

MAKERERE



UNIVERSITY

**ASSESSING FACTORS AFFECTING ACADEMIC ACHIEVEMENT AMONG
UNDERGRADUATE STUDENTS AT MAKERERE UNIVERSITY. A CASE STUDY OF
BACHELOR OF STATISTICS STUDENTS**

BY

AKAMPURA FLAVIUS

2300705494

**A DISSERTATION SUBMITTED TO THE COLLEGE OF BUSINESS AND
MANAGEMENT SCIENCES, SCHOOL OF STATISTICS AND PLANNING,
DEPARTMENT OF STATISTICAL METHODS AND ACTUARIAL SCIENCE IN
PARTIAL FULFILMENT AS A REQUIREMENT OF THE AWARD OF BACHELOR
DEGREE OF STATISTICS OF MAKERERE UNIVERSITY**

JULY 2026

DECLARATION

I declare that this work is entirely my own and has not been submitted for a degree at any other university.

Signed.......... Date.....27/07/2026.....

Akampura Flavius

23/U/05494/PS

APPROVAL

This is to certify that Akampura Flavius, registration number 23/U/05494/PS, carried out this research study **entitled "Assessing Factors Affecting Academic Achievement among Undergraduate students at Makerere University. A case study of Bachelor of Statistics students** under my supervision and guidance.

This dissertation has been submitted to the School of Statistics and Planning, Makerere University for examination with my approval as the university supervisor.

Signed.......... Date..........

Mr. Nicholas Keinerugaba

Assistant lecturer Department of Statistical Methods and Actuarial Science

School of Statistics and Planning

College of Business and Management Science

Makerere University

University Supervisor

DEDICATION

I dedicate this dissertation to my parents, my supervisor, my friends and all those who have supported and encouraged me throughout my academic journey. Your guidance, sacrifices, prayers, and unwavering support have been a source of inspiration and strength. I also dedicate this work to all children striving to access education despite the challenges they face, with the hope that the findings of this study will contribute towards improving educational opportunities for future generations.

ACKNOWLEDGEMENT.

I would like to sincerely express my appreciation to everyone who contributed to the successful completion of this research report. My special gratitude goes to my supervisor, Mr. Nicholas Keinerugaba whose expert guidance, valuable insights and unwavering support greatly contributed to the success of this study. His encouragement, constructive comments and dedication throughout the research process provided the direction and motivation needed to accomplish this work. I am also thankful to Makerere University for providing a conducive academic environment and the necessary resources that facilitated the completion of this research. I would also further like to acknowledge my colleagues for their useful suggestions and continuous encouragement, which were crucial in completing this report.

Finally, I extend my heartfelt appreciation to my family and friends for their constant support, patience and understanding throughout this period. Their encouragement and belief in my abilities inspired me to remain committed and determined to complete this research successfully.

TABLE OF CONTENTS

DECLARATION	i
APPROVAL	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
ABSTRACT	xi
CHAPTER ONE: INTRODUCTION	1
1.0 Introduction	1
1.1 Background	1
1.2 Problem Statement	3
1.3 Research objectives	5
1.3.1 Main objective	5
1.3.2 Specific objectives	5
1.4 Hypotheses	5
1.5 Significance of the Study	6
1.6 Scope	7
1.7 Conceptual Framework	8
CHAPTER TWO: LITERATURE REVIEW	10
2.0 Introduction	10
2.1 Academic achievement	10
2.2 Academic Achievement and Demographic Factors	10
2.2.1 Academic Achievement and age	10
2.2.2 Academic Achievement and Gender	11
2.2.3 Academic Achievement and Residence Status	11
2.2.4 Academic Achievement and Parents' Education Level	11
2.3 Academic achievement and the Socio-economic factors	12

2.3.1 Academic Achievement and Source of Tuition.....	12
2.3.2 Academic Achievement and Employment Status of the student.....	12
2.3.3 Academic Achievement and Parents' income Level.....	13
2.4 Academic achievement and the Social Environmental factors	13
2.4.1 Academic Achievement and Study Habits and Time Management	13
2.4.2 Academic Achievement and Motivation and Self-Efficacy	13
2.4.3 Academic Achievement and Physical and Mental Health.....	14
2.4.4 Academic Achievement and Sleep and Nutrition.....	14
2.4.5 Academic Achievement and Teaching Quality	15
2.4.6 Academic Achievement and Learning Resources	15
2.4.7 Academic Achievement and Peer Influence.....	15
2.4.8 Academic Achievement and Living Conditions.....	15
CHAPTER THREE: METHODOLOGY	17
3.0 Introduction	17
3.1 Research Design.....	17
3.2 Study Population	17
3.3 Sampling.....	17
3.3.1 Sampling Technique	17
3.3.2 Sample Size Determination	18
3.3.3 The Dependent variable.....	19
3.4 Data collection Procedure	21
3.5 Data quality control	21
3.6 Data Management	21
3.6.1 Missing data.....	22
3.7 Data Analysis	22
3.7.1 Univariate analysis	22
3.7.2 Bivariate analysis.....	22
3.7.3 Multivariate analysis.....	23
3.8 Ethical considerations	24
3.9 Limitations of the study.....	24
CHAPTER FOUR: PRESENTATION AND DISSEMINATION OF FINDINGS	26
4.0 Introduction	26

4.1 Univariate analysis	26
4.1.1 Dependent Variable	26
4.1.2 Demographic Variables	27
4.1.3 Socio-economic factors	28
4.1.4 The Student-Related Factors	29
4.1.5 University factors	30
4.1.6 Peer and Social environment factors	31
4.2 Bivariate Analysis	31
4.2.1 Analysis of Variance	31
4.2.3 Independent Sample t-test analysis.....	33
4.3 Multivariate Analysis	35
4.3.1 Regression analysis.....	35
CHAPTER FIVE: DISCUSSION, SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	37
5.0 Introduction	37
5.1 Discussion of findings.....	37
5.2 Summary of findings.....	39
5.3 Conclusions	40
5.4 Recommendations	40
5.5 Areas for further Research	41
REFERENCES.	42
APPENDICES	47
QUESTIONNAIRE.....	47
INTRODUCTORY LETTER	52

LIST OF TABLES

Table 3.1 The proportionate size allocation.....	19
Table 3.2 Variables and their measurements	19
Table 3.3 Anova table	23
Table 4.1 Summary of the CGPA	26
Table 4.2 Shapiro-Wilk normality test.....	26
Table 4.3 Distribution of Students by age, gender, residence status and parents' education level	27
Table 4.4 Distribution of the students by source of tuition, employment status and parents' income level.....	28
Table 4.5 Distribution of students by their study habits and time management, motivation and self- efficacy, physical and mental health, sleep and nutrition	29
Table 4.6 Distribution of students by the lecturers teaching quality and learning resources	30
Table 4.7 Distribution of students by peer influence and living conditions	31
Table 4.8 Relationship between CGPA and the variables	31
Table 4.9 Analysis using Independent Sample t-test	33
Table 4.10 Regression analysis.....	35

LIST OF FIGURES

Figure 1.1 Conceptual Framework	8
Figure 4.1 Histogram for normality	27

LIST OF ACRONYMS

ANOVA	Analysis of Variance
AY	Academic Year
BSTA	Bachelor of Statistics
CGPA	Cumulative Grade Point Average
MS	Mean Square
MSB	Mean Square between Groups
MSW	Mean Square within Groups
SS	Sum of Squares
SSB	Sum of Squares between Groups
SST	Total Sum of Squares
SSW	Sum of Squares within Groups
UGX	Uganda Shilling
VIF	Variance Inflation Factor

ABSTRACT

This study assessed the factors affecting academic achievement among undergraduate students at Makerere University using Bachelor of Statistics as a case study. Specifically, the study examined the influence of demographic, socio-economic, student-related, university, peer and social environmental factors on students' academic achievement. The study used primary data collected from 188 undergraduate students using a structured questionnaire administered through the kobo collect tool. The study used a cross-sectional research design and stratified simple random sampling technique were the collected data was analysed using Stata 16 software through univariate analysis, bivariate analysis and multivariate analysis using the Multiple Linear Regression to determine the combined influence of the explanatory variables on students' academic achievement.

The key findings showed that 54.26% of the students were aged between 23 - 25 years, 51.06% were female, 59.57% were privately/ self-sponsored, 83.51% were not employed, 46.28% attended more than 5 lectures per week, 85.64% reported having the ability to overcome academic challenges and 32.98% often accessed internet/ e-learning resources. Study habits and time management ($F = 4.670$, $p = 0.004$), learning resources ($F = 3.830$, $p = 0.005$), source of tuition ($t = 2.434$, $p = 0.016$), motivation and self-efficacy ($t = -2.440$, $p = 0.016$) and peer influence ($t = -2.402$, $p = 0.017$) were significantly associated with academic achievement. The multiple linear regression was statistically significant ($F = 4.34$, $p = 0.000$) and $R^2 = 0.197$. After controlling for other factors, only learning resources and source of tuition remained statistically significant predictors of academic achievement. Students who very often accessed internet/ e-learning resources had significantly higher CGPA ($\beta = 0.554$, $p = 0.014$) than those who never accessed them while privately/self-sponsored students had significantly lower CGPA ($\beta = -0.191$, $p = 0.003$) than government sponsored/ scholarship students.

The study concludes that access to learning/ e-learning resources and source of tuition are the key determinants of academic achievement among Bachelor of Statistics students at Makerere University. It recommends that Makerere University improve access to internet/ e-learning resources by expanding digital learning infrastructure and computer facilities while government and scholarship providers should increase financial support to reduce the burden on privately sponsored students. The study also recommends continued promotion of effective study habits, academic mentoring, counselling services, peer learning groups and greater utilization of available learning resources to enhance students' academic achievement.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter has the background of the study, problem statement, objectives, hypotheses, scope of the study, the justification and the conceptual framework.

1.1 Background

Education is one of the most important factors in determining the social and economic success of individuals (Astakhova et al., 2016). Education creates better opportunities for future success, which results in improved quality of life. The academic achievement is measured through test scores, grade point average (CGPA) and years of educational attainment (Suryawan & Putra, 2016). Globally, Academic achievement among university students remains a major concern worldwide because it determines graduation rates, employability, and economic productivity (Jackson & Bridgstock, 2018). Research indicates that student-related factors such as study habits, time management, motivation, self-efficacy, sleep quality, nutrition, and mental health significantly influence academic outcomes (Salisu, 2017). Students who possess effective study habits and strong self-efficacy tend to perform better academically, while poor sleep patterns, stress, anxiety, and inadequate nutrition reduce concentration, memory retention, and overall academic performance (Shi et al., 2025). Furthermore, socio-economic factors, institutional characteristics, and peer environments continue to shape academic achievement across the globe. Students from families with higher parental education levels and stable incomes often have better access to educational resources and academic support (Roksa & Kinsley, 2019), while quality teaching, adequate learning resources, and positive peer networks enhance learning outcomes. Although numerous studies have identified factors associated with academic achievement, there is no universal agreement regarding the relative importance of student-related, socio-economic, institutional, peer, and demographic factors in explaining variations in academic achievement. The magnitude and direction of these effects differ across educational settings, socio-economic environments, and student populations, making it difficult to determine which factors contribute most to academic success (Koçak et al., 2021).

