as follows:

Agreeableness

1. I often find myself insulting other students. (-ve)
2. I believe that others have good intentions in what they do.
3. I accept people as they are.
4. I easily get back at people. (-ve)

Extraversion

1. I don’t like drawing attention to myself. (-ve)
2. I make friends easily
3. I know how to captivate other students
4. I like keeping a low profile in campus(-ve)

Neuroticism

1. I have frequent mood swings.
2. Generally, other people's views about me do not trouble me. (-ve)
3. I easily panic about things around me.
4. In general, I feel satisfied with whom I am (-ve)

Conscientiousness

1. I carry out my plans to the end.
2. I find it difficult to get down to work. (-ve)
3. I often pay attention to details.
4. I often find myself wasting time. (-ve)

Openness-to-experience

1. I am not interested in abstract ideas. (-ve)
2. I tend to vote for student leaders who are conformists. (-ve)
3. I am drawn towards open-minded leaders.
4. I avoid philosophical discussions. (-ve)

Adequate copies of the revised questionnaire were then produced, collated and packaged for distribution to the various classes that were to participate in the study. The lecturers of the classes that were to participate in the study were notified, in writing at least one day in advance. The questionnaire was then distributed, by a trained research assistant, a day after notification, to the lecturers of the various classes. The lecturers then administered the questionnaire in their classes, relying on the students' willingness to respond to the questionnaire and provide their identity. The students were given an average of 20 minutes to respond to the questionnaire. The research assistant then received back the questionnaires from the lecturers concerned. In order to increase the possibility of the students providing their identity numbers, the students were informed that their responses would only be used for research purposes and that they were required to answer all the questions. In order to increase objectivity in the students' responses, the students were assured that their responses would be treated with confidence and would not be used in any way to victimize them; rather, their responses would only be used for research purposes.

The instrument was retested among the students who provided their identity when it was initially administered. This time, two research assistants were involved in administering the questionnaire in its original form. The research assistants had to locate the students who had provided their identity through the use of students' personal class timetables that were obtained from registration records. The latter was found necessary because the retest was carried out in the following semester and there was a high likelihood that the students who initially participated in the study were now not sharing the same classes. The latter scenario was confirmed through a glance at the class attendance lists, also obtained from the registrar's office that showed that students did not move in blocks in their choice of course. Instead, the students made choices on the courses they were to take in any given semester, being careful that the courses of interest are part of the required courses for the fulfillment of their degree course in the university and that they first meet the prerequisites of the various courses they intend to take (Daystar University Catalogue 2003-2007). The research assistants explained to the identified students that the retest was only meant to verify their previous responses and would not be used to victimize them in any way. In order to receive optimal responses from the identified students, the research assistants relied on the willingness of the students to respond to the questionnaire.

3.4.2 Secondary data

University documents, which included enrolment data and grade reports, were utilized as secondary data for the study. The data that was obtained using the university records included the students' final high school grades, English proficiency grades as obtained from averaging their grades on two English language tests that gave an indication of students' English reading and writing proficiencies, and their cumulative Grade Point Average (Cum GPA) by the end of the Block period. It was assumed that students do not willingly and objectively respond to items that reveal their actual academic performance, thus the need to establish other objective ways, such as the use of secondary data, of obtaining the students' academic performance.

Students' final high school grades were categorized in three ways. The first category was referred to as "Low Admission". It consisted of students who were admitted to the

university and had a final high school grade of 'C' or below. They were either admitted on mature age entry requirements or had to first attend pre-university or diploma, in order to qualify for admission into the undergraduate programme. The second category was referred to as the "Average Admission" It consisted of students whose grades were between 'C+' and 'B' or their equivalence. These were students who generally qualified to join the university, but due to their failure to attain a higher grade, were cut off from admission to the public universities of the country. The "High Admission" category was the third category, which consisted of students with grades of 'B+' and above. These students had grades that would have allowed them to gain access to the public universities of the country.

The English language grades range from 'A' to 'F', whereby 'A' is indicative of excellent proficiency and 'F' is indicative of very poor proficiency. Students English language proficiency was categorized in four ways, namely, "Excellent proficiency", which consisted of students with average English language grades of 'A' and 'A-', "Good proficiency", which consisted of students with average English language grades of 'B+', 'B' and 'B-', "Average proficiency", which consisted of students with average English language grades of 'C+', 'C' and 'C-' the "Poor proficiency" category, which consisted of students with average English language grades of 'D+', 'D' and 'F'.

The Cum GPA scores range from 0.00 to 4.00, by which 0.00 is considered to be the lowest grade and 4.00 is considered to be the highest grade one can obtain. The Cum GPA is considered to be an average of a student's grades in all the semesters the student has been assessed.

Other data that was obtained from the university records for purposes of verifying the information provided through questionnaire was the students' gender, chronological age, international students' status, course majors and their completed credit hours that were used to give an indication of the student's current year of study. This information was used to fill in gaps that resulted from a student failing to fully complete his/her demographic profile.

3.5 DATA ANALYSES

The data obtained from both the primary and secondary data were first coded in order to easily analyze it. The codes of the variables are presented on Table 3.2:

Table 3.2 Coded description of study variables

Variable No.	Variable Name	Code Description
1.	Student Number (stidno)	Record Number
2.	Age (age)	Record Number
3.	Gender (gender)	1 = Male 2 = Female
4.	Campus (campus)	1 = Athi River 2 = Nairobi Campus
5.	Year of study (year)	1 = 1 st year 2 = 2 nd year 3 = 3 rd year 4 = 4 th year
6.	International students' status (ISS)	1 = Local 2 = International
7.	Course Major type (major)	1 = Business-based courses, which include Accounting, Business Administration and Management, Logistics and Purchasing, Marketing and Management Information Systems 2 = Art-based courses, which include Communication, Biblical and Religious Studies and English Language 3 = Science-based courses, which include Economics and Applied Computer Science 4 = Social science-based courses, which include Community Development, Education, Psychology and Social Work
8.	Final High school grade (fgrades)	1 = Low grade 2 = Average grade 3 = High grade
9.	English Language proficiency (eng)	1 = Poor proficiency 2 = Average proficiency 3 = Good proficiency 4 = Excellent proficiency
10.	Self-Efficacy (se)	Average of items of self-efficacy ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak self-efficacy 5 = Very strong self-efficacy <i>For the negatively phrased items</i> 1 = Very strong self-efficacy 5 = Very weak self-efficacy
11.	Internal Locus of Control beliefs (loc)	Average of items of internal locus of control ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak internal locus of control beliefs 5 = Very strong internal locus of control beliefs <i>For the negatively phrased items</i> 1 = Very strong internal locus of control beliefs 5 = Very weak internal locus of control beliefs
12.	Intrinsic Goal Orientation (int)	Average of items of intrinsic goal orientation ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak intrinsic goal orientation 5 = Very strong intrinsic goal orientation <i>For the negatively phrased items</i>

Variable No.	Variable Name	Code Description
		1 = Very strong intrinsic goal orientation 5 = Very weak intrinsic goal orientation
13.	Extrinsic Goal Orientation (ext)	Average of items of extrinsic goal orientation ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak extrinsic goal orientation 5 = Very strong extrinsic goal orientation <i>For the negatively phrased items</i> 1 = Very strong extrinsic goal orientation 5 = Very weak extrinsic goal orientation
14.	Metacognitive regulation (met)	Average of items of metacognitive learning strategies ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak metacognitive regulatory strategies 5 = Very strong metacognitive regulatory strategies <i>For the negatively phrased items</i> 1 = Very strong metacognitive regulatory strategies 5 = Very weak metacognitive regulatory strategies
15.	Resource Management strategies (res)	Average of items of resource management strategies ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak resource management strategies 5 = Very strong resource management strategies <i>For the negatively phrased items</i> 1 = Very strong resource management strategies 5 = Very weak resource management strategies
16.	Cognitive learning strategies (cog)	Average of items of cognitive learning strategies ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak cognitive learning strategies 5 = Very strong cognitive learning strategies <i>For the negatively phrased items</i> 1 = Very strong cognitive learning strategies 5 = Very weak cognitive learning strategies
17.	Agreeableness (agr)	Average of items of agreeableness ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak agreeable personality trait 5 = Very strong agreeable personality trait <i>For the negatively phrased items</i> 1 = Very strong agreeable personality trait 5 = Very weak agreeable personality trait
18.	Extraversion (xtr)	Average of items of extraversion ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak extraversion personality trait 5 = Very strong extraversion personality trait <i>For the negatively phrased items</i> 1 = Very strong extraversion personality trait 5 = Very weak extraversion personality trait
19.	Neuroticism (neu)	Average of items of neuroticism ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak neuroticism personality trait 5 = Very strong neuroticism personality trait <i>For the negatively phrased items</i> 1 = Very strong neuroticism personality trait 5 = Very weak neuroticism personality trait

Variable No.	Variable Name	Code Description
20.	Conscientiousness (con)	Average of items of conscientiousness ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak conscientiousness personality trait 5 = Very strong conscientiousness personality trait <i>For the negatively phrased items</i> 1 = Very strong conscientiousness personality trait 5 = Very weak conscientiousness personality trait
21.	Openness-to-experience (ope)	Average of items of openness-to-experience ranging from 1-5 <i>For the positively phrased items</i> 1 = Very weak openness-to-experience personality trait 5 = Very strong openness-to-experience personality trait <i>For the negatively phrased items</i> 1 = Very strong openness-to-experience personality trait 5 = Very weak openness-to-experience personality trait
22.	Attitude (att)	Latent variable loading onto the manifested variables of self efficacy and internal locus of control
23.	Goal orientations (goal)	Latent variable loading onto the manifested variables of intrinsic goal orientation and extrinsic goal orientation
24.	Personality traits (per)	Latent variable loading onto the manifested variables of agreeableness, extraversion, neuroticism, conscientiousness and openness-to-experience.
25.	Self-regulatory learning strategies (self)	Latent variable loading onto the manifested variables of metacognitive learning strategies, resource management learning strategies and cognitive learning strategies.
26.	Cumulative Grade Point Average (cumgpa)	Value between 0.00-4.00 whereby: 0.00 = Very poor performance 4.00 = Very good performance

A total of 26 variables were analyzed in the study with the first variable having the purpose of linking the variable responses received from the primary data to those received from the secondary data. Items that were negatively phrased were reversed during the scoring, so that a rating of '1' was indicative of a strong presence of the variable being measured and a rating of '5' was indicative of a weak presence of the variable in question.

The data was initially fed into the Statistical Package of Social Sciences (SPSS 11.0) for purposes of easy access and analyses. Averages of the items that constituted the various constructs were then computed in order to provide an indication of the measures of each construct area. Descriptive analyses were carried out to determine the means, standard deviations, medians and skewness the variables of the study. The means provided the average of the scores of the attributes of the students in any given category, while the standard deviation measures provided the extent of dispersion from the mean of the attributes of any given category of students. On the other hand the skewness measure

provided the study with information on the direction and extent to which a distribution of all the scores of an attribute veered away from a normal distribution, which is symmetrical with the three measures of central tendency, namely the mean, mode and median being identical. Negatively skewed distributions would therefore be indicative of that most of the scores on the given attributes were high relative to the mean while positively skewed distributions would be indicative that most of the scores were low relative to the mean of the scores of the given attribute. In addition, the higher the values of the score, the higher the deviation of the distribution of the scores were from being symmetrical (Gupta & Gupta 2004). Differences in the means of the groupings of the study, mainly gender, international students status, year of study, campus of operation and type of course major, were also sort using a one-way Analysis of Variance (ANOVA) test. In order to initially provide an indication of the possible significant relationships of the variables of the study, bivariate correlation analyses were carried out. The significant levels at which null hypotheses were rejected was at $p \leq 0.05$.

Structural equation modeling (SEM) techniques were employed because of their strength in providing many options to multivariate models (Diseth, Pallesen, Hovland & Larsen 2006), their ability to determine the relative strength of each variable included in explaining the relationships and their ability to test complex models of functional relationships between observed variables and latent variables (Saenz et al. 1999). In order to employ the SEM techniques to the study, the Analysis of Moments Structures (AMOS) programme version 7.0, which is a product of SPSS Inc., was utilized. The choice of the AMOS 7.0 programme for the implementation of the SEM techniques was based on its operation of Windows software, its ability to visualize structural equation models, its user-friendly graphical use of simple drawing tools to specify, view and modify models and the programmes ability to easily assess model fits and make the necessary modifications that would lead to establishing the model that best fits the data of the study (Arbuckle 2006). The user-friendly graphical interface of AMOS 7.0 programme distinguishes it from the other programmes that would have been used for implementing the SEM techniques (Garson 2006).

The hypothesized model of the study was input into the AMOS programme using its graphical interface and its linkages to the SPSS data files. The observed and latent variables and hypothesized paths and covariance were specified in the graphical presentation. Parameter estimates were calculated to establish regression weights, covariance, variances and multiple regression correlations of the hypothesized model. However, there was need to establish the significance of the parameter estimates through carrying out confirmatory factor analyses (CFA). Confirmatory factor analyses (CFA) were carried out to test how well the observed variables gave a measure of the latent variables and consequently the significance of the relationships of the various variables of the study.

Goodness of fit measures for the hypothesized model were established using various indices. Models that did not have a good fit as determined by various indices were modified for better representation. The goodness of fit indices that were examined in the study were chi-square (χ^2), the root mean square error of approximation (RMSEA) the closeness of fit measure (PCLOSE) and the comparative fit index (CFI). When examining the chi-square index, the p value, which is the probability of getting as large a discrepancy as occurred with the present sample, is considered critical. In the current study, a p-value of less than 0.05 was indicative of a possibly poor fit, while a p-value of 0.05 and above was indicative of a possibly good fit (Arbuckle 2006). Kenny (2003) observed the chi-square statistics to provide reasonable measures for between 75 and 200 sample sizes. According to Kenny (2003), in the presence of larger sample sizes, the chi-square measure was almost always statistically significant, thus resulting in the statistical rejection of the null hypothesis of the hypothesized model fitting well onto the available data. Due to the sensitivity of the chi-square index to the sample size, with small samples indicating the probability of good fits and large samples indicating poor fits, other indices, which include the Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit Index (CFI), were considered necessary in making conclusions with regard to goodness of fit of the model of the study. A RMSEA index of 0.05 and less was indicative of a good fit while a CFI index close to 1.000 and greater than 0.90 was also indicative of a good fit (Kline 2005, Arbuckle 2006, Garson 2006). According to Garson (2006) a CFI index of greater

than 0.80 was considered acceptable as a reasonable fit for a study. Garson (2006) also considers a PCLOSE index of less than 0.05 to be indicative of lack of a close fit.

Models that were considered to have good fit were further analyzed and significant direct and indirect effects established for all the students, and more specifically, for the male and female students, international and local students, students in the Athi River and Nairobi campuses, students in the first, second, third and fourth year of study and students taking business-, art-, science- and social science-based courses. The final models obtained using the SEM techniques were subjected to further testing using data obtained during the retest of the study.

The results of the analyses carried out in this study are presented in the two subsequent chapters. The next chapter provides the results of the descriptive and correlation analyses carried out on the data, while the chapter thereafter presents the models that were considered to best explain the contributions of various factors in predicting the academic performance of undergraduate students in the various categories in the university.

CHAPTER FOUR

DESCRIPTIVE AND CORRELATION ANALYSES OF THE VARIABLES OF THE STUDY

4.1 INTRODUCTION TO THE SAMPLE

A total of 485 undergraduate students responded to the study questionnaire, however, only 421 provided their identity. Since the study heavily depended on the students' identity for purposes of establishing the students' current academic performance at the university, which was the criterion of the study and had to be obtained from the students' academic records, only the responses from the students who provided their identity were analyzed further.

4.2 DESCRIPTIVE ANALYSES OF THE DISCRETE EXOGENOUS VARIABLES OF THE STUDY

Analyses were initially carried out on the discrete exogenous variables of the study, namely gender, international students' status, campus of operation, year of study and type of course major being undertaken by the students, in relation to the other variables of the study. Means, standard deviations, medians and skewness of students' distinct groupings were established and tests of significance carried out on the means using the one-way Analysis of Variance (ANOVA) critical values at significant levels of $p \leq 0.05$ as discussed below.

4.2.1 Student's gender

The distinct groupings of male and female students were analyzed in the study. Table 4.1 shows the means, standard deviations, medians and skewness of the male and female students in relation to their academic performance, chronological age, final high school grade, English Language proficiency, attitudes, goal orientations, learning strategies and personality traits.

Table 4.1 Gender-related descriptive analysis of students

Report																	
GENDEI		CUMGPA	AGE	GRADES	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
Male	Mean	2.7863	24.63	1.80	2.88	4.24	3.73	4.19	3.34	3.80	3.64	3.49	3.91	3.15	2.25	3.88	3.68
	N	139	142	143	140	141	140	141	139	137	129	144	140	140	140	141	137
	Std. Devia	.48392	6.090	.551	3.461	.566	.697	.645	.719	.605	.437	.606	.609	.608	.661	.654	.529
	Median	2.7800	23.00	2.00	3.00	4.25	3.75	4.25	3.25	3.75	3.67	3.50	4.00	3.00	2.25	4.00	3.75
	Skewness	-.443	2.101	-.067	11.361	-.724	-.208	-1.188	-.032	-.405	-.222	-.197	-.462	.350	.162	-.484	-.078
Female	Mean	2.9009	25.32	1.80	2.66	4.31	3.87	4.31	3.47	3.80	3.64	3.57	4.03	3.05	2.26	3.77	3.62
	N	271	274	274	268	270	269	265	270	266	250	271	268	261	270	269	256
	Std. Devia	.38535	8.825	.541	.562	.553	.722	.570	.818	.648	.456	.616	.548	.631	.687	.669	.598
	Median	2.9200	22.00	2.00	3.00	4.50	4.00	4.50	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.63
	Skewness	-.313	1.646	-.108	-.514	-.897	-.632	-.742	-.150	-.747	-.341	.006	-.658	-.133	.480	-.449	-.304
Total	Mean	2.8620	25.08	1.80	2.73	4.29	3.82	4.27	3.42	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
	N	410	416	417	408	411	409	406	409	403	379	415	408	401	410	410	393
	Std. Devia	.42426	7.996	.544	2.076	.558	.716	.599	.787	.633	.449	.613	.572	.624	.678	.665	.575
	Median	2.8550	22.00	2.00	3.00	4.25	4.00	4.25	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.75
	Skewness	-.462	1.802	-.093	18.001	-.832	-.481	-.957	-.092	-.645	-.304	-.058	-.599	.014	.380	-.459	-.261

Note:

GENDER represents gender of respondent

CUMGPA represents respondents' cumulative Grade Point Average

AGE represents age of respondent

FGRADES represents final high school grade of respondent

ENG represents the respondents' English Language proficiency

SE represents the self-efficacy level of the respondent

LOC represents the internal locus of control level of the respondent

INT represents the intrinsic goal orientation level of the respondent

EXT represents the extrinsic goal orientation level of the respondent

MET represents the adoption of the metacognitive learning strategies by the respondent

RES represents the adoption of resource management learning strategies by the respondent

COG represents the adoption of cognitive learning strategies by the respondent

AGR represents the degree of the agreeableness personality trait within the respondent

XTR represents the degree of the extraversion personality trait within the respondent

NEU represents the degree of the neuroticism personality trait within the respondent

CON represents the degree of the conscientiousness personality trait within the respondent

OPE represents the degree of the openness-to-experience personality trait within the respondent

According to Table 4.1, the majority of the students had high scores on academic performance, final high school entrance grade, self-efficacy, locus of control, intrinsic and extrinsic goal orientations, metacognitive, resource management and cognitive learning strategies and agreeableness, conscientiousness and openness-to-experience personality traits, as portrayed by the skewness measures. Most students, however, had low scores on chronological ages and low English Language proficiency, implying that there were younger students than older students and that most students were relatively weak with regard to their English Language proficiency as revealed by the skewness measures on Table 4.1. Most students were also observed to have relatively low scores on the neuroticism and extraversion personality traits.

Unique observations were however made among the male and female students in relation to the total group of students. In specific, female students were found to have good English

Language proficiency, low levels of cognitive learning strategies and high levels of the extraversion trait. In order to establish significance in the differences between the male and female students, the one-way ANOVA was carried out as presented on Table 4.2.

Table 4.2 Significance of mean differences in genders

			ANOVA Table				
			Sum of Squares	df	Mean Square	F	Sig.
CUMGPA * GENDER1	Between Groups	(Combined)	1.208	1	1.208	6.804	.009
	Within Groups		72.410	408	.177		
	Total		73.617	409			
AGE * GENDER1	Between Groups	(Combined)	45.100	1	45.100	.705	.402
	Within Groups		26490.956	414	63.988		
	Total		26536.055	415			
FGRADES * GENDER1	Between Groups	(Combined)	.000	1	.000	.001	.971
	Within Groups		123.079	415	.297		
	Total		123.079	416			
ENG * GENDER1	Between Groups	(Combined)	4.526	1	4.526	1.050	.306
	Within Groups		1749.354	406	4.309		
	Total		1753.880	407			
SE * GENDER1	Between Groups	(Combined)	.455	1	.455	1.462	.227
	Within Groups		127.173	409	.311		
	Total		127.627	410			
LOC * GENDER1	Between Groups	(Combined)	1.765	1	1.765	3.466	.063
	Within Groups		207.290	407	.509		
	Total		209.055	408			
INT * GENDER1	Between Groups	(Combined)	1.182	1	1.182	3.315	.069
	Within Groups		144.072	404	.357		
	Total		145.254	405			
EXT * GENDER1	Between Groups	(Combined)	1.537	1	1.537	2.490	.115
	Within Groups		251.210	407	.617		
	Total		252.746	408			
MET * GENDER1	Between Groups	(Combined)	.002	1	.002	.006	.938
	Within Groups		160.955	401	.401		
	Total		160.957	402			
RES * GENDER1	Between Groups	(Combined)	.000	1	.000	.002	.962
	Within Groups		76.177	377	.202		
	Total		76.178	378			
COG * GENDER1	Between Groups	(Combined)	.493	1	.493	1.315	.252
	Within Groups		155.018	413	.375		
	Total		155.511	414			
AGR * GENDER1	Between Groups	(Combined)	1.385	1	1.385	4.265	.040
	Within Groups		131.804	406	.325		
	Total		133.189	407			
XTR * GENDER1	Between Groups	(Combined)	.928	1	.928	2.391	.123
	Within Groups		154.786	399	.388		
	Total		155.714	400			
NEU * GENDER1	Between Groups	(Combined)	.013	1	.013	.029	.866
	Within Groups		187.722	408	.460		
	Total		187.735	409			
CON * GENDER1	Between Groups	(Combined)	1.189	1	1.189	2.699	.101
	Within Groups		179.754	408	.441		
	Total		180.943	409			
OPE * GENDER1	Between Groups	(Combined)	.380	1	.380	1.152	.284
	Within Groups		129.172	391	.330		
	Total		129.553	392			

Note: df stands for degrees of freedom

According to Table 4.2, the female students were observed to be significantly academically better than the male students at $p \leq 0.05$. These findings support those of Cantwell (2001) Harackiewicz et al. (2002), Sikhovari (2005) and Siebert et al. (2006), all of who observe female students to be significantly better than their male counterparts in their academics. According to Salahdeen and Murtula (2005), female students' weaker academic performance in some cases as compared to their male counterparts could be attributed to cultural issues, which include the perception among female students that male students should be more successful than they are; family responsibilities, which are more for the female students than their male counterparts; and female students' assessment of their role in the society being lower than that of their male counterparts. The fact that the current study depicted the female students as being better than their male counterparts may therefore be an indication of the female students having overcome the cultural issues that have potential of being detrimental to their academic performance in the university. In addition, the female students were found to be significantly more agreeable than their male counterparts at $p \leq 0.05$. Although differences were observed between the means of the male and female students in relation to their chronological age, final high school grade, English Language proficiency, levels of self efficacy, internal locus of control, intrinsic and extrinsic goal orientations, adoption of metacognitive, resource management and cognitive learning strategies and the personality traits of extraversion, neuroticism, conscientiousness and openness-to-experience, the mean differences were considered to be insignificant.

4.2.2 Students' international status

The means, standard deviation scores, median scores and skewness of both the local and international students in relation to their academic performance, chronological age, final high school grade, English Language proficiency, attitudes, goal orientations, learning strategies and personality traits are shown on Table 4.3.

Table 4.3 International status-related descriptive analysis of students

		Report															
ISS1		CUMGPA	AGE	GRADES	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
Local	Mean	2.8849	24.91	1.80	2.77	4.30	3.83	4.28	3.41	3.80	3.65	3.56	4.00	3.07	2.23	3.83	3.65
	N	375	382	383	375	376	374	371	374	369	350	379	372	368	374	374	358
	Std. Devia	.39695	7.735	.539	2.151	.551	.720	.583	.775	.633	.439	.621	.554	.622	.676	.650	.574
	Median	2.8800	22.00	2.00	3.00	4.25	4.00	4.25	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.75
	Skewness	-.274	1.794	-.117	17.576	-.785	-.494	-.876	-.059	-.678	-.167	-.082	-.507	.007	.466	-.406	-.262
Internatio	Mean	2.6171	27.03	1.76	2.27	4.19	3.68	4.16	3.58	3.81	3.62	3.36	3.82	3.26	2.53	3.61	3.51
	N	35	34	34	33	35	35	35	35	34	29	36	36	33	36	36	35
	Std. Devia	.60368	10.446	.606	.719	.625	.660	.750	.903	.640	.568	.491	.724	.633	.637	.785	.574
	Median	2.6700	23.50	2.00	2.00	4.25	3.75	4.00	3.50	3.88	3.80	3.50	4.00	3.25	2.75	4.00	3.50
	Skewness	-.341	1.593	.144	.071	-1.149	-.474	-1.237	-.477	-.290	-1.084	-.212	-.780	.075	-.503	-.596	-.285
Total	Mean	2.8620	25.08	1.80	2.73	4.29	3.82	4.27	3.42	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
	N	410	416	417	408	411	409	406	409	403	379	415	408	401	410	410	393
	Std. Devia	.42426	7.996	.544	2.076	.558	.716	.599	.787	.633	.449	.613	.572	.624	.678	.665	.575
	Median	2.8550	22.00	2.00	3.00	4.25	4.00	4.25	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.75
	Skewness	-.462	1.802	-.093	18.001	-.832	-.481	-.957	-.092	-.645	-.304	-.058	-.599	.014	.380	-.459	-.261

Note:

ISS1 represents international students' status of respondent
 CUMGPA represents respondents' cumulative Grade Point Average
 AGE represents age of respondent
 FGRADES represents final high school grade of respondent
 ENG represents the respondents' English Language proficiency
 SE represents the self-efficacy level of the respondent
 LOC represents the internal locus of control level of the respondent
 INT represents the intrinsic goal orientation level of the respondent
 EXT represents the extrinsic goal orientation level of the respondent
 MET represents the adoption of the metacognitive learning strategies by the respondent
 RES represents the adoption of resource management learning strategies by the respondent
 COG represents the adoption of cognitive learning strategies by the respondent
 AGR represents the degree of the agreeableness personality trait within the respondent
 XTR represents the degree of the extraversion personality trait within the respondent
 NEU represents the degree of the neuroticism personality trait within the respondent
 CON represents the degree of the conscientiousness personality trait within the respondent
 OPE represents the degree of the openness-to-experience personality trait within the respondent

According to Table 4.3, most international students were admitted to the university with low final high school grades as shown by the skewness indices. Most international students are also portrayed as having high levels of neuroticism.

The distinct groupings of local and international students were further analyzed using one-way ANOVA in order to determine the significance of their mean differences in relation to the variables of academic performance at the university, age, final high school grade, English proficiency, attitudes, goal orientations, learning strategies and personality traits as shown on Table 4.4.

Table 4.4 Significance of mean differences in international student status

			Sum of Squares	df	Mean Square	F	Sig.
CUMGPA * ISS1	Between Groups	(Combined)	2.295	1	2.295	13.128	.000
	Within Groups		71.322	408	.175		
	Total		73.617	409			
AGE * ISS1	Between Groups	(Combined)	140.111	1	140.111	2.198	.139
	Within Groups		26395.944	414	63.758		
	Total		26536.055	415			
FGRADES * ISS1	Between Groups	(Combined)	.042	1	.042	.143	.705
	Within Groups		123.037	415	.296		
	Total		123.079	416			
ENG * ISS1	Between Groups	(Combined)	7.601	1	7.601	1.767	.184
	Within Groups		1746.279	406	4.301		
	Total		1753.880	407			
SE * ISS1	Between Groups	(Combined)	.408	1	.408	1.310	.253
	Within Groups		127.220	409	.311		
	Total		127.627	410			
LOC * ISS1	Between Groups	(Combined)	.742	1	.742	1.451	.229
	Within Groups		208.312	407	.512		
	Total		209.055	408			
INT * ISS1	Between Groups	(Combined)	.406	1	.406	1.132	.288
	Within Groups		144.848	404	.359		
	Total		145.254	405			
EXT * ISS1	Between Groups	(Combined)	.941	1	.941	1.521	.218
	Within Groups		251.805	407	.619		
	Total		252.746	408			
MET * ISS1	Between Groups	(Combined)	.002	1	.002	.006	.939
	Within Groups		160.955	401	.401		
	Total		160.957	402			
RES * ISS1	Between Groups	(Combined)	.020	1	.020	.098	.755
	Within Groups		76.158	377	.202		
	Total		76.178	378			
COG * ISS1	Between Groups	(Combined)	1.267	1	1.267	3.391	.066
	Within Groups		154.245	413	.373		
	Total		155.511	414			
AGR * ISS1	Between Groups	(Combined)	1.118	1	1.118	3.438	.064
	Within Groups		132.070	406	.325		
	Total		133.189	407			
XTR * ISS1	Between Groups	(Combined)	1.035	1	1.035	2.670	.103
	Within Groups		154.679	399	.388		
	Total		155.714	400			
NEU * ISS1	Between Groups	(Combined)	2.913	1	2.913	6.430	.012
	Within Groups		184.822	408	.453		
	Total		187.735	409			
CON * ISS1	Between Groups	(Combined)	1.567	1	1.567	3.564	.060
	Within Groups		179.377	408	.440		
	Total		180.943	409			
OPE * ISS1	Between Groups	(Combined)	.678	1	.678	2.056	.152
	Within Groups		128.875	391	.330		
	Total		129.553	392			

Note: df stands for degrees of freedom

Table 4.4 depicts the local students' means scores to be significantly different from those of the international students at $p \leq 0.05$ in relation to their academic performance and the neuroticism trait. However, all the other mean differences were considered to be insignificant at $p \leq 0.05$. The local students are observed to be significantly better than the

international students in terms of their academic performance. On the other hand, the international students are observed to have significantly higher levels of neuroticism in comparison to the local students. The latter could be attributed to adjustment issues among the international students (Saenz et al. 1999, Andrade 2006) that could also be contributing to their weaker academic performance.

4.2.3 Student's campus of study

Comparisons were also made between students in the Athi River and Nairobi campuses in relation to their academic performance, chronological age, final high school grade, English Language proficiency, attitudes, goal orientations, learning strategies and personality traits as shown on Table 4.5.

Table 4.5 Campus-related descriptive analysis of students

		Report															
CAMPUS1		CUMGPA	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
Athi River Ce	Mean	2.8498	21.81	1.84	2.73	4.25	3.81	4.22	3.55	3.80	3.67	3.56	3.95	3.06	2.28	3.79	3.62
	N	291	295	297	291	293	289	287	293	289	270	293	292	284	292	291	283
	Std. Devia	4.1957	3.666	.531	2.432	.578	.693	.615	.760	.634	.452	.624	.603	.627	.690	.648	.598
	Median	2.8500	21.00	2.00	3.00	4.25	3.75	4.25	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.75
	Skewness	-.443	2.679	-.140	15.748	-.840	-.363	-.905	-.179	-.470	-.348	-.072	-.555	.024	.366	-.443	-.298
Nairobi Camj	Mean	2.8918	33.06	1.69	2.74	4.39	3.84	4.38	3.09	3.81	3.58	3.49	4.09	3.15	2.20	3.86	3.68
	N	119	121	120	117	118	120	119	116	114	109	122	116	117	118	119	110
	Std. Devia	4.3585	9.890	.562	.575	.491	.770	.542	.758	.632	.437	.586	.473	.614	.645	.706	.511
	Median	2.9200	32.00	2.00	3.00	4.50	4.00	4.50	3.00	3.75	3.60	3.50	4.13	3.25	2.00	4.00	3.75
	Skewness	-.527	.428	.062	-1.043	-.624	-.709	-1.057	-.153	-1.110	-.229	-.056	-.443	.004	.393	-.530	-.016
Total	Mean	2.8620	25.08	1.80	2.73	4.29	3.82	4.27	3.42	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
	N	410	416	417	408	411	409	406	409	403	379	415	408	401	410	410	393
	Std. Devia	4.2426	7.996	.544	2.076	.558	.716	.599	.787	.633	.449	.613	.572	.624	.678	.665	.575
	Median	2.8550	22.00	2.00	3.00	4.25	4.00	4.25	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.75
	Skewness	-.462	1.802	-.093	18.001	-.832	-.481	-.957	-.092	-.645	-.304	-.058	-.599	.014	.380	-.459	-.261

Note:

CAMPUS1 represents campus of study of respondent

CUMGPA represents respondents' cumulative Grade Point Average

AGE represents age of respondent

FGRADES represents final high school grade of respondent

ENG represents the respondents' English Language proficiency

SE represents the self-efficacy level of the respondent

LOC represents the internal locus of control level of the respondent

INT represents the intrinsic goal orientation level of the respondent

EXT represents the extrinsic goal orientation level of the respondent

MET represents the adoption of the metacognitive learning strategies by the respondent

RES represents the adoption of resource management learning strategies by the respondent

COG represents the adoption of cognitive learning strategies by the respondent

AGR represents the degree of the agreeableness personality trait within the respondent

XTR represents the degree of the extraversion personality trait within the respondent

NEU represents the degree of the neuroticism personality trait within the respondent

CON represents the degree of the conscientiousness personality trait within the respondent

OPE represents the degree of the openness-to-experience personality trait within the respondent

According to Table 4.5, most of the Nairobi campus students had joined the university with low final high school grades, as depicted by the skewness indices. This could be attributed to the fact that most of the Nairobi campus students were either admitted to the university on the 'mature age' category, by which students who were above 23 years of age and who had gone through other formal training would be considered, or had to undergo the pre-university or diploma programmes of the university in order to upgrade their academic performance before being considered for admission into the undergraduate programme of the university. The skewness indices also revealed that most of the Nairobi campus students had high English Language proficiency levels and low levels of extrinsic goal orientations. Table 4.6 provides the significance of the mean differences of Athi River campus and Nairobi campus students using one-way ANOVA.

Table 4.6 Significance of mean differences in campuses

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
CUMGPA * CAMPUS1	Between Groups	(Combined)	.149	1	.149	.828	.364
	Within Groups		73.468	408	.180		
	Total		73.617	409			
AGE * CAMPUS1	Between Groups	(Combined)	10848.714	1	10848.714	286.305	.000
	Within Groups		15687.341	414	37.892		
	Total		26536.055	415			
FGRADES * CAMPUS1	Between Groups	(Combined)	1.925	1	1.925	6.595	.011
	Within Groups		121.154	415	.292		
	Total		123.079	416			
ENG * CAMPUS1	Between Groups	(Combined)	.019	1	.019	.004	.947
	Within Groups		1753.861	406	4.320		
	Total		1753.880	407			
SE * CAMPUS1	Between Groups	(Combined)	1.757	1	1.757	5.708	.017
	Within Groups		125.870	409	.308		
	Total		127.627	410			
LOC * CAMPUS1	Between Groups	(Combined)	.096	1	.096	.188	.665
	Within Groups		208.958	407	.513		
	Total		209.055	408			
INT * CAMPUS1	Between Groups	(Combined)	2.313	1	2.313	6.537	.011
	Within Groups		142.942	404	.354		
	Total		145.254	405			
EXT * CAMPUS1	Between Groups	(Combined)	17.999	1	17.999	31.206	.000
	Within Groups		234.748	407	.577		
	Total		252.746	408			
MET * CAMPUS1	Between Groups	(Combined)	.018	1	.018	.044	.834
	Within Groups		160.940	401	.401		
	Total		160.957	402			
RES * CAMPUS1	Between Groups	(Combined)	.656	1	.656	3.273	.071
	Within Groups		75.522	377	.200		
	Total		76.178	378			
COG * CAMPUS1	Between Groups	(Combined)	.443	1	.443	1.179	.278
	Within Groups		155.069	413	.375		
	Total		155.511	414			
AGR * CAMPUS1	Between Groups	(Combined)	1.712	1	1.712	5.286	.022
	Within Groups		131.477	406	.324		
	Total		133.189	407			
XTR * CAMPUS1	Between Groups	(Combined)	.628	1	.628	1.616	.204
	Within Groups		155.086	399	.389		
	Total		155.714	400			
NEU * CAMPUS1	Between Groups	(Combined)	.537	1	.537	1.171	.280
	Within Groups		187.197	408	.459		
	Total		187.735	409			
CON * CAMPUS1	Between Groups	(Combined)	.367	1	.367	.829	.363
	Within Groups		180.577	408	.443		
	Total		180.943	409			
OPE * CAMPUS1	Between Groups	(Combined)	.240	1	.240	.724	.395
	Within Groups		129.313	391	.331		
	Total		129.553	392			

Note: df stands for degrees of freedom

Although Table 4.6 does not reveal significant mean differences in the academic performance of Nairobi and Athi River students, significant differences are observed between the means of Athi River and Nairobi campus students with respect to chronological age, final high school grades, self-efficacy, intrinsic goal orientations,

extrinsic goal orientations and the agreeableness personality traits at $p \leq 0.05$. All other mean differences between the campuses of study were found to be insignificant at $p \leq 0.05$. The Athi River campus students are observed to be significantly younger than the Nairobi campus students. Whereas the mean chronological age of the Athi River students was 21.81, placing the majority of them in the traditional students' category (Eppler et al. 2000 & Cantwell et al. 2001), the mean age of the Nairobi students is 33.06, placing the majority of them in the non-traditional students' category (Eppler et al. 2000 & Cantwell et al. 2001). Eppler et al. (2000) & Cantwell et al. (2001) observe the non-traditional students, who are considered to be the majority in the Nairobi campus, to be joining the university with lower entry grades than those of the traditional students, who are considered to be the majority in the Athi River campus. The latter observation is thus supported by the current study that depicts the final high school grade of the Nairobi campus students to be significantly lower than that of the Athi River campus students. Athi River campus students are also depicted as having high levels of extrinsic goal orientation as compared to their Nairobi older counterparts. The Nairobi campus students were found to have higher self-efficacy and to be more intrinsically motivated as compared to their Athi River younger counterparts. This latter observation relates to that of Eppler et al. (2000) and Socrates Grundvit Action (2002), both of who consider younger students to be more extrinsically motivated and less intrinsically motivated than their older counterparts in relation to their academics.

4.2.4 Year of study

Comparisons of means, standard deviations, medians and skewness were made among students in the four years of study with respect to their academic performance, chronological age, final high school grade, English Language proficiency, attitudes, goal orientations, learning strategies and personality traits as shown on Table 4.7.

Table 4.7 Year of study-related descriptive analysis of students

Report																
EXYEAR	CUMGPA	AGE	GRADES	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
1st year Mean	2.8792	22.53	1.82	2.58	4.43	4.18	4.37	3.59	4.00	3.86	3.74	4.03	3.11	2.14	4.01	3.61
N	94	97	97	91	95	95	90	95	94	86	97	93	90	95	95	86
Std. Devia	.46467	8.118	.479	.579	.484	.554	.506	.784	.569	.428	.598	.556	.649	.712	.651	.585
Median	2.8950	20.00	2.00	3.00	4.50	4.25	4.50	3.75	4.00	3.87	3.75	4.00	3.00	2.00	4.00	3.50
Skewness	-.558	2.280	-.474	-.330	-1.166	-.409	-.496	-.024	-.142	-.302	-.188	-.567	-.041	.853	-.488	.118
2nd year Mean	2.8444	24.56	1.77	2.74	4.21	3.73	4.17	3.42	3.70	3.52	3.48	3.92	3.05	2.28	3.71	3.68
N	112	111	113	110	111	110	109	111	110	101	109	109	109	111	111	105
Std. Devia	.43903	7.141	.583	.536	.543	.665	.590	.737	.663	.426	.611	.548	.601	.611	.658	.524
Median	2.8550	21.00	2.00	3.00	4.25	3.75	4.25	3.50	3.75	3.53	3.50	4.00	3.00	2.25	3.75	3.75
Skewness	-.513	1.640	.074	-.859	-.634	-.288	-.735	-.085	-.657	-.520	-.169	-.438	.092	.303	-.380	-.380
3rd year Mean	2.8748	27.34	1.78	2.59	4.28	3.68	4.25	3.34	3.74	3.64	3.51	3.96	3.13	2.31	3.72	3.66
N	103	104	104	104	103	100	102	101	100	95	104	105	102	102	101	100
Std. Devia	.34883	8.748	.557	.568	.609	.716	.622	.848	.665	.433	.622	.667	.640	.694	.673	.632
Median	2.8500	23.00	2.00	3.00	4.25	3.75	4.25	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.75
Skewness	-.210	1.413	-.040	-.348	-.873	-.210	-1.114	-.095	-1.126	-.502	-.260	-.693	-.042	.454	-.428	-.604
4th year Mean	2.8603	25.28	1.84	3.02	4.27	3.71	4.31	3.37	3.78	3.59	3.44	4.05	3.05	2.31	3.82	3.61
N	98	101	100	100	99	101	102	99	96	96	102	98	98	99	100	100
Std. Devia	.43965	6.261	.545	4.077	.567	.802	.655	.765	.595	.444	.589	.504	.617	.689	.649	.564
Median	2.8300	23.00	2.00	3.00	4.50	3.75	4.50	3.25	3.75	3.60	3.25	4.00	3.00	2.50	4.00	3.75
Skewness	-.423	2.570	-.093	9.708	-.778	-.559	-1.173	-.156	-.274	-.159	.414	-.502	.046	-.028	-.656	-.041
Total Mean	2.8639	24.96	1.80	2.73	4.29	3.82	4.27	3.43	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
N	407	413	414	405	408	406	403	406	400	378	412	405	399	407	407	391
Std. Devia	.42320	7.779	.543	2.083	.557	.717	.601	.786	.634	.449	.614	.574	.625	.677	.667	.575
Median	2.8600	22.00	2.00	3.00	4.38	3.88	4.25	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.75
Skewness	-.466	1.782	-.098	17.945	-.845	-.473	-.953	-.096	-.648	-.307	-.056	-.600	.021	.385	-.458	-.265

Note:

- EXYEAR* represents year of study of respondent
- CUMGPA* represents respondents' cumulative Grade Point Average
- AGE* represents age of respondent
- FGRADES* represents final high school grade of respondent
- ENG* represents the respondents' English Language proficiency
- SE* represents the self-efficacy level of the respondent
- LOC* represents the internal locus of control level of the respondent
- INT* represents the intrinsic goal orientation level of the respondent
- EXT* represents the extrinsic goal orientation level of the respondent
- MET* represents the adoption of the metacognitive learning strategies by the respondent
- RES* represents the adoption of resource management learning strategies by the respondent
- COG* represents the adoption of cognitive learning strategies by the respondent
- AGR* represents the degree of the agreeableness personality trait within the respondent
- XTR* represents the degree of the extraversion personality trait within the respondent
- NEU* represents the degree of the neuroticism personality trait within the respondent
- CON* represents the degree of the conscientiousness personality trait within the respondent
- OPE* represents the degree of the openness-to-experience personality trait within the respondent

The statistics on skewness reveal unique differences in the various years of study as shown on Table 4.7. Most students in the first and third years of study portray high levels of the extraversion. In addition, the first year students portray low levels of openness-to-experience traits. On the other hand, most fourth year students portray less adoption of cognitive learning strategies and high levels of neuroticism. Table 4.8 provides one-way ANOVA statistics that reveal the significance of the mean differences in the various years of study

Table 4.8 Significance of mean differences in various years of study

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
CUMGPA * EXYEAR1	Between Groups	(Combined)	.078	3	.026	.144	.933
	Within Groups		72.636	403	.180		
	Total		72.714	406			
AGE * EXYEAR1	Between Groups	(Combined)	1190.202	3	396.734	6.835	.000
	Within Groups		23739.014	409	58.042		
	Total		24929.215	412			
FGRADES * EXYEAR1	Between Groups	(Combined)	.367	3	.122	.413	.744
	Within Groups		121.392	410	.296		
	Total		121.758	413			
ENG * EXYEAR1	Between Groups	(Combined)	12.532	3	4.177	.962	.410
	Within Groups		1740.668	401	4.341		
	Total		1753.200	404			
SE * EXYEAR1	Between Groups	(Combined)	2.461	3	.820	2.677	.047
	Within Groups		123.789	404	.306		
	Total		126.249	407			
LOC * EXYEAR1	Between Groups	(Combined)	16.283	3	5.428	11.358	.000
	Within Groups		192.112	402	.478		
	Total		208.395	405			
INT * EXYEAR1	Between Groups	(Combined)	2.222	3	.741	2.068	.104
	Within Groups		142.853	399	.358		
	Total		145.074	402			
EXT * EXYEAR1	Between Groups	(Combined)	3.758	3	1.253	2.041	.108
	Within Groups		246.749	402	.614		
	Total		250.508	405			
MET * EXYEAR1	Between Groups	(Combined)	5.219	3	1.740	4.433	.004
	Within Groups		155.392	396	.392		
	Total		160.611	399			
RES * EXYEAR1	Between Groups	(Combined)	6.015	3	2.005	10.697	.000
	Within Groups		70.103	374	.187		
	Total		76.118	377			
COG * EXYEAR1	Between Groups	(Combined)	5.376	3	1.792	4.888	.002
	Within Groups		149.588	408	.367		
	Total		154.964	411			
AGR * EXYEAR1	Between Groups	(Combined)	1.187	3	.396	1.204	.308
	Within Groups		131.819	401	.329		
	Total		133.007	404			
XTR * EXYEAR1	Between Groups	(Combined)	.547	3	.182	.465	.707
	Within Groups		154.701	395	.392		
	Total		155.247	398			
NEU * EXYEAR1	Between Groups	(Combined)	1.931	3	.644	1.410	.239
	Within Groups		183.905	403	.456		
	Total		185.836	406			
CON * EXYEAR1	Between Groups	(Combined)	5.917	3	1.972	4.555	.004
	Within Groups		174.483	403	.433		
	Total		180.400	406			
OPE * EXYEAR1	Between Groups	(Combined)	.385	3	.128	.386	.763
	Within Groups		128.745	387	.333		
	Total		129.130	390			

Note: df stands for degrees of freedom

Significant differences are observed on Table 4.8 with respect to chronological age, self-efficacy, internal locus of control, metacognitive, resource management and cognitive learning strategies and conscientiousness at $p \leq 0.05$. It is expected that students in higher years of study will tend to be older than those of lower years of study. Students in their

first year of study are observed to have significantly higher levels of self-efficacy, internal locus of control, intrinsic motivation and conscientiousness as compared to their counterparts in other years of study. In addition, students in their first year of study also adopt significantly better metacognitive, resource management and cognitive learning strategies as compared to students in other years of study. All other mean differences among the students in the various years of study were considered to be insignificant at $p \leq 0.05$.

