

MAKERERE



UNIVERSITY

COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES

**ANALYSIS OF FINANCIAL RISK TOLERANCE AMONG UNDERGRADUATE
UNIVERSITY STUDENTS: A CASE STUDY OF SCHOOL OF STATISTICS AND
PLANNING, MAKERERE UNIVERSITY**

BY

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**A DISSERTATION SUBMITTED TO THE SCHOOL OF STATISTICS AND
PLANNING IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF DEGREE OF BACHELOR OF SCIENCE IN ACTUARIAL SCIENCE
OF MAKERERE UNIVERSITY**

JULY, 2026

DECLARATION

I, AKANKUNDA VIOLAH PRINCESS, hereby declare that this dissertation titled, "Analysis of financial risk tolerance and its associated factors among undergraduate university students. A case study of school of statistics and planning, Makerere University, written in partial fulfillment of the requirements of the award of a Bachelor of Science in Actuarial Science degree at Makerere University, is my very own authentic work and the content of this document has never been submitted to any institution. Note however, that citations, quotations and references to other people's work or sources of information where used have been duly made.

Signature... .....

Date... 28th July, 2026.....

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APPROVAL

This is to approve that this dissertation was done under my supervision and is now ready for submission in partial fulfillment for the award of Bachelor of Science in Actuarial Science.

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DEDICATION

I dedicate this research work to my beloved parents Mr. & Mrs. Maani Jude, siblings and whoever has endlessly supported me throughout my life and academic journey.

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I would like to sincerely express my appreciation to everyone who contributed to the successful completion of this research report.

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ABSTRACT

This study analyzed financial risk tolerance and its associated factors among undergraduate students at the School of Statistics and Planning, Makerere University. Specifically, the study sought to determine the level of financial risk tolerance and examine the socio-demographic, financial knowledge, and financial experience factors associated with financial risk tolerance. A cross-sectional research design was employed. Data were collected from 298 undergraduate students selected from the Statistics, Actuarial Science, Quantitative Economics, and Population Studies programs using a structured questionnaire. Data were analyzed using Stata SE 15.0. Descriptive statistics were used to summarize respondents' characteristics and levels of financial risk tolerance measured using the Grable and Lytton Financial Risk Tolerance Scale, while chi-square tests and ordinal logistic regression were used to examine factors associated with financial risk tolerance.

Descriptive analysis showed that the majority of respondents (63.42%) exhibited a moderate level of financial risk tolerance, while 25.17% had high financial risk tolerance. At the bivariate level, gender, understanding of inflation, and frequency of mobile money usage were significantly associated with financial risk tolerance, whereas the remaining socio-demographic, financial knowledge, and financial experience variables were not significantly associated. Multivariate analysis using ordinal logistic regression revealed that gender and understanding of inflation remained significant predictors of financial risk tolerance. Male students were more likely to exhibit higher financial risk tolerance than female students, while respondents who did not correctly understand inflation were less likely to exhibit higher financial risk tolerance.

The study concludes that undergraduate students at the School of Statistics and Planning generally demonstrate moderate financial risk tolerance, and that gender and financial knowledge, particularly understanding of inflation, are important determinants of financial risk tolerance. The study recommends strengthening financial literacy programs within universities by placing greater emphasis on practical financial concepts such as inflation, savings, budgeting, and personal financial management to enhance students' financial decision-making. Future studies should include students from other universities and adopt longitudinal research designs to provide broader evidence on financial risk tolerance among young adults.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Financial risk tolerance refers to the degree to which an individual is willing and able to accept uncertainty in financial decision-making in pursuit of potential gains (Grable, Rabbani et al. 2026). It is an important aspect of financial behavior because it influences how individuals make decisions regarding saving, borrowing, spending, and other financial activities. Understanding financial risk tolerance is particularly important among young adults, who are increasingly required to make independent financial decisions while navigating uncertain economic environments.

Globally, financial risk tolerance among young people varies considerably and is influenced by a range of demographic, socioeconomic, and financial literacy factors (Thapa and Pun 2025). Studies indicate that a large proportion of young adults exhibit moderate to low financial risk tolerance, with more than half preferring low-risk financial choices such as saving rather than engaging in higher-risk financial activities (Alsuwaidi, Ahmad et al. 2025). Research has consistently shown that factors such as age, gender, income level, education, financial knowledge, and perceived financial security significantly influence individuals' willingness to accept financial risk (Rollins-Koons, Ouyang et al. 2026). Furthermore, interventions aimed at improving financial literacy and financial education have been found to enhance young people's confidence and willingness to make informed financial decisions under uncertainty.