In Sub-Saharan Africa, academic achievement among university students remains a significant concern despite increased access to higher education. Many students face challenges related to

poor study habits, weak time-management skills, mental health difficulties, and inadequate sleep, all of which are motivated, stress been associated with poor academic outcomes. The situation is often worsened by financial hardships that limit students' ability to access learning materials and maintain conducive learning conditions (Bustamante Ara et al., 2022). Additionally, universities across the region continue to face institutional challenges such as inadequate learning resources, overcrowded classrooms, and variations in teaching quality (Abugre, 2018). Socio-economic inequalities, residence conditions, and peer influence also affect students' academic engagement and performance. Although previous studies have examined some of these factors independently, few have investigated their combined effects on academic achievement, creating a knowledge gap in understanding student performance within African universities.

In Uganda, academic achievement among university students has become an important issue as institutions seek to improve educational quality and graduate outcomes. Studies conducted at Makerere University reveal that demographic and socio-economic factors such as parents' education level, family income, and source of tuition significantly influence academic performance (Nankwanga, 2019). Students from educated and financially stable families often receive greater academic support and have better access to learning resources, while financially constrained students frequently face challenges that affect their academic progress (Roksa & Kinsley, 2019).

Furthermore, research indicates that teaching quality, learning resources, peer influence, and students' living environments significantly affect academic achievement (Nankwanga, 2019). Although previous studies have examined factors such as parental background, peer influence, and university environment, limited research has comprehensively assessed the combined effects of study habits and time management, motivation and self-efficacy, physical and mental health, sleep and nutrition, socio-economic conditions, teaching quality, learning resources, peer influence, and living conditions among undergraduate students. Furthermore, differences in analytical approaches used by researchers have contributed to inconsistent findings regarding the factors that significantly influence academic achievement. Therefore, there is a need for studies that assess these factors within a single analytical framework in order to identify the factors that contribute significantly to academic achievement. This study seeks to address this gap by examining the combined influence of student-related, socio-economic, university, peer and demographic factors on academic achievement among undergraduate students at Makerere University.

1.2 Problem Statement

Academic achievement is a critical indicator of educational effectiveness and student success in higher education institutions worldwide. Globally, tertiary education enrollment has increased reflecting expanded access to university education. However, academic underachievement, delayed graduation, dropout, and low completion rates remain major concerns across universities despite this growth (Ji et al., 2024). Research has identified factors such as poor study habits, ineffective time management, low motivation, poor self-efficacy, mental health challenges, inadequate sleep, and poor nutrition as significant contributors to poor academic performance among university students (Suardiaz-Muro et al., 2020). These findings indicate that although higher education participation has increased globally, many students continue to experience academic difficulties that require intervention.

The challenge is even more pronounced in Sub-Saharan Africa, Universities across the region face persistent challenges such as inadequate learning resources, overcrowded classrooms, financial constraints, and limited student support services. The different studies have shown that socio-economic disadvantages, poor living conditions, inadequate teaching facilities, and negative peer influence significantly affect students' academic achievement (KADIO, 2025). To improve academic outcomes, governments and institutions have implemented interventions such as student loan schemes, scholarship programs, expansion of digital learning infrastructure, and academic support services. Despite these efforts, poor academic performance and low completion rates remain prevalent, suggesting that existing interventions have not adequately addressed the multiple factors affecting students' achievement.

In Uganda, academic achievement among university students remains a major concern despite substantial investments in higher education. Makerere University, Uganda's largest public university, enrolls thousands of undergraduate students annually and has introduced various initiatives such as academic advising, counseling services, e-learning platforms, and improved library facilities to support student learning (Nabushawo & Aguti, 2023). Nevertheless, evidence indicates that many students continue to experience academic difficulties. (MUNGOMA, 2023) found a significant negative relationship between stress and academic performance, while (Berhanu & Naidoo, 2026) reported that academic stress negatively affected students' academic

outcomes. Additionally, studies have shown that parental education, household income, peer influence, and students' socio-economic backgrounds significantly influence academic performance among university students in Uganda (Nason & Muhammad, 2025).

1.2.1 Statistical gap

Although previous studies have identified several determinants of academic achievement, most have focused on isolated factors such as stress, parental background, peer influence, or learning environments. In addition, previous researchers have employed different statistical methods including descriptive statistics, correlation analysis, analysis of variance (ANOVA) (Lugolole Robert *, 2024). Chi-square tests, t-tests, simple linear regression and multiple regression models involving a limited set of explanatory variables (Edamo, 2026). While these methods are useful for identifying relationships among variables, many studies have examined factors independently or within restricted models, making it difficult to determine the relative contribution of various determinants of academic achievement. Consequently, limited empirical evidence exists on the combined influence of student-related factors (study habits and time management, motivation and self-efficacy, physical and mental health, sleep and nutrition), socio-economic factors (income level, source of tuition and employment status) on academic achievement (Smith, 2025). In continuation, the University factors (teaching quality and learning resources), peer and social environmental factors (peer influence and living conditions) and demographic factors (age, gender, parents' education level and residence status) on academic achievement among undergraduate students at Makerere University. This gap limits the development of comprehensive interventions aimed at improving students' academic outcomes.

Therefore, this study seeks to assess the factors affecting academic achievement among Makerere University undergraduate students by examining the combined effects of student-related, socio-economic, institutional, peer and social environmental factors and demographic factors. The findings will provide evidence that can guide university administrators, policymakers, and other stakeholders in designing targeted strategies to improve academic achievement and overall student success. This study will employ Multiple Linear Regression to examine the combined influence of student-related, socio-economic, university, peer and demographic factors on academic achievement among undergraduate students at Makerere University. Unlike studies that focus on

a limited number of factors, Multiple Linear Regression will allow all relevant determinants to be analyzed simultaneously, making it possible to identify the factors that significantly influence academic achievement while controlling for the effects of other variables in the model.

1.3 Research objectives

This section presents the main objective and specific objectives.

1.3.1 Main objective

To assess the factors that affect the undergraduate student's academic achievement at Makerere University.

1.3.2 Specific objectives

1. To assess the effect of demographic factors (Age, gender, Students' Residence Status and Parents' Education level) on the student's academic achievement.
2. To determine the influence of socio-economic factors (Source of tuition, student's employment status and parents' income level) on students' academic achievement.
3. To assess the effect of student-related factors (study habits and time management, motivation and self-efficacy, physical and mental health, sleep and nutrition) on the academic achievement of students at Makerere University.
4. To determine the relationship between university/institutional factors (teaching quality and learning resources) and the student's academic achievement.
5. To assess the effect of peer and social environment factors (peer influence and living conditions of the students) on academic achievement.

1.4 Hypotheses

H₀₁: Demographic factors (Age, Gender, Parents' Education level and Residence status) have no significant influence on academic achievement among undergraduate students at Makerere University.

H₀₂: Socio-economic factors (Parents' income level, Source of tuition and students' employment Status) have no significant influence on academic achievement among undergraduate students at Makerere University.

H₀₃: Student-related factors (study habits and time management, motivation and self-efficacy, physical and mental health, and sleep and nutrition) have no significant influence on academic achievement among undergraduate students at Makerere University.

H₀₄: University factors (teaching quality and learning resources) have no significant influence on academic achievement among undergraduate students at Makerere University.

H₀₅: Peer and social environmental factors (peer influence and living conditions) have no significant influence on academic achievement among undergraduate students at Makerere University.

1.5 Significance of the Study

The study will contribute to existing knowledge on academic achievement by providing empirical evidence on the factors that influence academic performance among undergraduate students. By examining student-related, socio-economic, university, peer and demographic factors within a single analytical framework, the study will provide a more comprehensive understanding of academic achievement than studies that focus on isolated determinants.

The study will also contribute methodological knowledge by demonstrating the application of Multiple Linear Regression in assessing the combined influence of several determinants of academic achievement. The findings will identify the factors that significantly contribute to academic performance and provide evidence-based recommendations for improving educational outcomes.

The findings will be useful to university administrators, lecturers and policymakers in designing interventions aimed at improving students' academic performance. The results may also guide resource allocation, student support programs and institutional policies intended to enhance academic achievement. Furthermore, the study will provide a reference for future researchers interested in investigating factors affecting academic achievement in higher education institutions.

1.6 Scope

The study will examine factors affecting academic achievement among undergraduate students at Makerere University. Specifically, the study will assess the influence of student-related factors (study habits and time management, motivation and self-efficacy, physical and mental health, and sleep and nutrition), socio-economic factors (parents' income level, source of tuition and students' employment status), University factors (teaching quality and learning resources), peer and social environmental factors (peer influence and living conditions), and demographic factors (age, gender, parents' education level and students' residence status) on academic achievement. Previous studies have often examined these factors independently. For example, some studies focused on socio-economic factors while others examined student-related factors, university factors or peer influences separately. Although such studies provide useful insights, they do not adequately show how the different factors influence academic achievement when considered simultaneously. A factor that appears important when analyzed alone may become insignificant when analyzed together with other related factors.

Therefore, this study will examine all the selected factors within a single multiple linear regression model. This approach will make it possible to assess the combined influence of the factors on academic achievement and determine the relative contribution of each factor while controlling for the effects of other variables in the model. Consequently, the study is expected to provide a more comprehensive understanding of academic achievement than studies that examine factors in isolation.

The study will focus on undergraduate students at Makerere University. Data will be collected during the 2025/2026 academic year and academic achievement will be measured using students' CGPA. Multiple Linear Regression will be used to determine the combined influence of the selected factors on academic achievement.