4.2.5 Course major

Comparisons were also made on the means, standard deviation scores, medians and skewness of students taking either business-, science-, social science-related or art-related courses in relation to their academic performance, chronological age, final high school grade, English Language proficiency, attitudes, goal orientations, learning strategies and personality traits as shown on Table 4.9.

Table 4.9 Course-related descriptive analysis of students

Report																	
MAJTYPE		CUMGPA	AGE	GRADES	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
Business based	Mean	2.8856	24.82	1.82	2.91	4.29	3.71	4.22	3.43	3.85	3.64	3.53	3.94	3.05	2.23	3.83	3.59
	N	160	164	165	160	163	160	161	162	158	151	163	161	160	160	161	157
	Std. Devia	.40148	6.976	.594	3.231	.589	.662	.592	.742	.621	.423	.637	.559	.611	.694	.589	.620
	Median	2.8550	22.00	2.00	3.00	4.25	3.75	4.25	3.25	3.88	3.67	3.50	4.00	3.00	2.25	4.00	3.50
	Skewness	-.411	1.785	.071	12.165	-.948	-.127	-.839	.156	-.648	-.154	-.003	-.674	.194	.394	-.563	-.391
Art based	Mean	2.8801	23.62	1.79	2.68	4.26	3.85	4.29	3.43	3.75	3.64	3.54	4.06	3.09	2.28	3.78	3.70
	N	155	156	154	154	154	155	151	153	153	146	156	152	152	155	155	148
	Std. Devia	.42597	6.548	.485	.582	.571	.776	.569	.809	.639	.500	.616	.567	.578	.692	.731	.546
	Median	2.8800	22.00	2.00	3.00	4.25	4.00	4.50	3.50	3.75	3.63	3.50	4.00	3.00	2.25	3.75	3.75
	Skewness	-.345	1.944	-.488	-.414	-.776	-.803	-.527	-.321	-.326	-.257	.082	-.650	-.178	.330	-.380	-.173
Science based	Mean	2.8068	22.27	1.91	2.55	4.50	3.93	4.36	3.36	3.93	3.79	3.54	3.95	3.15	2.38	3.77	3.58
	N	22	22	23	22	23	22	21	22	22	19	23	23	21	22	22	23
	Std. Devia	.41605	3.680	.515	.510	.494	.724	.491	.816	.642	.331	.615	.666	.731	.626	.622	.556
	Median	2.8200	22.00	2.00	3.00	4.75	4.00	4.25	3.25	4.00	3.73	3.50	4.00	3.25	2.38	3.75	3.50
	Skewness	-.277	1.893	-.170	-.196	-.657	-1.174	-.933	-.448	-.874	.061	-.239	-.346	-1.016	.391	.438	-.204
Social Science	Mean	2.7888	29.61	1.73	2.53	4.28	3.95	4.28	3.40	3.75	3.60	3.57	3.95	3.15	2.24	3.84	3.63
	N	73	74	75	72	71	72	73	72	70	63	73	72	68	73	72	65
	Std. Devia	.46863	11.490	.553	.627	.464	.671	.700	.844	.642	.413	.559	.576	.719	.632	.701	.530
	Median	2.8500	23.00	2.00	3.00	4.50	4.00	4.50	3.50	3.75	3.67	3.75	4.00	3.00	2.00	4.00	3.75
	Skewness	-.688	.918	-.036	-.987	-.542	-.175	-1.604	.063	-1.327	-.816	-.551	-.527	.187	.536	-.616	.188
Total	Mean	2.8620	25.08	1.80	2.73	4.29	3.82	4.27	3.42	3.80	3.64	3.54	3.99	3.09	2.26	3.81	3.64
	N	410	416	417	408	411	409	406	409	403	379	415	408	401	410	410	393
	Std. Devia	.42426	7.996	.544	2.076	.558	.716	.599	.787	.633	.449	.613	.572	.624	.678	.665	.575
	Median	2.8550	22.00	2.00	3.00	4.25	4.00	4.25	3.50	3.75	3.67	3.50	4.00	3.00	2.25	3.75	3.75
	Skewness	-.462	1.802	-.093	18.001	-.832	-.481	-.957	-.092	-.645	-.304	-.058	-.599	.014	.380	-.459	-.261

Note:

- MAJTYPE represents type of course the respondent is pursuing
- CUMGPA represents respondents' cumulative Grade Point Average
- AGE represents age of respondent
- FGRADES represents final high school grade of respondent
- ENG represents the respondents' English Language proficiency
- SE represents the self-efficacy level of the respondent
- LOC represents the internal locus of control level of the respondent
- INT represents the intrinsic goal orientation level of the respondent
- EXT represents the extrinsic goal orientation level of the respondent
- MET represents the adoption of the metacognitive learning strategies by the respondent
- RES represents the adoption of resource management learning strategies by the respondent
- COG represents the adoption of cognitive learning strategies by the respondent
- AGR represents the degree of the agreeableness personality trait within the respondent
- XTR represents the degree of the extraversion personality trait within the respondent
- NEU represents the degree of the neuroticism personality trait within the respondent
- CON represents the degree of the conscientiousness personality trait within the respondent
- OPE represents the degree of the openness-to-experience personality trait within the respondent

Unique differences are observed in the skewness of students taking various majors in comparison to the total observed skewness as shown on Table 4.9. Most students taking business-related courses were admitted with low final high school grades, had low levels of extrinsic goal orientations and portrayed low levels of the openness-to-experience trait. On the other hand most students taking art-related courses and had high levels of English language proficiency had weak cognitive learning strategies and portrayed high levels of extraversion. Most students taking science-related courses were also good in English Language proficiency; adopted poor resource management strategies and had high levels

of the extraversion and conscientiousness traits. Lastly, most students taking social science-related courses had good English Language proficiency, low levels of extrinsic goal orientations and were weak with respect to the openness-to-experience personality trait. Significances in the mean differences in the students' courses of study were established using one-way ANOVA as shown on Table 4.10.

Table 4.10 Significance of mean differences in various course majors of study

			Sum of Squares	df	Mean Square	F	Sig.
CUMGPA * MAJTYPE	Between Groups	(Combined)	.598	3	.199	1.108	.345
	Within Groups		73.019	406	.180		
	Total		73.617	409			
AGE * MAJTYPE	Between Groups	(Combined)	2036.621	3	678.874	11.416	.000
	Within Groups		24499.434	412	59.465		
	Total		26536.055	415			
FGRADES * MAJTYPE	Between Groups	(Combined)	.755	3	.252	.849	.467
	Within Groups		122.324	413	.296		
	Total		123.079	416			
ENG * MAJTYPE	Between Groups	(Combined)	9.121	3	3.040	.704	.550
	Within Groups		1744.759	404	4.319		
	Total		1753.880	407			
SE * MAJTYPE	Between Groups	(Combined)	1.125	3	.375	1.206	.307
	Within Groups		126.502	407	.311		
	Total		127.627	410			
LOC * MAJTYPE	Between Groups	(Combined)	3.580	3	1.193	2.352	.072
	Within Groups		205.474	405	.507		
	Total		209.055	408			
INT * MAJTYPE	Between Groups	(Combined)	.634	3	.211	.587	.624
	Within Groups		144.621	402	.360		
	Total		145.254	405			
EXT * MAJTYPE	Between Groups	(Combined)	.138	3	.046	.074	.974
	Within Groups		252.609	405	.624		
	Total		252.746	408			
MET * MAJTYPE	Between Groups	(Combined)	1.257	3	.419	1.047	.372
	Within Groups		159.700	399	.400		
	Total		160.957	402			
RES * MAJTYPE	Between Groups	(Combined)	.534	3	.178	.882	.450
	Within Groups		75.644	375	.202		
	Total		76.178	378			
COG * MAJTYPE	Between Groups	(Combined)	.056	3	.019	.049	.985
	Within Groups		155.455	411	.378		
	Total		155.511	414			
AGR * MAJTYPE	Between Groups	(Combined)	1.307	3	.436	1.334	.263
	Within Groups		131.882	404	.326		
	Total		133.189	407			
XTR * MAJTYPE	Between Groups	(Combined)	.564	3	.188	.481	.695
	Within Groups		155.149	397	.391		
	Total		155.714	400			
NEU * MAJTYPE	Between Groups	(Combined)	.535	3	.178	.387	.762
	Within Groups		187.199	406	.461		
	Total		187.735	409			
CON * MAJTYPE	Between Groups	(Combined)	.271	3	.090	.203	.894
	Within Groups		180.673	406	.445		
	Total		180.943	409			
OPE * MAJTYPE	Between Groups	(Combined)	1.090	3	.363	1.100	.349
	Within Groups		128.463	389	.330		
	Total		129.553	392			

Note: df stands for degrees of freedom

According to Table 4.10, the only observed significant mean differences in course major types were with regard to the students' chronological ages at $p \leq 0.05$. All other mean differences among the students in the various course major types were considered to be

insignificant at $p \leq 0.05$. While students taking social science-related courses were considered to be significantly older than those taking other types of courses, students taking science-related courses were significantly younger than those taking other types of course majors.

4.3 CORRELATION ANALYSES OF THE VARIABLES OF THE STUDY

The study further established relationships in the study variables of each of the distinct groupings of gender, international students' status, campus of operation, year of study and course major types using bivariate correlation analyses and more specifically the Pearson correlation coefficients at significant levels of $p \leq 0.05$.

4.3.1 Correlations among all students of the study

The relationships between the variables of all the students of the study were established as shown on Table 4.11.

Table 4.11 Correlations of the variables of all the students of the study

Correlations

	UMGP	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMG Pearson Co	1	.028	.258*	.214*	.161*	.125*	.151*	-.128*	.139*	.078	.100*	.084	-.058	-.034	.163*	.035
Sig. (2-tailed)	.	.580	.000	.000	.001	.012	.003	.010	.006	.133	.044	.093	.249	.498	.001	.492
N	410	405	408	405	400	398	395	399	393	369	404	398	391	399	399	382
AGE Pearson Co	.028	1	-.171*	-.014	.096	.021	.138*	-.303*	.045	-.027	-.037	.061	.097	-.025	.056	.025
Sig. (2-tailed)	.580	.	.000	.773	.053	.675	.006	.000	.367	.602	.452	.223	.054	.617	.257	.625
N	405	416	413	403	406	404	402	404	398	376	411	403	396	405	405	388
FGRAI Pearson Co	.258*	-.171*	1	.129*	-.003	.015	-.108*	.071	.022	-.004	-.042	-.075	-.031	-.062	.032	-.037
Sig. (2-tailed)	.000	.000	.	.009	.950	.767	.030	.154	.663	.943	.394	.133	.533	.211	.522	.467
N	408	413	417	406	407	405	402	406	400	377	411	404	398	406	406	389
ENG Pearson Co	.214*	-.014	.129*	1	.037	-.072	.011	-.045	-.025	-.039	-.081	.039	-.010	-.078	-.007	.082
Sig. (2-tailed)	.000	.773	.009	.	.467	.151	.825	.368	.623	.461	.104	.440	.844	.120	.892	.112
N	405	403	406	408	398	397	393	397	391	367	402	396	389	397	397	380
SE Pearson Co	.161*	.096	-.003	.037	1	.299*	.409*	-.058	.425*	.353*	.281*	.281*	.120*	-.113*	.260*	.107*
Sig. (2-tailed)	.001	.053	.950	.467	.	.000	.000	.243	.000	.000	.000	.000	.017	.023	.000	.035
N	400	406	407	398	411	401	398	400	394	371	406	399	393	401	401	386
LOC Pearson Co	.125*	.021	.015	-.072	.299*	1	.283*	-.071	.174*	.235*	.203*	.254*	.056	-.094	.234*	.080
Sig. (2-tailed)	.012	.675	.767	.151	.000	.	.000	.159	.001	.000	.000	.000	.267	.060	.000	.120
N	398	404	405	397	401	409	396	398	391	370	403	398	391	400	398	382
INT Pearson Co	.151*	.138*	-.108*	.011	.409*	.283*	1	-.013	.402*	.387*	.239*	.312*	.092	-.026	.234*	.244*
Sig. (2-tailed)	.003	.006	.030	.825	.000	.000	.	.794	.000	.000	.000	.000	.069	.606	.000	.000
N	395	402	402	393	398	396	406	395	389	367	400	395	387	396	395	380
EXT Pearson Co	-.128*	-.303*	.071	-.045	-.058	-.071	-.013	1	-.005	-.014	-.019	-.015	-.106*	.137*	-.147*	.020
Sig. (2-tailed)	.010	.000	.154	.368	.243	.159	.794	.	.924	.794	.710	.768	.036	.006	.003	.696
N	399	404	406	397	400	398	395	409	398	374	403	397	390	399	400	382
MET Pearson Co	.139*	.045	.022	-.025	.425*	.174*	.402*	-.005	1	.605*	.542*	.330*	.048	-.189*	.476*	.139*
Sig. (2-tailed)	.006	.367	.663	.623	.000	.001	.000	.924	.	.000	.000	.000	.344	.000	.000	.007
N	393	398	400	391	394	391	389	398	403	369	399	391	383	393	393	375
RES Pearson Co	.078	-.027	-.004	-.039	.353*	.235*	.387*	-.014	.605*	1	.516*	.337*	.101	-.154*	.519*	.132*
Sig. (2-tailed)	.133	.602	.943	.461	.000	.000	.000	.794	.000	.	.000	.000	.054	.003	.000	.013
N	369	376	377	367	371	370	367	374	369	379	374	367	365	370	371	359
COG Pearson Co	.100*	-.037	-.042	-.081	.281*	.203*	.239*	-.019	.542*	.516*	1	.219*	-.024	-.133*	.367*	.112*
Sig. (2-tailed)	.044	.452	.394	.104	.000	.000	.000	.710	.000	.000	.	.000	.630	.008	.000	.028
N	404	411	411	402	406	403	400	403	399	374	415	402	395	404	405	387
AGR Pearson Co	.084	.061	-.075	.039	.281*	.254*	.312*	-.015	.330*	.337*	.219*	1	.038	-.180*	.291*	.209*
Sig. (2-tailed)	.093	.223	.133	.440	.000	.000	.000	.768	.000	.000	.000	.	.448	.000	.000	.000
N	398	403	404	396	399	398	395	397	391	367	402	408	395	401	400	386
XTR Pearson Co	-.058	.097	-.031	-.010	.120*	.056	.092	-.106*	.048	.101	-.024	.038	1	-.112*	.006	.160*
Sig. (2-tailed)	.249	.054	.533	.844	.017	.267	.069	.036	.344	.054	.630	.448	.	.027	.906	.002
N	391	396	398	389	393	391	387	390	383	365	395	395	401	394	395	381
NEU Pearson Co	-.034	-.025	-.062	-.078	-.113*	-.094	-.026	.137*	-.189*	-.154*	-.133*	-.180*	-.112*	1	-.400*	-.125*
Sig. (2-tailed)	.498	.617	.211	.120	.023	.060	.606	.006	.000	.003	.008	.000	.027	.	.000	.014
N	399	405	406	397	401	400	396	399	393	370	404	401	394	410	402	388
CON Pearson Co	.163*	.056	.032	-.007	.260*	.234*	.234*	-.147*	.476*	.519*	.367*	.291*	.006	-.400*	1	.186*
Sig. (2-tailed)	.001	.257	.522	.892	.000	.000	.000	.003	.000	.000	.000	.000	.906	.000	.	.000
N	399	405	406	397	401	398	395	400	393	371	405	400	395	402	410	386
OPE Pearson Co	.035	.025	-.037	.082	.107*	.080	.244*	.020	.139*	.132*	.112*	.209*	.160*	-.125*	.186*	1
Sig. (2-tailed)	.492	.625	.467	.112	.035	.120	.000	.696	.007	.013	.028	.000	.002	.014	.000	.
N	382	388	389	380	386	382	380	382	375	359	387	386	381	388	386	393

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Significant positive relationships are observed between students' academic performance and the variables of final high school grade, English Language proficiency, self-efficacy, internal locus of control, intrinsic goal orientations, metacognitive and cognitive learning strategies and the conscientiousness trait as presented on Table 4.11. On the other hand, significant negative relationships are observed between students' academic performance at the university and extrinsic goal orientations. Students' final high school grade is observed to significantly positively relate to English language proficiency and negatively relate to students' chronological age and intrinsic goal orientation. Table 4.11 also depicts self-efficacy as having significant positive relationships with internal locus of control, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies, agreeableness, extraversion, conscientiousness and openness-to-experience. On the other hand, self-efficacy significantly negatively relates to the neuroticism personality trait. Internal locus of control is also depicted as having significant positive relationships with intrinsic motivation, metacognitive, resource management and cognitive learning strategies and the personality traits of agreeableness and conscientiousness. Other significant positive relationships of intrinsic goal orientation included metacognitive, resource management and cognitive learning strategies, agreeableness, conscientiousness and openness-to-experience personality traits. The metacognitive learning strategies significantly positively correlated with resource management and cognitive learning strategies, agreeableness, conscientiousness and openness-to-experience personality traits, but negatively with neuroticism. Cognitive learning strategies also significantly positively related to resource management learning strategies, agreeableness, conscientiousness and openness-to-experience personality traits, but negatively with the neuroticism. Table 4.11 also portrays the conscientiousness personality trait as having significant positive correlations with resource management learning strategies, agreeableness and openness-to-experience personality traits, but negative relations with extrinsic goal orientations and the neuroticism personality trait. Finally, the extrinsic goal orientation is shown as having significant negative relations with students' chronological age, agreeableness and extraversion, but positive correlations with neuroticism.

Despite students' chronological age, resource management strategies, agreeableness, extraversion, neuroticism and openness-to-experience being portrayed as having no

significant relationships with the students' academic performance at $p \leq 0.05$, they were portrayed as having significant relationships with other variables that consequently have significant relationships with the academic performance of the students. Chronological age significantly correlates with students' final high school grade, intrinsic and extrinsic goal orientations all of which have significant relationships with the academic performance of the students in the university. Resource management strategies significantly correlates with self efficacy, internal locus of control, metacognitive and cognitive learning strategies and conscientiousness, all of which significantly relate with the academic performance of students in the university. On the other hand, the agreeableness personality trait significantly correlates with self efficacy, internal locus of control, intrinsic goal orientation, metacognitive and cognitive learning strategies and conscientious learning strategies, all of which significantly correlate with the academic performance. In addition significant correlations are observed between agreeableness and resource management, neuroticism and openness-to-experience. The extraversion personality trait significantly correlates with self-efficacy and extrinsic goal orientations, both of which significantly correlate with the students' academic performance. The extraversion personality trait also significantly correlates with neuroticism and openness-to-experience. The neuroticism personality trait significantly correlates with self-efficacy, extrinsic goal orientation, metacognitive and cognitive learning strategies and conscientiousness, all of which significantly correlate with academic performance. Neuroticism also significantly correlates with resource management and openness-to-experience. Lastly, openness-to-experience significantly correlates with self-efficacy, intrinsic goal orientation, metacognitive and cognitive learning strategies and conscientiousness, all of which significantly correlated with the students' academic performance.

In general, the significance of all the variables of the study was of great importance when considering their relationships in view of all students' academic performance in the university. All the variables were considered to relate to one or another variable that would then be related to the academic performance of students at $p \leq 0.05$. Therefore, their roles in determining the models that best represented the factors that contribute to the academic performance of students in the university were cautiously considered in the study. Correlations were further observed in the specific groups as discussed below.

4.3.2 Correlations among male students

Table 4.12 provides the correlation analyses among the variables of the male students of the study.

Table 4.12 Correlations among the variables of the male students of the study

		Correlations															
		UMGPA	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGF	Pearson Corr	1	-.085	.253*	.213*	.141	.151	.144	-.149	.147	.037	.141	.084	-.106	.035	.193*	-.082
	Sig. (2-tailed)	.	.323	.003	.012	.101	.080	.093	.087	.093	.685	.098	.329	.220	.686	.024	.349
	N	139	137	138	138	136	135	136	134	132	124	139	136	135	135	136	132
AGE	Pearson Corr	-.085	1	-.105	-.053	.044	.048	.181*	-.109	.176*	.175*	.117	.032	.222*	.001	.072	.086
	Sig. (2-tailed)	.323	.	.214	.540	.605	.580	.032	.205	.041	.048	.166	.705	.009	.987	.401	.320
	N	137	142	142	138	139	138	140	137	135	128	142	138	138	138	139	135
FGRAD	Pearson Corr	.253*	-.105	1	-.195*	.007	-.064	-.166*	.019	.059	-.020	-.001	-.051	.004	.067	-.068	-.163
	Sig. (2-tailed)	.003	.214	.	.021	.935	.456	.049	.823	.496	.822	.990	.553	.964	.435	.428	.057
	N	138	142	143	139	140	139	140	138	136	129	143	139	139	139	140	136
ENG	Pearson Corr	.213*	-.053	.195*	1	.047	-.144	.022	-.002	-.045	-.068	-.144	.080	-.018	-.094	-.050	.134
	Sig. (2-tailed)	.012	.540	.021	.	.589	.095	.798	.978	.605	.454	.091	.355	.839	.275	.562	.125
	N	138	138	139	140	137	136	137	135	133	125	140	137	136	136	137	133
SE	Pearson Corr	.141	.044	.007	.047	1	.397*	.378*	.010	.422*	.305*	.245*	.255*	.024	-.028	.305*	.113
	Sig. (2-tailed)	.101	.605	.935	.589	.	.000	.000	.904	.000	.001	.003	.003	.781	.742	.000	.193
	N	136	139	140	137	141	138	139	137	134	126	141	137	137	137	138	134
LOC	Pearson Corr	.151	.048	-.064	-.144	.397*	1	.326*	-.014	.259*	.207*	.186*	.286*	.032	-.001	.338*	-.003
	Sig. (2-tailed)	.080	.580	.456	.095	.000	.	.000	.870	.003	.020	.028	.001	.713	.992	.000	.975
	N	135	138	139	136	138	140	139	136	133	126	140	137	137	138	137	134
INT	Pearson Corr	.144	.181*	-.166*	.022	.378*	.326*	1	-.071	.420*	.450*	.209*	.292*	.079	.065	.308*	.302*
	Sig. (2-tailed)	.093	.032	.049	.798	.000	.000	.	.409	.000	.000	.013	.001	.357	.448	.000	.000
	N	136	140	140	137	139	139	141	137	134	126	141	137	137	137	138	134
EXT	Pearson Corr	-.149	-.109	.019	-.002	.010	-.014	-.071	1	.090	.118	.065	-.059	-.088	.134	-.196*	.035
	Sig. (2-tailed)	.087	.205	.823	.978	.904	.870	.409	.	.302	.186	.447	.499	.311	.119	.022	.690
	N	134	137	138	135	137	136	137	139	135	127	139	136	136	136	137	133
MET	Pearson Corr	.147	.176*	.059	-.045	.422*	.259*	.420*	.090	1	.627*	.477*	.386*	.092	.013	.523*	.193*
	Sig. (2-tailed)	.093	.041	.496	.605	.000	.003	.000	.302	.	.000	.000	.000	.292	.885	.000	.028
	N	132	135	136	133	134	133	134	135	137	125	137	133	133	133	134	130
RES	Pearson Corr	.037	.175*	-.020	-.068	.305*	.207*	.450*	.118	.627*	1	.496*	.385*	.076	-.038	.560*	.167
	Sig. (2-tailed)	.685	.048	.822	.454	.001	.020	.000	.186	.000	.	.000	.000	.398	.674	.000	.063
	N	124	128	129	125	126	126	127	127	125	129	129	126	127	126	126	125
COG	Pearson Corr	.141	.117	-.001	-.144	.245*	.186*	.209*	.065	.477*	.496*	1	.186*	.033	.051	.381*	.053
	Sig. (2-tailed)	.098	.166	.990	.091	.003	.028	.013	.447	.000	.000	.	.028	.698	.546	.000	.539
	N	139	142	143	140	141	140	141	139	137	129	144	140	140	140	141	137
AGR	Pearson Corr	.084	.032	-.051	.080	.255*	.286*	.292*	-.059	.386*	.385*	.186*	1	.132	-.148	.391*	.135
	Sig. (2-tailed)	.329	.705	.553	.355	.003	.001	.001	.499	.000	.000	.028	.	.121	.082	.000	.118
	N	136	138	139	137	137	137	137	136	133	126	140	140	139	138	138	135
XTR	Pearson Corr	-.106	.222*	.004	-.018	.024	.032	.079	-.088	.092	.076	.033	.132	1	-.098	.054	.249*
	Sig. (2-tailed)	.220	.009	.964	.839	.781	.713	.357	.311	.292	.398	.698	.121	.	.251	.530	.004
	N	135	138	139	136	137	137	137	136	133	127	140	139	140	138	138	135
NEU	Pearson Corr	.035	.001	.067	-.094	-.028	-.001	.065	.134	.013	-.038	.051	-.148	-.098	1	-.332*	-.042
	Sig. (2-tailed)	.686	.987	.435	.275	.742	.992	.448	.119	.885	.674	.546	.082	.251	.	.000	.626
	N	135	138	139	136	137	138	137	136	133	126	140	138	138	140	138	135
CON	Pearson Corr	.193*	.072	-.068	-.050	.305*	.338*	.308*	-.196*	.523*	.560*	.381*	.391*	.054	-.332*	1	.180*
	Sig. (2-tailed)	.024	.401	.428	.562	.000	.000	.000	.022	.000	.000	.000	.000	.530	.000	.	.037
	N	136	139	140	137	138	137	138	137	134	126	141	138	138	138	141	135
OPE	Pearson Corr	-.082	.086	-.163	.134	.113	-.003	.302*	.035	.193*	.167	.053	.135	.249*	-.042	.180*	1
	Sig. (2-tailed)	.349	.320	.057	.125	.193	.975	.000	.690	.028	.063	.539	.118	.004	.626	.037	.
	N	132	135	136	133	134	134	134	133	130	125	137	135	135	135	135	137

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.12, the variables that are significantly related to the male students' academic performance at the university at $p \leq 0.05$ were final high school performance, English language proficiency and the conscientiousness personality trait, all of which have positive correlations. The final high school grade significantly positively relates to English Language proficiency and negatively with intrinsic goal orientations. On the other hand, the conscientiousness personality trait significantly positively correlates with self-efficacy, internal locus of control, intrinsic goal orientations, metacognitive, resource management and cognitive learning strategies, agreeableness and openness-to-experience personality traits. Conscientiousness, however, significantly negatively relates to extrinsic goal orientations and neuroticism. Although no significant relationships were observed between the academic performance of students and all the other variables of the study except for final high school grade, English Language proficiency and conscientiousness, the other variables are portrayed as significantly correlating with one or more of these three variables. Thus, the contributions of the other variables to the academic performance of students in the university could not be disregarded in establishing the models that best explained the contributions of various variables to the academic performance of male students of the university.

4.3.3 Correlations among female students

The correlation analyses of the female students are shown on Table 4.13.

Table 4.13 Correlations among the variables of the female students of the study

		Correlations															
	UMGP/	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE	
CUMGF	Pearson Cor	1	.071	.268*	.517*	.170*	.095	.137*	-.136*	.139*	.108	.066	.066	-.016	-.079	.166*	.115
	Sig. (2-tailed)	.	.243	.000	.000	.006	.124	.027	.027	.025	.093	.282	.285	.798	.198	.007	.070
	N	271	268	270	267	264	263	259	265	261	245	265	262	256	264	263	250
AGE	Pearson Cor	.071	1	-.199*	.054	.114	.008	.120	-.371*	.002	-.098	-.096	.069	.058	-.035	.057	.006
	Sig. (2-tailed)	.243	.	.001	.385	.063	.892	.052	.000	.974	.124	.116	.264	.350	.569	.355	.923
	N	268	274	271	265	267	266	262	267	263	248	269	265	258	267	266	253
FGRAC	Pearson Cor	.268*	-.199*	1	.089	-.009	.056	-.074	.095	.003	.005	-.065	-.092	-.052	-.128*	.084	.026
	Sig. (2-tailed)	.000	.001	.	.149	.889	.365	.234	.119	.959	.943	.291	.136	.408	.037	.174	.681
	N	270	271	274	267	267	266	262	268	264	248	268	265	259	267	266	253
ENG	Pearson Cor	.517*	.054	.089	1	.072	.078	.014	-.213*	.008	-.005	.022	-.027	-.026	-.138*	.098	.046
	Sig. (2-tailed)	.000	.385	.149	.	.247	.212	.819	.001	.893	.941	.718	.667	.680	.026	.113	.469
	N	267	265	267	268	261	261	256	262	258	242	262	259	253	261	260	247
SE	Pearson Cor	.170*	.114	-.009	.072	1	.244*	.423*	-.097	.427*	.379*	.296*	.292*	.182*	-.156*	.244*	.112
	Sig. (2-tailed)	.006	.063	.889	.247	.	.000	.000	.116	.000	.000	.000	.000	.003	.011	.000	.076
	N	264	267	267	261	270	263	259	263	260	245	265	262	256	264	263	252
LOC	Pearson Cor	.095	.008	.056	.078	.244*	1	.252*	-.107	.137*	.251*	.206*	.228*	.080	-.141*	.195*	.123
	Sig. (2-tailed)	.124	.892	.365	.212	.000	.	.000	.085	.028	.000	.001	.000	.203	.023	.002	.053
	N	263	266	266	261	263	269	257	262	258	244	263	261	254	262	261	248
INT	Pearson Cor	.137*	.120	-.074	.014	.423*	.252*	1	.005	.396*	.355*	.250*	.314*	-.114	-.077	.206*	.225*
	Sig. (2-tailed)	.027	.052	.234	.819	.000	.000	.	.936	.000	.000	.000	.000	.073	.216	.001	.000
	N	259	262	262	256	259	257	265	258	255	241	259	258	250	259	257	246
EXT	Pearson Cor	-.136*	-.371*	.095	-.213*	-.097	-.107	.005	1	-.045	-.071	-.063	-.004	-.108	.138*	-.117	.021
	Sig. (2-tailed)	.027	.000	.119	.001	.116	.085	.936	.	.469	.270	.304	.944	.086	.025	.058	.738
	N	265	267	268	262	263	263	258	270	263	247	264	261	254	263	263	249
MET	Pearson Cor	.139*	.002	.003	.008	.427*	.137*	.396*	-.045	1	.596*	.576*	.302*	.026	-.282*	.456*	.114
	Sig. (2-tailed)	.025	.974	.959	.893	.000	.028	.000	.469	.	.000	.000	.000	.680	.000	.000	.076
	N	261	263	264	258	260	258	255	263	266	244	262	258	250	260	259	245
RES	Pearson Cor	.108	-.098	.005	-.005	.379*	.251*	.355*	-.071	.596*	1	.527*	.317*	-.112	-.210*	.500*	.115
	Sig. (2-tailed)	.093	.124	.943	.941	.000	.000	.000	.270	.000	.	.000	.000	.084	.001	.000	.080
	N	245	248	248	242	245	244	241	247	244	250	245	241	238	244	245	234
COG	Pearson Cor	.066	-.096	-.065	.022	.296*	.206*	.250*	-.063	.576*	.527*	1	.232*	-.048	-.227*	.369*	.142*
	Sig. (2-tailed)	.282	.116	.291	.718	.000	.001	.000	.304	.000	.000	.	.000	.446	.000	.000	.025
	N	265	269	268	262	265	263	259	264	262	245	271	262	255	264	264	250
AGR	Pearson Cor	.066	.069	-.092	-.027	.292*	.228*	.314*	-.004	.302*	.317*	.232*	1	-.004	-.201*	.252*	.258*
	Sig. (2-tailed)	.285	.264	.136	.667	.000	.000	.000	.944	.000	.000	.000	.	.952	.001	.000	.000
	N	262	265	265	259	262	261	258	261	258	241	262	268	256	263	262	251
XTR	Pearson Cor	-.016	.058	-.052	-.026	.182*	.080	.114	-.108	.026	.112	-.048	-.004	1	-.119	-.029	.115
	Sig. (2-tailed)	.798	.350	.408	.680	.003	.203	.073	.086	.680	.084	.446	.952	.	.057	.646	.072
	N	256	258	259	253	256	254	250	254	250	238	255	256	261	256	257	246
NEU	Pearson Cor	-.079	-.035	-.128*	-.138*	-.156*	-.141*	-.077	.138*	-.282*	-.210*	-.227*	-.201*	-.119	1	-.434*	-.162*
	Sig. (2-tailed)	.198	.569	.037	.026	.011	.023	.216	.025	.000	.001	.000	.001	.057	.	.000	.010
	N	264	267	267	261	264	262	259	263	260	244	264	263	256	270	264	253
CON	Pearson Cor	.166*	.057	.084	.098	.244*	.195*	.206*	-.117	.456*	.500*	.369*	.252*	-.029	-.434*	1	.183*
	Sig. (2-tailed)	.007	.355	.174	.113	.000	.002	.001	.058	.000	.000	.000	.000	.646	.000	.	.004
	N	263	266	266	260	263	261	257	263	259	245	264	262	257	264	269	251
OPE	Pearson Cor	.115	.006	.026	.046	.112	.123	.225*	.021	.114	.115	.142*	.258*	.115	-.162*	.183*	1
	Sig. (2-tailed)	.070	.923	.681	.469	.076	.053	.000	.738	.076	.080	.025	.000	.072	.010	.004	.
	N	250	253	253	247	252	248	246	249	245	234	250	251	246	253	251	256

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.13, significant positive relationships are observed between the female students' academic performance at the university and their final high school grade, English Language proficiency, self-efficacy, intrinsic goal orientations, metacognitive learning strategies and the conscientiousness personality trait at $p \leq 0.05$. Significant

negative relationships are however observed between the students' academic performance at the university and the extrinsic goal orientation. Further analysis of the extrinsic goal orientation reveals significant positive correlations with the neuroticism trait but significant negative correlations with chronological age and English language proficiency. The final high school grade has significant negative relations with chronological age and neuroticism, while English language proficiency has significant negative relations with neuroticism. Students' self-efficacy levels significantly positively correlated with internal locus of control, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and agreeableness, extraversion and conscientiousness personality traits, but negatively with the neuroticism personality trait. On the other hand, intrinsic goal orientation is observed to have significant positive relations with internal locus of control, metacognitive, resource management and cognitive learning strategies and the conscientiousness and openness-to-experience personality traits. Metacognitive learning strategies also significantly positively relates to resource management and cognitive learning strategies and the conscientiousness personality traits and negatively to neuroticism. Lastly, conscientiousness is depicted as having significant positive relationships with internal locus of control, resource management and cognitive learning strategies and the agreeableness and openness-to-experience personality traits, but negative relationships with the neuroticism personality trait.

The students' chronological age, internal locus of control, resource management and cognitive learning strategies, agreeableness, extraversion, neuroticism and openness-to-experience are observed to have no significant correlation with the academic performance of female students at $p \leq 0.05$. However, noting that all these variables have significant correlations with one or more of the variables that are portrayed as having significant correlations with the female students' academic performance, their contributions to the models on academic performance of the female students could not be immediately disregarded.

4.3.4 Correlations among local students

Table 4.14 shows the relationships among the local students study variables.

Table 4.14 Correlations among the variables of the local students of the study

Correlations

	UMGP	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMG Pearson Cor	1	.039	.291*	.189*	.177*	.117*	.116*	-.100	.159*	.113*	.103*	.058	-.026	-.034	.169*	.053
Sig. (2-tailed)	.	.456	.000	.000	.001	.026	.027	.056	.002	.036	.049	.268	.620	.512	.001	.320
N	375	372	374	372	366	364	361	365	360	341	369	363	358	364	364	348
AGE Pearson Cor	.039	1	-.169*	-.006	.101	.024	.142*	-.308*	.022	-.043	-.055	.111*	.076	-.064	.049	.058
Sig. (2-tailed)	.456	.	.001	.911	.052	.648	.006	.000	.680	.423	.287	.032	.150	.219	.347	.272
N	372	382	380	372	373	371	369	371	366	348	377	369	365	371	371	355
FGRAL Pearson Cor	.291*	-.169*	1	.133*	.020	.009	-.098	.052	.019	.005	-.054	-.119*	-.003	-.063	.020	-.058
Sig. (2-tailed)	.000	.001	.	.010	.707	.856	.059	.318	.719	.928	.292	.022	.947	.226	.707	.271
N	374	380	383	374	374	372	369	373	368	349	377	370	366	372	372	356
ENG Pearson Cor	.189*	-.006	.133*	1	.037	-.082	-.002	-.039	-.022	-.031	-.090	.030	-.002	-.074	-.013	.083
Sig. (2-tailed)	.000	.911	.010	.	.482	.119	.963	.461	.684	.566	.084	.564	.971	.157	.803	.120
N	372	372	374	375	366	364	361	365	360	341	369	363	358	364	364	348
SE Pearson Cor	.177*	.101	.020	.037	1	.281*	.373*	-.074	.407*	.349*	.296*	.285*	.114*	-.121*	.250*	.089
Sig. (2-tailed)	.001	.052	.707	.482	.	.000	.000	.157	.000	.000	.000	.000	.030	.021	.000	.095
N	366	373	374	366	376	367	363	366	361	342	371	364	361	366	366	351
LOC Pearson Cor	.117*	.024	.009	-.082	.281*	1	.260*	-.107*	.154*	.243*	.194*	.225*	.064	-.081	.219*	.047
Sig. (2-tailed)	.026	.648	.856	.119	.000	.	.000	.040	.004	.000	.000	.000	.227	.122	.000	.384
N	364	371	372	364	367	374	362	364	358	342	368	363	359	365	363	348
INT Pearson Cor	.116*	.142*	-.098	.002	.373*	.260*	1	-.026	.382*	.381*	.238*	.306*	.084	-.049	.217*	.241*
Sig. (2-tailed)	.027	.006	.059	.963	.000	.000	.	.629	.000	.000	.000	.000	.112	.358	.000	.000
N	361	369	369	361	363	362	371	361	356	338	365	360	355	361	360	345
EXT Pearson Cor	-.100	-.308*	.052	-.039	-.074	-.107*	-.026	1	-.020	-.008	-.013	-.046	-.101	.139*	-.120*	-.016
Sig. (2-tailed)	.056	.000	.318	.461	.157	.040	.629	.	.711	.884	.801	.381	.057	.008	.022	.772
N	365	371	373	365	366	364	361	374	364	345	368	362	358	364	365	348
MET Pearson Cor	.159*	.022	.019	-.022	.407*	.154*	.382*	-.020	1	.595*	.567*	.326*	.028	-.214*	.486*	.118*
Sig. (2-tailed)	.002	.680	.719	.684	.000	.004	.000	.711	.	.000	.000	.000	.598	.000	.000	.029
N	360	366	368	360	361	358	356	364	369	341	365	357	352	359	359	342
RES Pearson Cor	.113*	-.043	.005	-.031	.349*	.243*	.381*	-.008	.595*	1	.542*	.333*	.080	-.138*	.504*	.121*
Sig. (2-tailed)	.036	.423	.928	.566	.000	.000	.000	.884	.000	.	.000	.000	.144	.011	.000	.029
N	341	348	349	341	342	342	338	345	341	350	345	338	337	341	342	330
COG Pearson Cor	.103*	-.055	-.054	-.090	.296*	.194*	.238*	-.013	.567*	.542*	1	.222*	-.055	-.123*	.363*	.091
Sig. (2-tailed)	.049	.287	.292	.084	.000	.000	.000	.801	.000	.000	.	.000	.293	.018	.000	.087
N	369	377	377	369	371	368	365	368	365	345	379	366	362	368	369	352
AGR Pearson Cor	.058	.111*	-.119*	.030	.285*	.225*	.306*	-.046	.326*	.333*	.222*	1	.045	-.154*	.239*	.176*
Sig. (2-tailed)	.268	.032	.022	.564	.000	.000	.000	.381	.000	.000	.000	.	.394	.003	.000	.001
N	363	369	370	363	364	363	360	362	357	338	366	372	362	365	364	351
XTR Pearson Cor	-.026	.076	-.003	-.002	.114*	.064	.084	-.101	.028	.080	-.055	.045	1	-.132*	-.019	.155*
Sig. (2-tailed)	.620	.150	.947	.971	.030	.227	.112	.057	.598	.144	.293	.394	.	.012	.717	.004
N	358	365	366	358	361	359	355	358	352	337	362	362	368	361	362	349
NEU Pearson Cor	-.034	-.064	-.063	-.074	-.121*	-.081	-.049	.139*	-.214*	-.138*	-.123*	-.154*	-.132*	1	-.385*	-.114*
Sig. (2-tailed)	.512	.219	.226	.157	.021	.122	.358	.008	.000	.011	.018	.003	.012	.	.000	.032
N	364	371	372	364	366	365	361	364	359	341	368	365	361	374	366	353
CON Pearson Cor	.169*	.049	.020	-.013	.250*	.219*	.217*	-.120*	.486*	.504*	.363*	.239*	-.019	-.385*	1	.164*
Sig. (2-tailed)	.001	.347	.707	.803	.000	.000	.000	.022	.000	.000	.000	.000	.717	.000	.	.002
N	364	371	372	364	366	363	360	365	359	342	369	364	362	366	374	351
OPE Pearson Cor	.053	.058	-.058	.083	.089	.047	.241*	-.016	.118*	.121*	.091	.176*	.155*	-.114*	.164*	1
Sig. (2-tailed)	.320	.272	.271	.120	.095	.384	.000	.772	.029	.029	.087	.001	.004	.032	.002	.
N	348	355	356	348	351	348	345	348	342	330	352	351	349	353	351	358

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.14, the local students' academic performance in the university significantly positively correlates with final high school grade, English Language proficiency, internal locus of control, intrinsic motivation, metacognitive, resource

management and cognitive learning strategies and the conscientiousness personality trait at $p \leq 0.05$. The local students' final high school grade significantly negatively correlates with chronological age and the agreeableness personality trait, and positively with English language proficiency. On the other hand, self-efficacy significantly positively correlates with internal locus of control, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and agreeableness, extraversion and conscientiousness traits, but negatively with the neuroticism trait. The internal locus of control significantly positively correlates with intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and agreeableness and conscientiousness traits, but negatively with the extrinsic goal orientation. The intrinsic goal orientation also significantly positively correlates with metacognitive, resource management and cognitive learning strategies and agreeableness, conscientiousness and openness-to-experience personality traits. The metacognitive learning strategies significantly positively correlates with the resource management and cognitive learning strategies and agreeableness, conscientiousness and openness-to-experience personality traits, but negatively with the neuroticism personality trait. The resource management strategies also significantly relate to the cognitive learning strategies and agreeableness, conscientiousness and openness-to-experience personality traits, but negatively to the neuroticism personality trait. In addition, the cognitive learning strategies significantly positively relate to agreeableness and conscientiousness traits, but negatively to the neuroticism trait. Finally, the conscientiousness personality trait significantly positively relates to the agreeableness and openness-to-experience traits, but negatively to extrinsic goal orientation and the neuroticism personality trait.