In Africa, financial risk tolerance among youths is often shaped by economic uncertainty, limited employment opportunities, restricted access to financial resources, and varying levels of financial literacy (Kasonde 2025). Studies conducted in West and Central Africa have identified age, education, income, gender, and place of residence as important determinants of financial behavior and risk attitudes (Uifalean 2024). Additionally, financial inclusion, digital financial literacy, and access to financial education have emerged as key factors that improve young people's ability to understand, manage, and tolerate financial risks (Koskelainen, Kalmi et al. 2023).

In Uganda, available research has focused primarily on financial literacy and financial inclusion, with limited attention given specifically to financial risk tolerance (Okello Candiya

Bongomin, Akol Malinga et al. 2025). Evidence from Kampala indicates that many youths possess relatively low objectively measured financial literacy despite reporting high levels of self-perceived financial knowledge, a situation that often contributes to conservative financial behavior (Keryne and Jason 2025). Other studies have shown that income levels, employment opportunities, and access to financial education significantly influence financial behavior among young Ugandans. These findings suggest that financial risk tolerance among Ugandan youths is shaped by an interaction of demographic characteristics, socioeconomic circumstances, and financial literacy factors, although the extent of these relationships remains underexplored.

Undergraduate university students constitute a particularly important population for studying financial risk tolerance because they are in a transitional stage between financial dependence and financial independence (Keryne and Jason 2025). During this period, students increasingly make decisions regarding educational expenses, personal expenditures, savings, and other financial commitments (Merter and Balcioğlu 2025). Their ability and willingness to manage financial uncertainty may therefore have significant implications for their future financial well-being. This study focuses on undergraduate students in the School of Statistics and Planning, whose academic training in quantitative analysis, statistics, and planning may influence their perception of financial risk and decision-making behavior.

Although global and regional evidence consistently demonstrates that financial risk tolerance is influenced by demographic, socioeconomic, and financial literacy factors, limited empirical evidence exists regarding these relationships among university students in Uganda. This study therefore seeks to examine the factors associated with financial risk tolerance among undergraduate students in the School of Statistics and Planning. The findings are expected to contribute to a better understanding of financial behavior among Ugandan youths and provide useful insights for financial educators, policymakers, and student support programs aimed at improving financial decision-making.

1.2 Problem statement

University students and young adults are increasingly exposed to a wide range of financial products and investment opportunities (Ferguson, Willson et al. 2026), yet many lack the capacity to make informed financial decisions (Rubin, Chen et al. 2026). Studies have shown

that young people often exhibit low or inconsistent levels of financial risk tolerance, leading either to excessive risk aversion that limits wealth accumulation or to excessive risk-taking that exposes them to significant financial losses (Alsuwaidi, Ahmad et al. 2025). This challenge is particularly concerning because the university years represent a critical stage during which lifelong financial habits and decisions are formed.

Several governments, financial institutions, and educational institutions have responded by promoting financial literacy programs and investor education initiatives aimed at improving financial decision-making among young people (Maity, Mitra et al. 2025). Despite these efforts, evidence suggests that many students continue to demonstrate inadequate understanding of uncertainty, resulting in suboptimal financial choices (Develaki 2024).

In Uganda, limited empirical evidence exists regarding the financial risk tolerance of university students and the factors that influence their financial decision-making under conditions of uncertainty. Most existing studies have focused on the general population, employed individuals, or broader aspects of financial literacy (Zaimovic, Torlakovic et al. 2023), with little attention given to undergraduate students who are increasingly participating in savings groups and other emerging financial opportunities. This study therefore seeks to fill that gap by systematically analyzing financial risk tolerance and its associated factors among undergraduate students at Makerere University.

1.3 Research Objectives

1.3.1 Main Objective

To analyze financial risk tolerance and its associated factors among undergraduate students at School of statistics and planning, Makerere University.