1.7 Conceptual Framework

Independent variables

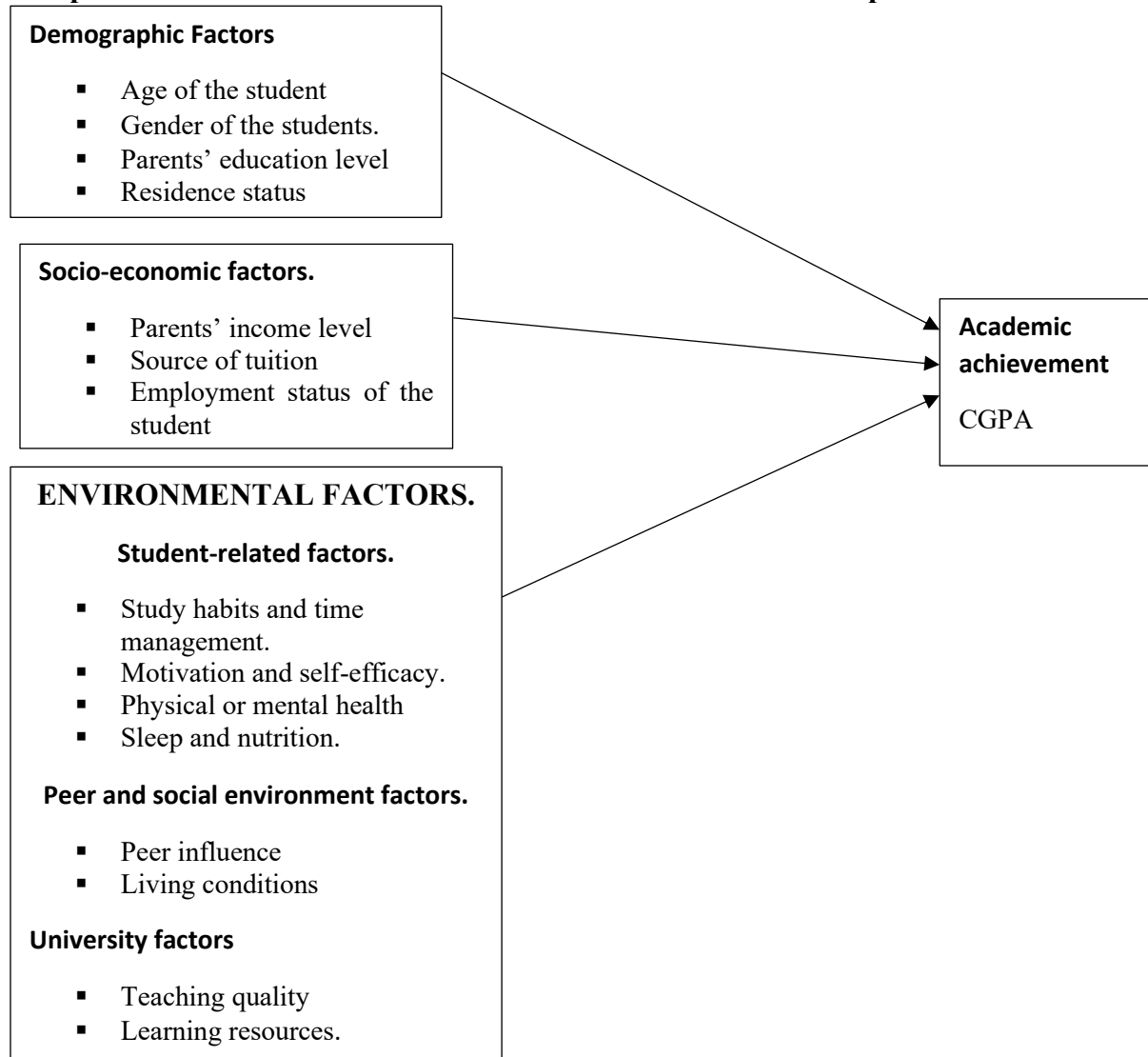


Figure 1.1 Conceptual Framework

The conceptual framework illustrates the relationship between the independent variables and the dependent variable in this study. The independent variables are grouped into five main categories: demographic factors, socio-economic factors, university factors, student-related factors and peer & social environment factors. Demographic factors such as age, gender, parent's education level, residence status and socio-economic factors such as source of tuition, parents' income level and employment status of the student influence students' academic achievement. Peer and social

environment factors including peer influence and living conditions shape the external conditions that may influence academic achievement.

The framework assumes that each independent variable contributes to variations in academic achievement. Multiple Linear Regression will be used to assess the combined influence of these factors and determine the relative contribution of each factor to academic achievement while controlling for the effects of other variables in the model.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of existing literature related to the factors affecting academic achievement among university students. The review specifically focuses on how the different variables are determinants of student's academic achievement. By examining studies from different contexts, this chapter identifies research gaps that justify the current investigation at Makerere University.

2.1 Academic achievement

Academic achievement refers to the extent to which students attain educational goals and is commonly measured using GPA, CGPA, examination scores, and graduation outcomes. Globally, academic achievement has been linked to individual, family, institutional, and environmental factors. (Al-Abyadh & Abdel Azeem, 2022) found that self-management and self-efficacy significantly predicted academic achievement among university students. Similarly, (Zhao et al., 2024) reported that students with stronger self-regulation and self-efficacy exhibited significantly higher academic performance than their counterparts. In addition, according to (Jie Li, 2018), Despite these limitations, the current study makes several significant contributions. It investigates how perceived social support correlates with university students' quality of life by considering academic achievement and emotional exhaustion as crucial indicators, and it provides an empirical framework for further investigation by examining the mediating effect of self-esteem on the relationship between social support and university students' academic achievement and emotional exhaustion. Academic achievement is therefore an important measure used to evaluate the effectiveness of students' learning processes.

2.2 Academic Achievement and Demographic Factors

2.2.1 Academic Achievement and age

Age is one of the key demographic variables that might affect academic performance because of the differences in the level of maturity, academic experience, self-control, and motivation. Mature individuals usually cope better with academic requirements due to the developed level of self-regulation and academic experience. Age may also influence academic performance because older students often possess greater maturity, self-regulation, and academic experience, although

findings vary across studies (Jerez, 2024). Still, there is some evidence that the role of age may be different depending on certain educational programs and settings.

2.2.2 Academic Achievement and Gender

Gender has been extensively investigated as a factor contributing to academic achievement owing to possible disparities between male and female learners regarding behaviors, self-efficacy, motivation, and academic involvement. For instance, according to (Matovu, 2020) there were notable differences in terms of academic self-efficacy and performance between males and females enrolled in universities. (Zhao et al., 2024) also found out that gender had an effect on the relationship between self-management and academic achievement. However, some research has shown no substantial differences between male and female students.

2.2.3 Academic Achievement and Residence Status

Residence status refers to where a student lives or resides while attending university such as university halls, hostels, rented apartments, or family homes. The physical environment in which a student lives can dictate their study habits and access to university facilities. Residence status influences students' access to conducive learning environments. Students residing in university halls or well-organized accommodation facilities often experience fewer distractions and better access to academic resources than those living in overcrowded or unconducive environments. Research indicates that conducive residential environments positively affect concentration, study habits, and academic performance among university students (Gaisiey et al., 2025). According to (Shazia Hasan, 2018), in general the students residing in the university housing facility are satisfied but this satisfaction is higher for study environment and security provided by the facility as compare to the facilities and cleanliness. Students living off campus may face challenges such as transportation difficulties, distractions and poor study environments, which can negatively affect academic achievement. Therefore, the type of residence environment can influence students' academic outcomes.

2.2.4 Academic Achievement and Parents' Education Level

Parents' education level influences students' academic achievement through academic guidance, educational expectations, and support provided to learners. (Idris et al., 2020) found that students

from families with highly educated parents achieved better academic outcomes than those whose parents had lower educational attainment. According to (Werang et al., 2024) reported that favorable parental educational environments positively influenced students' academic performance across different subjects. Educated parents are more likely to create learning-supportive environments that foster academic achievement.

2.3 Academic achievement and the Socio-economic factors

2.3.1 Academic Achievement and Source of Tuition

The source of tuition affects students' academic achievement by influencing their financial security and stability in learning. Students whose tuition is regularly covered by sponsors, scholarships, or government programs are less likely to face breaks in their education than those who have to manage their own tuition costs. (Mngomezulu et al., 2017) explored how students in South Africa negotiate the "alienating dilemmas" of university environments when they lack adequate financial assistance. Furthermore, (Nshemereirwe, 2016) found that students from financially stable backgrounds are more likely to access higher education and perform better academically.

Financial challenges related to paying tuition often raise stress levels and lower focus on schoolwork, which can harm academic performance (Ogbuagu et al., 2025). Financial support therefore plays a significant role in determining students' academic achievement.

2.3.2 Academic Achievement and Employment Status of the student

Employment status of the student refers to whether the student has a job while studying and the type of work they do. Employment status can influence academic achievement in both good and bad ways. Having a job offers financial support for students, but working too much can leave less time for studying and attending lectures. Previous studies indicate that students who work often struggle to balance their jobs and schoolwork (Summer et al., 2025). According to (Li et al., 2018) suggested that while employment provides financial support, the resulting "emotional exhaustion" can act as a mediator that lowers academic achievement. This struggle can lead to lower academic achievement compared to those who do not work.

2.3.3 Academic Achievement and Parents' income Level

Family income has been found to influence academic achievement by determining access to learning materials, technology, accommodation, and educational opportunities. (Faiza & Daud, 2023) established that students from higher socio-economic backgrounds generally performed better academically than those from low-income households. Financial stability enables students to access educational resources and reduces financial stress, thereby improving academic performance. Conversely, students from financially constrained households may experience challenges that negatively affect their academic achievement

2.4 Academic achievement and the Social Environmental factors

2.4.1 Academic Achievement and Study Habits and Time Management

Study habits and time management have consistently been identified as significant predictors of academic achievement among university students. (Aljaffer et al., 2024) found that students who followed structured study schedules, reviewed course materials regularly, and managed their study time effectively achieved significantly higher academic performance than those with poor study habits. Similarly (Aufa et al., 2024) reported a positive relationship between effective time management and academic achievement concluding that students who allocate sufficient time to academic activities tend to obtain higher grades. (Boevé et al., 2017) found that academic behaviors like regular attendance of lectures, studying in a disciplined manner, and spending enough time on academics could contribute towards positive academic success. In the same vein, (Suleiman et al., 2024) found that efficient time utilization and consistent participation in academic activities predict good academic performance. However, (Alani et al., 2020) found that some dimensions of time management did not significantly influence academic performance, suggesting that the relationship may vary across educational contexts.

2.4.2 Academic Achievement and Motivation and Self-Efficacy

Motivation and self-efficacy are among the most widely studied determinants of academic achievement. Motivation and self-efficacy are typically assessed through students' confidence in their academic abilities, persistence when faced with challenges, commitment to academic goals.

(Matovu, 2020) found a strong positive relationship between academic self-efficacy and academic performance among undergraduate students ($r = 0.816$, $p < 0.01$), indicating that students who believe in their academic abilities are more likely to perform better. (Li et al., 2025) found that confidence, perseverance, and self-belief positively influence academic achievement through improved learning engagement. Likewise, (Zhao et al., 2024) established that self-management positively influences academic achievement through self-efficacy, suggesting that confident and motivated students persist more in academic tasks and attain better outcomes.

2.4.3 Academic Achievement and Physical and Mental Health

Physical and mental health significantly affect students' academic achievement. Students experiencing stress, anxiety, depression, and psychological distress often report lower academic performance due to reduced concentration and motivation. According to (Wunsch et al., 2021), good physical health and physical activity positively influenced academic performance through improved mental well-being. Other studies have shown that mental health problems contribute to absenteeism, poor classroom participation, and low academic outcomes among university students (Çimen et al., 2026). (Wunsch et al., 2021) found that lower levels of stress and psychological distress are associated with improved concentration and better academic outcomes among university students. Therefore, maintaining good physical and psychological health is essential for academic success.

2.4.4 Academic Achievement and Sleep and Nutrition

Sleep and nutrition play an important role in cognitive functioning and learning. (Driller et al., 2021) found that sleep quality and sleep duration significantly influenced academic achievement among first-year university students. In addition, (Aydin & Aydin, 2024) reported that good sleep quality was positively associated with academic self-efficacy and overall academic success. (Kalbacher & Randler, 2024) further established that sleep quality positively influenced self-regulation and academic performance among university students. Poor sleep patterns and inadequate nutrition reduce concentration, memory retention, and learning effectiveness, thereby negatively affecting academic achievement.