The students' chronological age, extrinsic goal orientation, extraversion, neuroticism and openness-to-experience are observed to have no significant correlation with the academic performance of local students at $p \leq 0.05$. However, noting that all these variables have significant correlations with one or more of the variables that are portrayed as having significant correlations with the local students' academic performance, their contributions to the models on academic performance of the local students could not be immediately disregarded.

4.3.5 Correlations among international students

Table 4.15 shows the relationship between the international students' variables.

Table 4.15 Correlations among the variables of the international students of the study

		Correlations															
		UMGP	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	COG	RES	AGR	XTR	NEU	CON	OPE
CUMGF	Pearson Corr	1	.046	.049	.847*	.034	.166	.347*	-.247	.047	-.042	-.166	.161	-.172	.138	.054	-.168
	Sig. (2-tailed)	.	.798	.785	.000	.851	.350	.044	.159	.794	.810	.399	.355	.339	.430	.760	.343
	N	35	33	34	33	34	34	34	34	33	35	28	35	33	35	35	34
AGE	Pearson Corr	.046	1	-.176	-.121	.088	.036	.138	-.304	.238	.212	.130	-.202	.241	.223	.156	-.191
	Sig. (2-tailed)	.798	.	.326	.518	.626	.842	.445	.086	.190	.230	.509	.253	.192	.204	.379	.287
	N	33	34	33	31	33	33	33	33	32	34	28	34	31	34	34	33
FGRAD	Pearson Corr	.049	-.176	1	.019	-.267	.086	-.196	.285	.064	.089	-.083	.275	-.289	-.034	.123	.192
	Sig. (2-tailed)	.785	.326	.	.916	.133	.634	.275	.108	.727	.618	.673	.116	.109	.849	.489	.285
	N	34	33	34	32	33	33	33	33	32	34	28	34	32	34	34	33
ENG	Pearson Corr	.847*	-.121	.019	1	-.015	.151	.225	-.117	-.154	.014	-.348	.198	-.079	.036	.001	-.033
	Sig. (2-tailed)	.000	.518	.916	.	.937	.403	.215	.523	.408	.939	.081	.270	.673	.844	.995	.856
	N	33	31	32	33	32	33	32	32	31	33	26	33	31	33	33	32
SE	Pearson Corr	.034	.088	-.267	-.015	1	.465*	.658*	.096	.611*	.062	.394*	.231	.223	.021	.314	.242
	Sig. (2-tailed)	.851	.626	.133	.937	.	.006	.000	.591	.000	.725	.034	.183	.220	.906	.066	.161
	N	34	33	33	32	35	34	35	34	33	35	29	35	32	35	35	35
LOC	Pearson Corr	.166	.036	.086	.151	.465*	1	.490*	.361*	.433*	.281	.163	.484*	.017	-.163	.338*	.412*
	Sig. (2-tailed)	.350	.842	.634	.403	.006	.	.003	.036	.012	.102	.406	.003	.925	.350	.047	.015
	N	34	33	33	33	34	35	34	34	33	35	28	35	32	35	35	34
INT	Pearson Corr	.347*	.138	-.196	.225	.658*	.490*	1	.098	.588*	.227	.442*	.329	.180	.228	.337*	.254
	Sig. (2-tailed)	.044	.445	.275	.215	.000	.003	.	.582	.000	.189	.016	.054	.324	.188	.048	.142
	N	34	33	33	32	35	34	35	34	33	35	29	35	32	35	35	35
EXT	Pearson Corr	-.247	-.304	.285	-.117	.096	.361*	.098	1	.130	-.009	-.052	.245	-.255	.044	-.309	.374*
	Sig. (2-tailed)	.159	.086	.108	.523	.591	.036	.582	.	.464	.960	.789	.157	.158	.800	.071	.029
	N	34	33	33	32	34	34	34	35	34	35	29	35	32	35	35	34
MET	Pearson Corr	.047	.238	.064	-.154	.611*	.433*	.588*	.130	1	.253	.718*	.394*	.271	.061	.439*	.365*
	Sig. (2-tailed)	.794	.190	.727	.408	.000	.012	.000	.464	.	.150	.000	.021	.140	.733	.009	.037
	N	33	32	32	31	33	33	33	34	34	34	28	34	31	34	34	33
COG	Pearson Corr	-.042	.212	.089	.014	.062	.281	.227	-.009	.253	1	.274	.139	.494*	-.124	.366*	.302
	Sig. (2-tailed)	.810	.230	.618	.939	.725	.102	.189	.960	.150	.	.150	.420	.003	.470	.028	.078
	N	35	34	34	33	35	35	35	34	36	36	29	36	33	36	36	35
RES	Pearson Corr	-.166	.130	-.083	-.348	.394*	.163	.442*	-.052	.718*	.274	1	.368*	.298	-.303	.648*	.223
	Sig. (2-tailed)	.399	.509	.673	.081	.034	.406	.016	.789	.000	.150	.	.049	.124	.110	.000	.246
	N	28	28	28	26	29	28	29	29	28	29	29	29	29	29	29	29
AGR	Pearson Corr	.161	-.202	.275	.198	.231	.484*	.329	.245	.394*	.139	.368*	1	.034	-.318	.590*	.431*
	Sig. (2-tailed)	.355	.253	.116	.270	.183	.003	.054	.157	.021	.420	.049	.	.852	.059	.000	.010
	N	35	34	34	33	35	35	35	35	34	36	29	36	33	36	36	35
XTR	Pearson Corr	-.172	.241	-.289	-.079	.223	.017	.180	-.255	.271	.494*	.298	.034	1	-.014	.298	.299
	Sig. (2-tailed)	.339	.192	.109	.673	.220	.925	.324	.158	.140	.003	.124	.852	.	.937	.092	.096
	N	33	31	32	31	32	32	32	32	31	33	28	33	33	33	33	32
NEU	Pearson Corr	.138	.223	-.034	.036	.021	-.163	.228	.044	.061	-.124	-.303	-.318	-.014	1	-.474*	-.150
	Sig. (2-tailed)	.430	.204	.849	.844	.906	.350	.188	.800	.733	.470	.110	.059	.937	.	.003	.389
	N	35	34	34	33	35	35	35	34	36	29	36	33	33	36	36	35
CON	Pearson Corr	.054	.156	.123	.001	.314	.338*	.337*	-.309	.439*	.366*	.648*	.590*	.298	-.474*	1	.337*
	Sig. (2-tailed)	.760	.379	.489	.995	.066	.047	.048	.071	.009	.028	.000	.000	.092	.003	.	.048
	N	35	34	34	33	35	35	35	35	34	36	29	36	33	36	36	35
OPE	Pearson Corr	-.168	-.191	.192	-.033	.242	.412*	.254	.374*	.365*	.302	.223	.431*	.299	-.150	.337*	1
	Sig. (2-tailed)	.343	.287	.285	.856	.161	.015	.142	.029	.037	.078	.246	.010	.096	.389	.048	.
	N	34	33	33	32	35	34	35	34	33	35	29	35	32	35	35	35

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.15, among the international students, significant positive relationships are observed between their academic performance and both English

Language proficiency and intrinsic goal orientation at $p \leq 0.05$. The intrinsic goal orientation is also observed to have significant positive relationships with self-efficacy, internal locus of control, metacognitive and resource management learning strategies and the conscientiousness personality trait. The variables of age and final high school grade are not depicted as significantly relating to the other variables of the study in relation to the students' academic performance and are therefore disregarded in the determining of the final model on the factors contributing to the academic performance of international students. Although, self-efficacy, internal locus of control, metacognitive learning and resource management strategies were portrayed as having no significant relationships with the academic performance of the international students at $p \leq 0.05$, their contributions to the model on the factors affecting the academic performance of international students could not be immediately disregarded because of the significance of their correlations with intrinsic goal orientation, which is portrayed as having positive correlations with the academic performance of international students at $p \leq 0.05$.

4.3.6 Correlations among Athi River campus students

The relationships between the variables of the Athi River campus students are shown on Table 4.16.

Table 4.16 Correlations among the variables of Athi River campus students

		Correlations															
		UMGP	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGI	Pearson Cor	1	.046	.229*	.210*	.162*	.138*	.168*	-.146*	.149*	.055	.038	.104	-.012	-.006	.166*	.067
	Sig. (2-tailed)	.	.434	.000	.000	.006	.021	.005	.013	.012	.375	.520	.082	.836	.918	.005	.271
	N	291	287	290	288	285	281	279	285	281	262	285	284	277	284	283	275
AGE	Pearson Cor	.046	1	-.173*	-.008	-.001	-.109	.095	-.145*	.013	-.024	-.039	-.095	.025	.079	-.019	-.075
	Sig. (2-tailed)	.434	.	.003	.889	.990	.065	.110	.014	.834	.700	.510	.106	.677	.179	.745	.211
	N	287	295	294	287	289	285	284	289	285	268	290	288	280	288	287	279
FGRAC	Pearson Cor	.229*	-.173*	1	.159*	-.039	.004	-.084	.037	-.011	-.021	-.087	-.025	-.015	-.065	.037	-.020
	Sig. (2-tailed)	.000	.003	.	.007	.509	.950	.155	.529	.856	.727	.138	.669	.808	.270	.527	.742
	N	290	294	297	290	291	287	285	291	287	269	291	290	283	290	289	281
ENG	Pearson Cor	.210*	-.008	.159*	1	.043	-.096	.011	-.048	-.021	-.058	-.105	.042	-.003	-.096	-.009	.092
	Sig. (2-tailed)	.000	.889	.007	.	.473	.109	.858	.424	.728	.346	.076	.482	.958	.108	.881	.127
	N	288	287	290	291	285	282	279	285	281	262	285	284	277	284	283	275
SE	Pearson Cor	.162*	-.001	-.039	.043	1	.343*	.406*	-.037	.458*	.445*	.314*	.301*	.108	-.137*	.336*	.114
	Sig. (2-tailed)	.006	.990	.509	.473	.	.000	.000	.528	.000	.000	.000	.000	.071	.020	.000	.057
	N	285	289	291	285	293	285	283	288	284	265	288	287	279	287	285	279
LOC	Pearson Cor	.138*	-.109	.004	-.096	.343*	1	.278*	-.020	.237*	.308*	.266*	.283*	.014	-.151*	.322*	.096
	Sig. (2-tailed)	.021	.065	.950	.109	.000	.	.000	.738	.000	.000	.000	.000	.813	.011	.000	.112
	N	281	285	287	282	285	289	279	284	279	263	283	284	276	284	281	274
INT	Pearson Cor	.168*	.095	-.084	.011	.406*	.278*	1	.051	.433*	.431*	.234*	.317*	.059	-.014	.250*	.233*
	Sig. (2-tailed)	.005	.110	.155	.858	.000	.000	.	.397	.000	.000	.000	.000	.334	.813	.000	.000
	N	279	284	285	279	283	279	282	282	277	261	281	281	273	281	279	273
EXT	Pearson Cor	-.146*	-.145*	.037	-.048	-.037	-.020	.051	1	.011	-.009	-.017	.085	-.060	.063	-.112	.078
	Sig. (2-tailed)	.013	.014	.529	.424	.528	.738	.397	.	.855	.884	.771	.151	.317	.289	.059	.197
	N	285	289	291	285	288	284	282	293	286	267	287	287	279	287	286	278
MET	Pearson Cor	.149*	.013	-.011	-.021	.458*	.237*	.433*	.011	1	.601*	.532*	.363*	.068	-.200*	.488*	.124*
	Sig. (2-tailed)	.012	.834	.856	.728	.000	.000	.000	.855	.	.000	.000	.000	.262	.001	.000	.041
	N	281	285	287	281	284	279	277	286	289	264	285	282	274	282	281	273
RES	Pearson Cor	.055	-.024	-.021	-.058	.445*	.308*	.431*	-.009	.601*	1	.493*	.402*	.066	-.180*	.534*	.155*
	Sig. (2-tailed)	.375	.700	.727	.346	.000	.000	.000	.884	.000	.	.000	.000	.291	.003	.000	.012
	N	262	268	269	262	265	263	261	267	264	270	265	264	258	264	263	259
COG	Pearson Cor	.038	-.039	-.087	-.105	.314*	.266*	.234*	-.017	.532*	.493*	1	.245*	-.004	-.164*	.380*	.111
	Sig. (2-tailed)	.520	.510	.138	.076	.000	.000	.000	.771	.000	.000	.	.000	.950	.006	.000	.065
	N	285	290	291	285	288	283	281	287	285	265	293	286	278	286	286	277
AGR	Pearson Cor	.104	-.095	-.025	.042	.301*	.283*	.317*	.085	.363*	.402*	.245*	1	.002	-.172*	.337*	.183*
	Sig. (2-tailed)	.082	.106	.669	.482	.000	.000	.000	.151	.000	.000	.000	.	.967	.003	.000	.002
	N	284	288	290	284	287	284	281	287	282	264	286	292	283	288	286	280
XTR	Pearson Cor	-.012	.025	-.015	-.003	.108	.014	.059	-.060	.068	.066	.004	.002	1	-.107	-.023	.146*
	Sig. (2-tailed)	.836	.677	.808	.958	.071	.813	.334	.317	.262	.291	.950	.967	.	.073	.696	.016
	N	277	280	283	277	279	276	273	279	274	258	278	283	284	280	279	273
NEU	Pearson Cor	-.006	.079	-.065	-.096	-.137*	-.151*	-.014	.063	-.200*	-.180*	-.164*	-.172*	-.107	1	-.377*	-.157*
	Sig. (2-tailed)	.918	.179	.270	.108	.020	.011	.813	.289	.001	.003	.006	.003	.073	.	.000	.008
	N	284	288	290	284	287	284	281	287	282	264	286	288	280	292	286	280
CON	Pearson Cor	.166*	-.019	.037	-.009	.336*	.322*	.250*	-.112	.488*	.534*	.380*	.337*	-.023	-.377*	1	.220*
	Sig. (2-tailed)	.005	.745	.527	.881	.000	.000	.000	.059	.000	.000	.000	.000	.696	.000	.	.000
	N	283	287	289	283	285	281	279	286	281	263	286	286	279	286	291	277
OPE	Pearson Cor	.067	-.075	-.020	.092	.114	.096	.233*	.078	.124*	.155*	.111	.183*	.146*	-.157*	.220*	1
	Sig. (2-tailed)	.271	.211	.742	.127	.057	.112	.000	.197	.041	.012	.065	.002	.016	.008	.000	.
	N	275	279	281	275	279	274	273	278	273	259	277	280	273	280	277	283

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.16, the Athi River campus students’ academic performance significantly positively relates to their final high school grade, English language proficiency, self-efficacy, internal locus of control, intrinsic motivation, metacognitive learning strategies and conscientiousness at $p \leq 0.05$. In addition, the Athi River campus students’ academic performance significantly negatively relates to their extrinsic goal

orientation. The final high school grade of the Athi River campus students significantly positively correlates with English Language proficiency, but negatively with chronological age. Self-efficacy, on the other hand, significantly positively relates with internal locus of control, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and the agreeableness and conscientiousness traits, but significantly negatively relates with the neuroticism trait. Internal locus of control also shows other significant positive relations with intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and the agreeableness and conscientiousness traits, but negative relations with the neuroticism trait. The intrinsic goal orientation reveals significant positive relations with metacognitive, resource management and cognitive learning strategies and the agreeableness, conscientiousness and openness-to-experience traits. Metacognitive learning strategies are observed to significantly positively relate to resource management and cognitive learning strategies and the agreeableness, conscientiousness and openness-to-experience traits, but negatively with the neuroticism trait. The conscientiousness personality trait also significantly positively correlates with resource management and cognitive learning strategies and the agreeableness and openness-to-experience traits but negatively with the neuroticism trait. Conversely, the extrinsic goal orientation significantly negatively correlates with the students' chronological age.

The students' chronological age, resource management and cognitive learning strategies and agreeableness, extraversion, neuroticism and openness-to-experience personality traits are not observed to have significantly relationships with the academic performance of students in the Athi River campus at $p \leq 0.05$. However, based on its inability to significantly correlate with any other variable that was portrayed as having significant relationships with the academic performance of students in the Athi River Campus at $p \leq 0.05$, the extraversion personality trait was instantly disregarded from the model that best explains the contributions of various factors to the academic performance of the Athi River students.

4.3.7 Correlations among Nairobi campus students

Table 4.17 presents the relationships between the variables of the Nairobi Campus students.

Table 4.17 Correlations among the variables of Nairobi campus students

		Correlations															
		UMGP	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGF	Pearson Corr	1	-.035	.351*	.495*	.155	.099	.094	-.051	.115	.144	.263*	.018	-.172	-.096	.152	-.058
	Sig. (2-tailed)	.	.707	.000	.000	.098	.289	.313	.588	.227	.140	.004	.850	.068	.305	.103	.552
	N	119	118	118	117	115	117	116	114	112	107	119	114	114	115	116	107
AGE	Pearson Corr	-.035	1	-.092	-.145	.056	.119	.074	-.244*	.077	.089	.018	.058	.137	-.036	.074	.060
	Sig. (2-tailed)	.707	.	.320	.122	.551	.198	.428	.009	.420	.359	.841	.541	.142	.697	.426	.534
	N	118	121	119	116	117	119	118	115	113	108	121	115	116	117	118	109
FGRAD	Pearson Corr	.351*	-.092	1	-.001	.143	.048	-.125	.037	.102	-.004	.039	-.176	-.044	-.076	.035	-.070
	Sig. (2-tailed)	.000	.320	.	.988	.126	.608	.180	.692	.281	.968	.670	.060	.643	.417	.710	.474
	N	118	119	120	116	116	118	117	115	113	108	120	114	115	116	117	108
ENG	Pearson Corr	.495*	-.145	-.001	1	-.002	.063	.028	-.078	-.103	.149	.103	.037	-.095	.041	.004	.010
	Sig. (2-tailed)	.000	.122	.988	.	.986	.504	.768	.411	.282	.130	.270	.701	.320	.667	.969	.921
	N	117	116	116	117	113	115	114	112	110	105	117	112	112	113	114	105
SE	Pearson Corr	.155	.056	.143	-.002	1	.188*	.377*	-.006	.334*	.149	.222*	.160	.134	-.021	.056	.061
	Sig. (2-tailed)	.098	.551	.126	.986	.	.043	.000	.951	.000	.127	.016	.092	.155	.823	.550	.530
	N	115	117	116	113	118	116	115	112	110	106	118	112	114	114	116	107
LOC	Pearson Corr	.099	.119	.048	.063	.188*	1	.300*	-.183	.030	.074	.068	.177	.147	.039	.055	.039
	Sig. (2-tailed)	.289	.198	.608	.504	.043	.	.001	.052	.754	.452	.458	.059	.118	.676	.556	.691
	N	117	119	118	115	116	120	117	114	112	107	120	114	115	116	117	108
INT	Pearson Corr	.094	.074	-.125	.028	.377*	.300*	1	-.056	.321*	.314*	.285*	.250*	.160	-.035	.189*	.270*
	Sig. (2-tailed)	.313	.428	.180	.768	.000	.001	.	.559	.001	.001	.002	.007	.090	.713	.043	.005
	N	116	118	117	114	115	117	119	113	112	106	119	114	114	115	116	107
EXT	Pearson Corr	-.051	-.244*	.037	-.078	-.006	-.183	-.056	1	-.033	-.126	-.086	-.216*	-.180	.305*	-.216*	-.104
	Sig. (2-tailed)	.588	.009	.692	.411	.951	.052	.559	.	.732	.196	.360	.024	.059	.001	.021	.294
	N	114	115	115	112	112	114	113	116	112	107	116	110	111	112	114	104
MET	Pearson Corr	.115	.077	.102	-.103	.334*	.030	.321*	-.033	1	.630*	.575*	.233*	-.001	-.159	.452*	.191
	Sig. (2-tailed)	.227	.420	.281	.282	.000	.754	.001	.732	.	.000	.000	.015	.995	.096	.000	.054
	N	112	113	113	110	110	112	112	112	114	105	114	109	109	111	112	102
RES	Pearson Corr	.144	.089	-.004	.149	.149	.074	.314*	-.126	.630*	1	.570*	.188	.214*	-.105	.510*	.073
	Sig. (2-tailed)	.140	.359	.968	.130	.127	.452	.001	.196	.000	.	.000	.057	.027	.282	.000	.473
	N	107	108	108	105	106	107	106	107	105	109	109	103	107	106	108	100
COG	Pearson Corr	.263*	.018	.039	.103	.222*	.068	.285*	-.086	.575*	.570*	1	.172	-.084	-.057	.350*	.129
	Sig. (2-tailed)	.004	.841	.670	.270	.016	.458	.002	.360	.000	.000	.	.066	.369	.540	.000	.180
	N	119	121	120	117	118	120	119	116	114	109	122	116	117	118	119	110
AGR	Pearson Corr	.018	.058	-.176	.037	.160	.177	.250*	-.216*	.233*	.188	.172	1	.129	-.189*	.159	.304*
	Sig. (2-tailed)	.850	.541	.060	.701	.092	.059	.007	.024	.015	.057	.066	.	.176	.045	.092	.002
	N	114	115	114	112	112	114	114	110	109	103	116	116	112	113	114	106
XTR	Pearson Corr	-.172	.137	-.044	-.095	.134	.147	.160	-.180	-.001	.214*	-.084	.129	1	-.112	.063	.198*
	Sig. (2-tailed)	.068	.142	.643	.320	.155	.118	.090	.059	.995	.027	.369	.176	.	.234	.504	.040
	N	114	116	115	112	114	115	114	111	109	107	117	112	117	114	116	108
NEU	Pearson Corr	-.096	-.036	-.076	.041	-.021	.039	-.035	.305*	-.159	-.105	-.057	-.189*	-.112	1	-.454*	-.010
	Sig. (2-tailed)	.305	.697	.417	.667	.823	.676	.713	.001	.096	.282	.540	.045	.234	.	.000	.915
	N	115	117	116	113	114	116	115	112	111	106	118	113	114	118	116	108
CON	Pearson Corr	.152	.074	.035	.004	.056	.055	.189*	-.216*	.452*	.510*	.350*	.159	.063	-.454*	1	.089
	Sig. (2-tailed)	.103	.426	.710	.969	.550	.556	.043	.021	.000	.000	.000	.092	.504	.000	.	.356
	N	116	118	117	114	116	117	116	114	112	108	119	114	116	116	119	109
OPE	Pearson Corr	-.058	.060	-.070	.010	.061	.039	.270*	-.104	.191	.073	.129	.304*	.198*	-.010	.089	1
	Sig. (2-tailed)	.552	.534	.474	.921	.530	.691	.005	.294	.054	.473	.180	.002	.040	.915	.356	.
	N	107	109	108	105	107	108	107	104	102	100	110	106	108	108	109	110

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.17, the Nairobi Campus students' academic performance significantly positively relates to final high school grade, English language proficiency and cognitive learning strategies $p \leq 0.05$. In addition, the students' cognitive learning strategies are also observed to significantly positively correlate with self-efficacy, intrinsic goal orientation, metacognitive and resource management learning strategies and the conscientiousness personality trait.

Table 4.17 however portrays chronological age, self efficacy, internal locus of control, intrinsic goal orientation, extrinsic goal orientation, metacognitive learning and resource management strategies and the personality traits of agreeableness, extraversion, neuroticisms, conscientiousness and openness-to-experience as having no significant correlations with the academic performance of Nairobi campus students in the university at $p \leq 0.05$. Nonetheless, while the contributions of chronological age, extrinsic goal orientations, agreeableness, extraversion, neuroticism and openness-to-experience could immediately be disregarded from the model of academic performance of Nairobi campus students, those of self-efficacy, intrinsic goal orientation, metacognitive learning and resource management strategies and conscientiousness could not be immediately ignored due to their significant relationships with the cognitive learning strategies at $p \leq 0.05$.

4.3.8 Correlations among students in the first year of study

Correlation analyses of students in the first year of study are presented on Table 4.18.

Table 4.18 Correlations among the variables of students in their first year of study

		Correlations															
		UMGPA	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGPA	Pearson Corr	1	-.084	.364*	.576*	-.028	.234*	.090	-.048	.039	.074	-.010	.194	-.172	-.093	.230*	-.049
	Sig. (2-tailed)	.	.420	.000	.000	.790	.025	.407	.652	.715	.504	.923	.067	.112	.376	.027	.658
	N	94	94	94	91	92	92	87	92	91	83	94	90	87	92	92	83
AGE	Pearson Corr	-.084	1	-.209*	-.162	.072	-.054	.113	-.133	.129	.006	-.095	.030	.154	.030	.004	.120
	Sig. (2-tailed)	.420	.	.040	.125	.487	.605	.291	.200	.216	.959	.355	.777	.146	.776	.969	.269
	N	94	97	97	91	95	95	90	95	94	86	97	93	90	95	95	86
FGRAD	Pearson Corr	.364*	-.209*	1	.346*	-.124	.154	-.041	-.026	.041	.203	.057	.084	-.158	-.176	.202*	.002
	Sig. (2-tailed)	.000	.040	.	.001	.232	.136	.703	.801	.693	.061	.578	.425	.136	.089	.050	.987
	N	94	97	97	91	95	95	90	95	94	86	97	93	90	95	95	86
ENG	Pearson Corr	.576*	-.162	.346*	1	-.063	-.047	-.011	-.224*	-.090	.093	-.081	.071	-.155	-.114	.113	.038
	Sig. (2-tailed)	.000	.125	.001	.	.557	.658	.919	.035	.407	.411	.447	.515	.158	.287	.291	.737
	N	91	91	91	91	89	90	84	89	88	80	91	87	84	89	89	80
SE	Pearson Corr	-.028	.072	-.124	-.063	1	.250*	.404*	-.125	.400*	.356*	.367*	.269*	.061	-.034	.247*	-.025
	Sig. (2-tailed)	.790	.487	.232	.557	.	.016	.000	.234	.000	.001	.000	.010	.571	.745	.017	.823
	N	92	95	95	89	95	93	89	93	85	95	91	88	93	93	85	85
LOC	Pearson Corr	.234*	-.054	.154	-.047	.250*	1	.355*	-.045	.232*	.206	.191	.367*	.026	-.065	.183	.056
	Sig. (2-tailed)	.025	.605	.136	.658	.016	.	.001	.666	.026	.059	.064	.000	.812	.536	.079	.612
	N	92	95	95	90	93	95	88	93	92	85	95	91	88	93	93	84
INT	Pearson Corr	.090	.113	-.041	-.011	.404*	.355*	1	.172	.487*	.434*	.379*	.260*	.007	.079	.211*	-.014
	Sig. (2-tailed)	.407	.291	.703	.919	.000	.001	.	.108	.000	.000	.000	.015	.952	.460	.048	.901
	N	87	90	90	84	89	88	90	88	88	81	90	88	84	89	88	81
EXT	Pearson Corr	-.048	-.133	-.026	-.224*	-.125	-.045	.172	1	.049	-.013	.044	.013	.056	-.057	-.073	.082
	Sig. (2-tailed)	.652	.200	.801	.035	.234	.666	.108	.	.642	.906	.675	.905	.606	.585	.484	.459
	N	92	95	95	89	93	93	88	95	93	85	95	91	88	93	93	84
MET	Pearson Corr	.039	.129	.041	-.090	.400*	.232*	.487*	.049	1	.666*	.577*	.286*	-.036	-.138	.442*	.055
	Sig. (2-tailed)	.715	.216	.693	.407	.000	.026	.000	.642	.	.000	.000	.006	.741	.190	.000	.619
	N	91	94	94	88	92	92	88	93	94	84	94	91	87	92	92	83
RES	Pearson Corr	.074	.006	.203	.093	.356*	.206	.434*	-.013	.666*	1	.520*	.345*	.011	-.172	.612*	.140
	Sig. (2-tailed)	.504	.959	.061	.411	.001	.059	.000	.906	.000	.	.000	.002	.926	.117	.000	.226
	N	83	86	86	80	85	85	81	85	84	86	86	82	80	84	85	77
COG	Pearson Corr	-.010	-.095	.057	-.081	.367*	.191	.379*	.044	.577*	.520*	1	.214*	-.100	-.163	.352*	.150
	Sig. (2-tailed)	.923	.355	.578	.447	.000	.064	.000	.675	.000	.000	.	.040	.347	.115	.000	.167
	N	94	97	97	91	95	95	90	95	94	86	97	93	90	95	95	86
AGR	Pearson Corr	.194	.030	.084	.071	.269*	.367*	.260*	.013	.286*	.345*	.214*	1	-.096	-.098	.179	-.093
	Sig. (2-tailed)	.067	.777	.425	.515	.010	.000	.015	.905	.006	.002	.040	.	.376	.352	.089	.400
	N	90	93	93	87	91	91	88	91	91	82	93	93	88	92	92	84
XTR	Pearson Corr	-.172	.154	-.158	-.155	.061	.026	.007	.056	-.036	.011	-.100	-.096	1	-.102	-.032	.028
	Sig. (2-tailed)	.112	.146	.136	.158	.571	.812	.952	.606	.741	.926	.347	.376	.	.343	.763	.802
	N	87	90	90	84	88	88	84	88	87	80	90	88	90	89	89	82
NEU	Pearson Corr	-.093	.030	-.176	-.114	-.034	-.065	.079	-.057	-.138	-.172	-.163	-.098	-.102	1	-.361*	-.220*
	Sig. (2-tailed)	.376	.776	.089	.287	.745	.536	.460	.585	.190	.117	.115	.352	.343	.	.000	.043
	N	92	95	95	89	93	93	89	93	92	84	95	92	89	95	94	85
CON	Pearson Corr	.230*	-.004	.202*	.113	.247*	.183	.211*	-.073	.442*	.612*	.352*	.179	-.032	-.361*	1	.292*
	Sig. (2-tailed)	.027	.969	.050	.291	.017	.079	.048	.484	.000	.000	.000	.089	.763	.000	.	.007
	N	92	95	95	89	93	93	88	93	92	85	95	92	89	94	95	85
OPE	Pearson Corr	-.049	.120	.002	.038	-.025	.056	-.014	.082	.055	.140	.150	-.093	.028	-.220*	.292*	1
	Sig. (2-tailed)	.658	.269	.987	.737	.823	.612	.901	.459	.619	.226	.167	.400	.802	.043	.007	.
	N	83	86	86	80	85	84	81	84	83	77	86	84	82	85	85	86

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Among the students in the first year of study, academic performance is observed to significantly positively relate to final high school grade, English language proficiency, internal locus of control and conscientiousness at $p \leq 0.05$, as shown on Table 4.18. The final high school grade also significantly positively relates to English Language proficiency and the conscientiousness trait, but negatively to students chronological age. English language proficiency also significantly negatively correlates with extrinsic goal

orientation. On the other hand, conscientiousness significantly positively correlates with self-efficacy, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and the openness-to-experience trait, but negatively with neuroticism. Extraversion is not depicted as having any significant relationship with the other variables of the study among the students in the first year of study and was therefore eliminated from further analyses in determining the model that best explains the factors that contribute to the academic performance of the students in the first year of study. In addition the chronological age of the students was also eliminated from further analyses among the first year students due to its inability to significantly correlate with any other variable that was portrayed as having significant relationships with the academic performance of first year students at $p \leq 0.05$. All the other variables were considered in determining the model that best portrays the factors that contribute to the academic performance of first year students due to their significant relationships with other variables that are portrayed as having significant correlations with the academic performance of first year students of the university at $p \leq 0.05$.

4.3.9 Correlations among students in the second year of study

Table 4.19 depicts the relationships among the variables of students in their second year of study.

Table 4.19 Correlations among the variables of students in their second year of study

		Correlations															
		CUMGPA	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	COG	RES	AGR	NEU	XTR	CON	OPE
CUMGPA	Pearson Correlation	1	-.042	.178	.575*	.097	.191*	.206*	-.082	.072	.081	.032	.039	.095	-.143	.165	.062
	Sig. (2-tailed)	.	.661	.061	.000	.311	.047	.032	.394	.459	.403	.754	.691	.324	.139	.085	.532
	N	112	110	112	110	110	109	108	110	109	108	100	108	110	108	110	104
AGE	Pearson Correlation	-.042	1	-.293*	-.037	.033	.151	.192*	-.355*	.063	-.017	.088	.164	-.109	.049	.257*	.013
	Sig. (2-tailed)	.661	.	.002	.701	.734	.118	.046	.000	.515	.865	.382	.091	.258	.617	.007	.893
	N	110	111	111	108	109	108	108	109	108	108	100	107	109	107	109	103
FGRAD	Pearson Correlation	.178	-.293*	1	-.057	-.040	-.043	-.210*	.126	-.028	-.134	-.138	-.316*	.140	-.099	-.119	-.181
	Sig. (2-tailed)	.061	.002	.	.551	.675	.655	.028	.186	.773	.166	.168	.001	.143	.307	.214	.064
	N	112	111	113	110	111	110	109	111	110	109	101	109	111	109	111	105
ENG	Pearson Correlation	.575*	-.037	.057	1	-.017	.149	.185	-.154	-.150	-.054	-.264*	-.023	.083	-.100	.009	-.004
	Sig. (2-tailed)	.000	.701	.551	.	.864	.126	.057	.113	.124	.584	.009	.816	.390	.306	.929	.968
	N	110	108	110	110	108	107	106	108	107	106	98	106	108	106	108	102
SE	Pearson Correlation	.097	.033	-.040	-.017	1	.146	.365*	-.128	.227*	.160	.263*	-.005	-.048	.150	.019	.039
	Sig. (2-tailed)	.311	.734	.675	.864	.	.131	.000	.184	.018	.100	.009	.959	.620	.123	.844	.694
	N	110	109	111	108	111	108	107	109	108	107	99	107	109	107	109	103
LOC	Pearson Correlation	.191*	.151	-.043	.149	.146	1	.305*	-.288*	-.100	.022	-.012	.072	.079	.118	.117	.248*
	Sig. (2-tailed)	.047	.118	.655	.126	.131	.	.001	.002	.306	.822	.909	.459	.415	.228	.229	.012
	N	109	108	110	107	108	110	106	108	107	106	100	107	109	107	108	103
INT	Pearson Correlation	.206*	.192*	-.210*	.185	.365*	.305*	1	-.244*	.190	.138	.120	.244*	-.031	-.098	.215*	.284*
	Sig. (2-tailed)	.032	.046	.028	.057	.000	.001	.	.011	.051	.161	.238	.012	.755	.322	.026	.004
	N	108	108	109	106	107	106	109	107	106	105	98	105	107	105	107	101
EXT	Pearson Correlation	-.082	-.355*	.126	-.154	-.128	-.288*	-.244*	1	-.110	-.001	-.176	-.138	.231*	-.155	-.293*	-.090
	Sig. (2-tailed)	.394	.000	.186	.113	.184	.002	.011	.	.256	.990	.079	.156	.015	.112	.002	.367
	N	110	109	111	108	109	108	107	111	109	107	100	107	109	107	109	103
MET	Pearson Correlation	.072	.063	-.028	-.150	.227*	-.100	.190	-.110	1	.533*	.561*	.154	-.197*	-.016	.434*	.051
	Sig. (2-tailed)	.459	.515	.773	.124	.018	.306	.051	.256	.	.000	.000	.116	.041	.873	.000	.608
	N	109	108	110	107	108	107	106	109	110	107	99	106	108	106	108	102
COG	Pearson Correlation	.081	-.017	-.134	-.054	.160	.022	.138	-.001	.533*	1	.390*	.089	-.129	.088	.326*	.165
	Sig. (2-tailed)	.403	.865	.166	.584	.100	.822	.161	.990	.000	.	.000	.366	.185	.370	.001	.099
	N	108	108	109	106	107	106	105	107	107	109	98	105	107	105	108	101
RES	Pearson Correlation	.032	.088	-.138	-.264*	.263*	-.012	.120	-.176	.561*	.390*	1	.189	-.149	.083	.421*	.056
	Sig. (2-tailed)	.754	.382	.168	.009	.009	.909	.238	.079	.000	.000	.	.062	.138	.414	.000	.591
	N	100	100	101	98	99	100	98	100	99	98	101	98	100	99	99	96
AGR	Pearson Correlation	.039	.164	-.316*	-.023	-.005	.072	.244*	-.138	.154	.089	.189	1	-.156	.076	.105	.186
	Sig. (2-tailed)	.691	.091	.001	.816	.959	.459	.012	.156	.116	.366	.062	.	.107	.437	.281	.060
	N	108	107	109	106	107	107	105	107	106	105	98	109	108	107	107	103
NEU	Pearson Correlation	.095	-.109	.140	.083	-.048	.079	-.031	.231*	-.197*	-.129	-.149	-.156	1	-.129	-.332*	-.193*
	Sig. (2-tailed)	.324	.258	.143	.390	.620	.415	.755	.015	.041	.185	.138	.107	.	.182	.000	.050
	N	110	109	111	108	109	109	107	109	108	107	100	108	111	108	109	104
XTR	Pearson Correlation	-.143	.049	-.099	-.100	.150	.118	.098	-.155	-.016	.088	.083	.076	-.129	1	.088	.199*
	Sig. (2-tailed)	.139	.617	.307	.306	.123	.228	.322	.112	.873	.370	.414	.437	.182	.	.368	.045
	N	108	107	109	106	107	107	105	107	106	105	99	107	108	109	107	102
CON	Pearson Correlation	.165	.257*	-.119	.009	.019	.117	.215*	-.293*	.434*	.326*	.421*	.105	-.332*	.088	1	.089
	Sig. (2-tailed)	.085	.007	.214	.929	.844	.229	.026	.002	.000	.001	.000	.281	.000	.368	.	.373
	N	110	109	111	108	109	108	107	109	108	108	99	107	109	107	111	103
OPE	Pearson Correlation	.062	.013	-.181	-.004	.039	.248*	.284*	-.090	.051	.165	.056	.186	-.193*	.199*	.089	1
	Sig. (2-tailed)	.532	.893	.064	.968	.694	.012	.004	.367	.608	.099	.591	.060	.050	.045	.373	.
	N	104	103	105	102	103	103	101	103	102	101	96	103	104	102	103	105

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.19, the academic performance of students in their second year of study significantly positively relates to English language proficiency, internal locus of control and the intrinsic goal orientation at $p \leq 0.05$. The English Language proficiency

significantly negatively relates to resource management learning strategies, while the internal locus of control significantly positively related to intrinsic goal orientation and the openness-to-learning trait, but negatively to extrinsic goal orientation. The intrinsic goal orientation also significantly positively relates to chronological age, self-efficacy, agreeableness, conscientiousness and openness-to-experience traits, but negatively to final high school grade, and extrinsic goal orientation.

The variables of chronological age, final high school grade, self-efficacy, extrinsic goal orientation, resource management, and the personality traits of agreeableness, conscientiousness and openness-to-experience could not be immediately disregarded in determining the model that best explained the factors that contribute to the academic performance of second year students due to the significance of their relationships to one or two of the variables that significantly correlate with the academic performance of the second year students of the university at $p \leq 0.05$.

4.3.10 Correlations among students in the third year of study

The relationships between the variables of students in their third year of study are shown on Table 4.20.

Table 4.20 Correlations among the variables of students in their third year of study

		CUMGPA	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGPA	Pearson Correlation	1	.198*	.132	.455*	.295*	.138	.275*	-.206*	.263*	.162	.217*	-.025	.067	-.126	.101	.136
	Sig. (2-tailed)	.	.046	.185	.000	.003	.174	.006	.039	.009	.118	.028	.801	.510	.212	.319	.183
	N	103	102	103	103	101	98	100	100	99	94	102	103	100	100	99	98
AGE	Pearson Correlation	.198*	1	-.131	.241*	.179	.038	.165	-.314*	.146	-.042	.083	.047	.053	-.065	.000	-.008
	Sig. (2-tailed)	.046	.	.188	.014	.072	.707	.099	.001	.148	.688	.406	.636	.596	.520	1.000	.941
	N	102	104	103	103	102	99	101	100	99	94	103	104	101	101	100	99
FGRAD	Pearson Correlation	.132	-.131	1	-.016	-.015	.037	-.062	.140	.052	.084	-.017	-.058	.130	-.160	.043	-.060
	Sig. (2-tailed)	.185	.188	.	.875	.881	.713	.537	.163	.609	.417	.866	.555	.195	.110	.668	.558
	N	103	103	104	104	102	99	101	101	100	95	103	104	101	101	100	99
ENG	Pearson Correlation	.455*	.241*	-.016	1	.254*	.286*	.055	-.219*	.094	-.004	.106	.016	.004	-.176	.061	.049
	Sig. (2-tailed)	.000	.014	.875	.	.010	.004	.588	.028	.354	.967	.287	.869	.966	.079	.547	.627
	N	103	103	104	104	102	99	101	101	100	95	103	104	101	101	100	99
SE	Pearson Correlation	.295*	.179	-.015	.254*	1	.379*	.389*	-.116	.554*	.399*	.331*	.396*	.216*	-.274*	.381*	.156
	Sig. (2-tailed)	.003	.072	.881	.010	.	.000	.000	.249	.000	.000	.001	.000	.030	.006	.000	.123
	N	101	102	102	102	103	99	101	100	98	94	102	103	101	100	100	99
LOC	Pearson Correlation	.138	.038	.037	.286*	.379*	1	.237*	-.046	.309*	.297*	.358*	.350*	.024	-.244*	.340*	.076
	Sig. (2-tailed)	.174	.707	.713	.004	.000	.	.018	.655	.002	.004	.000	.000	.813	.016	.001	.461
	N	98	99	99	99	99	100	99	97	95	90	99	100	97	97	96	95
INT	Pearson Correlation	.275*	.165	-.062	.055	.389*	.237*	1	-.033	.519*	.589*	.241*	.434*	.089	.031	.232*	.409*
	Sig. (2-tailed)	.006	.099	.537	.588	.000	.018	.	.745	.000	.000	.015	.000	.379	.758	.021	.000
	N	100	101	101	101	101	99	102	99	97	92	101	102	99	99	98	97
EXT	Pearson Correlation	-.206*	-.314*	.140	-.219*	-.116	-.046	-.033	1	-.126	-.004	-.121	.011	-.151	.356*	-.206*	.086
	Sig. (2-tailed)	.039	.001	.163	.028	.249	.655	.745	.	.218	.972	.229	.912	.136	.000	.042	.407
	N	100	100	101	101	100	97	99	101	98	93	100	101	98	98	98	96
MET	Pearson Correlation	.263*	.146	.052	.094	.554*	.309*	.519*	-.126	1	.607*	.549*	.491*	.026	-.190	.451*	.227*
	Sig. (2-tailed)	.009	.148	.609	.354	.000	.002	.000	.218	.	.000	.000	.000	.801	.061	.000	.027
	N	99	99	100	100	98	95	97	98	100	93	99	100	97	98	97	95
RES	Pearson Correlation	.162	-.042	.084	-.004	.399*	.297*	.589*	-.004	.607*	1	.571*	.511*	.122	-.059	.475*	.342*
	Sig. (2-tailed)	.118	.688	.417	.967	.000	.004	.000	.972	.000	.	.000	.000	.240	.573	.000	.001
	N	94	94	95	95	94	90	92	93	93	95	94	95	94	93	93	92
COG	Pearson Correlation	.217*	.083	-.017	.106	.331*	.358*	.241*	-.121	.549*	.571*	1	.356*	-.094	-.131	.401*	.146
	Sig. (2-tailed)	.028	.406	.866	.287	.001	.000	.015	.229	.000	.000	.	.000	.349	.190	.000	.150
	N	102	103	103	103	102	99	101	100	99	94	104	104	101	101	100	99
AGR	Pearson Correlation	-.025	.047	-.058	.016	.396*	.350*	.434*	.011	.491*	.511*	.356*	1	.100	-.127	.390*	.438*
	Sig. (2-tailed)	.801	.636	.555	.869	.000	.000	.000	.912	.000	.000	.000	.	.317	.202	.000	.000
	N	103	104	104	104	103	100	102	101	100	95	104	105	102	102	101	100
XTR	Pearson Correlation	.067	.053	.130	.004	.216*	.024	.089	-.151	.026	.122	-.094	.100	1	-.008	-.133	.200*
	Sig. (2-tailed)	.510	.596	.195	.966	.030	.813	.379	.136	.801	.240	.349	.317	.	.937	.186	.049
	N	100	101	101	101	101	97	99	98	97	94	101	102	102	99	100	98
NEU	Pearson Correlation	-.126	-.065	-.160	-.176	-.274*	-.244*	.031	.356*	-.190	-.059	-.131	-.127	-.008	1	-.419*	.097
	Sig. (2-tailed)	.212	.520	.110	.079	.006	.016	.758	.000	.061	.573	.190	.202	.937	.	.000	.342
	N	100	101	101	101	100	97	99	98	98	93	101	102	99	102	98	98
CON	Pearson Correlation	.101	.000	.043	.061	.381*	.340*	.232*	-.206*	.451*	.475*	.401*	.390*	-.133	-.419*	1	.195
	Sig. (2-tailed)	.319	1.000	.668	.547	.000	.001	.021	.042	.000	.000	.000	.000	.186	.000	.	.056
	N	99	100	100	100	100	96	98	98	97	93	100	101	100	98	101	97
OPE	Pearson Correlation	.136	-.008	-.060	.049	.156	.076	.409*	.086	.227*	.342*	.146	.438*	.200*	.097	.195	1
	Sig. (2-tailed)	.183	.941	.558	.627	.123	.461	.000	.407	.027	.001	.150	.000	.049	.342	.056	.
	N	98	99	99	99	99	95	97	96	95	92	99	100	98	98	97	100

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

According to Table 4.20, the academic performance of students in their third year of study significantly positively relates to students' chronological age, English language proficiency, self-efficacy, intrinsic goal orientation and metacognitive and cognitive learning strategies at $p \leq 0.05$. However their academic performance significantly negatively related to the extrinsic goal orientation. Significant positive relations are observed between the students' chronological age and English Language proficiency, while negative relations are observed between chronological age and the extrinsic goal orientation. With reference to English Language proficiency, significant positive relations are observed with self-efficacy and internal locus of control, while negative relations are observed with the extrinsic goal orientation. Self-efficacy is also observed to have significant positive relations with intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and the personality traits of agreeableness, extraversion and conscientiousness, but negative relations with neuroticism. The intrinsic goal orientation is depicted as having significant positive relations with internal locus of control, metacognitive, resource management and cognitive learning strategies and the personality traits of agreeableness, conscientiousness and openness-to-experience. Metacognitive learning strategies are also depicted as having significant positive effects with internal locus of control, resource management and cognitive learning strategies and the personality traits of agreeableness, conscientiousness and openness-to-experience. While cognitive learning strategies are observed to significantly correlate with internal locus of control, resource management learning strategies, agreeableness and conscientiousness traits. Conversely, extrinsic goal orientation is observed to also significantly positively relate to the neuroticism trait and negatively to the conscientiousness trait.