1.3.2 Specific Objectives

- i. To assess the level of financial risk tolerance among undergraduate students at School of statistics and planning, Makerere University.
- ii. To examine the demographic factors associated with financial risk tolerance among undergraduate students at School of statistics and planning, Makerere University.

- iii. To assess the influence of socio-economic factors on the financial risk tolerance of undergraduate students at School of statistics and planning, Makerere University
- iv. To determine the financial experience factors associated with financial risk tolerance among undergraduate university students at School of statistics and planning, Makerere University.

1.4 Hypotheses of the study

H01: There is no significant relationship between gender and financial risk tolerance among undergraduate students at School of statistics and planning, Makerere University

H02: There is no significant relationship between age and financial risk tolerance among undergraduate students of the School of Statistics and Planning, Makerere University.

H03: There is no significant relationship between family income level and financial risk tolerance among undergraduate students of the School of Statistics and Planning, Makerere University.

H04: There is no significant relationship between parental financial background and financial risk tolerance among undergraduate students of the School of Statistics and Planning.

1.5 Significance of the study

The findings of this study are expected to be of considerable value to a wide range of stakeholders. Undergraduate students at School of statistics and planning will gain greater awareness of their own financial risk attitudes, encouraging more informed and deliberate financial decision-making at a formative stage of their lives, with potential lasting effects on their long-term financial well-being. University administrators and curriculum developers will benefit from empirical evidence that supports integrating personal finance and investment education across all colleges, rather than confining it to business-related disciplines. Financial institutions, including commercial banks, insurance companies, and microfinance providers, will gain a clearer understanding of the risk profiles of university students, a large and growing market segment, enabling them to design products and digital financial services better suited to young adults. Policymakers and regulatory bodies such as the Ministry of Finance, the Capital Markets Authority of Uganda, and the Bank of Uganda will find the study useful in designing youth-focused financial inclusion policies aligned with the NDP III's emphasis on domestic investment and private sector growth. Finally, the study contributes to the limited

body of literature on financial risk tolerance in Sub-Saharan Africa, offering a locally grounded perspective that can inform future comparative research in the region.

1.6 Scope of the study

This study focuses on financial risk tolerance and its associated factors among undergraduate university students. Specifically, it examines the level of financial risk tolerance among students, the socio-demographic factors associated with financial risk tolerance the influence of financial literacy on financial risk tolerance. It is geographically confined to the School of statistics and planning, Makerere University, located in Kampala, Uganda. This is because it houses multiple undergraduate programs including Statistics, Quantitative Economics, Population Studies, and Actuarial Science, allowing for meaningful within-school comparisons across programs. The population scope for this study is limited to undergraduate students currently enrolled at the School of statistics and planning, Makerere University enrolled between 2023 and 2025, a timeframe chosen deliberately to capture the financial attitudes and behaviors of students who have studied and made financial decisions within a particularly dynamic and challenging economic environment. Examining risk tolerance within this specific window allows the study to reflect contemporary financial realities faced by Ugandan university students rather than relying on outdated assumptions about their financial behavior. The research process, including data collection, analysis, and reporting, is expected to be conducted over a period of three months spanning from 20th May, 2025 to 31st July, 2025, ensuring comprehensive findings within the set timeframe.