2.4.5 Academic Achievement and Teaching Quality

Teaching quality is an important institutional determinant of academic achievement. High-quality teaching enhances students' understanding of course content, academic engagement, and learning outcomes (Huang, 2024). Studies have shown that lecturer competence, effective instructional methods, timely feedback and student-centered teaching approaches positively influence academic achievement (Li, 2023). Universities that provide quality teaching generally report better student performance and higher completion rates.

2.4.6 Academic Achievement and Learning Resources

Learning resources such as libraries, internet access, digital learning platforms, laboratories and textbooks facilitate effective learning and improve academic achievement. Studies indicate that students with adequate access to learning resources perform better academically than those facing resource limitations (Munje & Maarman, 2017). Availability and utilization of learning resources enhance independent learning, research skills and academic engagement, which contribute to better academic outcomes (Abubakar et al., 2024).

2.4.7 Academic Achievement and Peer Influence

Peer influence significantly affects students' academic achievement. Positive peer groups encourage academic engagement, collaborative learning, and knowledge sharing, which improve academic performance. Conversely, negative peer pressure may promote absenteeism, poor study habits and engagement in non-academic activities that reduce academic achievement. Studies consistently show that students surrounded by academically motivated peers are more likely to achieve better educational outcomes than those exposed to negative peer influences (Yanhong Shao, 2024) .

2.4.8 Academic Achievement and Living Conditions

Living conditions influence students' ability to concentrate and engage effectively in academic activities. Students residing in safe, quiet and conducive environments generally demonstrate better academic achievement than those living in overcrowded, noisy, or stressful conditions

(King-Agboto, (2023)). Adequate housing, access to electricity, internet connectivity and basic amenities support effective studying and improve academic outcomes among university students (Ramli, (2018)).

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter describes the methods that were used to conduct the study. It explains the research design, study population, sampling, data collection procedures, data management, data analysis and ethical considerations.

3.1 Research Design

The study used a cross-sectional research design. This design allowed collection of data from respondents at one point in time. The cross-sectional design was appropriate because the study had to examine the relationship between the various factors and access to academic achievement only during the period of data collection.

The research mainly used quantitative methods because data was collected using structured questionnaires and analyzed statistically.

3.2 Study Population

The study population consisted of undergraduate students at Makerere University, specifically those who pursued the Bachelor of Statistics program across all years of study. Students from different years of study provided a broader perspective on academic achievement and what was affecting it.

3.3 Sampling

3.3.1 Sampling Technique

The study adopted a stratified simple random sampling technique. In this approach, the population of Bachelor of Statistics (BSTA) students was divided into three strata based on year of study (Year 1, Year 2, and Year 3). After stratification, the sample size for each stratum was determined using proportionate-to-size sampling where the number of students selected from each year was proportional to the size of that year in the overall population and this approach ensured that all strata were adequately represented in the sample according to their actual population size. The proportionate allocation formula is:

$$nh = \frac{Nh}{N} \times n$$

Where:

- n = required total sample size
- N = total population size
- Nh = total number of students in each year.
- nh = the proportion sample size for each stratum.

After the allocation, the researcher selected respondents within each stratum using simple random sampling. This method gave every student within a stratum an equal probability of selection. This minimized the selection bias and improved the representativeness of the sample. The study population consisted of 127-year 1 students, 106 year 2 students and 122-year 3 students.

3.3.2 Sample Size Determination

The total study population (N) was $N = 127 + 106 + 122 = 355$ Bachelor of Statistics students from (Enrolment statistics for semester I AY 2025-2026). Since the population size was known, the total sample size was first determined using the formula below;

$$n = \frac{N}{1 + Ne^2}$$

Where: n = required sample size

N = total population size

e = margin of error

With substitution of the values:

$$n = \frac{355}{1 + 355(0.05)^2}$$

$$n = \frac{355}{1.8875}$$

$$n = 188 \text{ Students}$$

Since the study used stratified sampling, the sample was distributed across the three strata using proportionate allocation:

$$nh = \frac{Nh}{N} \times n$$

Table 3.1 The proportionate size allocation

Strata	Nh	Nh
Year 1	127	67
Year 2	106	56
Year 3	122	65

Thus, 188 respondents were selected comprising 67 students from year 1, 56 from year 2 and 65 from year 3 through simple random sampling within each stratum.

3.3.3 The Dependent variable

Academic achievement was the dependent variable in this study and was measured using students' CGPA. CGPA is a continuous variable that reflects a student's overall academic performance. The data on CGPA was obtained from respondents through the questionnaire, higher CGPA values were to indicate better academic achievement, and the variable was continuous.

Table 3.2 Variables and their measurements

Variables	Variable Labels	measurement	Data types
Academic Achievement	The CGPA of the student	CGPA	Continuous
Demographic factors			
Age	The age in complete years	Age in years	Continuous
Gender	The gender of the student	1. Female 2. Male	Binary
Parent's education level	The parents' highest level of education	1. No formal education 2. Primary education 3. Secondary education 4. Diploma 5. Bachelor's Degree 6. Postgraduate Degree	Ordinal
Residence status	Where the student resides	1. University halls 2. Private hostel/ Rental 3. Family Home	Nominal
Socio-economic factors			

Variables	Variable Labels	measurement	Data types
income level	The parents' monthly income earned.	Monthly household income categories	Ordinal
source of tuition	The students' source of income	1. Government Sponsorship/ Scholarship 2. Private sponsorship/ self-sponsorship	Nominal
Employment status	The students' employment status	1. Employed 2. Not employed	Binary
Environmental factors			
teaching quality	The teaching quality of the lectures	1. Timetable effectiveness 2. lecturer explaining course content	Nominal
Learning resources	The access and availability of learning resources	1. Library access 2. Internet/e-learning access 3. Availability of laptops	Nominal
Peer influence	The influence of peer influence	1. Academic discussions 2. Peer support 3. Peer encouragement	Nominal
Living conditions	The living conditions of students	1. Hostel noise, water shortages, security stress, electricity shortages	Nominal
Study Habits & Time Management	The study habits and time management of students	1. Number of Classes attended 2. Discussions attended 3. Regular attendance 4. Tests done	Nominal
Motivation & Self-Efficacy	The levels of motivation and self-efficacy of the students	1. Confidence, persistence and commitment 2. Ability to overcome challenges	Nominal
Physical & Mental Health	The physical and mental health of the students	1. Level of illness 2. Depression 3. Anxiety	Nominal
Sleep and nutrition	The sleep conditions and nutrition of students	1. Hours of sleep 2. Number of meals per day	Nominal

3.4 Data collection Procedure

Data for this study was collected using a structured questionnaire designed using kobo collect tool. The questionnaire contained closed-ended related to the study. objectives including demographic factors, the parents' education level, and source of tuition of students, residence status and student employment status, income level, study habits and time management, motivation and self-efficacy, physical/mental health, sleep and nutrition, teaching quality, learning resources, peer pressure and living conditions. This process involved sending the links to the randomly selected students and physical meetings to administer the questionnaire, which directly recorded the responses.

3.5 Data quality control

Before the actual data collection begun, the questionnaire was pre-tested on a small number of respondents with similar characteristics. The purpose of the pre-test was to identify unclear questions and make necessary adjustments to improve the reliability and clarity of the questionnaire and during the actual data collection. Respondents were informed about the purpose of the study, their consent obtained before participation and they were assured that the information provided was only for academic purposes.

This approach helped to ensure that responses were captured immediately and accurately. The kobo collect tool also help to reduce data entry errors because the responses were automatically stored in a digital format. The collected responses were saved in the google account and later exported to Microsoft Excel for further data management and then analysis.

3.6 Data Management

Data management involved organizing and preparing the collected data for easier analysis. After data collection using the kobo collect tool, the stored responses were exported to Microsoft Excel and later transferred to Stata 16 statistical software for further analysis. Data management involved data cleaning, handling missing data and data coding. This was done to check and remove duplicate responses, identify incomplete questionnaires, verify that all responses were within the expected range, checked for inconsistent responses and identify possible outliers.

3.6.1 Missing data

Missing data could come up because of unanswered questions, mistakes in entering information or incomplete responses. I screened the data before I analyzed it to figure out how much of the data was missing and the pattern it followed. The missing data was handled in a way that cases with too many missing responses were dropped, for continuous variables, filled in the gaps with the average value, which is the mean imputation method, and with categorical variables, i replaced any missing spots with the most common category, which is the mode imputation method. The method used was selected after seeing the data that was missing and what kind of pattern it made during the cleanup phase.

3.7 Data Analysis

Data collected was analyzed using Stata 16 software. The analysis conducted was in three stages: univariate, bivariate and multivariate analysis, taking into account that academic achievement (CGPA) was a continuous variable.

3.7.1 Univariate analysis

Univariate analysis conducted was to describe the characteristics of each variable independently. For categorical variables, the results were presented using frequencies, percentages, tables, bar charts and pie charts.

For continuous variables, the study computed descriptive statistics such as mean, standard deviation, minimum and maximum values.

Test for normality

Normality testing was conducted to know whether the data for CGPA was normally distributed. The test was done using the Shapiro–Wilk Test and the histogram for normality.

3.7.2 Bivariate analysis

Bivariate analysis conducted was to examine the relationship between each independent variable and CGPA. Different statistical tests were used depending on the nature of the variables.

3.7.2.1 Analysis of Variance

One-Way Analysis of Variance (ANOVA) was used to determine whether mean academic achievement (CGPA) differs significantly across categories of selected explanatory variables such

as parents' education level, source of tuition, and residence status. The test was appropriate because CGPA was a continuous variable while these explanatory variables contained more than two categories. ANOVA provided preliminary evidence on whether differences in academic achievement existed across groups with three or more categories before the multivariate analysis was performed. For groups that had two categories, independent sample t-test was used.

Table 3.3 Anova table

Source of variance	Df (Degrees of freedom)	Sum of Squares (SS)	Mean Square (MS)	F-Statistic
Between Groups	k-1	SSB	MSB=SSB/(k-1)	MSB/MSW
Within Groups	N-k	SSW	MSW=SSW/(N-k)	
Total	N-1	SST		

3.7.2.2 Independent sample t-test

It was used to compare the means of two independent unrelated groups to determine if there was statistical evidence that the associated population means were significantly different such as source of tuition, students' employment status, motivation and self-efficacy, peer influence and living conditions.

3.7.3 Multivariate analysis

Multiple Linear Regression Analysis was used to determine the combined influence of all explanatory variables on academic achievement. This method was appropriate because academic achievement (CGPA) was continuous and several predictor variables were involved.

$$Y_i = \beta_0 + \beta_1 X_1 + \dots + \beta_n X_n + \varepsilon_i$$

Where:

- Y = Academic Achievement
- β_0 = Constant
- β_i For $i = 1, \dots, n$ = Regression coefficients

- ε = Error term
- X_i For $i = 1, 2, \dots, n$ = the independent variables

3.8 Ethical considerations

The study was adhered to established ethical principles throughout the research process. Participation in the study was voluntary, and respondents were informed about the purpose, objectives, and procedures of the study before being requested to participate.