The students' final high school grade, internal locus of control, resource management strategies and personality traits of agreeableness, extraversion, neuroticism, conscientiousness and openness-to-experience are portrayed as not having significant relationships with the academic performance of students in their third year of study. Due to its inability to significantly correlate with any other variables that were identified to have significant correlations with the academic performance of students in their third year of study at $p \leq 0.05$, the students' final high school grade was eliminated from further analyses

in determining the model that best explains the factors that contribute to the academic performance of students in their third year of study.

4.3.11 Correlations among students in the fourth year of study

Table 4.21 shows the relationships between the variables of students in their fourth year of study.

Table 4.21 Correlations among the variables of students in their fourth year of study

Correlations

	UMGP	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGI Pearson Cor	1	-.030	.414*	.223*	.228*	.014	.033	-.211*	.151	-.001	.097	.218*	.002	-.067	.123	-.011
Sig. (2-tailed)	.	.766	.000	.025	.024	.887	.741	.038	.147	.991	.340	.032	.981	.514	.228	.918
N	101	99	99	101	97	99	100	97	94	94	100	97	97	97	98	98
AGE Pearson Cor	-.030	1	-.037	-.078	.252*	.156	.168	-.290*	.041	.078	-.057	.039	.151	-.014	.141	.026
Sig. (2-tailed)	.766	.	.711	.437	.011	.116	.090	.003	.691	.446	.569	.699	.135	.892	.160	.798
N	99	104	102	101	100	102	103	100	97	98	103	99	99	100	101	101
FGRAC Pearson Cor	.414*	-.037	1	.221*	.074	-.053	-.131	.010	-.013	-.150	-.084	.091	-.021	-.081	.013	.088
Sig. (2-tailed)	.000	.711	.	.026	.470	.598	.191	.921	.897	.142	.399	.371	.836	.423	.899	.384
N	99	102	103	101	99	101	102	99	96	97	102	98	99	99	100	100
ENG Pearson Cor	.223*	-.078	.221*	1	.046	-.165	-.013	-.003	-.036	-.040	-.157	.087	.021	-.140	-.045	.161
Sig. (2-tailed)	.025	.437	.026	.	.652	.099	.894	.974	.730	.699	.114	.390	.834	.166	.660	.110
N	101	101	101	103	99	101	102	99	96	96	102	99	99	99	100	100
SE Pearson Cor	.228*	.252*	.074	.046	1	.329*	.458*	.075	.457*	.316*	.209*	.399*	.046	-.052	.322*	.243*
Sig. (2-tailed)	.024	.011	.470	.652	.	.001	.000	.464	.000	.002	.035	.000	.655	.611	.001	.015
N	97	100	99	99	102	101	101	98	96	95	102	98	98	99	99	100
LOC Pearson Cor	.014	.156	-.053	-.165	.329*	1	.219*	-.049	.113	.221*	.077	.246*	.007	-.033	.167	-.001
Sig. (2-tailed)	.887	.116	.598	.099	.001	.	.026	.626	.270	.029	.437	.014	.945	.741	.095	.995
N	99	102	101	101	101	104	103	100	97	97	103	100	100	101	101	101
INT Pearson Cor	.033	.168	-.131	-.013	.458*	.219*	1	.069	.420*	.376*	.216*	.226*	.166	-.097	.215*	.240*
Sig. (2-tailed)	.741	.090	.191	.894	.000	.026	.	.493	.000	.000	.027	.024	.100	.336	.030	.015
N	100	103	102	102	101	103	105	101	98	98	104	100	100	101	102	102
EXT Pearson Cor	-.211*	-.290*	.010	-.003	.075	-.049	.069	1	.139	.020	-.061	.056	-.172	.062	-.084	-.011
Sig. (2-tailed)	.038	.003	.921	.974	.464	.626	.493	.	.173	.842	.545	.584	.090	.541	.404	.913
N	97	100	99	99	98	100	101	102	98	98	101	98	98	99	100	100
MET Pearson Cor	.151	.041	-.013	-.036	.457*	.113	.420*	.139	1	.569*	.435*	.327*	.294*	-.143	.507*	.209*
Sig. (2-tailed)	.147	.691	.897	.730	.000	.270	.000	.173	.	.000	.000	.001	.004	.168	.000	.041
N	94	97	96	96	96	97	98	98	99	95	99	94	94	95	96	96
RES Pearson Cor	-.001	.078	-.150	-.040	.316*	.221*	-.376*	.020	.569*	1	.466*	.257*	.211*	-.147	.497*	.019
Sig. (2-tailed)	.991	.446	.142	.699	.002	.029	.000	.842	.000	.	.000	.012	.041	.156	.000	.856
N	94	98	97	96	95	97	98	98	95	99	98	94	94	95	96	96
COG Pearson Cor	.097	-.057	-.084	-.157	.209*	.077	.216*	-.061	.435*	.466*	1	.160	-.013	-.065	.325*	.025
Sig. (2-tailed)	.340	.569	.399	.114	.035	.437	.027	.545	.000	.000	.	.112	.899	.516	.001	.802
N	100	103	102	102	102	103	104	101	99	98	105	100	100	101	102	102
AGR Pearson Cor	.218*	.039	.091	.087	.399*	.246*	.226*	.056	.327*	.257*	.160	1	.025	-.336*	.450*	.178
Sig. (2-tailed)	.032	.699	.371	.390	.000	.014	.024	.584	.001	.012	.112	.	.809	.001	.000	.076
N	97	99	98	99	98	100	100	98	94	94	100	101	99	99	100	100
XTR Pearson Cor	.002	.151	-.021	.021	.046	.007	.166	-.172	.294*	.211*	-.013	.025	1	-.136	.091	.179
Sig. (2-tailed)	.981	.135	.836	.834	.655	.945	.100	.090	.004	.041	.899	.809	.	.179	.369	.075
N	97	99	99	99	98	100	100	98	94	94	100	99	101	99	100	100
NEU Pearson Cor	-.067	-.014	-.081	-.140	-.052	-.033	-.097	.062	-.143	-.147	-.065	-.336*	-.136	1	-.467*	-.251*
Sig. (2-tailed)	.514	.892	.423	.166	.611	.741	.336	.541	.168	.156	.516	.001	.179	.	.000	.011
N	97	100	99	99	99	101	101	99	95	95	101	99	99	102	101	102
CON Pearson Cor	.123	.141	.013	-.045	.322*	.167	.215*	-.084	.507*	.497*	.325*	.450*	.091	-.467*	1	.244*
Sig. (2-tailed)	.228	.160	.899	.660	.001	.095	.030	.404	.000	.000	.001	.000	.369	.000	.	.013
N	98	101	100	100	99	101	102	100	96	96	102	100	100	101	103	102
OPE Pearson Cor	-.011	.026	.088	.161	.243*	-.001	.240*	-.011	.209*	.019	.025	.178	.179	-.251*	.244*	1
Sig. (2-tailed)	.918	.798	.384	.110	.015	.995	.015	.913	.041	.856	.802	.076	.075	.011	.013	.
N	98	101	100	100	100	101	102	100	96	96	102	100	100	102	102	103

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.21, the academic performance of students in their fourth year of study significantly positively relates to their final high school grade, English language proficiency, self-efficacy and the agreeable trait, but negatively to the extrinsic goal orientation at $p \leq 0.05$. A significant positive correlation is observed between the final high

school grade and English Language proficiency. On the other hand, self-efficacy is observed to significantly positively relate to chronological age, internal locus of control, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies, agreeableness, conscientiousness and openness-to-experience. The agreeableness personality trait also appears to significantly positively correlate with internal locus of control, intrinsic goal orientation, metacognitive and resource management learning strategies and conscientiousness, but negatively with neuroticism. Conversely, extrinsic goal orientation is depicted as significantly negatively correlating with chronological age.

Table 4.21 portrays students' chronological age, internal locus of control, intrinsic goal orientation, metacognitive learning, cognitive learning and resource management strategies and the personality traits of extraversion, neuroticism, conscientiousness and openness-to-experience as having no significant correlation with academic performance at $p \leq 0.05$. Due to its inability to significantly correlate with the variables that were portrayed to have significant relationships with the academic performance of the fourth year students at $p \leq 0.05$, extraversion was eliminated from further analyses.

4.3.12 Correlations among students taking business-based course majors

Table 4.22 shows the relationships between the variables of the students who were taking business-related courses.

Table 4.22 Correlations among the variables of students taking business-based courses

Correlations

	UMGP/	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGI Pearson Cor	1	.090	.397*	.190*	.193*	.143	.106	-.159*	.148	.050	.119	.016	.006	.030	.060	.014
Sig. (2-tailed)	.	.258	.000	.017	.016	.076	.187	.048	.069	.550	.138	.842	.945	.714	.455	.866
N	160	158	159	157	157	154	155	156	152	145	157	156	154	154	155	151
AGE Pearson Cor	.090	1	-.155*	-.014	.133	-.035	.123	-.312*	.022	-.013	.002	.057	.124	.046	-.029	-.028
Sig. (2-tailed)	.258	.	.048	.864	.092	.659	.122	.000	.789	.875	.980	.472	.121	.568	.713	.731
N	158	164	164	158	161	158	159	160	156	151	162	159	158	158	159	155
FGRAC Pearson Cor	.397*	-.155*	1	.186*	.014	.035	-.141	-.019	.007	-.045	-.102	-.061	.044	-.061	.032	-.044
Sig. (2-tailed)	.000	.048	.	.019	.855	.663	.075	.811	.933	.582	.195	.445	.578	.445	.685	.583
N	159	164	165	159	162	159	160	161	157	151	162	160	159	159	160	156
ENG Pearson Cor	.190*	-.014	.186*	1	.040	-.139	.002	-.018	-.048	-.055	-.143	.067	.005	-.079	-.062	.119
Sig. (2-tailed)	.017	.864	.019	.	.622	.084	.982	.819	.561	.510	.074	.408	.946	.329	.441	.144
N	157	158	159	160	157	155	155	156	152	145	157	156	154	154	155	151
SE Pearson Cor	.193*	.133	.014	.040	1	.424*	.475*	-.025	.480*	.341*	.325*	.253*	.230*	-.099	.231*	.091
Sig. (2-tailed)	.016	.092	.855	.622	.	.000	.000	.754	.000	.000	.000	.001	.004	.217	.003	.261
N	157	161	162	157	163	158	159	160	155	148	160	158	157	158	158	155
LOC Pearson Cor	.143	-.035	.035	-.139	.424*	1	.297*	-.018	.287*	.307*	.354*	.193*	.007	-.049	.228*	-.011
Sig. (2-tailed)	.076	.659	.663	.084	.000	.	.000	.825	.000	.000	.000	.016	.932	.545	.004	.892
N	154	158	159	155	158	160	157	157	152	147	157	156	155	155	155	152
INT Pearson Cor	.106	.123	-.141	.002	.475*	.297*	1	.024	.444*	.391*	.273*	.376*	.100	-.023	.227*	.274*
Sig. (2-tailed)	.187	.122	.075	.982	.000	.000	.	.765	.000	.000	.001	.000	.214	.781	.004	.001
N	155	159	160	155	159	157	161	158	153	146	158	156	155	155	156	152
EXT Pearson Cor	-.159*	-.312*	-.019	-.018	-.025	-.018	.024	1	.055	.092	-.013	.142	-.083	.144	-.046	.033
Sig. (2-tailed)	.048	.000	.811	.819	.754	.825	.765	.	.496	.265	.873	.077	.302	.072	.563	.689
N	156	160	161	156	160	157	158	162	156	149	159	157	156	156	158	153
MET Pearson Cor	.148	.022	.007	-.048	.480*	.287*	.444*	.055	1	.613*	.514*	.363*	.200*	-.153	.348*	.101
Sig. (2-tailed)	.069	.789	.933	.561	.000	.000	.000	.496	.	.000	.000	.000	.014	.060	.000	.222
N	152	156	157	152	155	152	153	156	158	146	156	153	152	152	154	149
RES Pearson Cor	.050	-.013	-.045	-.055	.341*	.307*	.391*	.092	.613*	1	.584*	.350*	.144	-.131	.401*	.079
Sig. (2-tailed)	.550	.875	.582	.510	.000	.000	.265	.000	.000	.	.000	.000	.083	.113	.000	.349
N	145	151	151	145	148	147	146	149	146	151	149	147	146	147	148	144
COG Pearson Cor	.119	.002	-.102	-.143	.325*	.354*	.273*	-.013	.514*	.584*	1	.239*	.077	-.074	.269*	.045
Sig. (2-tailed)	.138	.980	.195	.074	.000	.000	.001	.873	.000	.000	.	.002	.337	.357	.001	.577
N	157	162	162	157	160	157	158	159	156	149	163	158	157	157	158	154
AGR Pearson Cor	.016	.057	-.061	.067	.253*	.193*	.376*	.142	.363*	.350*	.239*	1	.105	-.071	.234*	.296*
Sig. (2-tailed)	.842	.472	.445	.408	.001	.016	.000	.077	.000	.000	.002	.	.189	.373	.003	.000
N	156	159	160	156	158	156	156	157	153	147	158	161	159	158	158	155
XTR Pearson Cor	.006	.124	.044	-.005	.230*	.007	.100	-.083	.200*	.144	.077	.105	1	-.196*	-.030	.096
Sig. (2-tailed)	.945	.121	.578	.946	.004	.932	.214	.302	.014	.083	.337	.189	.	.014	.711	.238
N	154	158	159	154	157	155	155	156	152	146	157	159	160	157	157	154
NEU Pearson Cor	.030	.046	-.061	-.079	-.099	-.049	-.023	.144	-.153	-.131	-.074	-.071	-.196*	1	-.457*	-.090
Sig. (2-tailed)	.714	.568	.445	.329	.217	.545	.781	.072	.060	.113	.357	.373	.014	.	.000	.265
N	154	158	159	154	158	155	155	156	152	147	157	158	157	160	157	155
CON Pearson Cor	.060	-.029	.032	-.062	.231*	.228*	.227*	-.046	.348*	.401*	.269*	.234*	-.030	-.457*	1	.158*
Sig. (2-tailed)	.455	.713	.685	.441	.003	.004	.004	.563	.000	.000	.001	.003	.711	.000	.	.050
N	155	159	160	155	158	155	156	158	154	148	158	158	157	157	161	154
OPE Pearson Cor	.014	-.028	-.044	.119	.091	-.011	.274*	.033	.101	.079	.045	.296*	.096	-.090	.158*	1
Sig. (2-tailed)	.866	.731	.583	.144	.261	.892	.001	.689	.222	.349	.577	.000	.238	.265	.050	.
N	151	155	156	151	155	152	152	153	149	144	154	155	154	155	154	157

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 4.22 shows significant positive correlations between the academic performance of students taking business-based course and final high school grade, English Language proficiency and self-efficacy and negative correlations with extrinsic goal orientations at $p \leq 0.05$. Table 4.22 depicts final high school grade as having significant positive relations

with English Language proficiency and negative relations with chronological age. On the other hand, self-efficacy is depicted as having significant positive relations with internal locus of control, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and with the personality traits of agreeableness, extraversion and conscientiousness. Conversely, extrinsic goal orientations are observed to significantly negatively relate to chronological age with older students reflecting lower levels of extrinsic goal orientation than their younger counterparts.

The students' chronological age, internal locus of control, intrinsic goal orientation, metacognitive learning, resource management and cognitive learning strategies and the personality traits of agreeableness, extraversion, neuroticism, conscientiousness and openness-to-experience are portrayed as having no significant correlations with the academic performance of students taking business-related courses at $p \leq 0.05$. However, the variables of chronological age, internal locus of control, intrinsic goal orientation, metacognitive learning, resource management and cognitive learning strategies and the personality traits of agreeableness, extraversion and conscientiousness could not be ignored in determining the model that best explained the contributions of various variables to the academic performance of students taking business-related courses due to the significance of their relationship with one or more variables that were portrayed as having significant correlations with the academic performance of students taking business-related courses at $p \leq 0.05$

4.3.13 Correlations among students taking art-based course majors

Table 4.23 reflects the relationship between the variables of the students taking art-based courses.

Table 4.23 Correlations among the variables of students taking art-related courses

		Correlations															
		UMGPJ	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGF	Pearson Corr	1	.033	.110	.548*	.194*	.148	.178*	-.008	.152	.128	.085	.062	-.092	.009	.211*	.055
	Sig. (2-tailed)	.	.683	.173	.000	.016	.068	.030	.921	.062	.124	.295	.449	.261	.913	.009	.509
	N	155	154	154	154	152	153	149	152	152	145	154	150	151	153	153	146
AGE	Pearson Corr	.033	1	-.309*	.121	.057	-.070	.165*	-.217*	-.065	-.115	-.147	.116	.092	.055	-.012	.071
	Sig. (2-tailed)	.683	.	.000	.135	.484	.391	.044	.007	.427	.168	.067	.157	.264	.500	.884	.392
	N	154	156	153	153	153	154	150	152	152	145	155	151	151	154	154	147
FGRAC	Pearson Corr	.110	-.309*	1	-.003	.010	.044	-.086	.144	-.006	.046	.165*	-.160	-.054	.030	-.021	.012
	Sig. (2-tailed)	.173	.000	.	.974	.906	.594	.301	.077	.938	.581	.042	.051	.510	.716	.800	.884
	N	154	153	154	153	151	152	148	151	151	144	153	149	150	152	152	145
ENG	Pearson Corr	.548*	.121	-.003	1	.144	.163*	.104	-.197*	.017	-.088	-.016	-.051	-.083	-.133	.120	.096
	Sig. (2-tailed)	.000	.135	.974	.	.078	.044	.207	.015	.839	.293	.846	.540	.314	.102	.140	.249
	N	154	153	153	154	151	152	148	151	151	144	153	149	150	152	152	145
SE	Pearson Corr	.194*	.057	.010	.144	1	.308*	.414*	-.051	.380*	.369*	.290*	.396*	.057	-.108	.289*	.040
	Sig. (2-tailed)	.016	.484	.906	.078	.	.000	.000	.535	.000	.000	.000	.000	.492	.186	.000	.629
	N	152	153	151	151	154	152	149	150	150	144	153	149	149	152	152	146
LOC	Pearson Corr	.148	-.070	.044	.163*	.308*	1	.234*	-.029	.177*	.237*	.225*	.309*	.068	-.170*	.252*	.180*
	Sig. (2-tailed)	.068	.391	.594	.044	.000	.	.004	.728	.030	.004	.005	.000	.410	.036	.002	.029
	N	153	154	152	152	152	155	149	151	151	145	154	150	150	153	153	146
INT	Pearson Corr	.178*	.165*	-.086	.104	.414*	.234*	1	.013	.433*	.444*	.204*	.308*	.205*	.021	.307*	.225*
	Sig. (2-tailed)	.030	.044	.301	.207	.000	.004	.	.873	.000	.000	.012	.000	.013	.803	.000	.007
	N	149	150	148	148	149	149	151	147	147	142	150	147	147	150	149	144
EXT	Pearson Corr	-.008	-.217*	.144	-.197*	-.051	-.029	.013	1	.014	-.080	.043	-.094	-.024	.150	-.177*	.049
	Sig. (2-tailed)	.921	.007	.077	.015	.535	.728	.873	.	.868	.342	.600	.253	.774	.067	.029	.561
	N	152	152	151	151	150	151	147	153	151	144	152	148	148	151	151	144
MET	Pearson Corr	.152	-.065	-.006	.017	.380*	.177*	.433*	.014	1	.631*	.614*	.443*	-.087	-.202*	.557*	.180*
	Sig. (2-tailed)	.062	.427	.938	.839	.000	.030	.000	.868	.	.000	.000	.000	.292	.013	.000	.030
	N	152	152	151	151	150	151	147	151	153	144	152	148	148	151	151	144
RES	Pearson Corr	.128	-.115	.046	-.088	.369*	.237*	.444*	-.080	.631*	1	.511*	.373*	.069	-.166*	.598*	.181*
	Sig. (2-tailed)	.124	.168	.581	.293	.000	.004	.000	.342	.000	.	.000	.000	.416	.047	.000	.034
	N	145	145	144	144	144	145	142	144	144	146	145	141	142	144	144	138
COG	Pearson Corr	.085	-.147	.165*	-.016	.290*	.225*	.204*	.043	.614*	.511*	1	.293*	-.099	-.183*	.479*	.157
	Sig. (2-tailed)	.295	.067	.042	.846	.000	.005	.012	.600	.000	.000	.	.000	.226	.023	.000	.058
	N	154	155	153	153	153	154	150	152	152	145	156	151	151	154	155	147
AGR	Pearson Corr	.062	.116	-.160	-.051	.396*	.309*	.308*	-.094	.443*	.373*	.293*	1	.074	-.235*	.360*	.125
	Sig. (2-tailed)	.449	.157	.051	.540	.000	.000	.000	.253	.000	.000	.000	.	.373	.004	.000	.135
	N	150	151	149	149	149	150	147	148	148	141	151	152	148	150	150	145
XTR	Pearson Corr	-.092	.092	-.054	-.083	.057	.068	.205*	-.024	-.087	.069	-.099	.074	1	-.053	-.042	.209*
	Sig. (2-tailed)	.261	.264	.510	.314	.492	.410	.013	.774	.292	.416	.226	.373	.	.516	.609	.012
	N	151	151	150	150	149	150	147	148	148	142	151	148	152	150	150	144
NEU	Pearson Corr	.009	.055	.030	-.133	-.108	-.170*	.021	.150	-.202*	-.166*	-.183*	-.235*	-.053	1	-.304*	-.142
	Sig. (2-tailed)	.913	.500	.716	.102	.186	.036	.803	.067	.013	.047	.023	.004	.516	.	.000	.086
	N	153	154	152	152	152	153	150	151	151	144	154	150	150	155	153	147
CON	Pearson Corr	.211*	-.012	-.021	.120	.289*	.252*	.307*	-.177*	.557*	.598*	.479*	.360*	-.042	-.304*	1	.189*
	Sig. (2-tailed)	.009	.884	.800	.140	.000	.002	.000	.029	.000	.000	.000	.000	.609	.000	.	.022
	N	153	154	152	152	152	153	149	151	151	144	155	150	150	153	155	146
OPE	Pearson Corr	.055	.071	.012	.096	.040	.180*	.225*	.049	.180*	.181*	.157	.125	.209*	-.142	.189*	1
	Sig. (2-tailed)	.509	.392	.884	.249	.629	.029	.007	.561	.030	.034	.058	.135	.012	.086	.022	.
	N	146	147	145	145	146	146	144	144	144	138	147	145	144	147	146	148

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.23, the academic performance of students taking art-based courses significantly positively relates to English Language proficiency, self-efficacy, intrinsic goal orientation and the conscientiousness personality trait at $p \leq 0.05$. English Language proficiency is portrayed as having significant positive relations with internal locus of

control and significant negative relations with extrinsic motivation. Self-efficacy, on the other hand, is portrayed as having significant positive relations with internal locus of control, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and conscientiousness. Intrinsic goal orientation is observed to have significant positive relations with chronological age, internal locus of control, metacognitive, resource management and cognitive learning strategies and the personality traits of agreeableness, extraversion, conscientiousness and openness-to-experience. Lastly, conscientiousness is also observed to have significant positive correlations with internal locus of control, metacognitive, resource management and cognitive learning strategies, agreeableness and openness-to-experience, but negative relations with extrinsic goal orientation and neuroticism.

The variables of chronological age, final high school grade, internal locus of control, extrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and the personality traits of agreeableness, extraversion, neuroticism, conscientiousness and openness-to-experience are portrayed as having no significant relationships with the academic performance of students taking art-related courses at $p \leq 0.05$. However, all, except the final high school grade, were considered for further analyses in determining the model that best explains the factors that contribute to the academic performance of students taking art-related courses, due to the significance of their relationships with one or more variables that are observed to have significant correlations with the academic performance of students taking art-related courses at $p \leq 0.05$.

4.3.14 Correlations among students taking science-based course majors

The relationship between the variables of students taking Science based courses is shown on Table 4.24.

Table 4.24 Correlations among the variables of students taking science-based courses

Correlations

	UMGPA	AGE	GRADE	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGF Pearson Corr	1	-.310	.468*	.685*	.071	-.092	-.305	-.374	.075	-.137	.137	.004	.112	-.269	.486*	-.246
Sig. (2-tailed)	.	.171	.028	.000	.755	.693	.192	.095	.746	.587	.542	.986	.639	.239	.025	.270
N	22	21	22	22	22	21	20	21	21	18	22	22	20	21	21	22
AGE Pearson Corr	-.310	1	-.208	-.182	-.134	.316	.407	-.155	-.538*	-.025	-.232	-.040	.196	.366	-.474*	-.152
Sig. (2-tailed)	.171	.	.353	.430	.552	.163	.067	.503	.012	.923	.299	.860	.409	.102	.030	.500
N	21	22	22	21	22	21	21	21	21	18	22	22	20	21	21	22
FGRAD Pearson Corr	.468*	-.208	1	.297	.000	-.048	-.243	-.197	.122	.339	-.275	.151	-.005	-.470*	.585*	-.214
Sig. (2-tailed)	.028	.353	.	.179	1.000	.831	.289	.380	.589	.155	.205	.490	.982	.027	.004	.327
N	22	22	23	22	23	22	21	22	22	19	23	23	21	22	22	23
ENG Pearson Corr	.685*	-.182	.297	1	.374	-.119	-.087	-.447*	.154	.103	.364	.109	.045	-.489*	.573*	-.116
Sig. (2-tailed)	.000	.430	.179	.	.086	.609	.716	.042	.505	.685	.096	.630	.850	.024	.007	.608
N	22	21	22	22	22	21	20	21	21	18	22	22	20	21	21	22
SE Pearson Corr	.071	-.134	.000	.374	1	-.189	.261	.020	.639*	.296	.327	.225	-.311	-.157	.264	.103
Sig. (2-tailed)	.755	.552	1.000	.086	.	.399	.253	.929	.001	.219	.128	.303	.170	.485	.236	.639
N	22	22	23	22	23	22	21	22	22	19	23	23	21	22	22	23
LOC Pearson Corr	-.092	.316	-.048	-.119	-.189	1	.286	.182	-.334	-.133	-.394	.028	.098	.204	.059	-.202
Sig. (2-tailed)	.693	.163	.831	.609	.399	.	.221	.431	.139	.598	.070	.903	.681	.364	.800	.367
N	21	21	22	21	22	22	20	21	21	18	22	22	20	22	21	22
INT Pearson Corr	-.305	.407	-.243	-.087	.261	.286	1	.289	-.098	.062	.134	-.018	.007	.267	-.247	.397
Sig. (2-tailed)	.192	.067	.289	.716	.253	.221	.	.217	.682	.807	.563	.937	.977	.256	.295	.075
N	20	21	21	20	21	20	21	20	20	18	21	21	19	20	20	21
EXT Pearson Corr	-.374	-.155	-.197	-.447*	.020	.182	.289	1	.266	.096	.091	.051	-.576*	.006	-.282	.130
Sig. (2-tailed)	.095	.503	.380	.042	.929	.431	.217	.	.232	.696	.688	.823	.008	.979	.216	.563
N	21	21	22	21	22	21	20	22	22	19	22	22	20	21	21	22
MET Pearson Corr	.075	-.538*	.122	.154	.639*	-.334	.098	.266	1	.169	.515*	.001	-.108	-.119	.320	.479*
Sig. (2-tailed)	.746	.012	.589	.505	.001	.139	.682	.232	.	.489	.014	.996	.650	.608	.157	.024
N	21	21	22	21	22	21	20	22	22	19	22	22	20	21	21	22
RES Pearson Corr	-.137	-.025	.339	.103	.296	-.133	.062	.096	.169	1	.212	.726*	-.478*	-.545*	.365	.169
Sig. (2-tailed)	.587	.923	.155	.685	.219	.598	.807	.696	.489	.	.383	.000	.045	.019	.136	.489
N	18	18	19	18	19	18	18	19	19	19	19	19	18	18	18	19
COG Pearson Corr	.137	-.232	-.275	.364	.327	-.394	.134	.091	.515*	.212	1	-.029	-.258	-.186	.151	.529*
Sig. (2-tailed)	.542	.299	.205	.096	.128	.070	.563	.688	.014	.383	.	.897	.258	.408	.503	.009
N	22	22	23	22	23	22	21	22	22	19	23	23	21	22	22	23
AGR Pearson Corr	.004	-.040	.151	.109	.225	.028	-.018	.051	.001	.726*	-.029	1	-.452*	-.244	.382	.027
Sig. (2-tailed)	.986	.860	.490	.630	.303	.903	.937	.823	.996	.000	.897	.	.040	.274	.079	.903
N	22	22	23	22	23	22	21	22	22	19	23	23	21	22	22	23
XTR Pearson Corr	.112	.196	-.005	.045	-.311	.098	.007	-.576*	-.108	-.478*	-.258	-.452*	1	.247	.056	.039
Sig. (2-tailed)	.639	.409	.982	.850	.170	.681	.977	.008	.650	.045	.258	.040	.	.294	.808	.866
N	20	20	21	20	21	20	19	20	20	18	21	21	21	20	21	21
NEU Pearson Corr	-.269	.366	-.470*	-.489*	-.157	.204	.267	.006	-.119	-.545*	-.186	-.244	.247	1	-.611*	-.013
Sig. (2-tailed)	.239	.102	.027	.024	.485	.364	.256	.979	.608	.019	.408	.274	.294	.	.003	.955
N	21	21	22	21	22	22	20	21	21	18	22	22	20	22	21	22
CON Pearson Corr	.486*	-.474*	.585*	.573*	.264	.059	-.247	-.282	.320	.365	.151	.382	.056	-.611*	1	.294
Sig. (2-tailed)	.025	.030	.004	.007	.236	.800	.295	.216	.157	.136	.503	.079	.808	.003	.	.183
N	21	21	22	21	22	21	20	21	21	18	22	22	21	21	22	22
OPE Pearson Corr	-.246	-.152	-.214	-.116	.103	-.202	.397	.130	.479*	.169	.529*	.027	.039	-.013	.294	1
Sig. (2-tailed)	.270	.500	.327	.608	.639	.367	.075	.563	.024	.489	.009	.903	.866	.955	.183	.
N	22	22	23	22	23	22	21	22	22	19	23	23	21	22	22	23

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Table 4.24 depicts significant positive correlations between the academic performance of students taking science-based courses and final high school grade, English language proficiency and conscientiousness at $p \leq 0.05$. English Language proficiency is portrayed as significantly positively correlating with conscientiousness and negatively with extrinsic

goal orientations, while final high school grade is portrayed to significantly positively correlate with conscientiousness. Conscientiousness is also observed to significantly negatively relate to students chronological age and neuroticism. However, Table 4.24 does not depict self-efficacy, internal locus of control, intrinsic goal orientation, metacognitive, resource management and cognitive learning strategies and the personality traits of agreeableness, extraversion and openness-to-experience as significantly relating to the other variables that are portrayed as being significantly associated to the academic performance of students taking science-based courses at $p \leq 0.05$. The former variables were therefore eliminated from further analyses in the model that best fits the variables that contribute to the academic performance of students taking science-related courses in the university.

4.3.15 Correlations among students taking social science-based course majors

Table 4.25 shows the relationship between the variables of the students taking social science related courses.

Table 4.25 Correlations among the variables of students taking social science-based courses

		CUMGPA	AGE	GRADE5	ENG	SE	LOC	INT	EXT	MET	RES	COG	AGR	XTR	NEU	CON	OPE
CUMGPA	Pearson Correlation	1	.066	.191	.560*	.066	.164	.265*	-.258*	.119	.046	.092	.273*	-.122	-.191	.162	.132
	Sig. (2-tailed)	.	.582	.105	.000	.588	.174	.025	.031	.333	.727	.445	.022	.329	.110	.181	.301
	N	73	72	73	72	69	70	71	70	68	61	71	70	66	71	70	63
AGE	Pearson Correlation	.066	1	-.043	-.104	.195	.167	.150	-.491*	.313*	.166	.044	.087	.062	-.260*	.290*	.129
	Sig. (2-tailed)	.582	.	.719	.388	.106	.163	.209	.000	.009	.197	.717	.470	.616	.028	.014	.311
	N	72	74	74	71	70	71	72	71	69	62	72	71	67	72	71	64
FGRAD	Pearson Correlation	.191	-.043	1	-.039	-.122	-.030	-.048	.213	.053	-.131	-.225	-.036	-.154	-.151	.014	-.039
	Sig. (2-tailed)	.105	.719	.	.744	.311	.805	.684	.073	.661	.306	.056	.763	.211	.204	.904	.758
	N	73	74	75	72	71	72	73	72	70	63	73	72	68	73	72	65
ENG	Pearson Correlation	.560*	-.104	-.039	1	-.152	-.021	.084	-.176	-.019	.091	.130	.109	-.012	-.141	.088	-.031
	Sig. (2-tailed)	.000	.388	.744	.	.215	.865	.490	.147	.877	.489	.285	.374	.927	.244	.475	.810
	N	72	71	72	72	68	69	70	69	67	60	70	69	65	70	69	62
SE	Pearson Correlation	.066	.195	-.122	-.152	1	.087	.304*	-.183	.316*	.330*	.103	.153	.118	-.205	.283*	.397*
	Sig. (2-tailed)	.588	.106	.311	.215	.	.478	.011	.135	.009	.010	.398	.208	.345	.090	.019	.001
	N	69	70	71	68	71	69	69	68	67	60	70	69	66	69	69	62
LOC	Pearson Correlation	.164	.167	-.030	-.021	.087	1	.355*	-.354*	.154	.150	-.009	.344*	.081	-.120	.269*	.133
	Sig. (2-tailed)	.174	.163	.805	.865	.478	.	.003	.003	.212	.252	.942	.004	.520	.321	.026	.304
	N	70	71	72	69	69	72	70	69	67	60	70	70	66	70	69	62
INT	Pearson Correlation	.265*	.150	-.048	.084	.304*	.355*	1	-.170	.360*	.328*	.266*	.283*	-.071	-.192	.214	.170
	Sig. (2-tailed)	.025	.209	.684	.490	.011	.003	.	.159	.002	.010	.025	.017	.569	.110	.075	.184
	N	71	72	73	70	69	70	73	70	69	61	71	71	66	71	70	63
EXT	Pearson Correlation	-.258*	-.491*	.213	-.176	-.183	-.354*	-.170	1	-.237	-.079	-.211	-.180	-.147	.138	-.219	-.108
	Sig. (2-tailed)	.031	.000	.073	.147	.135	.003	.159	.	.050	.541	.080	.136	.239	.250	.069	.400
	N	70	71	72	69	68	69	70	72	69	62	70	70	66	71	70	63
MET	Pearson Correlation	.119	.313*	.053	-.019	.316*	.154	.360*	-.237	1	.626*	.477*	.176	.060	-.271*	.583*	.064
	Sig. (2-tailed)	.333	.009	.661	.877	.009	.212	.002	.050	.	.000	.000	.152	.642	.024	.000	.626
	N	68	69	70	67	67	67	69	69	70	60	69	68	63	69	67	60
RES	Pearson Correlation	.046	.166	-.131	.091	.330*	.150	.328*	-.079	.626*	1	.457*	.129	.245	-.131	.579*	.150
	Sig. (2-tailed)	.727	.197	.306	.489	.010	.252	.010	.541	.000	.	.000	.324	.061	.316	.000	.263
	N	61	62	63	60	60	60	61	62	60	63	61	60	59	61	61	58
COG	Pearson Correlation	.092	.044	-.225	.130	.103	-.009	.266*	-.211	.477*	.457*	1	.102	-.036	-.145	.370*	.030
	Sig. (2-tailed)	.445	.717	.056	.285	.398	.942	.025	.080	.000	.000	.	.401	.772	.227	.002	.814
	N	71	72	73	70	70	70	71	70	69	61	73	70	66	71	70	63
AGR	Pearson Correlation	.273*	.087	-.036	.109	.153	.344*	.283*	-.180	.176	.129	.102	1	.003	-.321*	.254*	.200
	Sig. (2-tailed)	.022	.470	.763	.374	.208	.004	.017	.136	.152	.324	.401	.	.981	.006	.034	.116
	N	70	71	72	69	69	70	71	70	68	60	70	72	67	71	70	63
XTR	Pearson Correlation	-.122	.062	-.154	-.012	.118	.081	-.071	-.147	.060	.245	-.036	.003	1	-.162	.144	.263*
	Sig. (2-tailed)	.329	.616	.211	.927	.345	.520	.569	.239	.642	.061	.772	.981	.	.190	.246	.039
	N	66	67	68	65	66	66	66	66	63	59	66	67	68	67	67	62
NEU	Pearson Correlation	-.191	-.260*	-.151	-.141	-.205	-.120	-.192	.138	-.271*	-.131	-.145	-.321*	-.162	1	-.481*	-.240
	Sig. (2-tailed)	.110	.028	.204	.244	.090	.321	.110	.250	.024	.316	.227	.006	.190	.	.000	.056
	N	71	72	73	70	69	70	71	71	69	61	71	71	67	73	71	64
CON	Pearson Correlation	.162	.290*	.014	.088	.283*	.269*	.214	-.219	.583*	.579*	.370*	.254*	.144	-.481*	1	.232
	Sig. (2-tailed)	.181	.014	.904	.475	.019	.026	.075	.069	.000	.000	.002	.034	.246	.000	.	.066
	N	70	71	72	69	69	69	70	70	67	61	70	70	67	71	72	64
OPE	Pearson Correlation	.132	.129	-.039	-.031	.397*	.133	.170	-.108	.064	.150	.030	.200	.263*	-.240	.232	1
	Sig. (2-tailed)	.301	.311	.758	.810	.001	.304	.184	.400	.626	.263	.814	.116	.039	.056	.066	.
	N	63	64	65	62	62	62	63	63	60	58	63	63	62	64	64	65

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Table 4.25, the academic performance of students taking social science-related courses significantly positively relates to English language proficiency, intrinsic goal orientations and the agreeable personality trait, but negatively to the extrinsic goal

orientation at $p \leq 0.05$. The intrinsic goal orientation of students taking social science-based courses is observed to significantly positively relate to self-efficacy, internal locus of control, metacognitive, resource management and cognitive learning strategies and the agreeable personality trait. The agreeable personality trait is also identified as significantly positively relating to internal locus of control, and conscientiousness, but negatively to neuroticism. Conversely, extrinsic goal orientation appears to significantly negatively relate to chronological age and internal locus of control. It appears that the final high school grade does not significantly relate with the other variables in relation to the academic performance of students taking social science-based courses and therefore its consideration for further analyses was low.

4.4 CONCLUSIONS ON THE DESCRIPTIVE AND CORRELATION ANALYSES OF THE VARIABLES OF THE STUDY

In general, this section sought to establish significant differences in the means of the study variables in the various distinct groupings of gender, international students' status, campus of operation, year of study and course majors. Significant academic mean differences are observed between the distinct genders and also between the students' international students, with the female and local students outperforming the male and international students respectively in their academics. The age variable is also observed to significantly differ among the students in different years of study, different campuses of operations and taking different courses being taken by the students. There are younger students in the first year of study, the Athi River campus and among those taking science-based courses. On the other hand, the older students are in their fourth year of study, in the Nairobi campus and among those taking courses in the social sciences.

In order to provide an initial understanding of the relationships between the variables of the study in each unique group, correlation analyses were carried out. Of greatest importance to the study were the variables that significantly related to the students' academic performance in the university. The variables of final high school grade, English language proficiency, self-efficacy, intrinsic and extrinsic goal orientations and the conscientiousness variables are vastly portrayed as having significant relations with the students' academic performance in the various groupings of the study. However, the

personality trait variables of extraversion, neuroticism and openness-to-experience do not reveal significance in relation to the students' academic performance, although, in some groupings, they appear to relate with other variables that reveal significance in relation to the students' academic performance in the university. Two variables that distinctly reveal negative effects with other variables of the study are extrinsic goal orientation and the neuroticism trait. Variables that do not appear to correlate with other variables that significantly relate to academic performance were eliminated from further analyses in determining the models that best explain the factors that contribute to the academic performance of undergraduate students of the university.

In order to enhance understanding on the relationships between the variables of the study, and more specifically, in relation to the students' academic performance in the university, path analyses, in the form of structural equations were deemed necessary, as provided for in the next chapter. The insight obtained from the descriptive and correlation analyses was used to further inform the subsequent chapters of the study. More specifically, the information gathered from the correlation analyses was utilized in the adjusting of the models in an attempt to determine the models that best explain the contributions of the various factors to the academic performance of students in the university. The descriptive analyses were utilized in drawing conclusions on the factors that significantly contribute to the academic performance of the students in the university, once the most appropriate models were established.

CHAPTER FIVE

PATH MODELS OF FACTORS CONTRIBUTING TO STUDENTS' ACADEMIC PERFORMANCE

5.1 PATH ANALYSES OF ALL THE STUDENTS' ACADEMIC PERFORMANCE

The data of all the students of the study was initially subjected to the hypothesized model of factors contributing to the academic performance of undergraduate students (Figure 2.4) in order to establish the model's fit in relation to the data. The measures of goodness of fit of the hypothesized model are presented on Table 5.1.

Table 5.1 Measures of goodness of fit variables related to all the students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	54	250.183	98	.000	2.553
Saturated model	152	.000	0		
Independence model	16	1195.646	136	.000	8.792

2. Baseline comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.791	.710	.861	.801	.856
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. Root mean square error of approximation (RMSEA)

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.061	.052	.070	.028
Independence model	.136	.129	.143	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Chi-square measures revealed a p value of 0.00 as shown on Table 5.1. The chi-square measures were indicative of lack of any probability of discrepancies in the model, as occurred in the sample, thus the possibility of a rejected null hypothesis on the goodness of fit of the model. This may partly be attributed to the large sample size that renders the chi-square measure uncertain. According to Arbuckle (2006), for large samples as is the case when all the sampled students were considered, the chi-square measures have the tendency of reflecting significant differences between the model and the actual samples, thus the need for other measures to ascertain the goodness of fit of the model. Other measures were used to establish the goodness of fit of the initial model. The initial model had a CFI value of 0.856 and a RMSEA value of 0.61, both of which were indicative of an acceptable model but one that could be improved further.

Taking note of the significance of the regression weights of the model as provided on Table 5.2, and the correlation analysis of the variables provided on Table 4.11, modifications were made to the model.