1.7 Conceptual framework

Independent variables

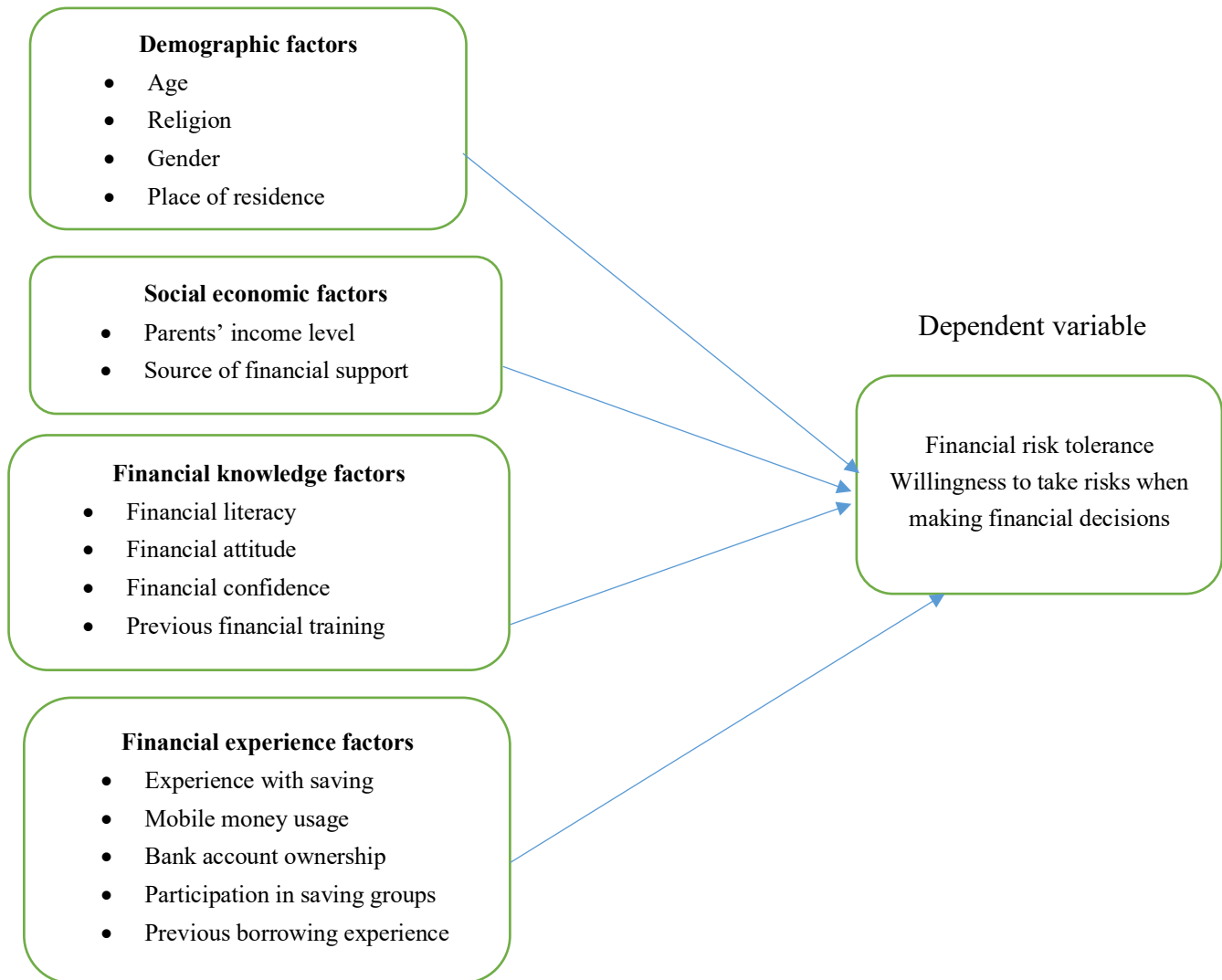


Figure 1: Conceptual framework

The conceptual framework illustrates the relationship between the independent variables and the dependent variable of the study. The independent variables include demographic factors, financial knowledge factors, Financial experience factors and socio-economic factors. These factors are hypothesized to influence the level of financial risk tolerance among undergraduate university students. Financial risk tolerance which is the dependent variable, refers to the individual's willingness to accept uncertainty and potential financial losses in pursuit of higher returns (Rahman 2020).

The framework provides a basis for examining the extent to which the identified factors affect students' financial risk tolerance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literature on financial risk tolerance and its associated factors. It examines theoretical and empirical studies related to financial risk tolerance among individuals, particularly university students. The chapter also discusses factors such as age, gender, financial literacy, income, and academic characteristics that may influence financial risk tolerance.

2.2 Conceptual Definitions

2.2.1 Financial Risk Tolerance

Financial risk tolerance is broadly defined as the maximum amount of uncertainty an individual is willing to accept when making financial decisions (Alsuwaidi, Ahmad et al. 2025). It reflects the extent to which a person is comfortable with the possibility of losing money in pursuit of potential financial gains (Grable, Rabbani et al. 2026). Scholars have distinguished financial risk tolerance from related concepts such as risk capacity, which refers to the objective ability to absorb financial losses, and risk perception, which denotes the subjective assessment of how risky a financial situation is (Ajaz Khan, Akhtar et al. 2025).