Informed consent was got from all respondents before administration of the questionnaire. Participants were informed that they had the right to refuse participation or withdraw from the study at any stage without any negative consequences.

Confidentiality and anonymity of respondents was maintained throughout the study. The information obtained was used strictly for academic purposes and was not shared with unauthorized persons. The collected data was stored securely using password-protected electronic devices and was only accessible by the researcher. Findings were reported in aggregate form to ensure that individual respondents cannot be identified.

The study also observed no physical, psychological, social, or financial harm caused to participants. Respondents were treated with respect, fairness, and dignity throughout the research process.

3.9 Limitations of the study

The study was subject to several limitations that could have affected the research process and interpretation of the findings:

The study employed a cross-sectional research design, which involved collecting data at one point in time. As a result, the study identified associations between the explanatory variables and academic achievement but could not establish cause and effect relationships.

The study relied on self-administered questionnaires to collect data. There was a possibility that some respondents might provide inaccurate or socially desirable responses or misinterpret some questions despite efforts to pre-test the questionnaire and provide clear instructions.

The study was conducted among Bachelor of Statistics students at Makerere University only. Therefore, the findings may not be generalizable to students from other academic programmes or other universities because they may have different characteristics.

The study was constrained by limited financial resources and time, which restricted the scope of the data collection and the duration available for conducting the research. However, careful planning and efficient management of available resources helped to minimize these constraints.

CHAPTER FOUR: PRESENTATION AND DISSEMINATION OF FINDINGS

4.0 Introduction

This chapter presents results on univariate, bivariate and multivariate analysis of the factors affecting academic achievement among Undergraduate students at Makerere University.

4.1 Univariate analysis

This section presents the summary of the dependent variable and independent variables.

4.1.1 Dependent Variable

Table 4.1 Summary of the CGPA

Observations	188
Mean	3.90
Standard deviation	0.46
Minimum	2.45
Maximum	5.00

The results in Table 4.1 showed that out of 188 students, the mean of their Academic achievement (CGPA) was 3.90 with the maximum CGPA being 5.00 and the lowest 2.45.

Test for CGPA (Shapiro-Wilk normality test)

H_0 : The data is normally distributed

H_1 : The data is not normally distributed

Table 4.2 Shapiro-Wilk normality test

Variable	Observations	W	V	z	p-value
CGPA	188	0.99	1.482	0.902	0.183

According to the findings in Table 4.2, the p-value is greater than 0.05 ($p = 0.183$) and therefore there is no enough evidence to reject the null hypothesis and hence the data is approximately normally distributed.

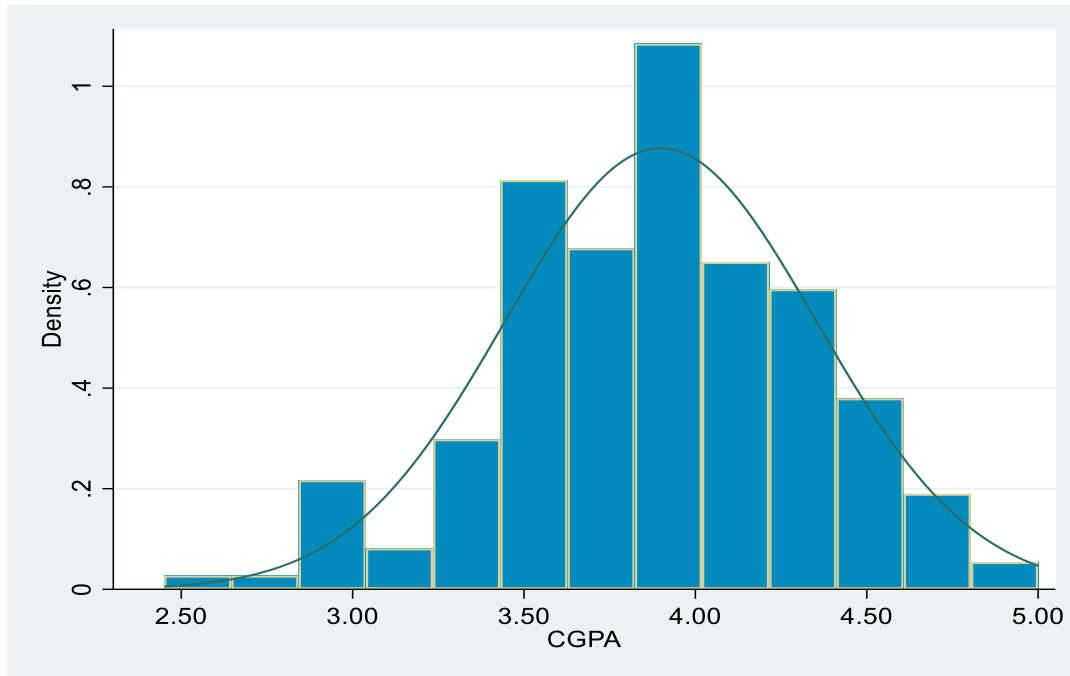


Figure 4.1 Histogram for normality

Findings from Figure 4.1 showed that CGPA is approximately normally distributed with most observations concentrated around the mean and the histogram closely following the overlaid normal curve, which indicates that the CGPA data satisfies the assumption of normality.

4.1.2 Demographic Variables

This includes the students' age, gender, students' residence status and parents' education level.

Table 4.3 Distribution of Students by age, gender, residence status and parents' education level

Variable	Category	Frequency	Percentage (%)
Students' age	Between 20 – 22	81	43.09
	Between 23 – 25	102	54.26
	26 and above	5	2.66
Gender	Female	96	51.06
	Male	92	48.94
Students' residence status	University hall	51	27.13
	Private hostel/ Rental	86	45.74
	Family Home/ Commute	51	27.13
Parents' Education level	No Formal Education	7	3.72

Variable	Category	Frequency	Percentage (%)
	Primary Education	11	5.85
	Secondary Education	49	26.06
	Diploma	27	14.36
	Bachelor's Degree	77	40.96
	Postgraduate	17	9.04

According to the findings in Table 4.3, majority of the students were aged between 23 – 25 (54.26%) and the smallest proportion of the students involved in the study were 26 and above years (2.66%). The findings also showed that in general there were more female students (51.06%) than male students (48.94%) involved in the study.

The highest percentage of the students resided in a private hostel/ rental (45.74%) making this the largest category whereas the percentage of students who resided in the university hall and the family home/ commute was the same (27.13%) which is a small proportion. The largest proportion was of students whose parents had a Bachelor's degree (40.96%) followed by students whose parents had secondary education (26.06%) while students whose parents had no formal education accounted for the smallest proportion (3.72%).

4.1.3 Socio-economic factors

This section presents the students' source of tuition, students' employment status and parents' income level.

Table 4.4 Distribution of the students by source of tuition, employment status and parents' income level

Variable	Category	Frequency	Percentage (%)
Source of tuition	Government Sponsorship/ Scholarship	76	40.43
	Private Sponsorship / self-sponsorship	112	59.57
Students' Employment Status	Not employed	157	83.51
	Employed	31	16.49
Parent's Income level	below UGX 500,000	28	14.89
	UGX 500,000 - 1,000,000	50	26.60
	UGX 1,000,001 - 2,000,000	62	32.98
	Above UGX 2,000,000	48	25.53

Findings in Table 4.4 showed that more than half of the students received their tuition through private sponsorship / self-sponsorship (59.57%) and the highest percentage of students were not employed (83.51%) compared to the employed students (16.49%).

The findings continued to show that majority of the students had parents whose income level was between UGX 1,000,001 - 2,000,000 (32.98%) followed by students whose parents earned between UGX 500,000 - 1,000,000 (26.6%) and the smallest proportion of students had their parents' income level below UGX 500,000 (14.89%).

4.1.4 The Student-Related Factors

This presents students' study habits and time management, motivation and self-efficacy, physical and mental health, sleep and nutrition.

Table 4.5 Distribution of students by their study habits and time management, motivation and self-efficacy, physical and mental health, sleep and nutrition

Variable	Category	Frequency	Percentage (%)
Study habits and time management (Number of lectures)	Less than 2	1	0.53
	Between 2 - 3 lectures	27	14.36
	Between 4 - 5 lectures	73	38.83
	More than 5	87	46.28
Motivation and self-efficacy (Ability to overcome challenges)	Yes	161	85.64
	No	27	14.36
Physical and Mental health (Level of illness)	Never	19	10.11
	Rarely	89	47.43
	Occasionally	34	18.09
	Often	30	15.96
	Very Often	16	8.51
Sleep and Nutrition (Hours of sleep)	Less than 5 hours	11	5.85
	Between 5 - 6 hours	79	42.02
	Between 7 - 8 hours	83	44.15
	More than 8 hours	15	7.98

According to the findings in Table 4.5, majority of the students attended more than 5 lectures (46.28%), followed by students who attended between 4 - 5 lectures (38.83%) and the smallest

proportion of the students attended less than 2 lectures (0.53%). For Motivation and self-efficacy, most of the students had the ability to overcome challenges (85.64%) whereas students who had no ability to overcome challenges accounted for only 14.36%.

Regarding Physical and mental health of the students, a majority of the students rarely had any illness (47.43%), followed by students who occasionally had any illness (18.09%) and the smallest proportion was for the students who got illnesses very often (8.51%). For Sleep and nutrition of the students, the highest proportion of students slept between 7 - 8 hours (44.15%), 42.02% of the students slept between 5 - 6 hours and the smallest proportion of students slept for less than 5 hours per night (5.85%).

4.1.5 University factors

This section includes teaching quality and learning resources.

Table 4.6 Distribution of students by the lecturers teaching quality and learning resources

Variable	Category	Frequency	Percentage (%)
Teaching quality (lecturers explaining course content)	Never	3	1.60
	Rarely	21	11.17
	Occasionally	65	34.57
	Often	73	38.83
	Always	26	13.83
Learning resources (Internet/ e-learning)	Never	4	2.13
	Rarely	32	17.02
	Occasionally	50	26.60
	Often	62	32.98
	Very Often	40	21.28

The findings in Table 4.6 showed that for the teaching quality of the lectures, the highest percentage of students reported that lecturers often explain course content clearly (38.83%), followed by the percentage of students who noted that clear explanations only happened occasionally (34.57%) and a smaller percentage of students reported that lecturers never explained the course content clearly (1.60%).

For the learning resources, the highest percentage of the students (32.98%) often used the internet/ e-learning for their studies, followed by students who occasionally used the internet/ e-learning

resources for their studies (26.60%) and a smallest percentage of the students never used the internet/ e-learning resources (2.13%).

4.1.6 Peer and Social environment factors

This section presents students' peer influence and their living conditions.