Table 5.2 Regression weights of the paths of the model

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P
Goal	<--- att	1.171	.189	6.178	***
Self	<--- per	1.040	.206	5.055	***
Self	<--- goal	.538	.132	4.089	***
Self	<--- age	-.006	.003	-2.139	.032
Agr	<--- per	1.000			
Neu	<--- per	-1.097	.187	-5.864	***
Con	<--- per	1.996	.270	7.386	***
cumGPA	<--- fgrades	.184	.036	5.062	***
cumGPA	<--- eng	.038	.010	4.018	***
cumGPA	<--- self	.165	.044	3.770	***
Se	<--- att	1.195	.182	6.564	***
Loc	<--- att	1.000			
Ext	<--- goal	-.148	.119	-1.246	.213
Int	<--- goal	1.000			
Cog	<--- self	.803	.065	12.273	***
Met	<--- self	1.000			
Res	<--- self	.707	.050	14.243	***
Ope	<--- per	.603	.143	4.217	***
Xtr	<--- per	.205	.140	1.462	.144

Note:

S.E. represents an estimate of the standard error of the regression weights

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

According to Table 5.2, the regression path of the observed variable, extrinsic goal orientation, and the latent variable, goal orientations was not significance. In addition, the regression path of the observed variable, extraversion, and the latent variable, personality trait, were also considered insignificant. A review of the correlation analyses on Table 4.11 revealed a significant relationship between extrinsic goal orientation and students' academic performance at the university. However, no significant relationships were observed between the extraversion personality trait and the students' academic performance in the university. Therefore, the hypothesized model was initially modified through the removal of the extraversion variable and the adjustment of the extrinsic goal orientation variable to reflect direct effects on academic performance. The latent variable of goal orientation was also removed and in its place, the intrinsic goal orientation manifested variable was considered.

The goodness of fit measures of the final model of all the students of the university is presented on Table 5.3

Table 5.3 Measures of goodness of fit of the final model of the variables related to all the students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	53	172.724	82	.000	2.106
Saturated model	135	.000	0		
Independence model	15	1158.544	120	.000	9.655

2. Baseline comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.851	.782	.916	.872	.913
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. Root mean square error of approximation (RMSEA)

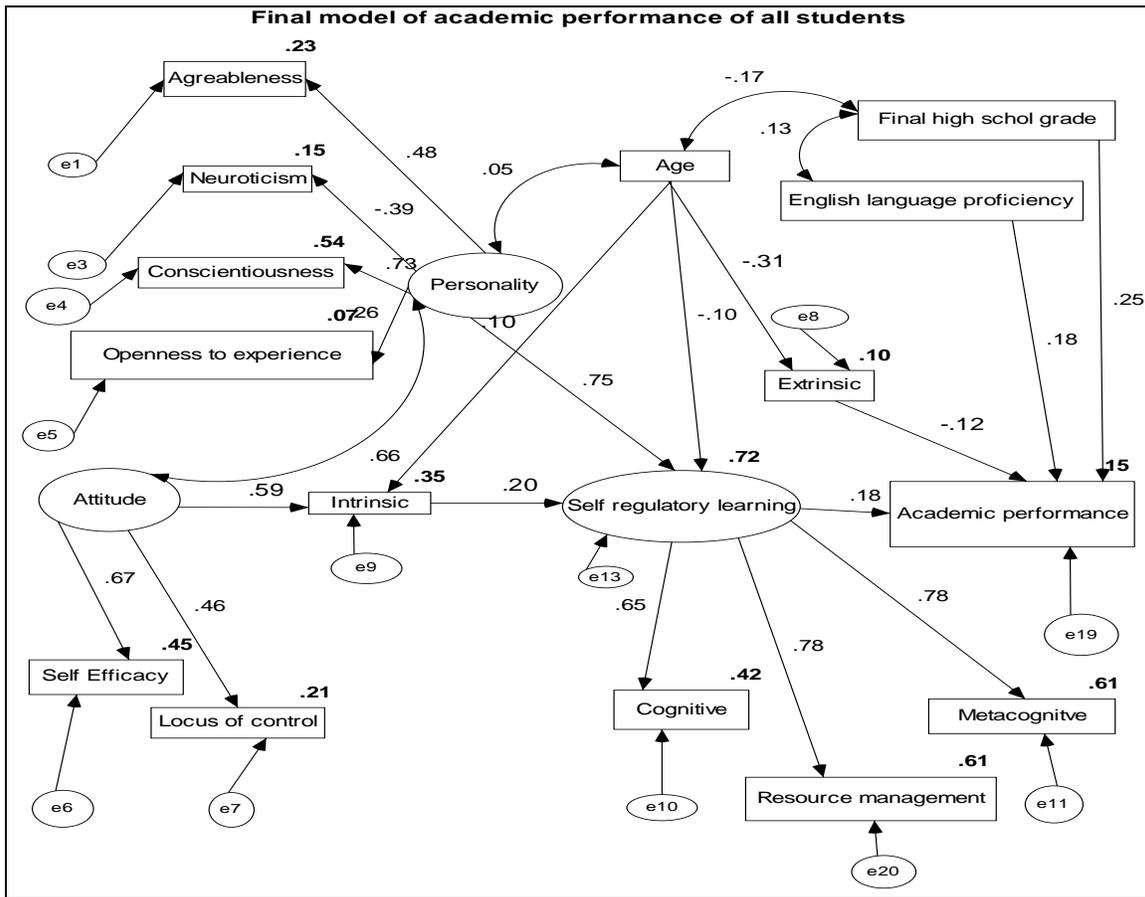
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.051	.041	.062	.404
Independence model	.144	.136	.151	.000

Note:

- NPAR represents the number of distinct parameters being estimated*
- CMIN represents the minimum value of discrepancy*
- DF represents the number of degrees of freedom for testing the model*
- P represents the probability of getting as large a discrepancy as occurred with the present sample*
- NFI represents the Normed Fit Index*
- RFI represents the Relative Fit Index*
- IFI represents the Incremental Fit Index*
- TLI represents the Tucker-Lewis Index*
- CFI represents the Comparative Fit Index*
- RMSEA represents the Root Mean Square Error of Approximation*
- LO90 represents the lower limit of a 90% confidence interval*
- HI90 represents the upper limit of a 90% confidence interval*
- PCLOSE represents the closeness of the fit to the population*

Although the chi-square measures did not reflect a good fit, the other measures of CFI (0.913), RMSEA (0.51) and PCLOSE (0.404) reflected good fits, thus its acceptance as a good model of the study. The adjusted model is presented on Figure 5.1.

Figure 5.1 Final model on the factors contributing to the academic performance of all the undergraduate students of the university



The e-variables shown on Figure 5.1 represent error variables that are latent in nature and include measurement errors and errors resulting from composites that were not measured in the study (Arbuckle 2006). The significances of the relationships represented on the model in Figure 5.1 are observed on Table 5.4.

Table 5.4 Regression weights and covariance estimates of the paths of the final model of all students

1. Regression Weights

		Estimate	S.E.	C.R.	P
Int	<--- att	1.063	.167	6.349	***
Int	<--- age	.008	.003	2.270	.023
Self	<--- age	-.006	.003	-2.033	.042
Self	<--- int	.165	.046	3.604	***
Ext	<--- age	-.031	.005	-6.554	***
Self	<--- per	1.374	.195	7.046	***
Agr	<--- per	1.000			
Neu	<--- per	-.965	.169	-5.696	***
Con	<--- per	1.800	.229	7.850	***
cumGPA	<--- fgrades	.191	.036	5.290	***
cumGPA	<--- eng	.037	.009	3.897	***
cumGPA	<--- self	.154	.044	3.517	***
Se	<--- att	1.134	.174	6.527	***
Loc	<--- att	1.000			
Cog	<--- self	.800	.066	12.138	***
Met	<--- self	1.000			
Res	<--- self	.706	.050	14.085	***
Ope	<--- per	.558	.134	4.167	***
cumGPA	<--- Ext	-.065	.025	-2.623	.009

2. Covariance estimates

		Estimate	S.E.	C.R.	P
att	<--> per	.059	.012	5.024	***
age	<--> per	.113	.123	.918	.359
fgrades	<--> age	-.740	.215	-3.446	***
fgrades	<--> eng	.144	.056	2.594	.009

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

According to Figure 5.1 and Table 5.4, students' self-regulatory learning strategies, extrinsic goal orientation, final high school grade and English Language proficiency have significant direct effects on the academic performance of students in the university at $p \leq 0.05$. The final high school grade (standardized regression weight = 0.25) is depicted as the highest contributor to students academic performance, while extrinsic goal orientation (standardized regression weight = -0.12) is considered to be the lowest contributor to the students academic performance. The model explains 15% of the variance of academic performance of all undergraduate students. In addition, the students' personality traits, age and intrinsic goal orientation have significant indirect effects on academic performance,

when mediated through self-regulatory learning strategies. The personality trait (standardized regression weight = 0.75) is depicted as the highest contributor to the self-regulatory learning strategies. Significant indirect effects of attitudes on academic performance are also observed when mediated through intrinsic goal orientations, which are further mediated through self-regulatory learning strategies at $p \leq 0.05$, an observation also made by Carroll and Garavalia (2004). The model also reveals significant loadings of the latent variable of self-regulatory learning strategies on metacognitive learning strategies, resource management and cognitive learning strategies; personality traits on agreeableness, neuroticism, conscientiousness and openness-to-experience; and attitudes on internal locus of control and self-efficacy at $p \leq 0.05$. Significant positive correlations are also observed between the attitudes and personality traits; and English Language proficiency and final high school grade, and negative correlations between age and final high school grade at $p \leq 0.05$.

5.2 PATH ANALYSES OF THE MALE STUDENTS' ACADEMIC PERFORMANCE

The data of the male students of the university was subjected to the hypothesized model in order to determine the model's fit. The model's fit is presented on Table 5.5.

Table 5.5 Measures of goodness of fit of initial model of the variables related to the male students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	143.840	97	.001	1.483
Saturated model	152	.000	0		
Independence model	16	480.437	136	.000	3.533

2. Baseline comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.701	.580	.878	.809	.864
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. Root mean square error of approximation (RMSEA)

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.058	.037	.077	.245
Independence model	.133	.120	.146	.000

Note:

NPAR represents the number of distinct parameters being estimated
CMIN represents the minimum value of discrepancy
DF represents the number of degrees of freedom for testing the model
P represents the probability of getting as large a discrepancy as occurred with the present sample
NFI represents the Normed Fit Index
RFI represents the Relative Fit Index
IFI represents the Incremental Fit Index
TLI represents the Tucker-Lewis Index
CFI represents the Comparative Fit Index
RMSEA represents the Root Mean Square Error of Approximation
LO90 represents the lower limit of a 90% confidence interval
HI90 represents the upper limit of a 90% confidence interval
PCLOSE represents the closeness of the fit to the population

The measures of CFI (0.864), RMSEA (0.058) and PCLOSE (0.245) on Table 5.5 are indicative of an acceptable but one that could be improved through modifying it. Table 5.6 provides the regression weights of the relationships of the variables of the hypothesized model for the male students of the university.

Table 5.6 Regression weights of the paths of the initial model for the male students

Regression Weights

		Estimate	S.E.	C.R.	P
Goal	<---att	.858	.203	4.223	***
Self	<---per	1.226	.290	4.233	***
Self	<---goal	.002	.160	.010	.992
Self	<---age	.009	.006	1.413	.158
Agr	<---per	1.000			
Neu	<---per	-.499	.211	-2.364	.018
Con	<---per	1.659	.316	5.253	***
cumGPA	<---fgrades	.203	.072	2.833	.005
cumGPA	<---eng	.025	.011	2.174	.030
cumGPA	<---self	.185	.092	2.013	.044
Se	<---att	.897	.199	4.502	***
Loc	<---att	1.000			
Ext	<---goal	-.002	.154	-.010	.992
Int	<---goal	1.000			
Cog	<---self	.727	.117	6.202	***
Met	<---self	1.000			
Res	<---self	.729	.088	8.332	***
Ope	<---per	.375	.170	2.212	.027
Xtr	<---per	.218	.186	1.169	.242

Note:

SE represents an estimate of the standard error of the regression weights

C.R. represents the critical ratio

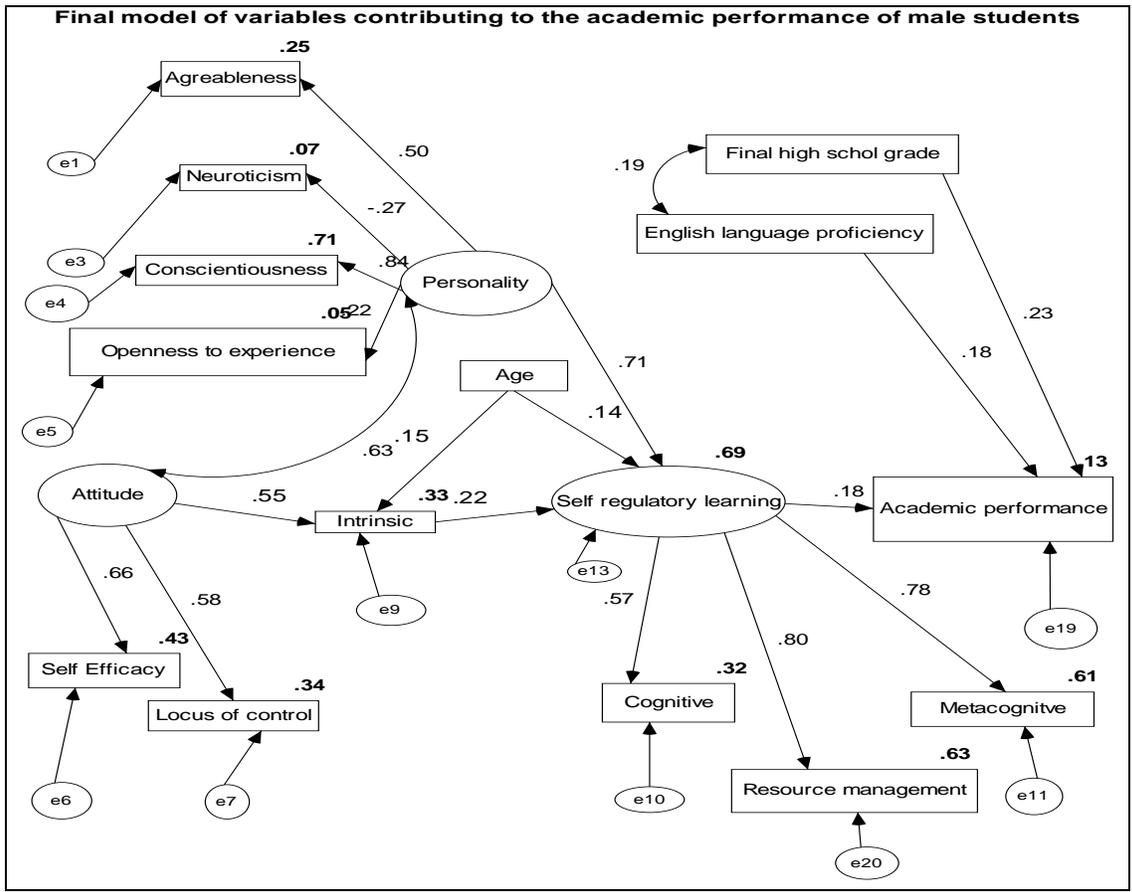
P represents the significance of the values

*** represents a significance level of 0.000

The estimates provided on Table 5.6 show insignificant paths between goal orientations and self-regulatory learning strategies; age and self-regulatory learning strategies; extrinsic goal orientation and the latent variable of goal orientation; and extraversion and the latent variable of personality traits at $p \leq 0.05$. Correlations of the variables of the male students provided on Table 4.12 show the extraversion trait as having no significant relations with the other personality traits except for the openness-to-experience trait. In addition, no significant relations are observed between the goal orientation variables of intrinsic and extrinsic goal orientations and the students' academic performance. However, significant relationships are observed between the intrinsic goal orientation and the self-regulatory learning strategies of metacognitive, resource management and cognitive learning strategies, but not with the extrinsic goal orientation. Chronological age is also observed to have relations with the two self-regulatory learning strategies of metacognitive and resource management but not with cognitive learning strategies. Taking note of the

observations made on Table 4.12 and Table 5.6, the hypothesized model was adjusted to yield the model presented on Figure 5.2 as a good model fitting the male students' predictive factors in relation to their academic performance in the university.

Figure 5.2 Final model on the factors contributing to the academic performance of the male students of the university



The final model for the male students has a good fit with a CFI value of 0.927 and a RMSEA value of 0.048 as shown on Table 5.7.

Table 5.7 Measures of goodness of fit of final model of the variables contributing to the male students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	47	95.795	72	.032	1.330
Saturated model	119	.000	0		
Independence model	14	432.408	105	.000	4.118

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.778	.677	.934	.894	.927
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. Root mean square error of approximation (RMSEA)

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.015	.072	.529
Independence model	.148	.133	.162	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Table 5.8 shows the regression weights and the covariance estimates of the variables contributing to the academic performance of the male students.

Table 5.8 Regression weights and covariance estimates of the paths of the final model of the male students

1. Regression Weights

		Estimate	S.E.	C.R.	P
Int	<--- att	.875	.206	4.257	***
Int	<--- age	.016	.008	2.026	.043
Self	<--- per	1.090	.239	4.565	***
Self	<--- age	.011	.006	1.891	.059
Self	<--- int	.164	.064	2.578	.010
Agr	<--- per	1.000			
Neu	<--- per	-.582	.221	-2.634	.008
Con	<--- per	1.796	.357	5.038	***
cumGPA	<--- fgrades	.203	.072	2.833	.005
cumGPA	<--- eng	.025	.011	2.185	.029
cumGPA	<--- self	.191	.092	2.081	.037
Se	<--- att	.916	.204	4.497	***
Loc	<--- att	1.000			
Cog	<--- self	.732	.117	6.247	***
Met	<--- self	1.000			
Res	<--- self	.728	.088	8.291	***
Ope	<--- per	.374	.174	2.146	.032

2. Covariance estimates

		Estimate	S.E.	C.R.	P
att	<--> per	.060	.012	5.047	***
fgrades	<--> eng	.146	.056	2.593	.010

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

Figure 5.2 and Table 5.8 depict significant direct effects of self-regulatory learning strategies, English Language proficiency and final high school grade on the academic performance of the male students of the university at $p \leq 0.05$. The contributions made by the final high school grade (standardized regression weight = 0.23) is considered to be the highest. The model explains 13% of the variance of academic performance among the male students of the university. The model depicts the students' personality traits and intrinsic goal orientation as having significant indirect effects on the academic performance of male students, when mediated through self-regulatory learning strategies. The personality trait (standardized regression weight = 0.71) is observed to have the greatest influence on the self-regulatory learning strategies. It also depicts significant indirect effect of male students' attitudes on academic performance when mediated through intrinsic goal

orientation, which is further mediated through self-regulatory learning strategies at $p \leq 0.05$. The model also reveals significant loadings of the latent variable of self-regulatory learning strategies on metacognitive learning strategies, resource management and cognitive learning strategies; personality traits on agreeableness, neuroticism, conscientiousness and openness-to-experience; and attitudes on internal locus of control and self-efficacy at $p \leq 0.05$. The male students' age is however observed to have a significant indirect effect on self-regulatory learning strategies when mediated through intrinsic goal orientation. Significant positive correlations are also observed between the students' attitudes and personality traits and between the final high school grade and English Language proficiency at $p \leq 0.05$.

5.3 PATH ANALYSES OF THE FEMALE STUDENTS' ACADEMIC PERFORMANCE

The data obtained from the female students was subjected to the hypothesized model. Table 5.9 represents the goodness of fit measures of the hypothesized model of the female students' data.

Table 5.9 Measures of goodness of fit of initial model of the variables related to the female students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	217.800	97	.000	2.245
Saturated model	152	.000	0		
Independence model	16	930.114	136	.000	6.839

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.766	.672	.855	.787	.848
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. Root mean square error of approximation (RMSEA)

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.067	.055	.079	.010
Independence model	.145	.137	.154	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The measures that are presented on Table 5.9 are indicative of a relatively weak fit of the hypothesized model onto the data, thus the need for modification of the model. Table 5.10 provides the regression weights of the relationships of the variables in the hypothesized model of the study.

Table 5.10 Regression weights of the variables of the initial model for the female students

1. Regression Weights

		Estimate	S.E.	C.R.	P
Goal	<--- Att	1.326	.296	4.472	***
Self	<--- Per	1.041	.280	3.723	***
Self	<--- Goal	.699	.177	3.958	***
Self	<--- Age	-.010	.003	-3.331	***
Agr	<--- Per	1.000			
Neu	<--- Per	-1.435	.282	-5.094	***
Con	<--- Per	2.087	.361	5.779	***
cumGPA	<--- fgrades	.158	.036	4.431	***
cumGPA	<--- Eng	.339	.034	9.876	***
cumGPA	<--- Self	.120	.041	2.901	.004
Se	<--- Att	1.365	.282	4.836	***
Loc	<--- Att	1.000			
Ext	<--- Goal	-.327	.170	-1.927	.054
Int	<--- Goal	1.000			
Cog	<--- Self	.831	.078	10.712	***
Met	<--- Self	1.000			
Res	<--- Self	.694	.059	11.797	***
Ope	<--- Per	.727	.206	3.532	***
Xtr	<--- Per	.168	.190	.881	.378

Note:

SE represents an estimate of the standard error of the regression weights

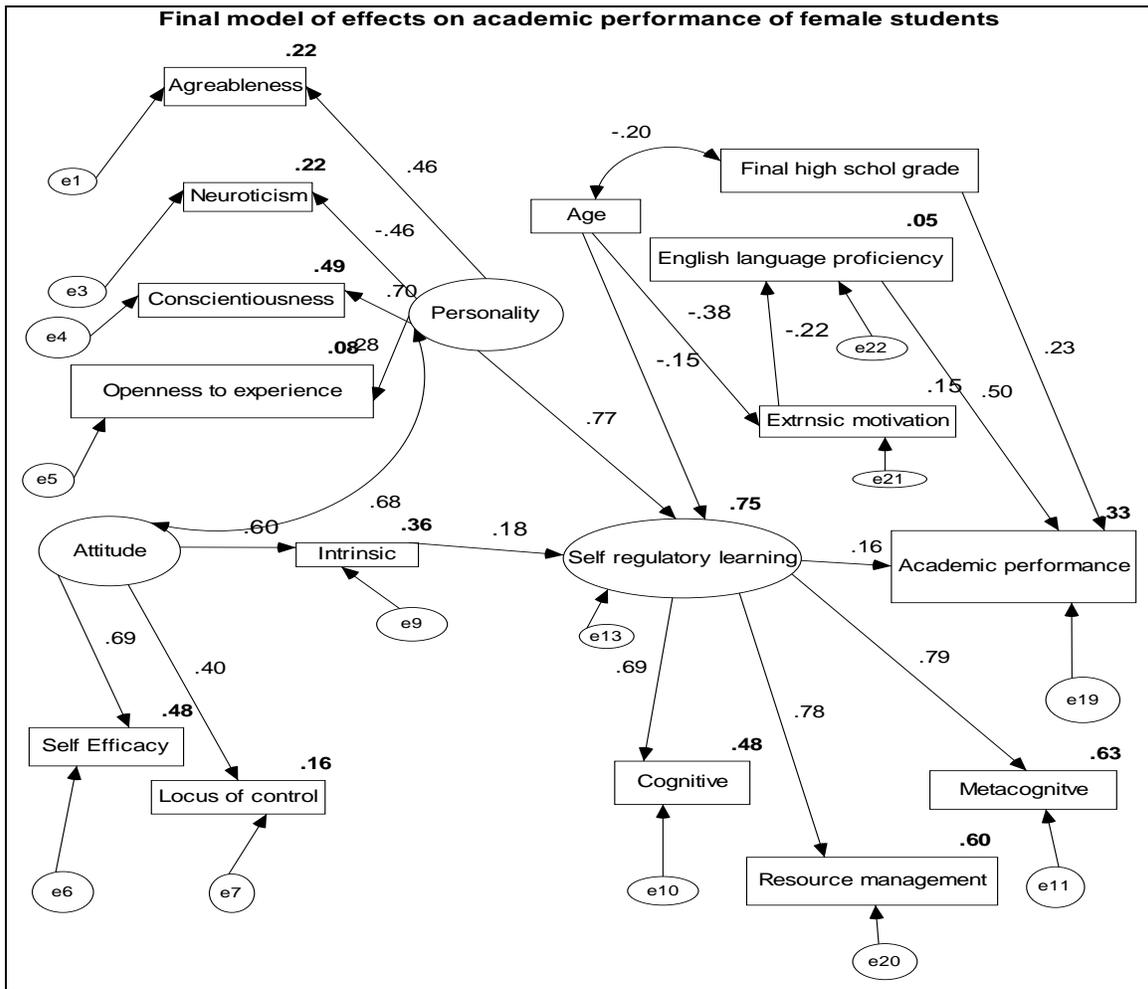
C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

According to Table 5.10, the path of the goal orientation latent variable and extrinsic goal orientation and that of the personality trait latent variable and extraversion are considered insignificant at $p \leq 0.05$. In addition, the correlation analyses of the female students on Table 4.13 reveal no significant relationship between age and the personality traits. In addition, no significant relationship is observed between final high school grade and English Language proficiency. Adjustments were made to the model based on the observations made on Table 4.13 and Table 5.10 to yield Figure 5.3.

Figure 5.3 Final model on the factors contributing to the academic performance of the female students of the university



In order to establish the goodness of fit of the final model, model fit measures were obtained as shown on Table 5.11.

Table 5.11 Measures of goodness of fit of the final model of the variables related to the female students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	50	147.749	85	.000	1.738
Saturated model	135	.000	0		
Independence model	15	897.101	120	.000	7.476

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.835	.767	.923	.886	.919
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. Root mean square error of approximation (RMSEA)

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.052	.037	.065	.403
Independence model	.153	.144	.163	.000

Note:

- NPAR* represents the number of distinct parameters being estimated
- CMIN* represents the minimum value of discrepancy
- DF* represents the number of degrees of freedom for testing the model
- P* represents the probability of getting as large a discrepancy as occurred with the present sample
- NFI* represents the Normed Fit Index
- RFI* represents the Relative Fit Index
- IFI* represents the Incremental Fit Index
- TLI* represents the Tucker-Lewis Index
- CFI* represents the Comparative Fit Index
- RMSEA* represents the Root Mean Square Error of Approximation
- LO90* represents the lower limit of a 90% confidence interval
- HI90* represents the upper limit of a 90% confidence interval
- PCLOSE* represents the closeness of the fit to the population

Table 5.11 portrays a reasonably good fit with a CFI value of 0.919, a RMSEA value of 0.52 and a PCLOSE index of 0.403. The model accounts for 33% variance in the academic performance of female students in the university as shown on Figure 5.3. Regression weights and covariance estimates of the final model are shown on Table 5.12.

Table 5.12 Regression weights and covariance estimates of the variables of the final model for the female students

1. Regression Weights

		Estimate	S.E.	C.R.	P
Int	<--- Att	1.198	.255	4.691	***
Ext	<--- Age	-.036	.005	-6.756	***
Self	<--- Int	.159	.062	2.564	.010
Self	<--- Per	1.558	.276	5.645	***
Self	<--- Age	-.009	.003	-2.912	.004
Eng	<--- Ext	-.149	.041	-3.622	***
Agr	<--- Per	1.000			
Neu	<--- Per	-1.251	.243	-5.144	***
Con	<--- Per	1.834	.295	6.209	***
cumGPA	<--- fgrades	.160	.035	4.509	***
cumGPA	<--- eng	.340	.034	9.932	***
cumGPA	<--- self	.120	.041	2.933	.003
Se	<--- Att	1.335	.278	4.793	***
Loc	<--- Att	1.000			
Cog	<--- self	.827	.077	10.707	***
Met	<--- self	1.000			
Res	<--- self	.687	.059	11.707	***
Ope	<--- Per	.658	.187	3.528	***

2. Covariance estimates

		Estimate	S.E.	C.R.	P	Label
Att	<--> per	.050	.013	3.808	***	
fgrades	<--> age	-.952	.295	-3.229	.001	

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

According to the model presented on Figure 5.3 and the regression weights shown on Table 5.12, self-regulatory learning strategies, English Language proficiency and final high school grade have significant direct effects on the academic performance of the female students of the university at $p \leq 0.05$. English Language proficiency (standardized regression weight = 0.50) is observed to be the highest contributor to the academic performance of female students. The model portrays the students' chronological age, personality traits and intrinsic goal orientation as having significant indirect effects on the academic performance of female students, when mediated through self-regulatory learning strategies. The contributions made by the personality traits (standardized regression weight

= 0.77) to the students' self-regulatory learning strategies is considered to be the highest. It also depicts significant indirect effect of female students' attitudes on academic performance when mediated through intrinsic goal orientation, which is further mediated through self-regulatory learning strategies at $p \leq 0.05$. In addition, the model depicts significant indirect effects of extrinsic goal orientation on the academic performance of female students when mediated through English language proficiency. The model also reveals significant loadings of the latent variable of self-regulatory learning strategies on metacognitive learning strategies, resource management and cognitive learning strategies; personality traits on agreeableness, neuroticism, conscientiousness and openness-to-experience; and attitudes on locus of control and self-efficacy at $p \leq 0.05$. The female students' age is also observed to have a significant direct effect on self-regulatory learning strategies. Significant positive correlations are also observed between the students' attitudes and personality traits and negative correlations between chronological age and final high school grade at $p \leq 0.05$.

5.4 PATH ANALYSES OF THE LOCAL STUDENTS' ACADEMIC PERFORMANCE

The data of the various variables of the local students was subjected to the hypothesized model. The goodness of fit measures of the model was obtained as shown on Table 5.13.

Table 5.13 Measures of goodness of fit of initial model of the variables related to the local students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	237.029	97	.000	2.444
Saturated model	152	.000	0		
Independence model	16	1085.709	136	.000	7.983

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.782	.694	.858	.793	.853
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.061	.051	.071	.030
Independence model	.135	.127	.142	.000

Note:

- NPAR represents the number of distinct parameters being estimated*
- CMIN represents the minimum value of discrepancy*
- DF represents the number of degrees of freedom for testing the model*
- P represents the probability of getting as large a discrepancy as occurred with the present sample*
- NFI represents the Normed Fit Index*
- RFI represents the Relative Fit Index*
- IFI represents the Incremental Fit Index*
- TLI represents the Tucker-Lewis Index*
- CFI represents the Comparative Fit Index*
- RMSEA represents the Root Mean Square Error of Approximation*
- LO90 represents the lower limit of a 90% confidence interval*
- HI90 represents the upper limit of a 90% confidence interval*
- PCLOSE represents the closeness of the fit to the population*

The measures of goodness of fit on Table 5.13 reveal a chi-square p value of 0.000, a CFI value of 0.853, a RMSEA value of 0.61 and a PCLOSE index of 0.030, indicative of an acceptable but weak model that could be improved further. Table 5.14 provides the regression weights of the variables in the hypothesized model.

Table 5.14 Regression weights of the variables of the initial model for the local students

1. Regression Weights

		Estimate	S.E.	C.R.	P
Goal	<--- Att	1.137	.207	5.488	***
Self	<--- Per	1.192	.271	4.396	***
Self	<--- goal	.546	.169	3.238	.001
Self	<--- Age	-.009	.003	-3.026	.002
Agr	<--- Per	1.000			
Neu	<--- Per	-1.110	.213	-5.209	***
Con	<--- Per	1.981	.296	6.693	***
cumGPA	<--- fgrades	.200	.036	5.620	***
cumGPA	<--- Eng	.029	.009	3.279	.001
cumGPA	<--- Self	.164	.042	3.876	***
Se	<--- Att	1.190	.201	5.921	***
Loc	<--- Att	1.000			
Ext	<--- goal	-.214	.135	-1.584	.113
Int	<--- goal	1.000			
Cog	<--- Self	.844	.068	12.410	***
Met	<--- Self	1.000			
Res	<--- Self	.683	.049	13.846	***
Ope	<--- Per	.585	.162	3.619	***
Xtr	<--- Per	.180	.158	1.136	.256

Note:

SE represents an estimate of the standard error of the regression weights

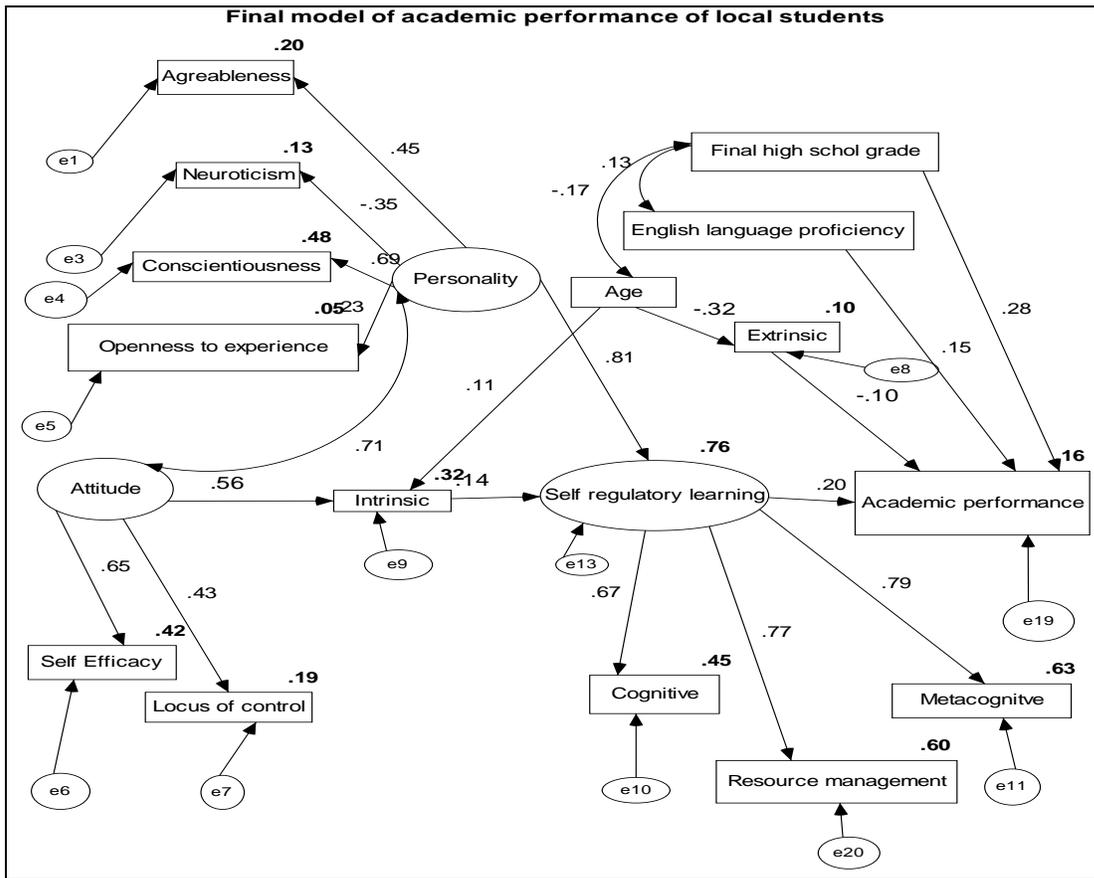
C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

Table 5.14 depicts insignificant paths between the goal orientation latent variable and extraversion and between the personality trait latent variable and extraversion at $p \leq 0.05$. The extraversion variable was eliminated from further analysis while the latent variable of goal orientation was replaced with the intrinsic goal orientation variable, while a direct path between the extrinsic goal orientation and academic performance of the local students was created as shown on the final model on Figure 5.4.

Figure 5.4 Final model on the factors contributing to the academic performance of the local students of the university



The goodness of fit indices of the final model of the local students are shown on Table 5.15, which reveals a reasonably acceptable model with a CFI value of 0.906, a RMSEA value of 0.052 and a PCLOSE index of 0.363.

Table 5.15 Measures of goodness of fit of final model of the variables related to the local students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	51	171.622	84	.000	2.043
Saturated model	135	.000	0		
Independence model	15	1050.743	120	.000	8.756

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.837	.767	.909	.866	.906
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.052	.041	.063	.363
Independence model	.142	.134	.150	.000

Note:

- NPAR* represents the number of distinct parameters being estimated
- CMIN* represents the minimum value of discrepancy
- DF* represents the number of degrees of freedom for testing the model
- P* represents the probability of getting as large a discrepancy as occurred with the present sample
- NFI* represents the Normed Fit Index
- RFI* represents the Relative Fit Index
- IFI* represents the Incremental Fit Index
- TLI* represents the Tucker-Lewis Index
- CFI* represents the Comparative Fit Index
- RMSEA* represents the Root Mean Square Error of Approximation
- LO90* represents the lower limit of a 90% confidence interval
- HI90* represents the upper limit of a 90% confidence interval
- PCLOSE* represents the closeness of the fit to the population

Table 5.16 provides the regression weights and covariance estimates of the variables of the final model of the local students with regard to their academic performance.

Table 5.16 Regression weights and covariance estimates of the variables of the final model for the local students

1. Regression weights

		Estimate	S.E.	C.R.	P	Label
Int	<--- Age	.008	.003	2.288	.022	
Int	<--- Att	1.040	.185	5.622	***	
Self	<--- Per	1.620	.252	6.432	***	
Ext	<--- Age	-.032	.005	-6.437	***	
Self	<--- Int	.120	.052	2.297	.022	
Agr	<--- Per	1.000				
Neu	<--- Per	-.963	.193	-4.985	***	
Con	<--- Per	1.814	.257	7.061	***	
cumGPA	<--- fgrades	.206	.035	5.798	***	
cumGPA	<--- Eng	.028	.009	3.196	.001	
cumGPA	<--- Self	.159	.042	3.769	***	
Se	<--- Att	1.148	.195	5.879	***	
Loc	<--- Att	1.000				
Cog	<--- Self	.834	.068	12.184	***	
Met	<--- Self	1.000				
Res	<--- Self	.674	.050	13.563	***	
Ope	<--- Per	.529	.152	3.482	***	
cumGPA	<--- Ext	-.050	.025	-2.016	.044	

2. Covariance estimates

		Estimate	S.E.	C.R.	P	Label
Att	<--> per	.055	.012	4.642	***	
fgrades	<--> age	-.704	.215	-3.279	.001	
fgrades	<--> eng	.152	.059	2.560	.010	

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

According to Table 5.16, significant direct effects of self-regulatory learning strategies, extrinsic goal orientation, English Language proficiency and final high school grade on the academic performance of the local students of the university at $p \leq 0.05$ are observed. The final high school grade (standardized regression weight = 0.28) is depicted as making the greatest contribution to the academic performance of the local students. The model portrays the local students' personality traits and intrinsic goal orientation as having significant indirect effects on the academic performance of local students, when mediated through self-regulatory learning strategies and significant indirect effects of chronological age on academic performance when mediated through the extrinsic goal orientation. The personality trait (standardized regression weight = 0.81) is depicted as being the highest contributor to the self-regulatory learning strategies among the local students. It also

portrays significant indirect effect of the local students' attitudes and age on academic performance when mediated through intrinsic goal orientation, which is further mediated through self-regulatory learning strategies at $p \leq 0.05$. The model also reveals significant loadings of the latent variable of self-regulatory learning strategies on metacognitive learning strategies, resource management and cognitive learning strategies; personality traits on agreeableness, neuroticism, conscientiousness and openness-to-experience; and attitudes on locus of control and self-efficacy at $p \leq 0.05$. Significant positive correlations are also observed between the attitudes and personality traits and between English Language proficiency and final high school grade, while negative correlations are observed between age and final high school grade at $p \leq 0.05$.

5.5 PATH ANALYSES OF THE INTERNATIONAL STUDENTS' ACADEMIC PERFORMANCE

The data of the international students was subjected to the hypothesized model of academic performance. The measures of goodness of fit showed a poor fit of the model to the data as presented on Table 5.17.

Table 5.17 Measures of goodness of fit of initial model of the variables related to the international students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	149.807	97	.000	1.544
Saturated model	152	.000	0		
Independence model	16	308.978	136	.000	2.272

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.515	.320	.751	.572	.695
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.125	.083	.163	.004
Independence model	.191	.163	.219	.000

Note:

- NPAR represents the number of distinct parameters being estimated*
- CMIN represents the minimum value of discrepancy*
- DF represents the number of degrees of freedom for testing the model*
- P represents the probability of getting as large a discrepancy as occurred with the present sample*
- NFI represents the Normed Fit Index*
- RFI represents the Relative Fit Index*
- IFI represents the Incremental Fit Index*
- TLI represents the Tucker-Lewis Index*
- CFI represents the Comparative Fit Index*
- RMSEA represents the Root Mean Square Error of Approximation*
- LO90 represents the lower limit of a 90% confidence interval*
- HI90 represents the upper limit of a 90% confidence interval*
- PCLOSE represents the closeness of the fit to the population*

The indices for the CFI are observed to be 0.695, which is very low, and those of the RMSEA were observed to be 0.125, which is very high. The regression weights on Table 5.18 reveal insignificant paths of most of the variables in relation to the international students' academic performance except for the direct effect of English language proficiency on the students' academic performance.

Table 5.18 Regression weights of the variables of the hypothesized model for the international students

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P
Goal	<--- Att	1.544	.496	3.110	.002
Self	<--- Per	.451	.219	2.058	.040
Self	<--- goal	.539	.191	2.830	.005
Self	<--- Age	.013	.007	1.729	.084
Agr	<--- Per	1.000			
Neu	<--- Per	-.570	.239	-2.380	.017
Con	<--- Per	1.321	.351	3.762	***
cumGPA	<--- fgrades	-.008	.092	-.088	.930
cumGPA	<--- Eng	.739	.077	9.550	***
cumGPA	<--- Self	.176	.101	1.748	.080
Se	<--- Att	1.285	.398	3.226	.001
Loc	<--- Att	1.000			
Ext	<--- goal	.269	.280	.961	.336
Int	<--- goal	1.000			
Cog	<--- Self	.253	.145	1.742	.082
Met	<--- Self	1.000			
Res	<--- Self	.690	.157	4.387	***
Ope	<--- Per	.555	.219	2.532	.011
Xtr	<--- Per	.412	.245	1.682	.093

Note:

SE represents an estimate of the standard error of the regression weights

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

Correlation analyses on Table 4.15 reveal significant relations between the international students academic performance and both English language proficiency and intrinsic goal orientation. The final model of the effects on the academic performance of international students is considered to be a good fit with a chi-square p value of 0.893, a CFI value of 1.000, a RMSEA value of 0.000 and a PCLOSE index of 0.897 as provided on Table 5.19.

Table 5.19 Measures of goodness of fit of the final model of the variables related to the international students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	8	.018	1	.893	.018
Saturated model	9	.000	0		
Independence model	3	40.894	6	.000	6.816

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	1.000	.997	1.025	1.169	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

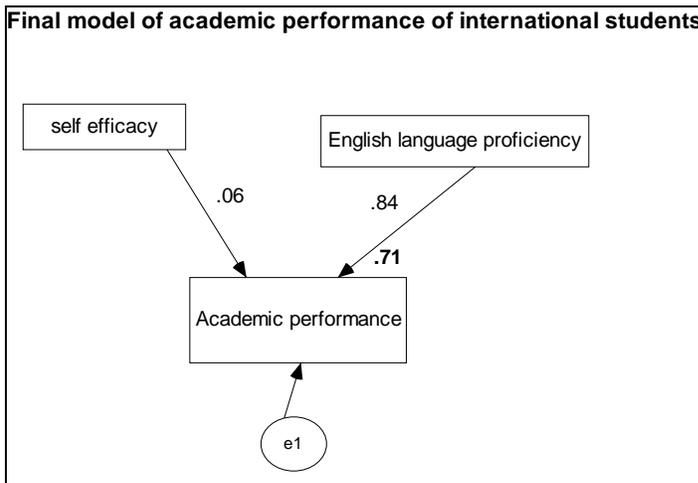
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.000	.000	.209	.897
Independence model	.408	.295	.530	.000

Note:

- NPAR represents the number of distinct parameters being estimated*
- CMIN represents the minimum value of discrepancy*
- DF represents the number of degrees of freedom for testing the model*
- P represents the probability of getting as large a discrepancy as occurred with the present sample*
- NFI represents the Normed Fit Index*
- RFI represents the Relative Fit Index*
- IFI represents the Incremental Fit Index*
- TLI represents the Tucker-Lewis Index*
- CFI represents the Comparative Fit Index*
- RMSEA represents the Root Mean Square Error of Approximation*
- LO90 represents the lower limit of a 90% confidence interval*
- HI90 represents the upper limit of a 90% confidence interval*
- PCLOSE represents the closeness of the fit to the population*

The model presented on Figure 5.5 accounts for 71% of the variance in the academic performance of the international students.

Figure 5.5 Final model on the factors contributing to the academic performance of the international students of the university



A glance at the regression weights presented on Table 5.20 reveal that the path of self-efficacy is insignificant, thus rendering the English language proficiency (standardized regression weight = 0.84) as the single greatest contributor to the academic performance of international students.

Table 5.20 Regression weights of the variables of the final model for the international students

	Estimate	S.E.	C.R.	P
cumGPA <--- se	.062	.092	.679	.497
cumGPA <--- eng	.718	.079	9.042	***

Note:
 SE represents an estimate of the standard error of the regression weights
 C.R. represents the critical ratio
 P represents the significance of the values
 *** represents a significance level of 0.000

5.6 PATH ANALYSES OF THE ATHI RIVER CAMPUS STUDENTS' ACADEMIC PERFORMANCE

The data of the Athi River campus students was subjected to the hypothesized model and revealed a good fit as shown on Table 5.21.