Risk tolerance is widely regarded as a multidimensional construct encompassing cognitive, emotional, and behavioral components (Shou and Olney 2022). The cognitive dimension involves an individual's rational assessment of risk-return tradeoffs, while the emotional dimension captures the psychological comfort or discomfort associated with financial uncertainty (Suriyanti, Mandung et al. 2024). The behavioral dimension reflects actual financial decisions made under conditions of uncertainty (Kumar, Islam et al. 2023).

2.2.2 Financial Risk among University Students

Among university students, financial risk tolerance manifests in decisions related to personal savings, borrowing and expenditure management (Bapat 2020). Students occupy a transitional financial phase, often moving from complete dependence on parents or guardians toward increasing financial autonomy (Serido, LeBaron et al. 2020). This transition introduces them

to a range of financial risks, including tuition debt, living expenses, and limited income streams (Mazelis and Kuperberg 2022). Understanding how students in this phase perceive and tolerate financial risk is therefore critical for informing financial education interventions (Mancone, Tosti et al. 2024).

2.3 Theoretical review

The Expected Utility Theory assumes that individuals are rational and consider both the potential benefits and risks associated with a decision. In the context of financial risk tolerance, individuals with higher risk tolerance may choose options with greater uncertainty if they expect higher returns, while risk-averse individuals may prefer safer alternatives. It is relevant to this study because it explains why students may differ in their willingness to take financial risks when making financial decisions.

Prospect Theory proposes that individuals evaluate gains and losses differently and tend to be more sensitive to losses than equivalent gains. It suggests that individuals often make decisions based on perceived gains and losses rather than final outcomes. This may lead to risk-averse behavior when gains are expected and risk-seeking behavior when attempting to avoid losses. The theory is relevant to this study because students' financial decisions may be influenced by how they perceive financial gains and losses, thereby affecting their risk tolerance levels.

2.4 Review of Related Literature

2.4.1 Demographic Factors and Financial Risk Tolerance

Demographic characteristics have been widely recognized as important determinants of financial risk tolerance (Nosita, Pirzada et al. 2020). Among the most frequently examined demographic factors are age and gender (Ansari and Bansal 2025). These characteristics influence individuals' perceptions of risk and their willingness to engage in financial activities involving uncertainty.

2.4.1.1 Age and Financial Risk Tolerance

Age has been widely examined as a determinant of financial risk tolerance. Studies generally suggest that younger individuals tend to exhibit higher levels of risk tolerance because they have a longer time horizon to recover from potential financial losses (Ansari and Bansal 2025).

Younger people are therefore more willing to engage in risky financial activities than older individuals (Bapat 2020).

Research by Grable and Lytton (Grable and Rabbani 2023) found a positive relationship between youthfulness and financial risk tolerance, indicating that younger individuals are more willing to accept financial risks. Similarly, Hallahan et al. reported that risk tolerance tends to decline with age as individuals become increasingly concerned about financial security and future obligations.

However, some studies (Ruiz-Palomo, Galache-Laza et al. 2023, Zaimovic, Torlakovic et al. 2023) have produced mixed findings, suggesting that age may become less significant when other factors such as income, education, and financial knowledge are taken into account. Among university students, age variations are relatively small, which may reduce its influence on financial risk tolerance (Ruiz-Palomo, Galache-Laza et al. 2023). Nevertheless, age remains an important demographic characteristic in understanding differences in risk-taking behavior (Rehman and Mia 2024).

2.4.1.2 Gender and Financial Risk Tolerance

Gender is another demographic factor that has received considerable attention in financial risk tolerance research. Numerous studies (Thanki, Shah et al. 2022) indicate that males generally exhibit higher financial risk tolerance than females. This difference has often been attributed to variations in confidence levels, financial experience, and attitudes toward uncertainty.

H.R.Bowles (Bowles, Mazei et al. 2025) concluded that males are generally more willing to engage in risk-taking behavior across a variety of decision-making contexts. Similar findings have been reported among university students, where male students often demonstrate a greater willingness to accept financial risks than female students.

Despite these findings, recent studies suggest that gender differences in financial risk tolerance may be diminishing due to increased financial education and economic participation among women. Consequently, further investigation is necessary to determine whether gender significantly influences financial risk tolerance among undergraduate students (Fisher and Yao 2017).