Table 4.7 Distribution of students by peer influence and living conditions

Variable	Category	Frequency	Percentage (%)
Peer Influence (Peer encouragement)	Yes	159	84.57
	No	29	15.43
Living conditions (Hostel noise, security stress, water and electricity shortages)	Yes	97	51.60
	No	91	48.40

The findings in the Table 4.7 showed a biggest percentage of the students received encouragement from their peers (84.57%) while a very small percentage did not (15.43%). For the living conditions, more than half of the students were affected by hostel noise, security stress, water and electricity shortages in their places of residence (51.60%) whereas 48.40% of the students were not affected by the noise, security stress, water and electricity shortages in their places of residence.

4.2 Bivariate Analysis

This presents the relationship between each independent variable and students' academic achievement.

4.2.1 Analysis of Variance

This section presents the association of independent variables with three or more categories and students' academic achievement.

Table 4.8 Relationship between CGPA and the variables

Variable		Means	F value	p-value
Students' age	Between 20 – 22	3.95	1.03	0.358
	Between 23 – 25	3.87		
	26 and above	3.75		
Students' residence status	University hall	3.98	2.600	0.077
	Private hostel/ Rental	3.92		
	Family Home/ Commute	3.78		
Parents' Education level	No Formal education	4.01	0.640	0.670
	Primary education	3.93		
	Secondary Education	3.89		
	Diploma	3.78		
	Bachelor's Degree	3.94		
	Postgraduate	3.86		
Parents' Income Level	below UGX 500,000	3.87	0.820	0.484
	UGX 500,000 - 1,000,000	3.98		
	UGX 1,000,001 - 2,000,000	3.85		
	Above UGX 2,000,000	3.89		
Study habits and time management (Number of lectures)	Less than 2	3.40	4.670	0.004
	Between 2 - 3 lectures	3.67		
	Between 4 - 5 lectures	3.87		
	More than 5	4.00		
Physical and Mental health (Level of illness)	Never	4.07	1.300	0.273
	Rarely	3.91		
	Occasionally	3.89		
	Often	3.77		
	Very Often	3.90		
Sleep and Nutrition (Hours of sleep)	Less than 5 hours	3.91	0.110	0.742
	Between 5 - 6 hours	4.00		
	Between 7 - 8 hours	3.79		
	More than 8 hours	3.98		
Teaching quality (lecturers explaining course content)	Never	4.05	1.340	0.256
	Rarely	3.96		
	Occasionally	3.80		
	Often	3.98		
	Always	3.88		
	Never	3.48	3.830	0.005

Variable		Means	F value	p-value
Learning resources (Internet/ e-learning)	Rarely	3.78		
	Occasionally	3.93		
	Often	3.83		
	Very Often	4.09		

The findings in the Table 4.8, showed a statistically significant difference in the mean CGPA of students across number of lectures attended ($F = 4.670$, $P = 0.004$) hence study habits and time management were statistically associated with students' academic achievement. Internet / e-learning usage also demonstrated a statistically significant difference in the mean CGPA ($F = 3.830$, $p = 0.005$). Therefore, the learning resources were statistically associated with the students' academic achievement.

Regarding students' age, there was no statistically significant difference in mean CGPA across the different age groups ($F = 1.03$, $p = 0.358$). Parents' education level also showed no statistically significant difference in mean CGPA across the different parents' education levels ($F = 0.640$, $p = 0.670$). Similarly, students' residence status was not statistically significant with the difference in mean CGPA ($F = 2.60$, $p = 0.0768$). Parents' income level also showed no statistically significant difference in mean CGPA across different parents' income categories ($F = 0.82$, $p = 0.484$).

Considering level of illness, there was no statistically significant association between the physical and mental health and academic achievement. Similarly, for hours of sleep, sleep and nutrition were not statistically associated with the students' academic achievement ($F = 0.110$, $P = 0.742$). In addition, teaching techniques by the lecturers was also not statistically significant with the difference in mean CGPA and therefore, the teaching quality was not statistically associated with the students' academic achievement ($F = 1.340$, $p = 0.256$).

4.2.3 Independent Sample t-test analysis

This presents the association of independent variables with two categories and students' academic achievement.

Table 4.9 Analysis using Independent Sample t-test

Variable		Means	t-value	p-value	95% Confidence Interval
Gender	Female	3.90	-0.063	0.95	-0.135, 0.127
	Male	3.90			
Source of tuition	Government Sponsorship/ Scholarship	4.00	2.434	0.016	0.031, 0.294
	Private Sponsorship/ self-sponsorship	3.83			
Students' Employment status	Not employed	3.91	1.082	0.281	-0.080, 0.273
	Employed	3.82			
Motivation and self-efficacy (Ability to overcome challenges)	Yes	3.93	-2.44	0.016	-0.412, -0.044
	No	3.70			
Peer influence (Peer encouragement)	Yes	3.93	-2.402	0.017	-0.397, -0.039
	No	3.71			
Living conditions (Hostel noise, security stress, water and electricity shortages)	Yes	3.92	-0.749	0.455	-0.181, 0.081
	No	3.87			

According to findings in Table 4.9, source of tuition showed that there was a statistically significant difference in the mean CGPA between students with different sources of tuition ($t = 2.434$, $p = 0.016$) therefore students whose tuition was paid through government sponsorships / scholarships had a significantly different mean CGPA compared to those whose tuition was paid through private sponsorship. Motivation and self-efficacy also showed a statistically significant difference in the mean CGPA between students with different levels of motivation and self-efficacy ($t = -2.440$, $p = 0.016$). Similarly, peer influence showed a statistically significant difference in the mean CGPA between students who were encouraged by their peers and those who were not ($t = -2.402$, $p = 0.017$).

Regarding gender, there was no statistically significant difference in the mean CGPA between male and female students ($t = -0.063$, $p = 0.950$). Students' employment status also revealed no statistically significant association with students' CGPA ($t = 1.082$, $p = 0.281$) and also the living

conditions of the students revealed no statistically significant association with students' CGPA ($t = -0.749$, $p = 0.455$).

4.3 Multivariate Analysis

This section presents the regression analysis of the significant variables from the bivariate analysis using multiple linear regression.

4.3.1 Regression analysis

Table 4.10 Regression analysis

Variable		Coefficient	Standard Error	t-value	p-value	95% Confidence interval
Study habits and time management (Number of lectures)	Less than 2	Reference Category				
	Between 2 - 3 lectures	0.402	0.438	0.92	0.360	-0.462, 1.265
	Between 4 - 5 lectures	0.474	0.435	1.09	0.277	-0.384, 1.333
	More than 5	0.585	0.433	1.35	0.179	-0.270, 1.440
Learning resources (Internet/ e-learning)	Never	Reference Category				
	Rarely	0.266	0.223	1.19	0.234	-0.174, 0.707
	Occasionally	0.420	0.219	1.92	0.057	-0.013, 0.853
	Often	0.283	0.218	1.29	0.197	-0.148, 0.714
	Very Often	0.554	0.222	2.49	0.014	0.116, 0.993
Source of tuition	Government Sponsorship/ Scholarship	Reference Category				
	Private Sponsorship / self-sponsorship	-0.191	0.064	-2.99	0.003	-0.318, -0.065
Motivation and self-efficacy (Ability to overcome challenges)	Yes	0.166	0.091	1.83	0.070	-0.013, 0.344
	No	Reference Category				
Peer Influence (Peer encouragement)	Yes	0.140	0.092	1.53	0.128	-0.041, 0.321
	No	Reference Category				

Number of observations = **188**, $F = 4.34$, $p\text{-value} = 0.000$, $R^2 = 0.197$

The overall model was statistically significant ($F = 4.34, p = 0.000$), indicating that the independent variables jointly explained a significant proportion of the variation in CGPA. The model explained 19.70% of the variation in CGPA ($R^2 = 0.197$).

According to the findings in Table 4.10, internet / e-learning access was significantly associated with CGPA meaning that learning resources significantly affect the academic achievement of students. Students who reported accessing internet / e-learning resources very often had significantly 0.554 CGPA points higher compared to students who never accessed internet / e-learning resources ($\beta = 0.554, t = 2.49, p = 0.014$). Since the p-value is less than 0.05, then the relationship is statistically significant. Source of tuition was also significantly associated with CGPA. Students whose source of tuition was private / self-sponsorship had on average about -0.191 CGPA points lower than those in the government sponsorship / scholarship category ($\beta = -0.191, t = -2.99, p = 0.003$). Since the p-value is less than 0.05, then the relationship is statistically significant.

CHAPTER FIVE: DISCUSSION, SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the findings of the study in relation to the existing literature and the study objectives. It also presents the summary of the findings, conclusions, recommendations and areas for further research on the factors affecting academic achievement among undergraduate students at Makerere University.

5.1 Discussion of findings

Socio-economic variables and Academic Achievement

Source of tuition was significantly associated with academic achievement at both bivariate and multivariate levels. Students under private/ self-sponsorship had significantly lower CGPA than those under government sponsorship/ scholarships. This suggests that government-sponsored students experience fewer financial constraints than privately sponsored students, allowing them to devote more time and effort to their studies, ultimately resulting in better academic achievement.

These findings are consistent with (Ogbuagu et al., 2025) who found out that financial challenges related to paying tuition often raise stress levels and lower focus on schoolwork, which can harm academic performance. Therefore, students whose tuition is regularly covered by sponsors, scholarships, or government programs are less likely to face breaks in their education than those who have to manage their own tuition costs.

Environmental factors and Academic Achievement

Study habits and time management were significantly associated with academic achievement at the bivariate level. Students attending more lectures generally demonstrated better academic performance than those attending fewer lectures. These findings agree with (Boevé et al., 2017) who found out that academic behaviors like regular attendance of lectures, studying in a disciplined manner and spending enough time on academics could contribute towards positive academic success. Similarly, (Suleiman et al., 2024) found that efficient time utilization and consistent participation in academic activities predict good academic performance.

However, after adjusting for other variables, study habits and time management became statistically insignificant at multivariate level. None of the lecture attendance categories remained statistically significant compared to the reference category (less than two lectures attended). This suggests that the apparent effect of lecture attendance may have been explained by other factors such as learning resources and source of tuition.

Motivation and self-efficacy were significantly associated with academic achievement at bivariate level. Students who had ability to overcome challenges generally had better academic achievement than those who never had ability to overcome challenges. These findings are consistent with (Matovu, 2020) who found a strong positive relationship between academic self-efficacy and academic performance among undergraduate students, indicating that students who believe in their academic abilities are more likely to perform better.

However, after controlling for other variables, the relationship became statistically insignificant. Students who had ability to overcome challenges and those who never had ability to overcome challenges had no statistically significant difference in their mean CGPA. The loss of significance at multivariate level suggests that the influence of motivation and self-efficacy overlaps with other explanatory variables included in the regression model for example, learning resources.

Learning resources demonstrated a statistically significant association with academic achievement both at bivariate and multivariate levels. Students who accessed internet and e-learning resources very often had significantly higher CGPA than students who never accessed these resources. This is because regular use of internet and e-learning resources enhances learning effectiveness and improves students' academic outcomes by providing easier access to learning materials and flexible study opportunities.