Table 5.21 Measures of goodness of fit of the hypothesized model of the variables related to the Athi River campus students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	158.874	97	.000	1.638
Saturated model	152	.000	0		
Independence model	16	877.026	136	.000	6.449

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.819	.746	.921	.883	.917
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.046	.033	.059	.671
Independence model	.135	.127	.144	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The model revealed a CFI index of 0.917 and a RMSEA index of 0.46, both of which are indicative of a good fit. However, the significance of the regression weights revealed insignificant paths between the personality trait latent variable and extraversion and between the goal orientation latent variable and extrinsic goal orientation at $p \leq 0.05$, as shown on Table 5.22, implying the possibility of need for further modification of the hypothesized model for its enhancement.

Table 5.22 Regression weights of the variables of the hypothesized model for the Athi River campus students

1. Regression Weights

	Estimate	S.E.	C.R.	P
Goal <--- att	1.026	.179	5.721	***
Self <--- per	.861	.227	3.795	***
Self <--- goal	.580	.190	3.053	.002
Self <--- age	.003	.007	.434	.665
Agr <--- per	1.000			
Neu <--- per	-.869	.172	-5.044	***
Con <--- per	1.579	.220	7.184	***
cumGPA <--- fgrades	.166	.044	3.753	***
cumGPA <--- eng	.032	.010	3.250	.001
cumGPA <--- self	.173	.053	3.291	.001
Se <--- att	1.195	.186	6.410	***
Loc <--- att	1.000			
Ext <--- goal	-.009	.132	-.070	.945
Int <--- goal	1.000			
Cog <--- self	.782	.080	9.795	***
Met <--- self	1.000			
Res <--- self	.719	.059	12.137	***
Ope <--- per	.549	.142	3.863	***
Xtr <--- per	.123	.138	.892	.373

Note:

SE represents an estimate of the standard error of the regression weights

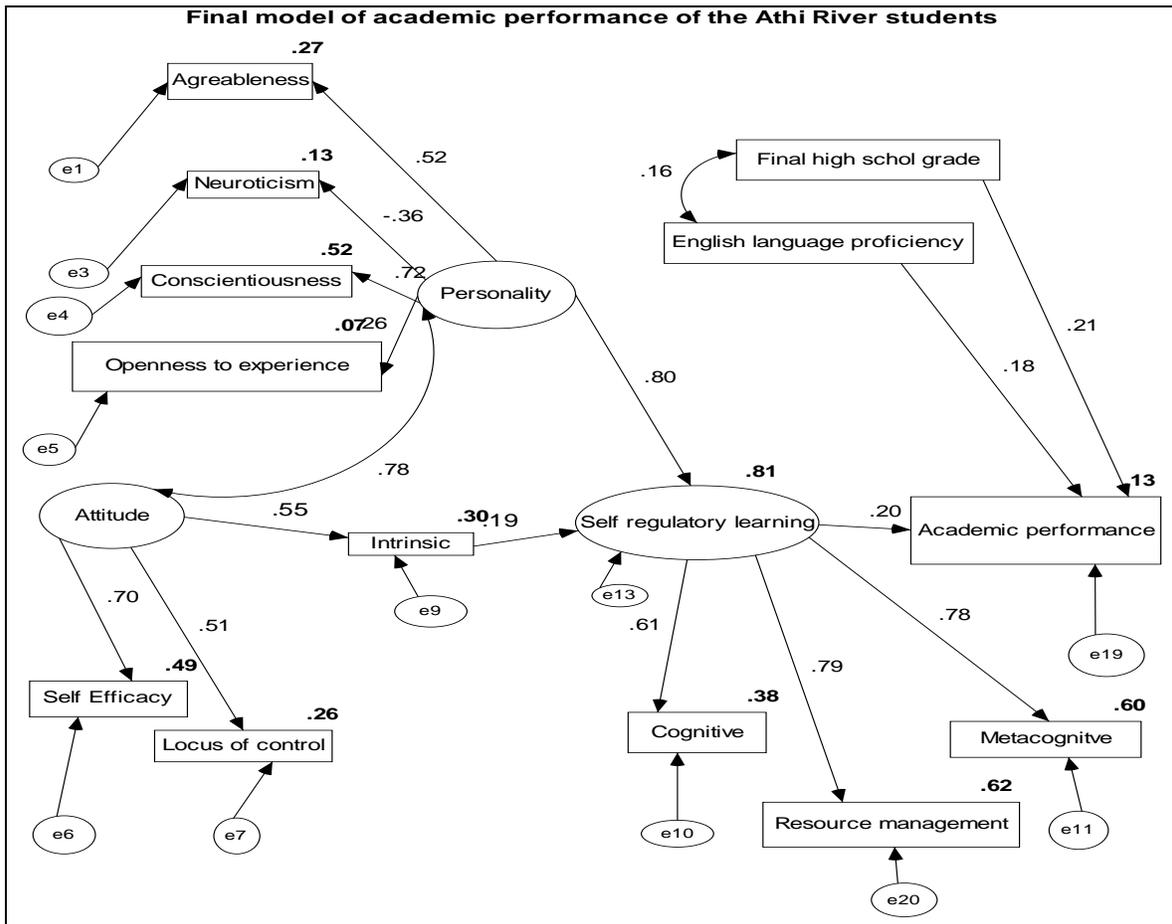
C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

The final model of the study therefore eliminated the extraversion personality trait and extrinsic goal orientation variables and replaced the goal orientation latent variable with the observed variable of intrinsic goal orientation as shown on Figure 5.6.

Figure 5.6 Final model on the factors contributing to the academic performance of the Athi River students of the university



The final model of the study is observed to have a good fit with a CFI index of 0.937 and a RMSEA index of 0.50 as shown on Table 5.23, both indices being indicative of a good fit. However, it should be noted that the hypothesized model could still have been used as a good fitting model for the Athi River students.

Table 5.23 Measures of goodness of fit of the final model of the variables related to the Athi River campus students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	43	106.238	61	.000	1.742
Saturated model	104	.000	0		
Independence model	13	808.673	91	.000	8.887

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.869	.804	.939	.906	.937
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.034	.065	.485
Independence model	.163	.152	.173	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Table 5.24 provides the significance of the regression weights and the covariance estimates of the variables of the students in the Athi River campus.

Table 5.24 Regression weights and covariance estimates of the variables of the final model for the Athi River campus students

1. Regression weights

	Estimate	S.E.	C.R.	P
Int <--- att	.962	.165	5.845	***
Self <--- per	1.261	.190	6.650	***
Self <--- int	.153	.051	3.000	.003
Agr <--- per	1.000			
Neu <--- per	-.789	.164	-4.801	***
Con <--- per	1.499	.201	7.451	***
cumGPA <--- fgrades	.166	.044	3.747	***
cumGPA <--- eng	.031	.010	3.243	.001
cumGPA <--- self	.170	.053	3.242	.001
Se <--- att	1.145	.177	6.459	***
Loc <--- att	1.000			
Cog <--- self	.781	.080	9.783	***
Met <--- self	1.000			
Res <--- self	.719	.059	12.111	***
Ope <--- per	.504	.137	3.669	***

2. Covariance estimates

	Estimate	S.E.	C.R.	P
Att <--> per	.085	.017	4.982	***
fgrades <--> eng	.208	.077	2.710	.007

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

Significant direct effects of final high school grades, English Language proficiency and self-regulatory learning strategies are observed from both Table 5.24 and Figure 5.6 at $p \leq 0.05$. The final high school grades (standardized regression weight = 0.21) are observed to make the greatest contributions to the academic performance of the Athi River students. The final model of the study accounts for 13% of the variance of the academic performance of the Athi River campus students. The model depicts the students' personality traits and intrinsic goal orientation as having significant indirect effects on the academic performance of the Athi River campus students, when mediated through self-regulatory learning strategies. The personality traits (standardized regression weight = 0.80) are depicted as the highest contributors to the self-regulatory learning strategies among the Athi River campus students. It also portrays significant indirect effect of the Athi River campus students' attitudes on academic performance when mediated through intrinsic goal orientation, which is further mediated through self-regulatory learning

strategies at $p \leq 0.05$. The model also reveals significant loadings of the latent variable of self-regulatory learning strategies on metacognitive learning strategies, resource management and cognitive learning strategies; personality traits on agreeableness, neuroticism, conscientiousness and openness-to-experience; and attitudes on locus of control and self-efficacy at $p \leq 0.05$. Significant positive correlations are also observed between the students' attitudes and personality traits and between the final high school grade and English Language proficiency at $p \leq 0.05$.

5.7 PATH ANALYSES OF THE NAIROBI CAMPUS STUDENTS' ACADEMIC PERFORMANCE

The Nairobi campus students' data was fitted to the hypothesized model. The model's fit was observed to be relatively poor as shown on Table 5.25.

Table 5.25 Measures of goodness of fit of the hypothesized model of the variables related to the Nairobi campus students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	161.424	97	.000	1.664
Saturated model	152	.000	0		
Independence model	16	449.369	136	.000	3.304

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.641	.496	.817	.712	.794
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.074	.053	.094	.030
Independence model	.138	.124	.152	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The chi-square measures depicted a p value of 0.00, in addition a CFI value of 0.794, a RMSEA value of 0.74 and a PCLOSE index of 0.030 were also depicted, all of which are indicative of a relatively weak model fit. In an endeavor to improve the fit of the Nairobi campus students' model the regression weights of the hypothesized model, as shown on Table 5.26, and the correlations observed on Table 4.17, were considered.

Table 5.26 Regression weights of the variables of the hypothesized model for the Nairobi campus students

1. Regression Weights

	Estimate	S.E.	C.R.	P
Goal <--- att	1.815	.896	2.025	.043
Self <--- per	2.558	1.284	1.993	.046
Self <--- goal	.499	.194	2.567	.010
Self <--- age	.001	.004	.133	.894
Agr <--- per	1.000			
Neu <--- per	-3.083	1.512	-2.039	.041
Con <--- per	6.636	3.310	2.005	.045
cumGPA <--- fgrades	.266	.056	4.751	***
cumGPA <--- eng	.372	.055	6.792	***
cumGPA <--- self	.152	.070	2.164	.030
Se <--- att	.905	.331	2.737	.006
Loc <--- att	1.000			
Ext <--- goal	-.245	.229	-1.066	.287
Int <--- goal	1.000			
Cog <--- self	.835	.116	7.219	***
Met <--- self	1.000			
Res <--- self	.694	.090	7.730	***
Ope <--- per	.627	.588	1.067	.286
Xtr <--- per	.490	.641	.764	.445

Note:

SE represents an estimate of the standard error of the regression weights

C.R. represents the critical ratio

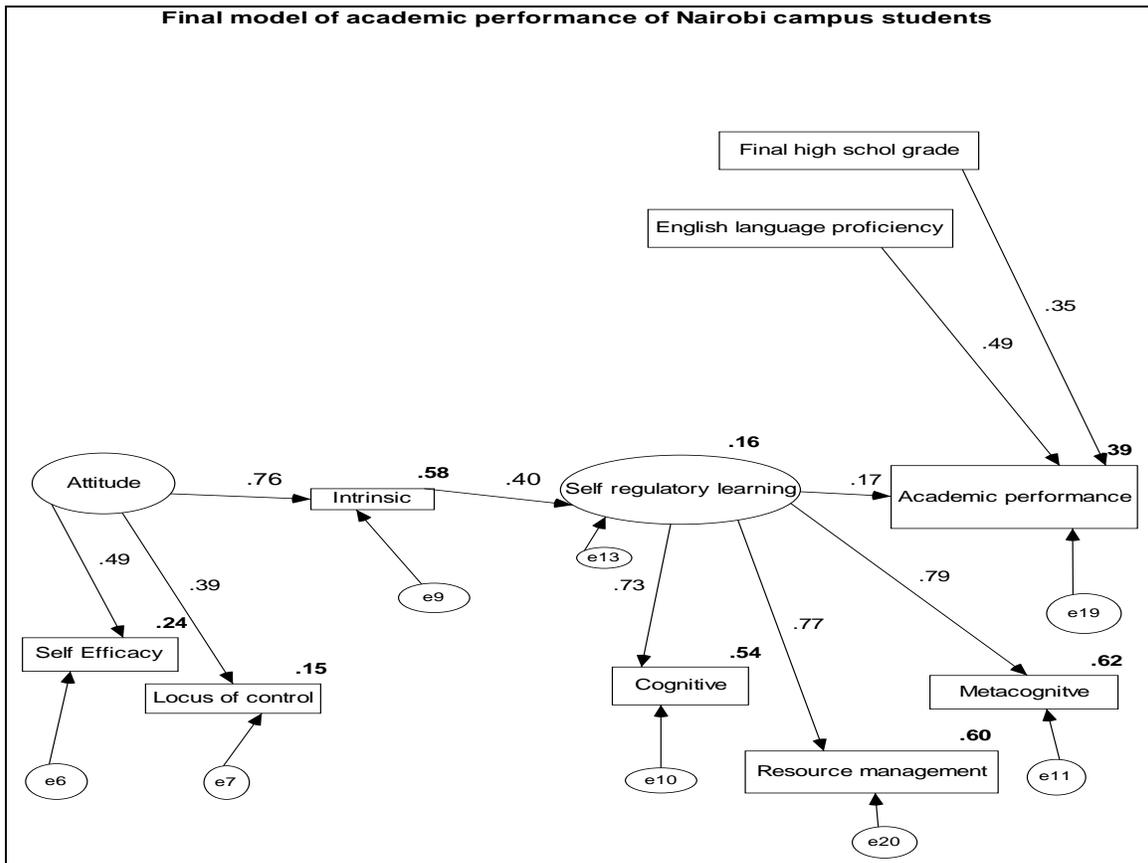
P represents the significance of the values

*** represents a significance level of 0.000

The paths between self-regulatory learning strategies and age and self-regulatory learning strategies and personality traits were both considered insignificant. In addition, the goal orientation latent variable did not significantly load onto the extrinsic goal orientation neither did the personality trait significant load onto the extraversion and openness-to-experience traits. No significant relationships were observed between attitudes and the personality traits; age and personality traits; and final high school grades and both chronological age and English Language proficiency of the Nairobi students. These paths were therefore eliminated from the model with the latent variable of goal orientation being replaced with the intrinsic goal orientation manifested variables. In addition, Table 4.17 did not depict any significant relationships between the academic performance of Nairobi students' academic performance and both extrinsic goal orientation and the personality traits, thus leading to further modification of the model.

The final model for the Nairobi campus students' academic performance is presented on Figure 5.7

Figure 5.7 Final model on the factors contributing to the academic performance of the Nairobi campus students of the university



The final model presented on Figure 5.7 accounts for 39% of the variance in the academic performance of the Nairobi campus students. The model measures that rendered the model an acceptable fit for Nairobi campus students are shown on Table 5.27.

Table 5.27 Measures of goodness of fit of the final model of the variables related to the Nairobi campus students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	28	37.925	26	.062	1.459
Saturated model	54	.000	0		
Independence model	9	251.352	45	.000	5.586

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.849	.739	.947	.900	.942
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.062	.000	.102	.304
Independence model	.195	.172	.218	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Although the RMSEA value is above 0.05, the PCLOSE index of 0.304, chi-square p value 0.062 and CFI index of 0.942 are indicative of a good fit. The significance of the regression weights of the final model are presented on Table 5.28.

Table 5.28 Regression weights of the variables of the final model for the Nairobi campus students

1. Regression Weights

		Estimate	S.E.	C.R.	P
Int	<--- att	1.388	.662	2.096	.036
Self	<--- int	.371	.092	4.017	***
cumGPA	<--- fgrades	.267	.056	4.762	***
cumGPA	<--- eng	.371	.055	6.756	***
cumGPA	<--- self	.149	.072	2.076	.038
Se	<--- att	.815	.294	2.771	.006
Loc	<--- att	1.000			
Cog	<--- self	.866	.125	6.932	***
Met	<--- self	1.000			
Res	<--- self	.676	.096	7.012	***

Note:
SE represents an estimate of the standard error of the regression weights
C.R. represents the critical ratio
P represents the significance of the values
**** represents a significance level of 0.000*

Table 5.28 and Figure 5.7 depict significant direct effects of the final high school grade, English Language proficiency and self-regulatory learning strategies on the academic performance of Nairobi Campus students at $p \leq 0.05$. English language proficiency (standardized regression weight = 0.49) is depicted as the largest contributor to the academic performance of the Nairobi campus students. The model also portrays the students' intrinsic goal orientation as having a significant indirect effect on the academic performance of the Nairobi campus students, when mediated through self-regulatory learning strategies. It also portrays significant indirect effect of the Nairobi campus students' attitudes on academic performance when mediated through intrinsic goal orientation, which is further mediated through self-regulatory learning strategies at $p \leq 0.05$. In addition, the model reveals significant loadings of the latent variable of self-regulatory learning strategies on metacognitive learning strategies, resource management and cognitive learning strategies; and attitudes on locus of control and self-efficacy at $p \leq 0.05$.

5.8 PATH ANALYSES OF THE FIRST YEAR STUDENTS' ACADEMIC PERFORMANCE

The data of the first year students of the university was subjected to the hypothesized model of the study. The model fit was established as shown on Table 5.29.

Table 5.29 Measures of goodness of fit of the initial model of the variables related to the first year students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	131.559	97	.011	1.356
Saturated model	152	.000	0		
Independence model	16	402.905	136	.000	2.963

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.673	.542	.887	.818	.871
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.061	.030	.086	.245
Independence model	.143	.127	.159	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The measures of Table 5.29, which had chi-square p value measures of 0.11, CFI values of 0.871, RMSEA values of 0.061 and a PCLOSE index of 0.245, were suggestive of an adequately good model that could be enhanced. The regression weights on Table 5.30 and the correlations on Table 4.18 were utilized in modifying the model to provide a better fit.

Table 5.30 Regression weights of the variables of the initial model for the first year students

Regression Weights

		Estimate	S.E.	C.R.	P
Goal	<--- att	1.243	.399	3.114	.002
Self	<--- per	1.989	.675	2.948	.003
Self	<--- goal	.006	.138	.044	.965
Self	<--- age	-.003	.006	-.489	.625
Agr	<--- per	1.000			
Neu	<--- per	-.969	.456	-2.127	.033
Con	<--- per	2.078	.644	3.228	.001
cumGPA	<--- fgrades	.165	.086	1.921	.055
cumGPA	<--- eng	.409	.071	5.777	***
cumGPA	<--- self	.099	.093	1.071	.284
Se	<--- att	1.221	.386	3.161	.002
Loc	<--- att	1.000			
Ext	<--- goal	.011	.261	.044	.965
Int	<--- goal	1.000			
Cog	<--- self	.885	.140	6.305	***
Met	<--- self	1.000			
Res	<--- self	.804	.103	7.829	***
Ope	<--- per	.568	.359	1.579	.114
Xtr	<--- per	-.049	.357	-.137	.891

Note:

SE represents an estimate of the standard error of the regression weights

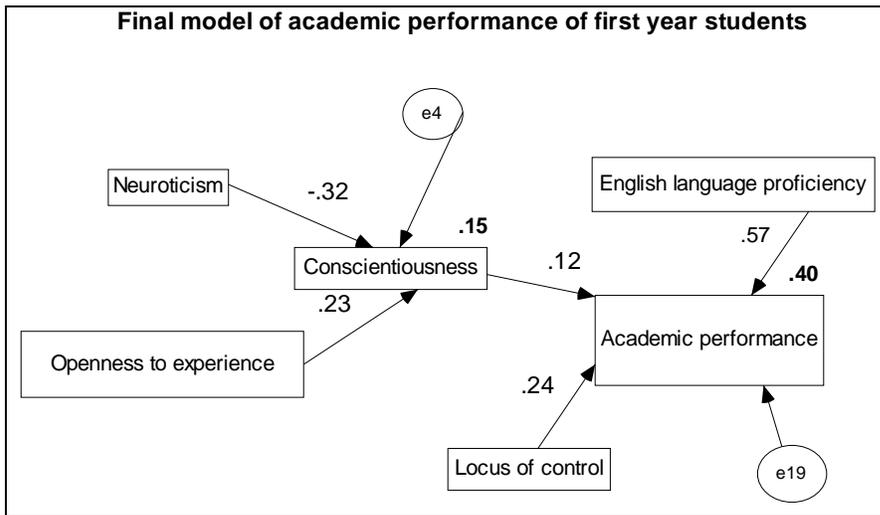
C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

The variables of self-regulatory learning strategies, goal orientations and chronological age were eliminated from the study due to their poor relationships with each other and with the academic performance of first year students. Table 4.18 depicts a significant relationship between academic performance and final high school grade, English Language proficiency, the attitude of locus of control and the personality trait of conscientiousness. Although the final high school grade was observed to have significant relationships with the first year students academic performance, its weak regression weights at $p \leq 0.05$ in the hypothesized model rendered to redundant in the final proposed model. The final model is therefore presented on Figure 5.8.

Figure 5.8 Final model on the factors contributing to the academic performance of the first year students of the university



The final model presented on Figure 5.8 is considered to have a good fit with a chi-square p value of 0.292 a CFI value of 0.966 and a RMSEA value of 0.044 as provided on Table 5.31.

Table 5.31 Measures of goodness of fit of the final model of the variables related to the first year students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	17	11.890	10	.292	1.189
Saturated model	27	.000	0		
Independence model	6	77.419	21	.000	3.687

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.846	.677	.972	.930	.966
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.044	.000	.124	.480
Independence model	.167	.128	.208	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The final model accounts for 40% of the variance in the academic performance of first year students of the university. Table 5.32 provides the regression weights of the variables of the final model of the first year students.

Table 5.32 Regression weights of the variables of the final model for the first year students

1. Regression Weights

	Estimate	S.E.	C.R.	P
Con <--- neu	-.284	.086	-3.297	***
Con <--- ope	.251	.109	2.298	.022
cumGPA <--- eng	.460	.065	7.085	***
cumGPA <--- loc	.201	.068	2.959	.003
cumGPA <--- con	.084	.059	1.424	.155

Note:

SE represents an estimate of the standard error of the regression weights

C.R. represents the critical ratio

P represents the significance of the values

**** represents a significance level of 0.000*

Table 5.32 and Figure 5.8 reveal that English Language proficiency (standardized regression weight = 0.57), followed by internal locus of control (standardized regression weight = 0.24) of first year students have the greatest significant direct effect on their academic performance. The path of conscientiousness on academic performance was observed to be insignificant at $p \leq 0.05$.

5.9 PATH ANALYSES OF THE SECOND YEAR STUDENTS' ACADEMIC PERFORMANCE

The data of the students in the second year of study was subjected to the hypothesized model of the academic performance of students in the second year of study. Table 5.33 shows the model fit of the data of the students in the second year of study.

Table 5.33 Measures of goodness of fit of the initial model of the variables related to the second year students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	144.565	97	.001	1.490
Saturated model	152	.000	0		
Independence model	16	380.111	136	.000	2.795

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.620	.467	.832	.727	.805
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.066	.042	.088	.123
Independence model	.127	.112	.142	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The model, whose chi-square significance index was $p=0.001$, CFI index was 0.805, RMSEA index was 0.066 and PCLOSE index was 0.123 was indicative of an acceptable model but one that could profit from modification. Table 5.34 shows the regression weights of the paths in the initial model of second year students' academic performance.

Table 5.34 Regression weights of the variables of the initial model for the second year students

1. Regression Weights

	Estimate	S.E.	C.R.	P
Goal <--- att	2.552	1.461	1.747	.081
Self <--- per	2.452	1.291	1.900	.057
Self <--- goal	.199	.257	.775	.439
Self <--- age	-.010	.008	-1.314	.189
Agr <--- per	1.000			
Neu <--- per	-1.819	.941	-1.934	.053
Con <--- per	3.534	1.688	2.094	.036
cumGPA <--- fgrades	.124	.056	2.204	.028
cumGPA <--- eng	.488	.061	7.945	***
cumGPA <--- self	.182	.071	2.576	.010
Se <--- att	.816	.297	2.752	.006
Loc <--- att	1.000			
Ext <--- goal	-.960	.285	-3.373	***
Int <--- goal	1.000			
Cog <--- self	.708	.128	5.535	***
Met <--- self	1.000			
Res <--- self	.532	.092	5.755	***
Ope <--- per	.817	.570	1.433	.152
Xtr <--- per	.669	.580	1.153	.249

Note:

SE represents an estimate of the standard error of the regression weights

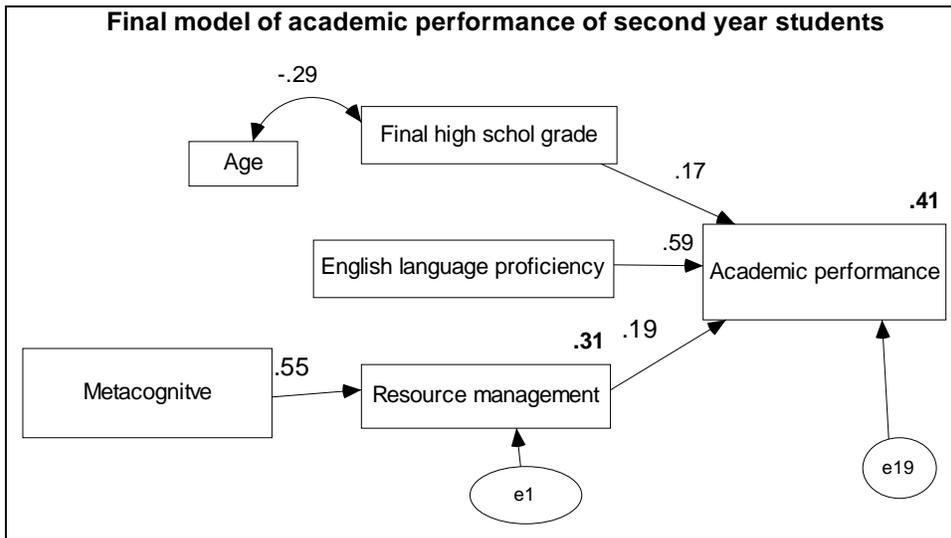
C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

Table 5.34 shows insignificant paths between attitudes and goal orientations; and self-regulatory learning strategies and personality traits, goal orientations and chronological age $p \leq 0.05$. The table also shows the second year students' personality traits to insignificantly load onto the traits of extraversion, neuroticism and openness-to-experience at $p \leq 0.05$. On the other hand, a look at Table 4.19 on the correlation analyses of the variables of the second year students reveals significant relations between the second year students' academic performance and English language proficiency, internal locus of control and intrinsic goal orientation. The initial model was modified incorporating the observations made on both Table 4.19 and Table 5.34. The final model of the second year students' academic performance variables is therefore provided on Figure 5.9.

Figure 5.9 Final model on the factors contributing to the academic performance of the second year students of the university



The final model of the paths of the factors contributing to the academic performance of students in their second year of study is accepted as a good model for the data of the second year students, with a chi-square p value of 0.424, a CFI value of 0.998, a RMSEA value of 0.013 and a PCLOSE index of 0.639 as shown on Table 5.35.

Table 5.35 Measures of goodness of fit of the final model of the variables related to the second year students' academic performance

1. Chi-square

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	17	10.194	10	.424	1.019
Saturated model	27	.000	0		
Independence model	6	109.884	21	.000	5.233

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.907	.805	.998	.995	.998
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.013	.000	.104	.639
Independence model	.194	.159	.231	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The model presented on Figure 5.9 is observed to account for 41% of the variance in the academic performance of second year students of the university. Table 5.36 shows the regression weights and covariance estimates of the variables of the final model of the factors that contribute to the academic performance of students in the second year of study.

Table 5.36 Regression weights and covariance estimates of the variables of the final model for the second year students

1. Regression weights

	Estimate	S.E.	C.R.	P
Res <--- Met	.351	.053	6.618	***
cumGPA <--- fgrades	.127	.056	2.253	.024
cumGPA <--- eng	.495	.062	8.039	***
cumGPA <--- res	.202	.081	2.500	.012

2. Covariance estimates

	Estimate	S.E.	C.R.	P
age <--> fgrades	-1.207	.409	-2.950	.003

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

According to Table 5.36 and Figure 5.9, significant direct effects of English language proficiency (standardized regression weight = 0.59), resource management strategies (standardized regression weight = 0.19) and final high school grade (standardized regression weight = 0.17), in a descending effects order, on academic performance of second year students are observed at $p \leq 0.05$. The metacognitive learning strategies are also observed to have significant indirect effects on the academic performance of the second year students when mediated through the students' resource management strategies. Significant negative correlations are observed between the students' chronological age and their final high school grade at $p \leq 0.05$.

5.10 PATH ANALYSES OF THE THIRD YEAR STUDENTS' ACADEMIC PERFORMANCE

The data of the students in the third year of study was subjected to the hypothesized model and was observed to be a relatively poor model as shown from the measures on Table 5.37.

Table 5.37 Measures of goodness of fit of the hypothesized model of the variables related to the third year students' academic performance

1. Chi-square Measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	190.751	97	.000	1.967
Saturated model	152	.000	0		
Independence model	16	511.352	136	.000	3.760

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.627	.477	.774	.650	.750
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.096	.076	.117	.000
Independence model	.163	.148	.178	.000

Note:

- NPAR represents the number of distinct parameters being estimated*
- CMIN represents the minimum value of discrepancy*
- DF represents the number of degrees of freedom for testing the model*
- P represents the probability of getting as large a discrepancy as occurred with the present sample*
- NFI represents the Normed Fit Index*
- RFI represents the Relative Fit Index*
- IFI represents the Incremental Fit Index*
- TLI represents the Tucker-Lewis Index*
- CFI represents the Comparative Fit Index*
- RMSEA represents the Root Mean Square Error of Approximation*
- LO90 represents the lower limit of a 90% confidence interval*
- HI90 represents the upper limit of a 90% confidence interval*
- PCLOSE represents the closeness of the fit to the population*

The model was considered to have a poor fit with a chi-square p value of 0.000, CFI value of 0.750, RMSEA value of 0.096 and PCLOSE index of 0.000. The regression weights provided on Table 5.38 shows insignificant paths of self-regulatory learning strategies with personality traits, goal orientations and age and of final high school grade with students' academic performance.

Table 5.38 Regression weights of the variables of the hypothesized model for the third year students

1. Regression Weights

	Estimate	S.E.	C.R.	P
Goal <--- att	.985	.259	3.806	***
Self <--- per	-5.230	8.203	-.638	.524
Self <--- goal	8.230	10.927	.753	.451
Self <--- age	-.039	.043	-.918	.359
Agr <--- per	1.000			
Neu <--- per	-.413	.165	-2.504	.012
Con <--- per	.910	.168	5.403	***
cumGPA <--- fgrades	.086	.053	1.639	.101
cumGPA <--- eng	.271	.051	5.283	***
cumGPA <--- self	.183	.061	3.025	.002
Se <--- att	1.122	.265	4.230	***
Loc <--- att	1.000			
Ext <--- goal	-.343	.228	-1.507	.132
Int <--- goal	1.000			
Cog <--- self	.765	.117	6.528	***
Met <--- self	1.000			
Res <--- self	.678	.082	8.279	***
Ope <--- per	.558	.154	3.631	***
Xtr <--- per	.138	.151	.916	.360

Note:
SE represents an estimate of the standard error of the regression weights
C.R. represents the critical ratio
P represents the significance of the values
**** represents a significance level of 0.000*

The personality trait is observed to have insignificant loadings on extraversion while the goal orientation latent variables are observed to have insignificant loadings on the extrinsic goal orientation. The correlation analyses of the variables of third year students shown on Table 4.20 shows significant relationships between academic performance and chronological age, English Language proficiency, self-efficacy, intrinsic and extrinsic goal orientations, and the metacognitive and cognitive learning strategies. Information obtained from Table 4.20 and Table 5.38 initially governed the modification of the hypothesized model, leading to a more reasonably acceptable model as portrayed on Figure 5.10.

Figure 5.10 Adopted model of the factors contributing to the academic performance of the third year students of the university

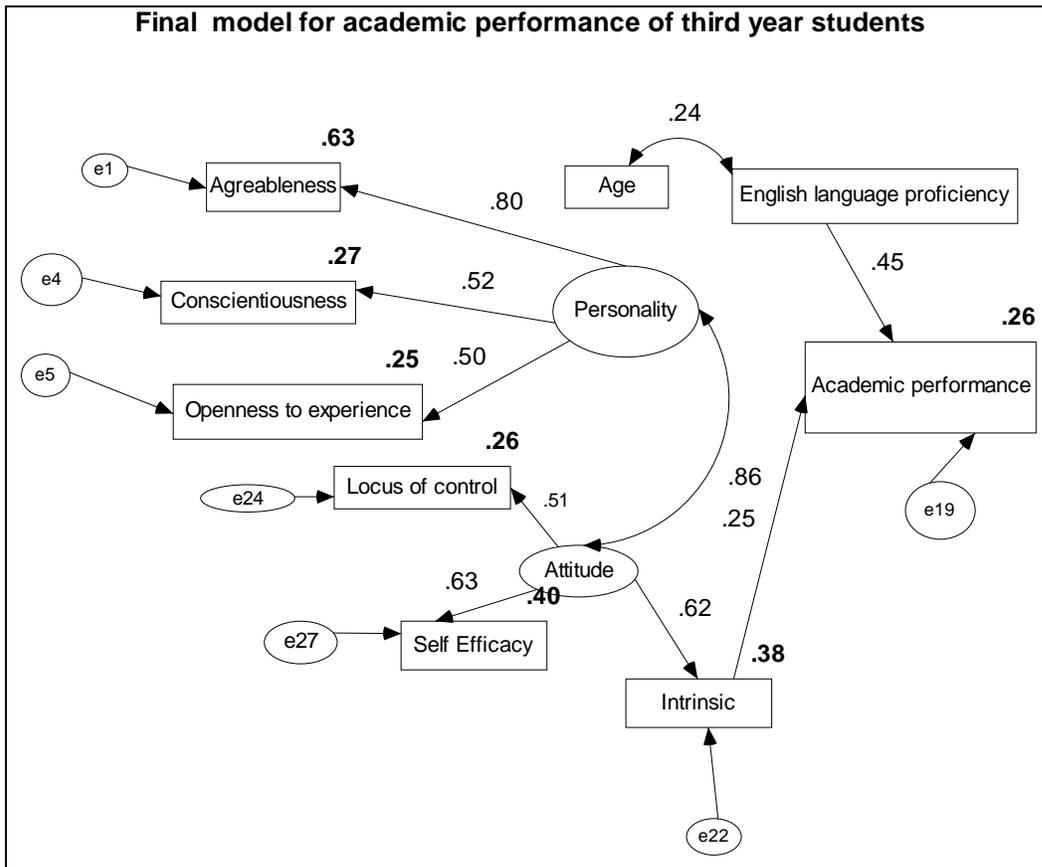


Table 5.39 presents the model of fit measures of the improved acceptable model.

Table 5.39 Measures of goodness of fit of the improved model of the variables related to the third year students' academic performance

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	28	43.657	26	.016	1.679
Saturated model	54	.000	0		
Independence model	9	189.672	45	.000	4.215

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.770	.602	.892	.789	.878
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.081	.035	.122	.115
Independence model	.176	.150	.202	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Although the measures in Table 5.39 are not indicative of a good model, it can be considered as an acceptable model with a chi-square p value of 0.016, a CFI value of 0.878, a RMSEA value of 0.081 and a PCLOSE index of 0.115. The regression weights and covariance estimates of the adopted model for the students in the third year of study are presented on Table 5.40.

Table 5.40 Regression weights and covariance estimates of the variables of the adopted model for the third year students

1. Regression weights

		Estimate	S.E.	C.R.	P
Int	<--- att	1.056	.282	3.744	***
Agr	<--- per	1.000			
Con	<--- per	.656	.158	4.161	***
Ope	<--- per	.601	.148	4.066	***
cumGPA	<--- eng	.272	.052	5.225	***
Loc	<--- att	1.000			
Se	<--- att	1.065	.281	3.787	***
cumGPA	<--- int	.140	.048	2.913	.004

2. Covariances estimates

		Estimate	S.E.	C.R.	P
att	<--> per	.163	.046	3.557	***
age	<--> eng	1.178	.500	2.354	.019

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

**** represents a significance level of 0.000*

According to Figure 5.10, the adopted model of the third year students' academic performance accounts for 26% of the variance. The third year students' English language proficiency (standardized regression weight = 0.45), followed by intrinsic goal orientation (standardized regression weight = 0.25) have the most significant direct effects on their academic performance at $p \leq 0.05$. The students' attitudes are observed to have significant effects on the academic performance of the third year students when mediated through the students' intrinsic goal orientation at $p \leq 0.05$. Significant positive correlations are observed between the students' attitudes and personality traits and between chronological age and English Language proficiency at $p \leq 0.05$.

5.11 PATH ANALYSES OF THE FOURTH YEAR STUDENTS' ACADEMIC PERFORMANCE

The data for the students in the fourth year of study was subjected to the hypothesized model. The hypothesized model's fit is presented on Table 5.41.

Table 5.41 Measures of goodness of fit of the initial model of the variables related to the fourth year students' academic performance

1. Chi-square

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	132.807	97	.009	1.369
Saturated model	152	.000	0		
Independence model	16	386.576	136	.000	2.842

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.656	.518	.876	.800	.857
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.059	.031	.083	.264
Independence model	.132	.117	.148	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Table 5.41 depicts a model that has a reasonable fit with a chi-square p value of 0.009, a CFI value of 0.857, a RMSEA value of 0.59 and a PCLOSE index of 0.264, indicative of an acceptable model but one that can be enhanced. Regression weights of the model are presented on Table 5.42.

Table 5.42 Regression weights of the variables of the hypothesized model for the fourth year students

1. Regression Weights

	Estimate	S.E.	C.R.	P
Goal <--- att	.171	.221	.773	.440
Self <--- age	-.007	.006	-1.299	.194
Self <--- per	.963	.276	3.485	***
Self <--- goal	3.308	4.215	.785	.433
Agr <--- per	1.000			
Con <--- per	2.227	.494	4.505	***
Ope <--- per	.606	.244	2.481	.013
cumGPA <--- self	.181	.095	1.913	.056
Cog <--- self	.676	.133	5.083	***
Met <--- self	1.000			
Neu <--- per	-1.277	.337	-3.785	***
cumGPA <--- fgrades	.317	.073	4.339	***
Res <--- self	.713	.107	6.647	***
Int <--- goal	6.707	8.474	.791	.429
Ext <--- goal	1.000			
Xtr <--- per	.362	.267	1.354	.176
cumGPA <--- eng	.016	.010	1.622	.105
Loc <--- att	1.000			
Se <--- att	1.513	.527	2.874	.004

Note:

SE represents an estimate of the standard error of the regression weights

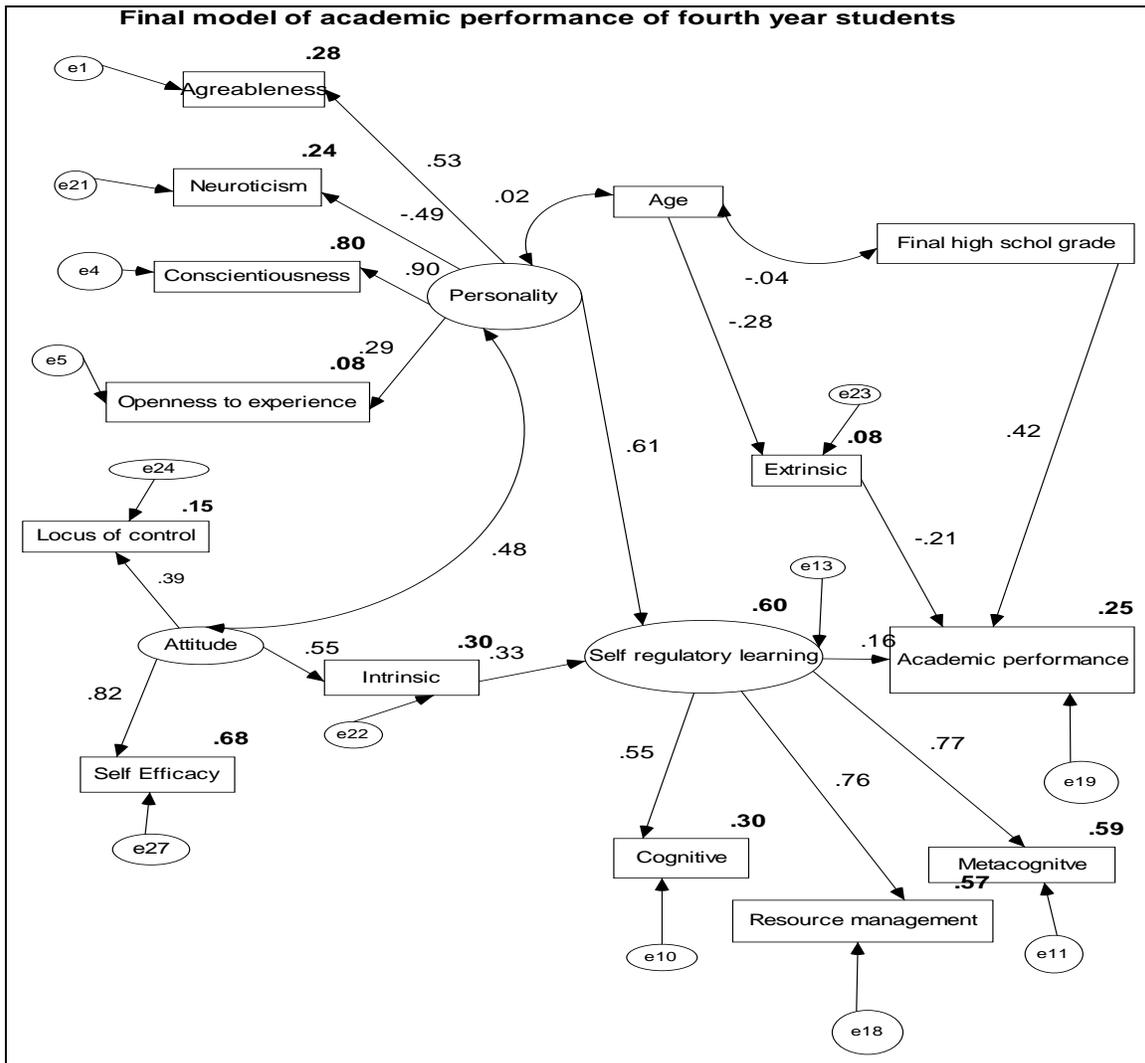
C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

Table 5.42 reveals insignificance of paths between fourth year students academic performance and both self-regulatory learning strategies and English Language proficiency; between self-regulatory learning strategies and both chronological age and goal orientation; between attitudes and goal orientations; and between self-regulatory learning strategies and goal orientations at $p \leq 0.05$. The table also depicts insignificant loadings of the goal orientation latent variable on the intrinsic goal orientation manifested variable and also of the personality trait of the extraversion trait. An evaluation of the regression weights presented on Table 5.42 and the correlation analyses of fourth year students presented on Table 4.21 led to the initial modifications of the model that finally adopted the model on Figure 5.11 as a good fitting model for the fourth year students of the university.

Figure 5.11 Final model on the factors contributing to the academic performance of the fourth year students of the university



The model fit of the academic performance of the students in the fourth year of study is presented on Table 5.43.

Table 5.43 Measures of goodness of fit of the final model of the variables related to the fourth year students' academic performance

1. Chi-square

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	47	83.615	72	.165	1.161
Saturated model	119	.000	0		
Independence model	14	342.474	105	.000	3.262

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.756	.644	.957	.929	.951
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.000	.071	.674
Independence model	.147	.130	.164	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The model fit indices presented on Table 5.43 depict a good model fit for the fourth year students' data, with a chi-square p value of 0.165, a CFI value of 0.951, a RMSEA value of 0.039 and a PCLOSE index of 0.674. The model is observed to account for 25% of the variance of the academic performance of the fourth year students of the university. The regression weights and covariance estimates of the final model of academic performance of the fourth year students are presented on Table 5.44.

Table 5.44 Regression weights and covariance estimates of the variables of the final model for the fourth year students

1. Regression weights

		Estimate	S.E.	C.R.	P
Int	<--- att	1.134	.374	3.035	.002
Self	<--- per	1.045	.262	3.987	***
Self	<--- int	.240	.071	3.404	***
Ext	<--- age	-.030	.010	-2.936	.003
Agr	<--- per	1.000			
Con	<--- per	2.123	.453	4.690	***
Ope	<--- per	.592	.237	2.503	.012
cumGPA	<--- self	.154	.096	1.608	.108
Cog	<--- self	.684	.138	4.946	***
Met	<--- self	1.000			
Neu	<--- per	-1.232	.323	-3.818	***
cumGPA	<--- fgrades	.347	.072	4.816	***
Res	<--- self	.728	.113	6.415	***
Loc	<--- att	1.000			
Se	<--- att	1.471	.509	2.888	.004
cumGPA	<--- Ext	-.129	.053	-2.419	.016

2. Covariance estimates

		Estimate	S.E.	C.R.	P
Att	<--> per	.041	.019	2.204	.028
Age	<--> per	.043	.194	.221	.825
fgrades	<--> age	-.169	.388	-.435	.663

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

According to Table 5.44, there are significant direct effects of first, the students' final high school grades (standardized regression weight = 0.42) and then their extrinsic goal orientation (standardized regression weight = -0.21), on the academic performance of students in the fourth year of study at the university at $p \leq 0.05$. No significant direct effects of the self-regulatory learning strategies on the fourth year students academic performance is observed at $p \leq 0.05$. While positive direct effects of the fourth year students' final high school grade on their academic performance are observed, negative direct effects are observed between their extrinsic motivation and academic performance.

5.12 PATH ANALYSES OF ACADEMIC PERFORMANCE OF STUDENTS TAKING BUSINESS-BASED COURSES

The data of students taking business-based courses was subjected to the hypothesized model of the study. The model fit for the data from the students is shown on Table 5.45.

Table 5.45 Measures of goodness of fit of the hypothesized model of the variables related to the students taking business-based course

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	173.902	97	.000	1.793
Saturated model	152	.000	0		
Independence model	16	567.929	136	.000	4.176

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.694	.571	.837	.750	.822
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.069	.052	.086	.032
Independence model	.139	.127	.151	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Table 5.45 depicts a model fit with a chi-square p value of 0.000, a CFI value of 0.822, a RMSEA value of 0.069 and a PCLOSE index of 0.032, indicative of a weak model that could be improved. Table 5.6 provides the significance of the regression weights of the hypothesized model.

Table 5.46 Regression weights of the variables of the hypothesized model for the students taking business-based courses

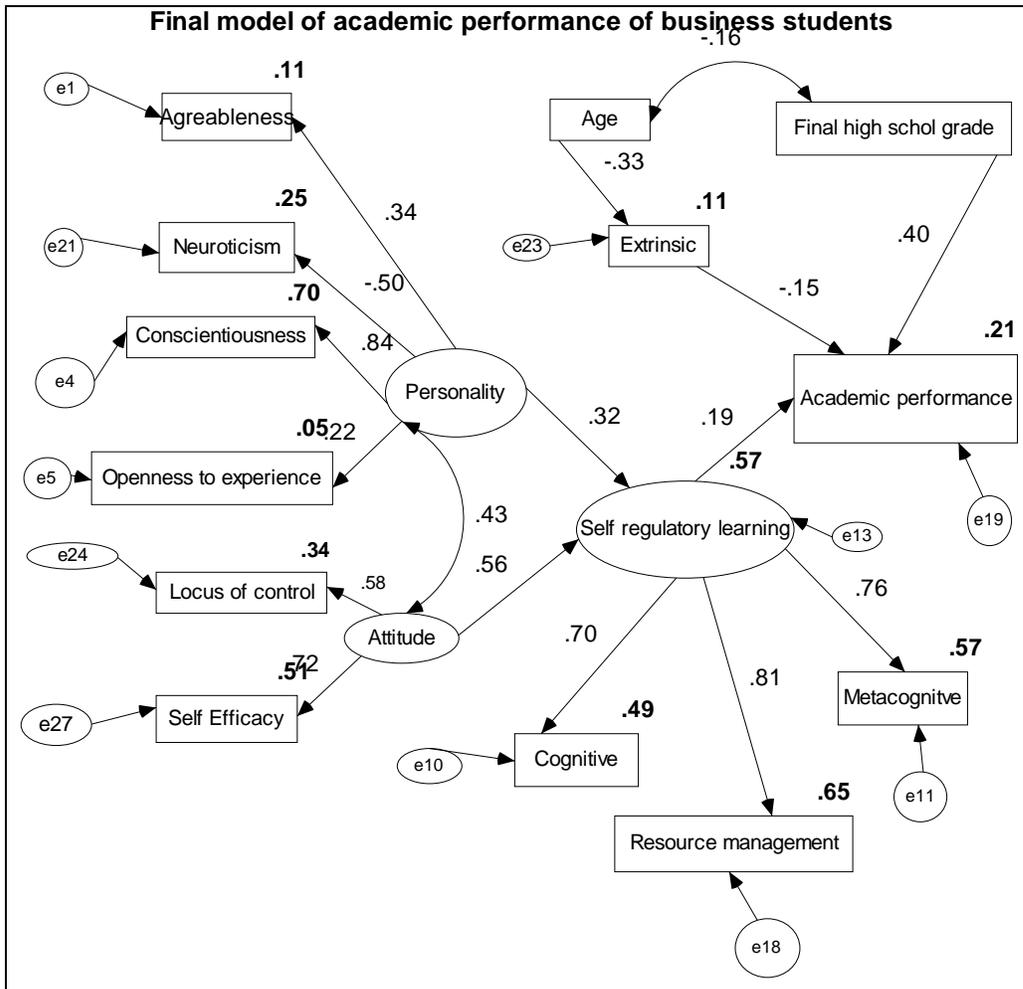
1. Regression Weights

		Estimate	S.E.	C.R.	P
Goal	<--- att	.024	.183	.131	.896
Self	<--- age	-.003	.005	-.659	.510
Self	<--- per	.719	.295	2.439	.015
Self	<--- goal	28.481	217.683	.131	.896
Agr	<--- per	1.000			
Con	<--- per	1.602	.384	4.168	***
Ope	<--- per	.692	.265	2.614	.009
cumGPA	<--- self	.160	.066	2.430	.015
Cog	<--- self	.912	.113	8.054	***
Met	<--- self	1.000			
Neu	<--- per	-1.216	.340	-3.579	***
cumGPA	<--- fgrades	.257	.048	5.372	***
Res	<--- self	.699	.078	8.949	***
Int	<--- goal	44.035	336.425	.131	.896
Ext	<--- goal	1.000			
Xtr	<--- per	.395	.239	1.651	.099
cumGPA	<--- eng	.016	.009	1.822	.069
Loc	<--- att	1.000			
Se	<--- att	1.228	.231	5.314	***

Note:
 SE represents an estimate of the standard error of the regression weights
 C.R. represents the critical ratio
 P represents the significance of the values
 *** represents a significance level of 0.000

According to Table 5.46, there are insignificant paths between goal orientations and attitudes, goal orientations and self-regulatory learning strategies and English Language proficiency and the students' academic performance at $p \leq 0.05$. In addition, the table portrays insignificant loadings of the goal orientation latent variable on the academic performance of students taking business-based courses and also insignificant loadings of the personality traits on extraversion at $p \leq 0.05$. In addition, the correlation analyses of students taking business related courses reveals significant relationships between academic performance and the variables of final high school grade, self-efficacy and extrinsic goal orientation at $p \leq 0.05$ as shown on Table 4.22. An assessment of the two tables relating to the academic performance of students taking business related courses provided the basis for further modification of the hypothesized model. Figure 5.12 provides the final proposed model of the academic performance of students taking business related courses.

Figure 5.12 Final model on the factors contributing to the academic performance of the students taking business-based courses



The goodness of fit measures of the final model of the academic performance of students taking business-based courses is presented on Table 5.47.

Table 5.47 Measures of goodness of fit of the final model of the variables related to the students taking business-based course

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	43	81.766	61	.039	1.340
Saturated model	104	.000	0		
Independence model	13	435.765	91	.000	4.789

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.812	.720	.945	.910	.940
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.045	.011	.069	.596
Independence model	.152	.137	.166	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

According to the measures of model fit presented on Table 5.47, the model has a good fit, with a chi-square p value of 0.039, a CFI value of 0.940, a RMSEA value of 0.045 and a PCLOSE index of 0.596. The model accounted for 21% of the variance in the academic performance of students taking business-based courses as shown on Figure 5.12. Table 5.48 provides the regression weights and covariance estimates of the final model of the academic performance of students taking business-based courses in the university.

Table 5.48 Regression weights and covariance estimates of the variables of the final model for the students taking business-based courses

1. Regression weights

		Estimate	S.E.	C.R.	P
Self	<--- per	.801	.346	2.316	.021
Ext	<--- age	-.036	.008	-4.480	***
Self	<--- att	.685	.184	3.721	***
Agr	<--- per	1.000			
Con	<--- per	2.612	.791	3.300	***
Ope	<--- per	.737	.351	2.101	.036
Cog	<--- self	.955	.120	7.975	***
Met	<--- self	1.000			
Neu	<--- per	-1.829	.557	-3.286	.001
cumGPA	<--- fgrades	.269	.048	5.636	***
cumGPA	<--- Ext	-.078	.038	-2.038	.042
Loc	<--- att	1.000			
Se	<--- att	1.096	.235	4.667	***
Res	<--- self	.726	.084	8.650	***
cumGPA	<--- self	.158	.068	2.334	.020

2. Covariance estimates

		Estimate	S.E.	C.R.	P
Att	<--> per	.031	.013	2.364	.018
fgrades	<--> age	-.641	.327	-1.962	.050

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

Figure 5.12 and Table 5.48 reveal significant direct effects of final high school grade, self-regulatory learning strategies and extrinsic goal orientation on the academic performance of students taking business-based courses. The final high school grade (standardized regression weight = 0.40) is observed to be the greatest contributor to the academic performance of students taking business-based courses, while extrinsic goal orientation (standardized regression weight = -0.15) contributes the least to the academic performance of students taking business-based courses. On the other hand, attitudes and personality traits are depicted as having significant indirect effects on academic performance when mediated through self-regulatory learning strategies, while the students' chronological age is depicted as having significant indirect effects on academic performance when mediated through the students' extrinsic goal orientation at $p \leq 0.05$. Attitudes (standardized regression weight = 0.56) are observed to have the greatest influence on the self-regulatory learning strategies. The model also reveals significant loadings of the latent variable of

self-regulatory learning strategies on metacognitive learning strategies, resource management and cognitive learning strategies; personality traits on agreeableness, neuroticism, conscientiousness and openness-to-experience and attitudes on locus of control and self-efficacy at $p \leq 0.05$. Significant positive correlations are also observed between the attitudes and personality traits and negative correlations between age and final high school age at $p \leq 0.05$.

5.13 PATH ANALYSES OF ACADEMIC PERFORMANCE OF STUDENTS TAKING ART-BASED COURSES

The data of students taking art-based courses was subjected to the hypothesized model. The model fit measures for the hypothesized model are shown on Table 5.49.

Table 5.49 Measures of goodness of fit of the hypothesized model of the variables related to the students taking art-based course

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	154.702	97	.000	1.595
Saturated model	152	.000	0		
Independence model	16	628.021	136	.000	4.618

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.754	.655	.891	.836	.883
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.062	.043	.079	.143
Independence model	.152	.140	.164	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Table 5.49 provides a chi-square p value of 0.00, a CFI index of 0.883, a RMSEA value of 0.062 and a PCLOSE value of 0.143. Although the model can be considered as an acceptable model based on its CFI, RMSEA and PCLOSE values, consideration was made to the enhancement of the model. The regression weights of the model were obtained as shown on Table 5.50 in order to consider its enhancement.

Table 5.50 Regression weights of the variables of the hypothesized model for the students taking art-based courses

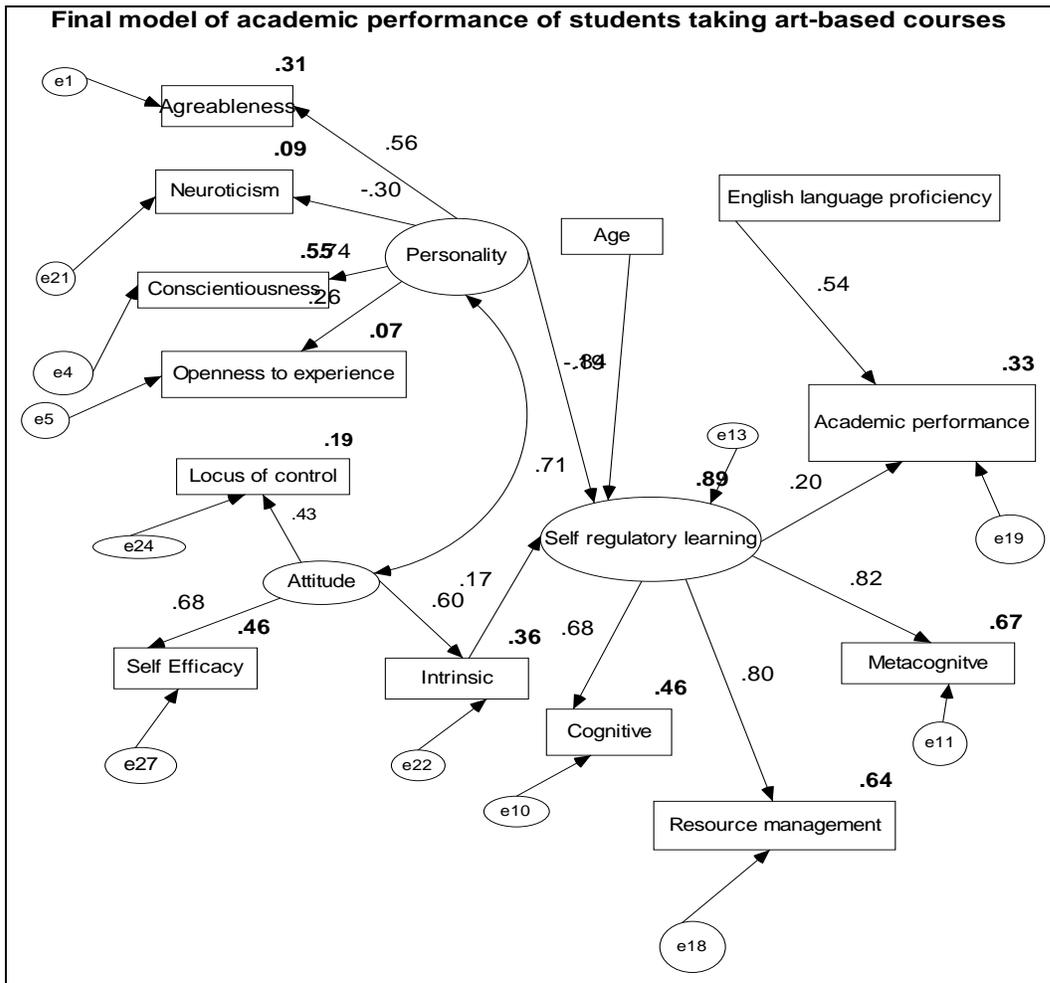
1. Regression Weights

	Estimate	S.E.	C.R.	P
Goal <--- att	-.175	.200	-.874	.382
Self <--- age	-.016	.006	-2.629	.009
Self <--- per	1.719	.418	4.108	***
Self <--- goal	1.245	1.596	.780	.435
Agr <--- per	1.000			
Con <--- per	1.619	.258	6.275	***
Ope <--- per	.428	.158	2.711	.007
cumGPA <--- self	.153	.058	2.650	.008
Cog <--- self	.792	.093	8.530	***
Met <--- self	1.000			
Neu <--- per	-.608	.198	-3.065	.002
cumGPA <--- fgrades	.096	.058	1.667	.095
Res <--- self	.762	.075	10.152	***
Int <--- goal	-5.709	6.502	-.878	.380
Ext <--- goal	1.000			
Xtr <--- per	.029	.159	.180	.857
cumGPA <--- eng	.398	.048	8.288	***
Loc <--- att	1.000			
Se <--- att	1.100	.267	4.123	***

Note:
 SE represents an estimate of the standard error of the regression weights
 C.R. represents the critical ratio
 P represents the significance of the values
 *** represents a significance level of 0.000

Table 5.50 shows insignificant paths between the students' goal orientations and attitudes, goal orientations and self-regulatory learning strategies, academic performance and final high school performance, chronological age and personality traits and between English Language proficiency and chronological age. A review of the correlation matrix of the variables of the study in relation to the academic performance of the students taking art-based also reveals significant relationships between academic performance and English Language proficiency, self-efficacy, intrinsic goal orientation and conscientiousness as shown on Table 4.22. Evaluation of the two tables of regression weights and correlation analysis of students taking art-based courses formed the initial basis for the review of the hypothesized model. The final adopted model of the academic performance of students taking art-based courses is shown on Figure 5.13.

Figure 5.13 Final model on the factors contributing to the academic performance of the students taking art-based courses



The goodness of fit measures for the final model are presented on Table 5.51

Table 5.51 Measures of goodness of fit of the final model of the variables related to the students taking art-based course

1. Chi-square measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	42	91.584	62	.009	1.477
Saturated model	104	.000	0		
Independence model	13	542.861	91	.000	5.966

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.831	.752	.938	.904	.935
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.055	.029	.078	.341
Independence model	.178	.164	.193	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Table 5.51 provides a model whose CFI value is 0.935, RMSEA value is 0.55 and PCLOSE index is 0.341, indicative of a considerably good fit. The regression weights and covariance estimates of the finally adopted model are shown on Table 5.52.

Table 5.52 Regression weights and covariance estimates of the variables of the final model for the students taking art-based courses

1. Regression weights

		Estimate	S.E.	C.R.	P
Int	<--- att	1.019	.263	3.881	***
Self	<--- age	-.015	.005	-3.163	.002
Self	<--- per	1.393	.256	5.448	***
Self	<--- int	.153	.077	1.987	.047
Agr	<--- per	1.000			
Con	<--- per	1.702	.278	6.121	***
Ope	<--- per	.438	.163	2.681	.007
cumGPA	<--- self	.159	.058	2.731	.006
Cog	<--- self	.795	.093	8.544	***
Met	<--- self	1.000			
Neu	<--- per	-.662	.207	-3.201	.001
Res	<--- self	.762	.075	10.133	***
cumGPA	<--- eng	.398	.048	8.210	***
Loc	<--- att	1.000			
Se	<--- att	1.146	.285	4.024	***

2. Covariance estimates

	Estimate	S.E.	C.R.	P
att <--> per	.076	.023	3.349	***

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

According to Table 5.52 and Figure 5.13, significant direct effects of first, English Language proficiency (standardized regression weight = 0.54), followed by the students' self-regulatory learning strategies (standardized regression weight = 0.20) on the academic performance of students taking art-based courses are observed at $p \leq 0.05$. The model portrays the students' chronological age, personality traits and intrinsic goal orientation as having significant indirect effects on the academic performance of the students taking art-related courses when mediated through self-regulatory learning strategies. The personality trait latent variable (standardized regression weight = 0.89) is considered to be the greatest contributor to the self-regulatory learning strategies. The model also shows significant indirect effect of the students' attitudes on academic performance of students taking art-based courses when mediated through intrinsic goal orientation, which is further mediated through self-regulatory learning strategies at $p \leq 0.05$. The model reveals significant loadings of the latent variable of self-regulatory learning strategies on metacognitive

learning strategies, resource management and cognitive learning strategies; personality traits on agreeableness, neuroticism, conscientiousness and openness-to-experience; and attitudes on locus of control and self-efficacy at $p \leq 0.05$. Significant positive correlations are also observed between students' attitudes and their personality traits.

5.14 PATH ANALYSES OF ACADEMIC PERFORMANCE OF STUDENTS TAKING SCIENCE-BASED COURSES

The data of the students taking science-based courses was also subjected to the hypothesized model on academic performance. The goodness of fit measures shown on Table 5.53 was indicative of a very poor model.

Table 5.53 Measures of goodness of fit of the hypothesized model of the variables related to the students taking science-based courses

1. Chi-square Measures

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	227.879	97	.000	2.349
Saturated model	152	.000	0		
Independence model	16	305.613	136	.000	2.247

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.254	-.045	.373	-.082	.228
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.248	.206	.289	.000
Independence model	.238	.203	.274	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

Attempts to enhance the model were not successful. This could greatly be attributed to the relatively small sample size of the students taking science-based courses. According to Mitchell (1993), a sample size of 10 to 20 times of the observed variables is adequate for the confirmation of a good fit. Stevens (1996) considers a sample size that is at least 15 times the number of observed variables to be adequate. On the other hand, Bacon (1997) considers the use of 200-400 cases to adequately fit measures that have between 10 to 15 observed variables, thus combining the views of Mitchell (1993) and Stevens (1996). The study only consisted of 22 students who were taking science-related courses. This was not a sufficient sample size for the variables of the study. Therefore the model for the students taking science-related courses could not be established.

5.15 PATH ANALYSES OF ACADEMIC PERFORMANCE OF STUDENTS TAKING SOCIAL SCIENCE- BASED COURSES

The data of the students taking social science related courses was subjected to the hypothesized model of the study. The model fit for the data is shown of Table 5.54.

Table 5.54 Measures of goodness of fit of the hypothesized model of the variables related to the students taking social science-based courses

1. Chi-square

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	137.476	97	.004	1.417
Saturated model	152	.000	0		
Independence model	16	326.768	136	.000	2.403

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.579	.410	.824	.703	.788
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.075	.043	.103	.089
Independence model	.138	.119	.157	.000

Note:

NPAR represents the number of distinct parameters being estimated

CMIN represents the minimum value of discrepancy

DF represents the number of degrees of freedom for testing the model

P represents the probability of getting as large a discrepancy as occurred with the present sample

NFI represents the Normed Fit Index

RFI represents the Relative Fit Index

IFI represents the Incremental Fit Index

TLI represents the Tucker-Lewis Index

CFI represents the Comparative Fit Index

RMSEA represents the Root Mean Square Error of Approximation

LO90 represents the lower limit of a 90% confidence interval

HI90 represents the upper limit of a 90% confidence interval

PCLOSE represents the closeness of the fit to the population

The critical model indices for the study were established as a chi-square p value of 0.004, a CFI value of 0.788, RMSEA value of 0.075 and PCLOSE index of 0.089 as provided on Table 5.54. The indices were indicative of a relatively weak model that would be enhanced by modification. The regression weights provided on Table 5.55 and the correlation analyses presented on Table 4.25 were evaluated to provide the basis for the modified model of the study.

Table 5.55 Regression weights of the variables of hypothesized model for the students taking social science-based courses

1. Regression Weights

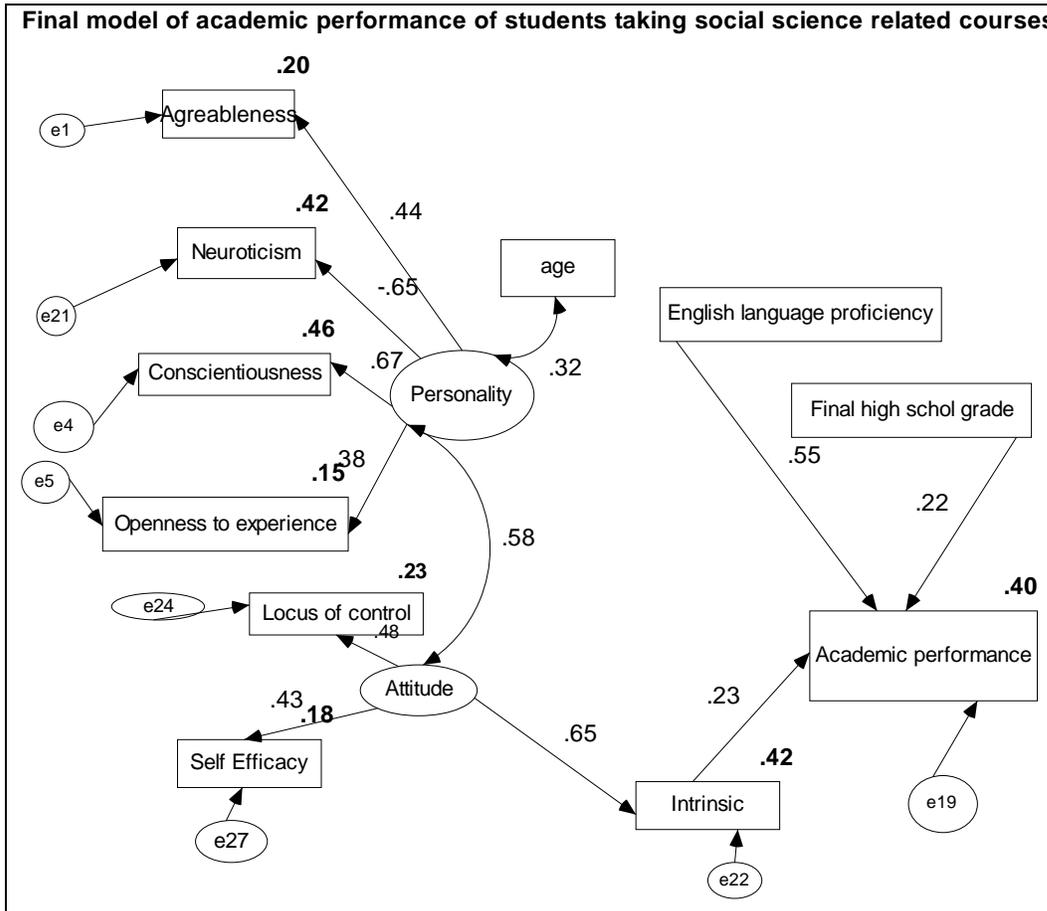
	Estimate	S.E.	C.R.	P
Goal <--- att	-1.157	.658	-1.758	.079
Self <--- age	.002	.005	.301	.763
Self <--- per	1.752	.846	2.072	.038
Self <--- goal	-.458	.325	-1.409	.159
Agr <--- per	1.000			
Con <--- per	3.604	1.546	2.331	.020
Ope <--- per	.747	.494	1.512	.131
cumGPA <--- self	.133	.097	1.373	.170
Cog <--- self	.596	.142	4.191	***
Met <--- self	1.000			
Neu <--- per	-1.909	.857	-2.229	.026
cumGPA <--- fgrades	.189	.079	2.394	.017
Res <--- self	.571	.110	5.205	***
Int <--- goal	-1.335	.590	-2.264	.024
Ext <--- goal	1.000			
Xtr <--- per	.674	.596	1.131	.258
cumGPA <--- eng	.422	.070	6.042	***
Loc <--- att	1.000			
Se <--- att	.637	.274	2.327	.020

Note:
 SE represents an estimate of the standard error of the regression weights
 C.R. represents the critical ratio
 P represents the significance of the values
 *** represents a significance level of 0.000

Table 4.25 shows significant relations between the academic performances of students taking social science-related courses and English Language proficiency, intrinsic and extrinsic goal orientations and the agreeableness personality trait at $p \leq 0.05$. On the other hand Table 5.55 depicted insignificant paths between the goal orientation latent variable and attitudes; and self-regulatory learning strategies and the three variables of students' age and goal orientations and the academic performance of students taking social science related courses at $p \leq 0.05$. In addition, the personality traits' latent variable is observed to have insignificant loadings on both the extraversion and openness-to-experience personality trait. No significant relations are observed between students' chronological age and both the final high school grade and English Language proficiency. Figure 5.14

provides the proposed final model for the academic performance of students taking social science-based courses.

Figure 5.14 Final model on the factors contributing to the academic performance of the students taking social science-based courses



The model presented on Figure 5.14 provides a good fit for the students taking social science-based courses. Table 5.56 provides the measures of the proposed final model of the students taking social science-based courses.

Table 5.56 Measures of goodness of fit of the final model of the variables related to the students taking social science-based courses

1. Chi-square

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	34	40.136	43	.596	.933
Saturated model	77	.000	0		
Independence model	11	141.559	66	.000	2.145

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.716	.565	1.029	1.058	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.000	.000	.070	.842
Independence model	.124	.096	.153	.000

Note:

- NPAR* represents the number of distinct parameters being estimated
- CMIN* represents the minimum value of discrepancy
- DF* represents the number of degrees of freedom for testing the model
- P* represents the probability of getting as large a discrepancy as occurred with the present sample
- NFI* represents the Normed Fit Index
- RFI* represents the Relative Fit Index
- IFI* represents the Incremental Fit Index
- TLI* represents the Tucker-Lewis Index
- CFI* represents the Comparative Fit Index
- RMSEA* represents the Root Mean Square Error of Approximation
- LO90* represents the lower limit of a 90% confidence interval
- HI90* represents the upper limit of a 90% confidence interval
- PCLOSE* represents the closeness of the fit to the population

Table 5.56 gives the final model’s chi-square p value as 0.596, CFI value as 1.000, RMSEA value as 0.000 and a PCLOSE index of 0.842, all of which represent indices of a good fit of the model on the data of the students taking social science related courses. In order to determine the significant paths of the model, Table 5.57 provides the regression weights and the covariance estimates of the various paths.

Table 5.57 Regression weights of the variables of final model for the students taking social science-based courses

1. Regression weights

		Estimate	S.E.	C.R.	P
Int	<--- att	1.394	.604	2.306	.021
Agr	<--- per	1.000			
Con	<--- per	1.849	.659	2.804	.005
Ope	<--- per	.801	.380	2.111	.035
Neu	<--- per	-1.607	.576	-2.790	.005
cumGPA	<--- fgrades	.189	.077	2.461	.014
cumGPA	<--- eng	.410	.068	6.013	***
cumGPA	<--- int	.151	.062	2.460	.014
Loc	<--- att	1.000			
Se	<--- att	.615	.289	2.128	.033

2. Covariance estimates

		Estimate	S.E.	C.R.	P
att	<--> per	.047	.025	1.852	.064
age	<--> per	.908	.481	1.889	.059

Note:

SE represents an estimate of the standard error

C.R. represents the critical ratio

P represents the significance of the values

*** represents a significance level of 0.000

Table 5.57 and Figure 5.14 reveal significant direct effects of first English Language proficiency (standardized regression weight = 0.55), then intrinsic goal orientation (standardized regression weight = 0.23), followed by final high school grades (standardized regression weight = 0.22) on the academic performance of students taking social science-based courses at $p \leq 0.05$. The model also portrays significant indirect effects of the attitudes on the academic performance of students taking social science-based courses, when mediated through the students' intrinsic goal orientation. The latent variable of attitude is depicted as having significant loadings on the variables of internal locus of control and self-efficacy, while the latent variable of personality traits is depicted as having significant loadings on the manifested variables of conscientiousness, neuroticism, agreeableness and openness-to-experience at $p \leq 0.05$. Although correlations are shown on Figure 5.14 between the personality traits and both attitudes and students chronological age, the relationships were considered insignificant at $p \leq 0.05$.

5.16 CONFIRMATION OF THE MODELS ON THE FACTORS THAT CONTRIBUTE TO THE ACADEMIC PERFORMANCE OF UNDERGRADUATE STUDENTS USING THE RETEST DATA

The retest sample was subjected to the proposed models for each category of students in order to confirm the fitness of the models in predicting the academic performance of undergraduate students of the university. The retest sample composed of all the students who responded to the study for the second time and provided their students' identity numbers. A total of 93 students were involved in the retest. Table 5.58 provides the frequency tables for the different categories of students involved in the retest.

Table 5.58 Frequencies of the various groupings of the study

1. Student's calculated year of study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	23	24.7	24.7	24.7
	2	21	22.6	22.6	47.3
	3	23	24.7	24.7	72.0
	4	26	28.0	28.0	100.0
	Total	93	100.0	100.0	

2. Students' gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	36	38.7	38.7	38.7
	Female	57	61.3	61.3	100.0
	Total	93	100.0	100.0	

3. Student's campus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Athi	81	87.1	87.1	87.1
	Nairobi	12	12.9	12.9	100.0
	Total	93	100.0	100.0	

4. Student's International students' status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Local students	86	92.5	93.5	93.5
	International students	6	6.5	6.5	100.0
	Total	92	98.9	100.0	
Missing	System	1	1.1		
Total		93	100.0		

5. Student's major type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Business-related	34	36.6	36.6	36.6
	Art-related	33	35.5	35.5	72.0
	Science-related	9	9.7	9.7	81.7
	Social science-related	17	18.3	18.3	100.0
	Total	93	100.0	100.0	

The sample sizes in the various groups were observed to be low in comparison to those in the initial sample thus presenting a threat to the ability of the sample data to provide adequate confirmation to the models' fits.

The retest data of all the students was first subjected to the adjusted model of factors contributing to the academic performance of all the students in the university. Measures of goodness of fit were established as presented on Table 5.59.

Table 5.59 Measures of goodness of fit of the proposed final model of the variables related to all students of the retest sample

1. Chi-square Measure

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	52	144.825	83	.000	1.745
Saturated model	135	.000	0		
Independence model	15	420.521	120	.000	3.504

2. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.656	.502	.817	.703	.794
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

3. RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.090	.065	.114	.006
Independence model	.165	.148	.182	.000

Note:

- NPAR represents the number of distinct parameters being estimated*
- CMIN represents the minimum value of discrepancy*
- DF represents the number of degrees of freedom for testing the model*
- P represents the probability of getting as large a discrepancy as occurred with the present sample*
- NFI represents the Normed Fit Index*
- RFI represents the Relative Fit Index*
- IFI represents the Incremental Fit Index*
- TLI represents the Tucker-Lewis Index*
- CFI represents the Comparative Fit Index*
- RMSEA represents the Root Mean Square Error of Approximation*
- LO90 represents the lower limit of a 90% confidence interval*
- HI90 represents the upper limit of a 90% confidence interval*
- PCLOSE represents the closeness of the fit to the population*

The measures presented on Table 5.59 reveal a poor fit with a chi-square index p value of 0.000, a CFI index of 0.794, a RMSEA value of 0.090 and a PCLOSE index of 0.006 as shown on Table 5.59. The differences in model fit between that of the data obtained after the retest and that of the initial data could be attributed to the great sample size differences, which structural equation modeling techniques are sensitive to. Whereas the initial sample used in the path models comprised of 421 undergraduate students, the retest sample comprised of 93 students. The latter sample was relatively small for the proposed model based on the views of Mitchell (1993), Stevens (1996) and Bacon (1997). Since the observed variables were 15, then the sample size that would have been best for the data should have been of 150 cases and above, that is above 10 times of the observed variables

of the model, of which the latter data fell short of. Therefore the retest data was considered to be inappropriate for the confirmation of the final model of the factors that contribute to the academic performance of all undergraduate students.

Using the conclusions made by Mitchell (1993), Stevens (1996) and Bacon (1997) on the relationship of the observed variables to the sample size of a good model, confirmation of all the other final models, using the retest data was also considered to be inappropriate. Both the male and female students' final models consisted of 14 and 15 observed variables respectively (Figure 5.2 and 5.3), while their retest sample sizes were 36 and 57 respectively, as shown on Table 5.58(2), thus considered inappropriate for confirmation of the models. On the other hand the observed variables for the local students were 15 while those for the international students were 3 (Figure 5.4 and 5.5), however, the sample sizes were 86 and 6 respectively, as shown on Table 5.58(4), also rendering the retest data for the local and international students inappropriate for confirmation of the respective models. The observed variables of the Athi River Campus students' model on academic performance were 13 (Figure 5.6), while those of the Nairobi Campus students were 8 (Figure 5.7), however, the retest sample sizes were 81 and 12 respectively, as shown on Table 5.58(3), thus rendering the retest data of both the Athi River students and the Nairobi campus students also inappropriate for confirmation of the respective models. Looking at the retest data obtained from the years of study categories of the first, second, third and fourth year students', the adopted academic performance models had 6, 6, 9 and 13 observed variables respectively (Figure 5.8, 5.9, 5.10 and 5.11), however, the retest sample sizes were 23, 21, 23 and 26 respectively, as shown on Table 5.58(1), thus rendering the retest data of all the groups improper for confirmation purposes. With respect to the type of course majors, the observed variables of the final models were 13, 13 and 11 for the students taking business-based, art-based and social science based courses respectively (Figure 5.12, 5.13 and 5.14), with no established final model for the students taking science-based course. However, the retest sample sizes were 34, 33 and 17 for the students taking business-based, art-based and social science based courses respectively, as shown on Table 5.58(5), thus rendering the sample unsuitable for confirming their respective final models. Thus, the study did not go further to confirm the adequacy of the models with the

retest data since the sample sizes were all perceived as inappropriate for confirmation purposes.

5.17 CONCLUSIONS ON PATH ANALYSES

In general, the data of the study was subjected to the hypothesized model of the study in order to establish its fit initially among the entire sample of students, then specifically in the various grouping categories of gender, international students' status, campuses, years of study and course major types. The hypothesized models were observed to have relative acceptable fits in most of the categories of the study. However, the hypothesized models had poor fits among the students in the categories of international, Nairobi campus, third years and science-based courses.

Modifications were however made to the various categories in an attempt to improve their model fits. In all the groupings of the study, the personality trait latent variable is not observed to significantly load onto the extraversion trait, while the goal orientation latent variable does not significantly load onto either one of the manifested variables of intrinsic and extrinsic goal orientation. Thus, the modifications initially involved removing both the extraversion manifested variable and the goal orientation latent variables by adjusting the manifested variables of intrinsic and extrinsic goal orientations in the model. Better models with adequate fits were obtained after modification of the hypothesized model in all the categories except that of the students taking science-based courses. An adequate model of the factors contributing to the academic performance of the students taking science-based courses could not be established due to the small sample size.

The model that included all the students of the sample, reveals significant direct effects of final high school grade, English Language proficiency, self-regulatory learning strategies and extrinsic goal orientation on the academic performance of the students. While the final high school grade has the greatest significant direct effect on academic performance, the extrinsic goal orientation variable has the least significant effect on academic performance at $p \leq 0.05$. The direct effect of extrinsic goal orientation on the academic performance of the students is observed to be negative while the effects of the final high school grade, self-

regulatory learning strategies and English Language proficiency are observed to be positive. On the other hand, the students' chronological age, personality traits, intrinsic goal orientation and attitudes are observed to have significant indirect effects on academic performance. While the students' extrinsic goal orientation is observed to mediate the effect of chronological age on academic performance, the students' self-regulatory learning strategies is observed to have mediating effects on the relationship between the academic performance and both the personality traits and intrinsic goal orientations. Intrinsic goal orientation further mediates the effects of attitudes on academic performance.

An analysis of the academic models related to gender depicted the final high school grade, English Language proficiency and self-regulatory learning strategies as having significant direct effects on the academic performance of both female and male students. Extrinsic goal orientation is observed to have significant indirect effects on the academic performance of female students when mediated through English Language proficiency. No significant effects of extrinsic goal orientation are observed among the male students category. In addition, the English Language proficiency of the female students, and not of the male students, is considered to be the greatest contributor to their academic performance. In addition the female students' academic performance is also portrayed as significantly better than that of the male students. The English Language proficiency significant effects on the female students' academic performance may be the factor resulting to the superior performance among the female students as compared to the male students. The male students' final high school grade is observed to be the greatest contributor to their academic performance in the university; however, it did not differ from that of the female students in terms of its weighting on the academic performance of the students. The proposed final model for the female students is depicted as accounting for greater variance in academic performance as compared to that of the male students.

The international students English Language proficiency is observed to be the single largest contributor to their academic performance. The proposed final model of the international students accounts for 71% of the variance in their academic performance. On the other hand, the proposed model of the local students, which accounts for 16% of the variance in their academic performance, portrays the students' final high grade as having

the greatest significant direct effect while extrinsic goal orientation has the least significant direct effects on academic performance. The direct effects of extrinsic goal orientation are observed to be negative, while those of the other variables, namely final high school grade, self-regulatory learning strategies and English Language proficiency, are observed to be positive.

The proposed final models of the data obtained from the students from both campuses of Nairobi and Athi River depicted the students' final high school grade, English Language proficiency and self-regulatory learning strategies as having significant direct effects on academic performance. The English Language proficiency and self-regulatory learning strategies have greater significant direct effects on the academic performance of the Nairobi campus students relative to the Athi River campus students. In addition, the proposed final model for the Nairobi campus students accounts for greater variance than that of the Athi River campus students.

Differences are also observed in the proposed models of students in various years of study. The English Language proficiency variable is observed to have the highest significant direct effects on the academic performance of students in their first, second and third year of study, but not in the fourth year of study. On the other hand, significant direct effects of extrinsic goal orientation are only observed among the students in the fourth year of study, while significant direct effects of intrinsic goal orientations are only observed among the students in the third year of study. In addition, significant direct effects of the internal locus of control are observed only among the students in the first year of study, while the resource management learning strategy is observed to have significant direct effects on academic performance only among students in the second year of study.

In relation to the students' courses, English Language proficiency have no significant direct effects of the academic performance of students taking business-based courses, however, English Language proficiency is observed to have the greatest significant direct effect on the academic performance of students taking both art-based and social science-based courses. The self-regulatory learning strategies are observed to have significant direct effects on students taking business and art-based courses, but not among students

taking social science-based courses. On the other hand, the students' high school grade has significant direct effects on the academic performance of students taking business- and social science-based courses, with greater effects among students taking business-based courses. Whereas the students' extrinsic goal orientation has significant negative direct effects on the academic performance of students taking business-based courses, intrinsic goal orientation is observed to have significant positive direct effects on the academic performance of students taking social science-based courses.

In general, distinct differences are observed in the models that represent the academic performance of students in different groupings. However, the variances accounted for by each model is indicative of possible other factors that contribute to the academic performance of students in the various categories.

A retest among the same students did not yield adequate confirmatory information in the various groupings due to the relatively small sample size in comparison to the initial sample sizes. There is need for future studies to consider retesting the various models among larger samples of students of the Daystar University so as to fully confirm the goodness of fit of the various final models of the study. Nonetheless, the next chapter uses the findings of the study to draw conclusions on the factors that contribute to the academic performance of undergraduate students in the university.

CHAPTER SIX

CONCLUSIONS ON THE FACTORS CONTRIBUTING TO THE ACADEMIC PERFORMANCE OF UNDERGRADUATE STUDENTS IN THE UNIVERSITY

6.1 FACTORS CONTRIBUTING TO THE ACADEMIC PERFORMANCE OF UNDERGRADUATE STUDENTS IN THE UNIVERSITY

The study involved determining the models that best explained the variables that contribute to the academic achievement of undergraduate students in the university. The study assessed the effects of the variables of final high school grade, English Language proficiency, chronological age, attitudes, goal orientations, self-regulatory learning strategies and personality traits on the academic performance of students in the university as a whole and more specifically, on the different distinct demographic grouping. The study embarked on assessing the effects of the various variables on the academic performance of all the undergraduate students, then specifically on the academic performance of male and female students, international and local students, students in the Nairobi Campus and Athi River campus, students in the different years of study and finally, students taking various course majors. The study determined the possible significant paths with respect to the various variables of the study and the students' academic performance in the university through using the structural equation techniques. Significant direct and indirect positive and negative effects were established, in addition to establishing possible significant correlations among the variables of the study. The significance of the latent variables' loadings on particular manifested variables was also established. Descriptive and correlation analyses were also provided for purposes of informing the study with regard to the models that best explained the contributions of various variables to the academic performance of undergraduate students of the university.

The following sections therefore draw conclusions on factors that contribute to the academic performance of undergraduate students of the university based on reviewed literature and empirical findings of the current study.

6.1.1 Effects of English Language proficiency on academic performance

Language proficiency, which is observed to be a strong indicator of verbal ability (Zeegers 2004), is considered to be a significant predictor of academic performance (Eeden et al. 2001 and Zeegers 2004). According to Eeden et al. (2001), verbal abilities rather than non-verbal abilities are significant predictors of academic performance among first year students in the university in South Africa. Zeegers (2004) also considers language proficiency to be a significant contributor to the academic performance of both first and third year students of an Australian university. The current study also establishes significant direct positive effects of English Language proficiency on the academic performance of the undergraduate students of the Daystar University, which is a Kenyan university, thus providing further support to the significance of the effects of language proficiency to the academic performance of students in the university. In particular, the current study establishes the significant positive effects of English language proficiency on the academic performance of generally all the undergraduate students, the male and female students, local and international students, Athi River and Nairobi campus students, first, second and third year students and students taking art- and social science based courses. English Language proficiency is observed to be the greatest direct contributor to the academic performance of female students, international students, Nairobi campus students, first, second and third year students and students taking art- and social science-based courses, an observation that cannot be overlooked.

One exceptional observation made in the current study is the effect of English Language proficiency on the academic performance of international students of the university. English Language proficiency is observed to be the single largest predictor of the academic performance of international students of the university. This latter observation supports those made by Eeden et al. (2001) and Andrade (2006) that language deficiencies among international students is one of their greatest deterrence to their academic success, thus the need to enhance the international students' English Language proficiency for the improvement of their academic performance in the university. The current study reveals no significant difference between the English Language proficiency of both the local and

international students. However, the greater contribution of the English Language proficiency to the international students rather than the local students' academic performance appears to be the factors behind the significant difference in the mean academic performance of both the international and local students. A review of Zeegers' (2004) models may therefore be indicative of improvements made by students in language proficiency in the third year of study, thus rendering effects of international students' status on academic performance insignificant in the third year of study yet significant in the first year of study.

The contribution of English Language proficiency to academic performance among the female students was observed to be much greater than that among the male students. This implied that deficiencies in English Language would result in more detrimental effects on the female students' academic performance as compared to their male counterparts. The latter observation may be the reason behind the academic performance of the female students being observed to be significantly better than that of the male students of the university. Although there were no significant differences in the mean English Language proficiency of both the male and female students, English Language proficiency contributions to academic performance were greater among the female students than the male students, thus having potential of enhancing the female students' academic performance more than the male students' academic performance.