These findings agree with (Munje & Maarman, 2017) who found out that students with adequate access to learning resources perform better academically than those facing resource limitations. Similarly, (Abubakar et al., 2024) found out that availability and utilization of learning resources enhance independent learning, research skills and academic engagement, which contribute to better academic outcomes. Although the categories Rarely, Occasionally and Often showed positive coefficients, they were not statistically significant.

The study found that peer influence was statistically significant at bivariate level. Students who were encouraged by their peers reportedly had better academic achievement than those who were not encouraged by their peers. These findings agree with (Yanhong Shao, 2024) who found that students surrounded by academically motivated peers are more likely to achieve better educational outcomes than those exposed to negative peer influences.

However, after controlling for other factors, peer influence became statistically insignificant at multivariate level. Therefore, students who were encouraged by their peers and those who were not encouraged by their peers had no statistically significant difference in their mean CGPA. This suggests that peer influence initially appeared important but lost significance when academic and socio-economic factors were considered simultaneously, although peer encouragement is beneficial, it does not independently determine students' academic achievement after accounting for other important factors.

5.2 Summary of findings

The multiple linear regression analysis showed that only learning resources and source of tuition were statistically significant predictors of academic achievement among Bachelor of Statistics students at Makerere University. Students who accessed internet/ e-learning resources very often had significantly higher CGPA than those who never accessed these resources, the reference category. This is because regular use of internet and e-learning resources enhances learning effectiveness and improves students' academic achievement. Similarly, students under private/ self-sponsorship had significantly lower CGPA than those under government sponsorship/ scholarship, the reference category. This may be because government-sponsored students experience fewer financial constraints than privately sponsored students resulting in better academic achievement of government-sponsored students. Although age, study habits and time management, motivation and self-efficacy and peer influence showed significant associations at the bivariate level, they were not statistically significant after controlling for other variables in the regression model. Their loss of significance suggests that their effects may operate indirectly through other variables rather than exerting an independent influence on students' academic achievement.

5.3 Conclusions

The study concludes that learning resources are key determinants of academic achievement. Students who frequently accessed internet and e-learning resources performed significantly better academically than those who never used such resources.

Similarly, source of tuition is an important determinant of academic achievement. Students under government sponsorship/ scholarship had better academic achievement than privately/ self-sponsored students, suggesting that financial support enables students to concentrate more on their studies. These findings indicate that improving access to learning resources and reducing financial constraints can contribute significantly to better academic achievement among undergraduate students.

5.4 Recommendations

Makerere University should improve access to internet and e-learning resources by expanding campus internet coverage, improving computer laboratories and ensuring uninterrupted access to online learning platforms. This will encourage students to utilize digital learning resources more frequently, thereby improving their academic achievement.

Government and scholarship providers should increase financial support for university students by expanding scholarship opportunities and financial aid programs. This will reduce the financial burden faced by privately sponsored students and enable them to devote more time to academic activities.

The University should continue encouraging effective study habits, motivation and peer academic support through academic mentoring programs, counselling services and peer learning groups. Although these variables were not statistically significant in the multivariate model, they demonstrated significant associations during the bivariate analysis and therefore remain important in promoting a positive learning environment.

Students should be encouraged to maximize the use of available university learning resources, including the library, internet facilities and e-learning platforms, to enhance their understanding of course content and improve their academic achievement.

5.5 Areas for further Research

Future studies should investigate the influence of age, study habits and time management, motivation and self-efficacy and peer influence on academic achievement since the variables were statistically significant at the bivariate level but became insignificant after controlling for other variables in the multiple regression model in order to determine whether they affect academic achievement indirectly through other factors.

Further research should also include students from different academic programs and other universities in Uganda to determine the factors affecting their academic achievement or whether similar findings are obtained.

In addition, future studies should employ longitudinal research designs and include other potential determinants of academic achievement such as learning styles, emotional intelligence, classroom engagement and technological competence, to provide a more comprehensive understanding of students' academic achievement.

REFERENCES.

- Abubakar, U., Ogunlade, O. O., & Ibrahim, H. A. (2024). The influence of technology-integrated curriculum resources on student engagement and academic achievement in higher education. *Advances in Mobile Learning Educational Research*, 4(2), 1208-1223.
- Abugre, J. B. (2018). Institutional governance and management systems in Sub-Saharan Africa higher education: Developments and challenges in a Ghanaian Research University. *Higher Education*, 75(2), 323-339.
- Al-Abyadh, M. H. A., & Abdel Azeem, H. A. H. (2022). Academic achievement: influences of university students' self-management and perceived self-efficacy. *Journal of Intelligence*, 10(3), 55.
- Alani, F., Khan, F. R., & Hawas, A. (2020). Do Time Management Factors Impede Students' Academic Achievement?: A Case-study–Sohar University, Oman. *Humanities & Social Sciences Reviews*, 8(4), 201-212.
- Aljaffer, M. A., Almadani, A. H., AlDughaither, A. S., Basfar, A. A., AlGhadir, S. M., AlGhamdi, Y. A., AlHubaysh, B. N., AlMayouf, O. A., AlGhamdi, S. A., & Ahmad, T. (2024). The impact of study habits and personal factors on the academic achievement performances of medical students. *BMC medical education*, 24(1), 888.
- Astakhova, K. V., Korobeev, A. I., Prokhorova, V. V., Kolupaev, A. A., Vorotnoy, M. V., & Kucheryavaya, E. R. (2016). The role of education in economic and social development of the country. *International Review of Management and Marketing*, 6(1S).
- Aufa, N. I., Fitriyani, A., & Aufa, B. W. E. I. (2024). The Relationship Between Time Management and Academic Achievement Among University Students. *KIAN JOURNAL*, 3(2), 85-95.
- Aydin, F., & Aydin, A. (2024). Relationship among sleep quality, quality of life and academic self-efficacy of university students. *Current Psychology*, 43(24), 21110-21119.
- Berhanu, K. Z., & Naidoo, P. (2026). Academic Stress as a Factor Influencing the Relationship Between Perceived Campus Climate and Academic Achievement of Students. *Participatory Educational Research*, 13(3), 18-36.
- Boevé, A. J., Meijer, R. R., Bosker, R. J., Vugteveen, J., Hoekstra, R., & Albers, C. J. (2017). Implementing the flipped classroom: an exploration of study behaviour and student performance. *Higher Education*, 74(6), 1015-1032.

- Bustamante Ara, N., Russell, J., Godoy Cumillaf, A., Merellano Navarro, E., & Uribe, N. (2022). Academic performance, physical activity, sleep and gender in university students during the pandemic-2020. *Cultura _Ciencia _Deporte [CCD]*, 17(53).
- Çimen, F., Seçer, İ., & Ay, E. (2026). Latent profile and network analysis of school attendance problems in adolescents: an evaluation in terms of mental health issues, academic achievement, and school dropout. *School Mental Health*, 18(1), 109-123.
- Driller, M., Suppiah, H., Gastin, P. B., & Beaven, C. M. (2021). Questionnaire-derived sleep habits and academic achievement in first year university students. *Clocks & Sleep*, 4(1), 1-7.
- Edamo, D. L. (2026). Motivation, leadership, and parental engagement: input and process factors influencing student achievement in Hawassa City Administration. *Discover Education*, 5, 310.
- Faiza, M., & Daud, S. (2023). The impact of socio-economic status on academic achievement. *Journal of Social Sciences Review*, 3(2), 695-705.
- Gaisiey, I. K., Ntoaduro, A., Asamoah-Gyawu, J., Yeboah, G., Inkoom, D., Opoku, K., Attila, F., Eshun, E., & Mensah, G. A. (2025). Impact of positive learning environment on students' academic performance in colleges of education. *Canadian Journal of Educational and Social Studies*, 5(1), 238-253.
- Huang, J. (2024). The impact of teaching quality on student academic performance: Student engagement as a mediator. SHS Web of Conferences,
- Idris, M., Hussain, S., & Ahmad, N. (2020). Relationship between Parents' Education and their children's Academic Achievement. *Journal of Arts & Social Sciences*, 7(2).
- Jackson, D., & Bridgstock, R. (2018). Evidencing student success in the contemporary world-of-work: Renewing our thinking. *Higher Education Research & Development*, 37(5), 984-998.
- Jerez, E. (2024). Exploring the Contribution of Student Engagement Factors to Mature-Aged Students' Persistence and Academic Achievement During the First Year of University. *The Journal of Continuing Higher Education* 72(3), 304-319.
- Ji, G. X., Chan, P. W. K., McCormick, A., Won, M., Ali, S., Jimmy, M., Gulfan, V. G., Faamanatu-Eteuati, N., Suaalii, T. F., & Chesal, K. (2024). Scholarly responses to 'UNESCO global education monitoring report 2024 Pacific Technology in Education: a tool on whose terms?'. *International Education Journal: Comparative Perspectives*, 23(2), 154-170.

- Jie Li, X. H., Wangshuai Wang. (2018). How social support influences university students' academic achievement and emotional exhaustion: The mediating role of self-esteem. *Learning and Individual Differences*, 61, 120-126.
- KADIO, K. E. (2025). Socioeconomic Background, School Quality and Peer Effects in Sub-Saharan Africa. *School Quality and Peer Effects in Sub-Saharan Africa**(January 31, 2025).
- Kalbacher, L. S., & Randler, C. (2024). Exploring the nexus between sleep, chronotype, and non-cognitive predictors in university students: Implications for academic success. *Chronobiology International*, 41(8), 1165-1175.
- King-Agboto, F., & Ugorji, C. O. ((2023)). Effects of overcrowded classroom on academic achievement of student in public secondary schools: implication for sustainable development. *Journal of Education in Developing Areas*., 31(3), 265-275.
- Koçak, Ö., Göksu, İ., & Göktas, Y. (2021). The Factors Affecting Academic Achievement: A Systematic Review of Meta Analyses. *International Online Journal of Education and Teaching*, 8(1), 454-484.
- Li, J. (2023). A research on relationship between student-centered approach and student competence development in higher education: case studies in China and Italy.
- Li, J., Han, X., Wang, W., Sun, G., & Cheng, Z. (2018). How social support influences university students' academic achievement and emotional exhaustion: The mediating role of self-esteem. *Learning and individual differences*, 61, 120-126.
- Li, X., AlWadi, B. M., Ahmad, A., Dukhaykh, S., & Khan, I. (2025). Igniting success: how growth mindset fuels academic achievement through self-belief and strategic effort. *BMC nursing*.
- Lugolole Robert *, N. D., Marjorie S K Batiibwe, Sentongo John, Israel Kibirige. (2024). Investigating secondary school learners' academic achievement in physics in Uganda. *International Journal of Educational Spectrum*, 6(1), 18-42.
- Matovu, M. (2020). Academic self-efficacy and academic performance among university undergraduate students: an antecedent to academic success.
- Mngomezulu, S., Dhunpath, R., & Munro, N. (2017). Does financial assistance undermine academic success? Experiences of at risk students in a south African university. *Journal of Education (University of KwaZulu-Natal)*(68), 131-148.