6.1.2 Effects of final high school grades on academic performance

Several studies have depicted the students' final high school grade as being a predictor to the academic performance of students in the university, especially in their first year of study (Hall 2000, Eeden et al. 2001 and Robbins et al. 2006). In addition, the studies of Harackiewicz et al. (2002) and McKenzie et al. (2004) suggest that the effects of final high school grade on the academic performance of undergraduate students decreases as they progress from one year of study to the next and as other factors come into play in determining the academic performance of undergraduate students in the university.

The current study observes the final high school grade as having significant direct positive effects on the academic performance of all undergraduate students in the university, and more specifically on both the male and female students, the local students, both the Athi River and Nairobi campus students, students in the second and fourth year of study and among students taking business- and social science-based courses. Although the current study provides support to the significant positive effects of final high school grades on the academic performance of undergraduate students, it appears to differ with the suggestions of Harackiewicz et al. (2002) and McKenzie et al. (2004) with regard to the declining effects of the final high school grade as students progress from one year of study to the next. The current study depicts the highest effects of the prior high school performance on the academic performance of students in the final year of study. Thus, the effects of prior high school grade on the academic performance of students in the university cannot be overlooked at any stage. This may imply that keeping all other factors constant, the final high school grade still predicts the academic performance of students, even in their fourth year of study.

Among all the students of the study, and specifically among the male students, the local students, students in the Athi River campus, the students in the fourth year of study and among those taking business-based courses, the students' final high school grade is observed to be the greatest contributor to the students' academic performance. Consequently, the effect of the students' academic entry qualification, with respect to the final high school grade, cannot be downplayed as a determinant of academic performance among undergraduate students of the university. This observation supports that made by Ofori and Charlton (2002) who depict the students' entry qualification as having significant direct effects on academic performance.

The current study portrays the Athi River students as having better final high school grades as compared to their Nairobi campus counterparts. However, the effects of the final high school grade on academic performance are observed to be greater among the Nairobi students than the Athi River students. Although, the Athi River students' final high school grade is shown as being significantly higher than that of the Nairobi campus students, the former's effects are less than the latter's effects on academic performance. Thus, a low

high school grade would be less detrimental among the Athi River students than among the Nairobi campus students. The Athi River campus students are observed to be significantly younger than their Nairobi campus counterparts. According to Richardson (1998), Bee and Bjorklund (2004) and Gravett (2005), fluid intelligence abilities, which include information processing speed, holding of items in the 'working memory' and the rapid access to previously learned information decrease with age, especially in early adulthood. Thus, while the rapid retrieval of previously learned information, which relates to prior academic performance or even to the final high school grade, is more challenging among the Nairobi campus students, who are on average in their middle adulthood, this is easier among the Athi River campus students who are on average in their late adolescence or early adulthood. The effects of final high school grades on the academic performance of the Nairobi campus students may also be compounded by the initial adjustment problems (Salahdeen & Murtala 2005) resulting from joining the university several years after completing high school education (Eppler et al. 2000 & Cantwell et al. 2001). However, despite the differences in the effects of high school performance on the academic performance of both the Athi River and Nairobi campus students, no significant difference is observed between the academic performances of the students. This is indicative of the presence of other variables that may have come into play in determining the academic performance of the Nairobi campus students. One such variable could be the English Language proficiency of the Nairobi campus students, a variable considered to be the greatest positive predictor of academic performance among the Nairobi campus students.

6.1.3 Effects of chronological age on academic performance

Past studies have shown age as having significant effects on the academic performance of students in the university. Ofori and Charlton's (2002) study and Zeegers' (2004) study establish indirect effects of age on the academic performance of students in the university, an observation also made in the current study. No significant direct effects are observed between a student's age and academic performance in the university.

Extrinsic goal orientation, which is portrayed in the current study as having negative effects on academic performance, is observed to mediate between the effects of

chronological age on academic performance among the category of all the students of the study, and specifically, among the local students, students in their fourth year of study and among students taking business-based courses. Older students are observed to have less of the extrinsic goal orientation, which subsequently enhanced their academic performance in the university, an observation previously made by Eppler et al. (2000) and Socrates Grundvit Action (2002). The current study portrays the younger students as being generally more extrinsically motivated, as also pointed out by Eppler et al. (2000) and Socrates Grundvit Action (2002), which in turn negatively impacts on their academic performance. There are significantly older students in the Nairobi campus compared to the Athi River campus. However, the age factor is not depicted as having significant direct or indirect effects on students in these categories. The latter observation may therefore provide explanation to the lack of significant differences between the academic performance of students in the Athi River and Nairobi Campus, noting that age, which is the most significant difference between the Nairobi and Athi River students, is not a significant determinant of the academic performance of the students in the two groupings. Among the female students, significant indirect effect of chronological age on academic performance are also observed when mediated through extrinsic goal orientation and subsequently through the students English Language proficiency. Extrinsic goal orientations of the female students are not depicted as having any significant direct effects on the academic performance of the students but they are depicted as having indirect effects on academic performance when mediated through the students' English Language proficiencies. According to the study, the students' chronological age negatively influences extrinsic goal orientation, which in turn negatively influenced the students English Language proficiency. Therefore, the students' chronological age can be considered to have positive indirect effects on English Language proficiency when mediated through extrinsic goal orientations.

Self-regulatory learning strategies are also portrayed as being mediators between age and academic performance in certain categories of students. Among generally all the students, and specifically among female students and students taking art-based courses, self-regulatory learning strategies negatively mediates between the effects of chronological age on academic performance. This implies that the older students adopted relatively weaker

self-regulatory learning strategies which in turn result in poor academic performance. Conversely, the younger students adopted relatively good self-regulatory learning strategies that have potential of enhancing their academic performance. The latter two observations may be attributed to reduction of time of studying among the older students than the younger students as a result of family and work-related commitments (Eppler et al. 2000 and Little 2002). As earlier pointed out, the Nairobi campus students are significantly older than their Athi River campus counterparts. This implied that the Nairobi campus students generally adopt weaker learning strategies than their Athi River campus counterparts; however, the models of the current study depict less effects of learning strategies on academic performance among the Nairobi campus students than among the Athi River campus students.

The students' intrinsic goal orientation is also observed to be a mediator between the effects of chronological age on the academic performance of the male students. Older male students were more intrinsically motivated as compared to their younger counterparts a view also shared by Eppler et al. (2000) and Socrates Grundvit Action (2002). The latter observation leads to the potential of older male students adopting good self-regulatory learning strategies than their younger counterparts. Thus, it should be pointed out that older students have the potential of adopting good self-regulatory learning strategies as long as they were highly intrinsically motivated.

The students' chronological age is also observed to significantly negatively correlate with students' final high school grade among all the students of the study, and specifically, among the female students, the local students, second and third year students and students taking business-based courses. Thus, in the latter groupings, the older students generally have lower entry qualifications compared to their younger counterparts. Chronological age also positively correlated with English Language proficiency among the third year students, with the older students being more English Language proficient compared to their younger counterparts.

In summary, the negative and positive indirect effects of chronological age on the academic performance of the undergraduate students appear to generally nullify its effects

on the academic performance of the undergraduate students. Thus, the significant effects of the chronological age on the academic performance of undergraduate students are not evident.

6.1.4 Effects of attitudes on academic performance

Tuckman (1999) considers the attitudes of self-efficacy and locus of control to be predictors of the academic performance of undergraduate students in the university. According to his model, the attitudes have indirect effects on the academic performance of students in the university, when mediated through goal orientations and subsequently through the learning strategies.

The current study confirms the observations made by Tuckman (1999) with respect to the significant indirect effects of the attitudes of self-efficacy and locus of control on the academic performance of all the students, and in particular, of both the male and female students, the local students, both the Athi River and Nairobi campus students and finally, of the students taking art-based courses, when mediated through specifically, intrinsic goal orientation and whose effects on academic performance are further mediated through the self-regulatory learning strategies. On the other hand, the students' attitudes are also observed to have significant indirect effects on academic performance among the third year students and those taking social science-based courses when mediated only through the intrinsic goal orientation. The self-regulatory learning strategies also directly mediate between the effects of the attitudes on the academic performance of students taking business-based courses. The current study supports that of Carroll and Garavalia's (2004) that depicts significant positive contributions of self-efficacy, which is an attitudes, on both intrinsic goal orientations and self-regulatory learning strategies and consequently, the indirect effect of self-efficacy on students' academic performance. Smith (2001) also observes self-efficacy, attributions, which include the internal or external locus of control, and intrinsic goal orientations to be vital in the prediction of self-regulatory learning strategies and thus academic performance in the university, an observation supported by the current study. In addition, Cassidy and Eachus' (2000) observe positive relationships

between the two attitudes of self-efficacy and internal locus of control, an observation also made in the current study.

The students' internal locus of control is also observed to have significant direct positive effects on the academic performance of first year students. In addition, internal locus of control is observed to be the highest positive predictor of the academic performance of the first year student.

In general, the positive effects of attitudes, and more specifically, self-efficacy and internal locus of control, cannot be overlooked in the determining of the academic performance of undergraduate students in the university.

6.1.5 Effects of goal orientations on the academic performance

Carroll and Garavalia (2004) categorize goal orientations into the two distinct groups of intrinsic and extrinsic goal orientations, both of which are observed to significantly predict academic performance of undergraduate students (Harackiewicz et al. 2002, Cobb 2003, Carroll & Garavalia 2004, Yip & Chung 2005). Both the extrinsic and intrinsic goal orientations are considered in the current study.

The current study observes extrinsic goal orientation to have significant direct negative effects on the academic performance of all students, and in particular, on the academic performance of the local students, students in their fourth year of study and among those taking business-based courses in the university. Among the latter groups of students, increase of extrinsic goal orientation implies decrease in academic performance and decrease of extrinsic goal orientation implies increase in academic performance. While the current study observes extrinsic goal orientations to have negative effects on the academic performance of students in the university, Harackiewicz et al. (2002) observes that performance-avoidance goal orientations, which are extrinsic goal orientations that involve the avoidance of ridicule and the protection of self-worth at all costs (Pintrich & Schunk 2002, Begetto 2004) to negatively affect academic performance, while performance-approach orientations, which focus more on achievement behavior for the purpose of

demonstrating their ability (Pintrich & Schunk 2002, Begetto 2004), have positive effects on the academic performance of the student. Harackiewicz et al. (2002) study provides more details with regard to the specific type of extrinsic goal orientation that negatively impacts on academic performance, thus providing explanation to the possibility of the current study focusing more on the performance-avoidance goal orientation than the performance-approach orientation. It should be noted that the significance of the direct effects of extrinsic goal orientation on the academic performance of all the students, and specifically, on the academic performance of the local students, fourth year students and students taking business-based courses in the current study is the least among the other significant variables. It should be noted that the negative effects of extrinsic goal orientations are more pronounced in the fourth year of study than in any other year of study. This may be indicative of anxiety within the students during their final year of study as a result of anticipating success in their future life, which is at this stage pegged to academic success after their tertiary level education. The expectation of the students may be for a good paying job, promotions in their work places, salary increments, qualifications for postgraduate studies and improved social and economic status, all of which are extrinsic goal orientations, which are associated with the successful completion of the undergraduate programme and the level academic success. Significant mean differences are observed between the extrinsic goal orientation of Athi River students and Nairobi campus students. The Athi River students, who are also significantly younger than the Nairobi campus students, are observed to be more extrinsically motivated than their Nairobi campus counterparts as also pointed out by Eppler et al. (2000) and Socrates Grundvit Action (2002). Nonetheless, the models of the two campuses do not reveal any significant effects of extrinsic goal orientation on the academic performance of their students. Significant indirect effects of extrinsic goal orientation on the academic performance of the female students are however observed when mediated through their English Language proficiency.

Intrinsic goal orientation is, on the other hand, observed to have significant direct positive effects on the academic performance of both third year students and students taking social science-related courses. It should be noted that students taking social-science based courses are significantly older than those taking any other major and are on average adults. In

addition, older students have been observed to be more intrinsically motivated as compared to their younger counterparts, thus providing a degree of explanation as to why the effects of intrinsic goal orientation would be more pronounced among the students taking social science based courses than among those taking any other major. On the other hand, intrinsic goal orientation is observed to have significant indirect positive effects on the academic performance of all students, and specifically, of both the male and female students, the local students, students in the Athi River and Nairobi campus and students taking art-based courses, when mediated through self-regulatory learning strategies. According to Richter (2001), Printick and Chunk (2002), Begetto (2004) and Carroll and Garavalia (2004) intrinsic goal orientation results in, among other factors, academic engagement and effort, perseverance in the face of challenges, risk-taking and seeking for assistance when stranded, all of which relate to self-regulatory learning strategies, which are further depicted in most models of the current study, as having significant positive effects on the academic performance of the undergraduate students. The current study therefore supports the observations of Cobb (2003), Carroll & Garavalia (2004) and Yip & Chung (2005) that intrinsic goal orientations positively affect the academic performance of students in the university.

6.1.6 Effects of self-regulatory learning strategies on academic performance

The adoption of good self-regulatory learning strategies, which Pintrich (1999) defines as the strategies employed by students to regulate their cognition and also control their learning, is observed to have positive effects on the academic performance of undergraduate students in the university (Tuckman 1999, Ofori & Charlton 2002, Chen 2002, McKenzie et al. 2004, Zeegers 2004, Yip & Chung 2005). The latter observations are sustained in the current study.

According to the current study, the self-regulatory learning strategies of metacognitive learning strategies, resource management and cognitive learning strategies, have significant direct positive effects on the academic performance of all students, and in particular, on the academic performance of both the male and female students, Athi River and Nairobi campus students and students taking business- and art-based courses. Students who adopted good self-regulatory strategies are also depicted as having high academic

performance. However, it should be noted that the significance of the direct positive effects of self-regulatory learning on the academic performance of the female students and the Nairobi campus is the least among the other significant variables. This latter observation does not however discredit the significance of the contributions made by self-regulatory learning strategies to the academic performance of undergraduate students in the university.

Among the students in the second year of study, resource management is observed to have significant direct positive effects on academic performance. The metacognitive learning strategies of the second year students are also observed to have significant indirect effects on academic performance when mediated through their resource management strategies. Thus, adoption of good metacognitive learning strategies contributes to the adoption of good resource management strategies among the students in their second year of study, thus consequently enhancing their academic performance.

The latter three sections generally provide evidence to the significant positive effects of high levels of self-efficacy, internal locus of control, intrinsic goal orientations and the adoption of good self-regulatory learning strategies to the academic performance of students in the university, all of which Zeegers (1999) and Leung et al. (2006) consider to be indicators of deep learning approaches. Thus, the adoption of good deep approaches to learning would therefore positively influence the academic performance of the students in the university. With the greater emphasis on deep rather than surface learning approaches in tertiary institutions (Fourie 2003) and the observations made in the current study that reflect the indicators of deep learning approaches as having a significant positive effect on the academic performance of undergraduate students, great attention needs to be given to the enhancement of the deep learning approaches in the universities.

6.1.7 Effects of personality traits on academic performance

Personality traits cannot be overlooked in relation to their contributions to the academic performance of students in the university. Several studies depict personality traits as contributors to the academic performance of students in the university (Eeden et al. 2001

and McKenzie et al. 2004). In particular, McKenzie et al. (2004) shows introversion and agreeableness as having significant direct effects on the academic performance of students in the university. They however depict conscientiousness as having significant indirect effects and the two personality traits of openness-to-experience and neuroticism as having no significant effects on academic performance of undergraduate students. The latter observations are therefore an indication that the various personality traits affect academic performance in varying ways and degrees.

The current study also gives further support to the contributions made by the various personality traits to the academic performance of students in the university. The current study reveals significant positive loadings of the personality latent variable onto the variables of agreeableness, conscientiousness and openness-to-experience and negatively loadings onto neuroticism among most of the groups of students. The current study was however unable to adequately determine the contributions made by extroversion to the academic performance of students in the university. Indirect significant effects of the personality traits on the academic performance of all students, and in particular, among male and female students, local students, Athi River students and students taking business- and art-based courses are observed in the current study, when mediated through the students' self-regulatory learning strategies. In fact, in most of the groupings except for the students taking business-related courses, the personality traits are portrayed as the largest contributors to the students' self-regulatory learning strategies, thus closely relating personality traits to the adoption of self-regulatory learning strategies, an observation also made in McKenzie et al.'s (2004) study. Therefore, the effects of personality traits on the various self-regulatory learning strategies cannot be disregarded, thus giving further support to Bidjerano and Dai (2007) study on the relationship between the big-five model of personality and self-regulatory learning strategies. These studies rendered the personality traits an important effect to reckon with in relation to the academic performance of students in the university, and more specifically, in relation to self-regulatory learning strategies, which are depicted as being significant contributors to the academic performance of undergraduate students. The personality traits also revealed significant positive relationships with the attitudes of all students, and in particular, male and female students, local students, Athi River students, students in the third year of study

and those taking business- and art-based courses.

The next section therefore looks at the implications of the various conclusions to the academic performance of students in the university.

6.2 IMPLICATIONS OF THE FINDINGS OF THE FACTORS CONTRIBUTING TO THE ACADEMIC PERFORMANCE OF UNDERGRADUATE STUDENTS OF THE UNIVERSITY

In conclusion, several factors are observed to have significant effects on the academic performance of students in the university. The factors that are observed to have significant direct effects on the academic performance of undergraduate students are the students' final high school grade, English Language proficiency, self-regulatory learning strategies and extrinsic goal orientation, while those that are observed to have significant direct and indirect effects, depending on the categories of students in focus are the students' chronological age, intrinsic goal orientations, attitudes and personality traits. In particular, among the first year and third year students and also among students taking social-science related courses, internal locus of control and intrinsic goal orientations are observed to have significant direct effects on the students' academic performance. Among the factors that have direct effects on the academic performance of most of the undergraduate students, the extrinsic goal orientation is observed to have negative effects, while the other variables are observed to have positive effects on the academic performance of the undergraduate students. Therefore, there is need for all the factors that have significant direct and indirect effects to be considered as critical to the determining of the academic performance of undergraduate students.

The students' high school grade is observed to be a significant positive predictor of the academic performance of high school students. The contributions of final high school grades to the academic performance of undergraduate students in the university should not only be considered to have significant effects on students in their first year of study, but, as reflected in the current study, to have potential of affecting students in all levels of education, and more specifically, students in the final year of study. This implies that students who enter the university with good high school grades of 'B+' and above are also

expected to outperform the students who enter the university with low grades of 'C' and below with regard to their academic performance, not only in the first year of study but in all other years of study. Therefore, the significance of the final high school grade in determining students' readiness for university education and their possible academic performance in the university cannot be downplayed. Students with final high school grades of 'B+' and above should therefore be given highest priority, while those with final high school grades of 'C' and below should be given less priority in terms of enrolment into the academic programmes of the university. Good final high school grade should therefore remain as a qualification for admission to the undergraduate programmes of the university.

The students' English Language proficiency is also considered to have great positive effects on the academic performance of undergraduate students in the university. The university's faculty should therefore re-emphasize to the students on the need for proper use of English Language in the University for the enhancing of their academic performance. Lecturers should seek ways of assisting students to improve their English Language reading, writing, comprehension and communication skills for the enhancement of the students' academic performance in the university. Two main English Language courses emphasizing on reading, comprehension, writing and communication are provided by the university. Although this is a good initiative to the enhancing of the students English Language proficiency, there is need for this initiative to be made even outside the classroom setting by both students and lecturers in the university. Both students and faculty need to make correct use of English Language, even in informal settings. The student advisors also need to encourage the students to enhance their English Language proficiency, through encouraging them to develop a culture of reading English books and to write and communicate with others using proper English Language skills. More attention needs to be given to the English Language proficiency of the international students. According to Andrade (2006), difficulties in international students' reading and writing skills and comprehension of the lecturers' language vocabulary negatively impact on the students' academic performance in the university, thus the need for more emphasis on English Language proficiency among the international students of the university. One English language introductory and another remedial course are given to the international

students during their first year of study. However, there is need for more time to be given to the international students for the improvement of their English Language skills, through formal and informal sessions. More specifically, international students should interact more with English Language through increasing their English Language readings and writing and communicating more in English Language in both formal and informal settings.

Self-regulatory learning strategies, which comprise of metacognitive, cognitive and resource management strategies, are also considered to be critical positive predictors of the academic performance of undergraduate students. It is crucial for all mentors of undergraduate students, who include parents, lecturers and student advisors to encourage and assist students on the use of a variety of good self-regulatory learning strategies for the enhancing of their academic performance in the university. The various mentors would first need to know and understand what is entailed in the adoption of the various good self-regulatory strategies before they can advocate for them among the students.

Isaacson and Fujita (2006) observe the success of the students in the tertiary level of education as being greatly influenced by the students' adoption of a variety of self-regulatory learning strategies, which included, the use of accurate metacognitive knowledge monitoring strategies while studying, evaluating their academic performance and making appropriate adjustments to their learning in an endeavor to enhance their academic performance. According to Printich (1999), metacognitive regulation learning strategies, which are a vital component of self-regulation strategies (Smith 2001), include planning, monitoring and regulating activities. According to Chen (2002), planning entails the setting of academic goals and expected outcomes by the student. The progress of the achievement of the set goals should be monitored and choices further made by the student in regulation of their behavior for the successful accomplishment of their academic goals. Therefore, students' mentors need to assist students to set their own academic goals, closely monitor them and make appropriate adjustments for the enhancement of their academic success. The mentors would also be called upon to initially closely walk with the student in each of the steps, namely, the planning, monitoring and evaluating of their academic programmes in the university, especially in their first year of study, in which

they are expected to make adjustments from having their learning greatly influenced by external sources that include parents and teachers, to being more responsible for their academic lives in the university, regulating their learning activities for the enhancement of their academic performance.

The cognitive learning strategies entail rehearsal, elaboration and organization strategies (Printich, 1999), all of which involve the use of deep learning approaches. According to Cassidy & Eachus (2000) and Fourie (2003), the deep approaches to learning refer to the intention to understand related ideas, which are inclined to cognitive learning strategies.

Deep learning approaches rather than surface learning strategies are observed to greatly influence the academic performance of undergraduate students in the university. Therefore, aspects that promote the adoption of deep learning approaches should be enhanced in the students' lives in the university. According to Fourie (2003) these aspects include effective time management, perception of assessment dealing with high level learning skills rather than the reproduction of information and the teaching approaches engaging students in the learning process with a wide variety of methods such as group work, projects and role-play, which would optimize their learning. Fourie also observes the need to discourage rote-learning approaches in academics at the tertiary levels of education. Lecturers should therefore be encouraged to allow students for adequate time to plan their academics without overworking them, give students assignments and tests that expose students to high levels of learning skills and use a variety of teaching methods that engage students in the learning process for the enhancement of their academics in the university. Lecturers should endeavor to make use of higher levels of assessments, which involve critical thinking tasks of application, analysis, synthesis and evaluation according to the Bloom's Taxonomy of Learning Outcomes (Bloom, Englerhart, Furst, Hill & Krathwohl 1956), for the enhancement of the students' perceptions of the assessments, thus encouraging them to adopt strategies that promote the use of deep learning approaches to learning. According to Gravett and Geysler (2004) teaching approaches that engage students, by which students seek to understand the content rather than those in which the learners are least involved in the learning process should be encouraged for the enhancing of deep approaches to learning. Cilliers and Sternberg (2001) also advocate for students to be exposed to a wide

variety of methods such as group work, projects and role-play, which would optimize the students' learning. Therefore, the lecturers should apply a variety of teaching and assessment techniques that encourage students to be active, analytical learners as a way of encouraging students to use good cognitive learning strategies for the enhancing of their academic performance in the university.

Adoption of good resource management learning strategies entails good management and control of one's time, effort, study environment and people including teachers and peers (Printich, 1999). Chen (2002) considered resource management to encompass the regulation of physical and social environments. Resource management strategies entail the control and management of one's physical surroundings for the optimization of performance; social resources, which include teachers, peers and other adults (Smith 2001, Pintrich 1999, Ruban et al. 2003); time management, which includes the scheduling, planning and managing of one's study time; and effort regulation, which is the tendency of one to maintain focus and effort towards a goal despite potential distraction. The student mentors should therefore encourage students to identify study areas that are quiet and relatively free of visual and auditory distractions, to seek academic support when experiencing difficulties in their academics, to involve themselves in collaborative learning, which involves learning in groups rather than alone and which encourages students to ask questions, justify their opinions, articulate their reasoning and reflect upon their knowledge (Soller 2001), to manage their time well and to regulate their effort, even during stressful moments, for the enhancing of their academic performance in the university. Mentors should therefore encourage students to have a written program of what they intend to do at any given time of their semester, allocating time and place for individual and collaborative studying of various courses and following through their programs diligently in order to enhance their time and effort management strategies. The mentors should constantly evaluate these programs with the students to see whether the programs are contributing to the students' academics, encouraging students to make the necessary adjustments to the programs as a result of evaluations of their academic growth. The mentors would therefore have the role of initially assisting the students to adopt metacognitive learning strategies that would enhance their academic performance in the university.

According to McKenzie et al. (2004) lecturers should also avoid giving students heavy workloads and restricted time to complete their work, both of which have the tendency to hamper effective time management, thus negatively affecting the students' academic achievement in the university. Lecturers therefore need to give the students adequate working space, while also ensuring that they have enough work to allow them to assimilate what they have learned in class. The latter would allow the students to plan their time adequately, thus be more effective in time management.

The main transition-related issues of students from high school to the university should not be overlooked when considering how to enhance the academic performance of university students. Whereas in many cases, high school students are considered as passive learners, university students are expected to be active learners, who take personal initiative and are more responsible for their academic outcomes (Tam 2002, Cobb 2003, Appleby 2005, Yip & Chung 2005, Isaacson & Fujita 2006). It is therefore crucial for the high school teachers to assist the students to make this transition as the students complete their high school education. High school teachers should encourage students, especially in their final year of high secondary school education, to make and diligently follow through time programs of how and where they will utilize their time in any given school term. These programs should be evaluated on a constant basis by the teachers and student mentors in order to establish to what extent the programs enhance the students' academics and in order to establish whether there is need to have the set activities reviewed. Revision of the activities of the programs could therefore be considered depending on how well the activities go into enhancing the students' academics in schools. The latter would therefore go into influencing the metacognitive learning strategies that would be applied in the university too, thus making the transition from secondary to tertiary level education smooth.

The universities should also consider initiating good effective orientation programmes that would assist first year students to make smooth transitions from secondary to university education, by enlightening the students on the differences between high school and university education and the expectations of university education. In general, the university policies and practices should be geared towards developing an environment by which

students' responsibility and active participation in their own university experience is promoted (Tam 2002). This could be done by the emphasis on lecturers presenting to students' class activities, test and assignments that allow for critical thinking, discussions and group work activities. Class activities that promote reproduction of information, use of exclusive lecture techniques and rote learning, with very little challenges presented to students, should be minimized in tertiary levels of education.

Extrinsic goal orientations are also observed to be a significant but negative predictor of academic performance in the university. However, this mainly refers to the performance-avoidance goal orientation rather than the performance-approach goal orientation. It is important to identify ways by which the performance-avoidance goal orientations which relate to the fear of failure and ridicule, and in addition, externally-driven extrinsic goal orientations, are reduced in the university. Whereas in the high school level, external forces have important roles to play in the enhancement of the academic performance of students, this is different at the university level, where students are expected to regulate their own learning with less influence from external forces (Cobb 2003, Isaacson & Fujita 2006). Therefore, student mentors, who include parents, lecturers and student advisors, should discourage the heavy dependence on externally-driven extrinsic goal orientation and, more specifically, performance-avoidance goal orientations among the students. Mentors should be made aware that students with low perceived ability tend to develop externally driven extrinsic goal orientations (Carroll & Garavalia 2004). Thus, mentors need to seek for ways of enhancing students' perceptions of their abilities as a way of reducing the students' fear of failure and ridicule, thus enhancing their academic performance in the university. The Athi River students are observed to experience more of extrinsic motivation than their Nairobi campus counterparts. This could be attributed to their age differences, with more adolescent students in the Athi River campus and adult students in the Nairobi campus. According to Bogenschneider (1997), the two main externally-driven extrinsic motivations that influence the adolescent students' behaviors are peer and parental approval. The younger students, therefore, need to be encouraged to balance between the two kinds of approval, reducing their negative effect on their academics, for the enhancement of their academic performance in the university.

Students with good positive attitudes, which include high levels of self-efficacy and internal locus of control, also tend to employ high intrinsic goal orientation levels that result in the adoption of good self-regulatory learning strategies that significantly positively influence their students' academic performance in the university. Therefore, it is imperative that high school teachers, university lecturers and other individuals, who have the role of mentoring students, seek to enhance the students' internal locus of control beliefs, levels of self-efficacy and intrinsic motivation either as the students complete their high school education or in their initial years of study in the university.

Cassidy and Eachus (2000) consider the attributions of successes or failures to internal factors to refer to internal control beliefs. According to Cassidy and Eachus, students who attribute success to internal factors are most likely to perform well in their academics. In addition, students who attribute their failure to internal factors and are confident of their ability to control the internal factors, thus have high self-efficacy levels, are also likely to perform well in their academics. Therefore, both internal locus of control and self-efficacy could be considered to work together for the enhancement of the students' academic performance in the university. Smith (2001) emphasizes the need for students to believe that their learning can be attributed to forces within their control and that, mistakes or errors are part of the learning process, and not necessarily a demonstration of their inabilities. Therefore, university student mentors need to assist students to appreciate mediocre academic performance as a learning process rather than the demonstration of lack of ability, thus enhance their desire to seek academic support, which is a resource management learning strategy. Student mentors should also assist students to recognize their potential to control the factors that result in mediocre performance, thus increasing both their internal locus of control and self-efficacy.

According to Lingren (1995), parents, teachers and the community should seek to develop students' self-concept and self-worth so as to make them valued individuals and thus positively impact on their academic performance. Bandura (1997), Carroll and Garavalia (2004) and Mwamwenda, (2004) also identify mastery experiences, identification with people similar to oneself, managing task demands successfully, social persuasion that one has the capability to succeed in given activities and inferences from somatic and emotional

states that indicate one's personal strength as the main factors that contribute to self-efficacy. It is therefore necessary that the teachers, lecturers, parents and other mentors of the students seek to enhance the latter factors in the students' academic lives for the enhancing of their academic performance in the university.

Smith (2001) recommends the following procedures, as measures necessary for the enhancement of both self-efficacy and intrinsic motivation among university students:

1. Establishing an appropriate level of difficulty in any given course. This would motivate the students to master their learning in a way that does not discourage them from further trying. Thus, as students perform well in their academics, they become more confident in their ability to perform well on other similar tasks, thus increasing their self-efficacy.
2. Assisting students to set meaningful learning objectives that would increase their intrinsic motivation and thus enhance their academic performance.
3. Allowing students to freely express their opinions in learning situations. Students should also be given constructive feedback to their responses. The latter increases the students desire to critically think in a learning situation. Critical thinking involves the use of high level learning skills that are observed to be vital in the success of undergraduate students more than in the success of high school students (Isaacson & Fujita 2006).
4. Assisting students to generate their own motivation as they make transitions from intensively depending on external forces for motivation to internally driven motivation.

According to Carroll and Garavalia (2004), intrinsic motivations should be developed early in childhood through children being encouraged to perceive themselves as academically competent and thus desiring to master skills more.

Thus, the students' mentors need to promote the students' internal locus of control, self-efficacy and intrinsic goal orientations, for the enhancing of their self-regulatory learning strategies and thus the students' academic performance in the university.

Personality traits are also observed to have direct effects on self-regulatory learning strategies that in turn positively contribute to the academic performance of university students. The personality traits that are considered to positively contribute to the adoption of good self-regulatory learning strategies are agreeableness, conscientiousness and openness-to-experience. Neuroticism is considered to have negative effects on the adoption of appropriate self-regulatory learning strategies. The effects of extraversion on academic performance could not be determined in the current study. According to McKenzie et al. (2004) agreeableness reflects students' ability to adjust quickly to new academic environments, to accept and hence complete the requirements of their courses on time and to be less likely to antagonize their lecturers, all of which enhance the students' performance in the university. On the other hand, Buchanan (2001) relates conscientiousness to the ability to organize and persist in pursuing goals. McKenzie et al. (2004) also considers high scores on conscientiousness to be a reflection of self-control, purposeful and reliable behaviour and strong will power, all of which relate to effort regulation, which is a self-regulatory learning aspect. Buchanan relates openness-to-experience to being open-minded, imaginative, and creative and to the seeking out for cultural and educational experiences, all of which could be related to active learning rather than passive learning. The student mentors should seek to promote the personality traits of agreeableness, conscientiousness and openness-to-experience among the students for the enhancing of their self-regulatory learning strategies, which consequently will result in an enhancement of the students' academic performance. Neuroticism, which is considered to relate to the tendency of one to experience negative thoughts and feeling and to be prone to insecurity and emotional distress (Buchanan 2001), should be discouraged in relation to the academic success of students in the university.

Students' chronological age, although considered to have significant indirect effects on the academic performance of students in the university, may not really be a factor of great concern among the undergraduate students of the university. An examination of the mean differences in the academic performance of the relatively young Athi River campus students and the significantly older Nairobi campus students showed no significant difference in performances, implying that age does not necessarily contribute to the academic performance of students in the university, but rather interacts with other factors

to affect academic performance. Thus the negative and positive effects of chronological age on other factors that contribute to the academic performance of university students finally invalidate the significance of the effects of age on the academic performance of the undergraduate students.

An assessment of the models that had been depicted as adequate and good with regard to the paths of factors contributing to the academic performance of students in various demographic grouping revealed the need to special attention to be given to various factors depending on the group under consideration. The demographic groups that were considered were gender, international students' status, campus of operation, year of study and course major of students.

Among the male students of the university, more focus need to be given to the students' final high school grade in relation to admissions to the university, the promotion of English Language proficiency, the adoption of good self-regulatory learning strategies of cognitive, metacognitive and resource management, enhancement of intrinsic goal orientation, self-efficacy and internal locus of control and the promotion of agreeableness, conscientiousness and the openness-to-experience trait. In addition, there is need for neuroticism to be discouraged among the male students of the university. Among the female students of the university, there was need for more focus to be given to the students' final high school grade in relation to admissions to the university, the promotion of English Language proficiency, adoption of good self-regulatory learning strategies of cognitive, metacognitive and resource management, the promotion of intrinsic goal orientation, self-efficacy and internal locus of control and the encouragement of the agreeableness, conscientiousness and the openness-to-experience traits. In addition, there is need for neuroticism and extrinsic goal orientation to be discouraged among the female students of the university. The effect of English Language proficiency on the academic performance of the female students cannot at all be downplayed since it has potential of enhancing their academic performance relative to that of their male counterparts. Therefore, mentors of female students of the university need to emphasize the importance of English Language proficiency to their academic performance.

Among the local students of the university, more focus needs to be given to the students' final high school grade in relation to admissions to the university, the promotion of English Language proficiency, good self-regulatory learning strategies of cognitive, metacognitive and resource management, high levels of intrinsic goal orientation, self-efficacy and internal locus of control and the promotion of the agreeableness, conscientiousness and the openness-to-experience personality traits, while also discouraging performance-avoidance extrinsic goal orientations and neuroticism among the students. However, the main focus that needed to be given to the international students is in relation to the enhancing of their English Language proficiency for the improvement of their academic performance.

Focus among the Athi River campus students, many of who were adolescents, with relatively no work experience and relatively few family commitments, should be on the students' final high school grade in relation to admissions to the university, the promotion of English Language proficiency, good self-regulatory learning strategies of cognitive, metacognitive and resource management, intrinsic goal orientation, self-efficacy, internal locus of control, agreeableness, conscientiousness and the openness-to-experience trait while also discouraging the effects of the neuroticism traits on their academic programmes. On the other hand, the focus among the Nairobi campus students, many of who are adult learners, working and with family commitments, should be on the students' final high school grade in relation to admissions to the university, the promotion of English Language proficiency, good self-regulatory learning strategies of cognitive, metacognitive and resource management, intrinsic goal orientation, self-efficacy and internal locus of control.

Focus among the students in their first year of study should be on the promotion of English Language proficiency and internal locus of control, while that among the students in the second year of study should mainly be on the improving the students' English Language proficiency, resource management and metacognitive learning strategies. Among the students in the third year of study, great emphasis should be made on improving the students' English Language proficiency, intrinsic or mastery goal orientation, self-efficacy and internal locus of control. However, the focus that should be given to the students in the fourth year of study should be on the promotion of the self-regulatory learning strategies of

cognitive, metacognitive and resource management, intrinsic goal orientation, self-efficacy, internal locus of control, agreeableness, conscientiousness and the openness-to-experience trait, while also discouraging extrinsic goal orientation and neuroticism among the students.

Among students taking business related courses, greater emphasis should be made on the students' final high school grade in relation to admissions to the university and the promotion of the self-regulatory learning strategies of cognitive, metacognitive and resource management, self-efficacy, internal locus of control, agreeableness, conscientiousness and the openness-to-experience trait, while also discouraging extrinsic goal orientation and neuroticism among the students. On the other hand, among students taking art related courses, greater emphasis should be made on the promotion of English Language proficiency, the self-regulatory learning strategies of cognitive, metacognitive and resource management, intrinsic goal orientation, self-efficacy, internal locus of control, agreeableness, conscientiousness and the openness-to-experience trait, while also discouraging neuroticism among the students. Conversely, among the students taking social science related courses, emphasis should be made on the students' final high school grade in relation to admissions, the promotion of English Language proficiency, the intrinsic goal orientation, self-efficacy and internal locus of control. No conclusive direction could be provided for the students taking science related course due to the inadequacy of the sample size in this category.

In summary, the study recommends Table 6.1 as a guide to the student mentors with respect to the enhancing of undergraduate students' academic performance in the university. The table reveals areas of focus in the enhancing of the various categories of undergraduate students' academic performance.

Table 6.1 Areas of focus in the enhancing of academic performance of undergraduate students of the university.

Variables of focus	English language proficiency	Final high school grade	Self efficacy	Internal locus of control	Intrinsic goal orientation	Extrinsic goal orientation	Cognitive learning strategies	Metacognitive learning strategies	Resource management strategies	Agreeableness	Conscientiousness	Openness-to-experience	Neuroticism
Categories of students													
All students	+	+	+	+	+	-	+	+	+	+	+	+	-
Male	+	+	+	+	+		+	+	+	+	+	+	-
Female	+	+	+	+	+	-	+	+	+	+	+	+	-
Local	+	+	+	+	+	-	+	+	+	+	+	+	-
International	+												
Athi River Campus	+	+	+	+	+		+	+	+	+	+	+	-
Nairobi Campus	+	+	+	+	+		+	+	+				
First year	+			+							+	+	-
Second year	+	+						+	+				
Third year	+		+	+	+					+	+	+	
Fourth year		+	+	+	+	-	+	+	+	+	+	+	-
Business-based		+	+	+		-	+	+	+	+	+	+	-
Social science-based	+	+	+	+	+					+	+	+	-
Art-based	+		+	+	+		+	+	+	+	+	+	-

Note:
 + represents a focus on promoting the variable
 - represents a focus on discouraging the variable

Student mentors are therefore encouraged to focus on the areas provided on Table 6.1 while assisting undergraduate students to enhance their academic performance in the university.

6.3 RECOMMENDATIONS FOR FURTHER RESEARCH ON THE FACTORS CONTRIBUTING TO THE ACADEMIC PERFORMANCE OF UNDERGRADUATE STUDENTS

The effect of the extraversion personality trait was not established in the current study. Therefore, there is need for a study that will determine the effects of extraversion on the academic performance of undergraduate students in the Kenyan universities and more specifically, on self-regulatory learning strategies adopted by the students.

Due to the small sample size of students taking science-related courses the current study was unable to establish the paths of the factors contributing to the academic performance of students taking. There is need for a study to be made in the future among a larger sample of students taking science related courses in the Kenyan universities in order to determine the possible paths of factors contributing to the academic performance of this category of students.

A retest among the same students of the study did not yield adequate success due to the small percentage of students who provided their identity in the initial test being willing to provide their identity a second time. Therefore, although attempts were made to fit the retest data onto the model of factors affecting the academic performance of all students in the university it did not yield appropriate results. In addition it was difficult to do the fit the retest data on the models of the various groups of gender, international students' status, campus of operation, year of study and students' course majors. It would be of interest to have the same study repeated using larger samples and among all the groups of the study in other private in the country and also in Daystar University in order to strengthen the conclusions with respect to the paths of academic performance among different categories of students in the university. It would also be of interest to have the various models of the current study tested for goodness of fit among students of the private of the country.

The study was carried out in a private university and may not reflect the situation in the public universities of the country. Noting that the private universities in Kenya differ from the public universities in terms of the numbers of students in the various classes, cost of university education, availability of space and facilities and the criteria of admission into

the universities, there is need to have a replica of the same study in the public universities so as to make more conclusive observations on the predictive factors of academic performance in the universities in Kenya.

It should be noted that apart from the model of factors that contribute to the academic performance of the international students, all the other models accounted for less than 50% of variance. This is indicative of the possibility of other variables, not considered in the current study, having effects on the academic performance of undergraduate students of the university. The current study therefore recommends another study to establish other factors that could be significantly contributing to the academic performance of undergraduate students in the Kenyan universities.

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The following statements explain your characteristics as a student in the university. Explain to what extent you agree with the statements by ticking (✓) your appropriate response to each of the statements of a scale of “strongly agree” to “strongly disagree”

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A. SE	1. I believe I will receive good grades this semester.					
	2. Even if I try hard, I will never improve in my academics.					
	3. I can always manage to solve difficult academic problems if I try hard enough.					
	4. I am not confident that I can pass in courses that I find difficult to understand.					
B. ILOC	5. The success of my courses depends more on the lecturer than my own effort in the course.					
	6. It is difficult for me to be in full control over the success of the courses I am taking.					
	7. As far as success in my courses is concerned, I am a victim of forces that I cannot control.					
	8. I believe I have control over the success of my courses.					
C. INT	9. I believe that what I am learning in my studies at the university is useful for me to know.					
	10. I enjoy learning new things in my university courses.					
	11. I enjoy discussing issues I have learned in my courses outside the class setting.					
	12. I consider my future goals in life to be unrelated to my studies in the university.					
D. EXT	13. One of the reasons I study is to avoid disappointing my family.					
	14. Getting a good grade in my courses is one of the most satisfying things for me right now.					
	15. Failing in my courses at times makes me feel like a failure in life.					
	16. I want to do well in my courses because it is important to show my ability to my family, friends, employers or others.					
E. MET	17. During class time, I often miss important points because I am thinking of other things.					

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	18. When studying for my courses, I set goals for myself in order to direct my activities in each study period.					
	19. If a course is difficult to understand, I look for ways that will help me understand it better.					
	20. Before I study new course material thoroughly, I often skim it to see how it is organized.					
F. RES	21. I often do not find adequate time to spend on my coursework due to other activities.					
	22. I do not find adequate time to review all my notes before my examinations.					
	23. I have a regular place set aside for studying.					
	24. I usually study in a place where I can concentrate on my course work.					
	25. When course work is difficult, I either give up or only study the easy parts.					
	26. I often feel so lazy or bored when studying that I quit before I finish what I planned to study.					
	27. I work hard to do well in my courses even if I don't like what I am studying.					
	28. Even when course materials are uninteresting, I manage to keep working until I finish.					
	29. I try to contribute to class discussions as much as possible.					
	30. When studying for my courses, I often set aside time to discuss course materials with a group of students from my classes.					
	31. Given a choice, I would prefer working on my own to complete course.					
	32. I normally ask lecturers to clarify concepts I don't understand well.					
	33. I prefer tackling my coursework on my own without assistance from other students.					
	34. I normally discuss my academic progress with lecturers.					
	35. I try to identify students in my courses whom I can ask for help if necessary.					

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
G. COG	36. I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.					
	37. I make a point of looking at most of the suggested readings that go with the lectures.					
	38. I only study seriously what is given in class or in the course outlines.					
	39. I generally restrict my study to what is specifically given in class as I think it is unnecessary to do anything extra.					
H. AGR	40. I often find myself insulting other students.					
	41. I believe that others have good intentions in what they do.					
	42. I accept people as they are.					
	43. I easily get back at people.					
I. XTR	44. I don't like drawing attention to myself.					
	45. I make friends easily.					
	46. I know how to captivate other students.					
	47. I like keeping a low profile in campus.					
J. NEU	48. I have frequent mood swings.					
	49. Generally, other people's views about me do not bother me.					
	50. I easily panic about things around me.					
	51. I generally feel satisfied with whom I am.					
K. CON	52. I carry out my plans to the end.					
	53. I find it difficult to get down to work.					
	54. I often pay attention to details.					
	55. I often find myself wasting time.					
L. OPE	56. I am not interested in abstract ideas.					
	57. I tend to vote for student leaders who are conformists.					
	58. I am drawn towards open-minded leaders.					
	59. I avoid philosophical discussions in class.					