- MUNGOMA, R. R. (2023). IMPACT OF STRESS ON MENTAL HEALTH AND ACADEMIC PERFORMANCE OF STUDENTS OF MAKERERE UNIVERSITY.
- Munje, P. N., & Maarman, R. (2017). Do school resources matter? The effects of school resources on learner performance in poor school communities. *Journal of Educational Studies*, 16(1), 34-51.
- Nabushawo, H. M., & Aguti, J. N. (2023). Online learning and professional development for faculty and staff at Makerere University in Uganda.
- Nankwanga, C. H. (2019). Socio-Economic factors that influence teaching and Learning Achievements in Secondary Schools in Eastern Region of Uganda a Case Study of Kaliro District.
- Nason, B. M., & Muhammad, T. (2025). Socioeconomic Determinants of Academic Performance: The Influence of Parental Education, Occupation, and Income on Secondary School Students in Kasese District, Uganda. *Newport International Journal of Research in Education (Nijre)*, 5(1), 8-26.
- Nshemereirwe, C. (2016). Socioeconomic status and access to higher education in Uganda.
- Ogbuagu, A. R., Ohalet, P. I., Nwaoga, C. T., Uroko, F. C., & Onyeana, A. K. (2025). Impact of financial stress on academic performance of university students in South East Nigeria. *Human Affairs*, 35(1), 119-136.
- Ramli, A., Zain, R. M., Campus, C., Chepa, P., & Bharu, K. ((2018).). The impact of facilities on students' academic achievement. *Sci. Int.(Lahore)*, 30(2), 299-311.
- Roksa, J., & Kinsley, P. (2019). The role of family support in facilitating academic success of low-income students. *Research in Higher Education*, 60(4), 415-436.
- Salisu, U. (2017). Factors affecting the academic performance of student nurses: A cross-sectional study. *Journal of nursing education and practice*.
- Shazia Hasan, M. F. (2018). Factors affecting the Academic Performance of. *Khazar Journal of Humanities and Social Sciences*, 21(1), 83-100.
- Shi, M., Miao, R., Bing, M., & Liu, S. (2025). The association between sleep quality and anxiety symptoms: a cross-sectional study based on Tibetan university students at high altitude in China. *Frontiers in Psychology*, 16, 1505948.

- Smith, H. P. (2025). Exploring Barriers and Benefits in Parental Involvement Strategies for Children's Education. *A Qualitative Single-Case Study (Doctoral dissertation, University of Arizona Global Campus)*.
- Suardiaz-Muro, M., Morante-Ruiz, M., Ortega-Moreno, M., Ruiz, M. A., Martin-Plasencia, P., & Vela-Bueno, A. (2020). Sleep and academic performance in university students: a systematic review. *Revista de neurologia*, 71(2), 43-53.
- Suleiman, I. B., Okunade, O. A., Dada, E. G., & Ezeanya, U. C. (2024). Key factors influencing students' academic performance. *Journal of Electrical Systems and Information Technology*, 11(1), 41.
- Summer, R., McCoy, M., Trujillo, I., & Rodriguez, E. (2025). Support for working students: Understanding the impacts of employment on students' lives. *Journal of College Student Retention: Research, Theory & Practice*, 26(4), 1123-1146.
- Suryawan, A. D., & Putra, E. (2016). Analysis of determining factors for successful student's GPA achievement. 2016 11th International Conference on Knowledge, Information and Creativity Support Systems (KICSS),
- Werang, B. R., Agung, A. A. G., Pio, R. J., Jim, E. L., Asaloei, S. I., Imbang, D., Leba, S. M. R., & Angelianawati, D. (2024). Exploring the effect of parental support and school environment on student academic achievement: A survey study. *International Journal of Religion*, 5(5), 345-357.
- Wunsch, K., Fiedler, J., Bachert, P., & Woll, A. (2021). The tridirectional relationship among physical activity, stress, and academic performance in university students: a systematic review and meta-analysis. *International journal of environmental research and public health*, 18(2), 739.
- Yanhong Shao, S. K., Quan Lu, Chao Zhang & Ruoxi Li. (2024). How peer relationships affect academic achievement among junior high school students: The chain mediating roles of learning motivation and learning engagement. *the chain mediating roles of learning motivation and learning engagement.*, 12(278).
- Zhao, Z., Ren, P., & Yang, Q. (2024). Student self-management, academic achievement: Exploring the mediating role of self-efficacy and the moderating influence of gender insights from a survey conducted in 3 universities in America. *arXiv preprint arXiv:2404.11029*.

APPENDICES

QUESTIONNAIRE

Factors Affecting Academic Achievement among Undergraduate Students at Makerere University.

Dear respondent, I am Akampura Flavius a statistics student conducting a study titled: Assessing the factors affecting academic achievement among undergraduate Makerere University students. A case study of Bachelor of Statistics Students. Your response will be kept confidential and used strictly for academic purposes, kindly answer all questions honestly.

Your cooperation and time are highly appreciated. Thank you.

Do you consent to participate in this study? (Yes, No)

Please tick (✓) the appropriate box.

SECTION A: DEMOGRAPHIC INFORMATION AND SOCIO-ECONOMIC FACTORS

Q1. What is your Age (Years)? _____

Q2. What is your Gender?

1. Male

2. Female

Q3. What is your Year of Study?

1. Year 1

2. Year 2

3. Year 3

Q4. What is your employment status?

1. Employed

2. Not employed

Q5. What is the highest education level of your parent(s)/guardian?

- | | |
|------------------------|------------------------|
| 1. No Formal Education | 4. Diploma |
| 2. Primary Education | 5. Bachelor's Degree |
| 3. Secondary Education | 6. Postgraduate Degree |

Q6. Where do you (student) reside.

- | | |
|---------------------------|-------------------------|
| 1. University hall | 3. Family Home/ commute |
| 2. Private hostel/ Rental | |

Q7. What is the parent(s)/guardian monthly household income?

- | | |
|----------------------------|------------------------------|
| 1. below UGX 500,000 | 3. UGX 1,000,001 – 2,000,000 |
| 2. UGX 500,000 – 1,000,000 | 4. Above UGX 2,000,000 |

Q8. What is your main source of tuition?

- | | |
|---|---|
| 1. Government Sponsorship/
Scholarship | 2. Private Sponsorship / self-
sponsorship |
|---|---|

SECTION B: ENVIRONMENTAL FACTORS

Q9. Do you regularly attend lectures?

- | | |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

Q10. How many of your scheduled lectures do you attend in a week?

- | | |
|----------------|----------------|
| 1. Less than 2 | 4. 4 - 5 |
| 2. 2 - 3 | 5. More than 5 |
| 3. 3 - 4 | |

Q11. How effective is the class timetable in supporting your learning?

- | | |
|---------------------|-------------------------|
| 1. Very ineffective | 3. Moderately effective |
| 2. Ineffective | 4. Effective |

5. Very effective

Q12. How often do lecturers explain course content clearly?

- | | |
|-----------------|-----------|
| 1. Never | 4. Often |
| 2. Rarely | 5. Always |
| 3. Occasionally | |

Q13. In a semester, how many class tests do you complete?

- | | |
|----------|----------------|
| 1. None | 4. 5 - 6 |
| 2. 1 - 2 | 5. More than 6 |
| 3. 3 - 4 | |

Q14. How often do lecturers provide feedback on tests and assignments on time?

- | | |
|-----------------|-----------|
| 1. Never | 4. Often |
| 2. Rarely | 5. Always |
| 3. Occasionally | |

Q15. In relation to your peers, do your friends encourage you to study or perform well academically?

- | | |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

Q16. How often do you participate in academic discussions with fellow students?

- | | |
|-----------------|---------------|
| 1. Never | 4. Often |
| 2. Rarely | 5. Very Often |
| 3. Occasionally | |

Q17. With the resources used for your learning purposes, do you use a laptop or computer for academic work?

- | | |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

Q18. How often do you use online learning resources (e-learning platforms, internet resources)?

- | | |
|----------|-----------|
| 1. Never | 2. Rarely |
|----------|-----------|

- 3. Occasionally
- 4. Often

5. Very Often

Q19a. Do you use the university library for academic purposes such as research?

1. Yes

2. No

Q19b. If yes how often;

1. Rarely

3. Often

2. Occasionally

4. Very Often

Q20. For the living conditions at you place of residence, are you affected by noise, electricity or water shortages and does it, interfere with your studies?

1. Yes

2. No

Q20b. If yes, how often?

1. Rarely

2. Occasionally

3. Often

4. Very Often

Q21. For better academic achievement health and nutrition conditions are looked at so on average, how many hours do you sleep per night?

1. Less than 5 hours

3. 7 - 8 hours

2. 5 - 6 hours

4. More than 8 hours

Q22. On average, how many meals do you eat per day?

1. One meal

3. Three meals

2. Two meals

4. More than three meals

Q23. How often do you become sick during a semester?

- | | |
|-----------------|---------------|
| 1. Never | 4. Often |
| 2. Rarely | 5. Very Often |
| 3. Occasionally | |

Q24. How often do you feel depressed or emotionally overwhelmed?

- | | |
|-----------------|---------------|
| 1. Never | 4. Often |
| 2. Rarely | 5. Very Often |
| 3. Occasionally | |

Q25. Do you experience anxiety related to your academic work?

- | | |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

Q26. For one to perform and achieve better academic achievement, all the factors above have to be considered so basing on the questions answered, please indicate your current CGPA: _____

Q27. Do you feel confident in your ability to perform well academically?

- | | |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

Q28. Are you able to overcome academic challenges successfully?

- | | |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

Q29. When coursework becomes difficult, how often do you continue working until you understand it?

- | | |
|-----------------|-----------|
| 1. Never | 4. Often |
| 2. Rarely | 5. Always |
| 3. Occasionally | |

INTRODUCTORY LETTER

MAKERERE

Plot 51, Pool Road
P.O. Box 7062
Kampala, UGANDA
Website: www.bams.mak.ac.ug



UNIVERSITY

Phone: +256 414 541558/9
Fax: +256 414 530756
E-mail: hodsas@bams.mak.ac.ug
info@bams.mak.ac.ug

COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES
School of Statistics and Planning
Department of Statistical Methods and Actuarial Science

Date: 27th May, 2026

To: Academic Registrar
Makerere University

Dear Sir,

Re: Request to Permit a Third-Year BStat Student to Collect Data from Fellow Students

Ms. Akampura Flavius (Student Number: 2300705494) is a third-year Bachelor of Statistics student at Makerere University. As part of the requirements for her third-year research project, she is conducting a study and will subsequently prepare a dissertation.

Her research is titled "*Assessing the factors affecting academic achievement among undergraduate students at Makerere University. A case study of Bachelor of Statistics Students*"

We kindly request your permission to allow Ms. Akampura Flavius to collect data by interviewing fellow students within the School of Statistics and Planning for this study. The information collected will be used strictly for academic purposes, and the confidentiality of all participants will be maintained.

We would greatly appreciate your support and cooperation in facilitating this research.

Thank you for your consideration.

Yours faithfully,

Symon Peter Wandiembe, PhD
Makerere University, Dept of Statistical Methods & Actuarial Science
Tel: +256-773-26321



Leveraging 100 years of Excellence in Building a Transformed Society