2.4.2 Socio-Economic Factors and Financial Risk Tolerance

Socio-economic factors influence individuals' access to financial resources and opportunities, thereby affecting their willingness to take financial risks. Among university students, income represents one of the most important socio-economic variables associated with financial risk tolerance (Etale, Ammann et al. 2022).

2.4.2.1 Income and Financial Risk Tolerance

Income has consistently been identified as a significant predictor of financial risk tolerance (Gibson 2013). Individuals with higher income levels tend to possess greater financial security and are therefore more willing to accept financial risks. Their financial resources provide a cushion against potential losses, reducing the perceived consequences of risky financial decisions.

Previous studies have found a positive relationship between income and financial risk tolerance, indicating that individuals with higher incomes are generally more willing to engage in uncertain financial activities. Conversely, those with lower income levels tend to be more risk-averse due to concerns about maintaining financial stability.

Among university students, income may originate from allowances, scholarships or family support. Students with greater access to financial resources may exhibit higher levels of financial risk tolerance than those facing financial constraints. However, university students in Uganda are more likely to engage with informal or semi-formal financial mechanisms (Morris, Lobao et al. 2009), such as savings groups, mobile money platforms, and peer lending arrangements.

2.4.3 Financial Knowledge Factors and Financial Risk Tolerance

Financial knowledge refers to an individual's understanding of financial concepts and ability to apply that knowledge in making informed financial decisions (Nogueira, Almeida et al. 2025). It is widely recognized as one of the key determinants of financial risk tolerance. Individuals with higher levels of financial knowledge are generally better able to evaluate financial risks and potential outcomes, making them more willing to accept financial uncertainty when making financial decisions.

Several studies (Grable and Rabbani 2023, Noman, Chu et al. 2023, Song, Pan et al. 2023) have reported a positive relationship between financial knowledge and financial risk tolerance. (Grable and Rabbani 2023) found that individuals with greater financial knowledge exhibited higher levels of financial risk tolerance because they were more capable of understanding and managing financial risks. Similarly, (Merter and Balcıoğlu 2025) reported that financial knowledge significantly influenced individuals' willingness to take financial risks, with financially knowledgeable individuals demonstrating greater confidence in dealing with uncertain financial situations. These findings imply that students who possess a better understanding of financial concepts may be more willing to tolerate financial risks than those with limited financial knowledge.

2.4.4 Financial Experience Factors and Financial Risk Tolerance

Financial experience refers to an individual's prior exposure to financial activities such as budgeting, saving, managing personal finances, Mobile money usage, bank account ownership, previous borrowing experience and making financial decisions (Gumbo, Margaret et al. 2022). Previous studies (Young 2024, Alsuwaidi, Ahmad et al. 2025) suggest that financial experience plays an important role in shaping financial risk tolerance because individuals who have greater exposure to financial matters tend to be more familiar with financial uncertainty and are therefore more comfortable taking financial risks.

Research by (Sinnewe and Nicholson 2023) further suggests that individuals who actively engage in financial activities tend to possess better financial knowledge and are more likely to undertake decisions involving financial risk. In addition, Nguyen, Gallery, and Newton (2019) found that previous financial experience positively influenced risk-taking behaviour among young adults by improving their understanding of financial outcomes and reducing uncertainty associated with financial decisions. These findings imply that students with prior experience in managing finances, saving regularly, using financial services, or participating in financial decision-making may exhibit higher levels of financial risk tolerance compared to those with limited financial experience.

2.5 Research Gap

While the reviewed literature provides valuable insight into the factors influencing financial risk tolerance, several gaps remain that this study seeks to address. First, the majority of existing studies on financial risk tolerance have been conducted among working adults, employed professionals, or active investors in developed economies (Mahdzan and Zainudin 2020), with limited attention paid to university students, particularly those in Sub-Saharan Africa, whose financial circumstances, income sources, and life stage differ significantly from these populations. As a result, findings on the relationship between demographic, socio-economic, financial knowledge, financial experience factors and financial risk tolerance may not be directly applicable to undergraduate students in a context such as Uganda.

Second, much of the literature on demographic factors and financial risk tolerance, particularly regarding gender and age, has been generated within Western cultural (Wong 2011) and economic settings, where financial socialization patterns, gender roles, and access to financial systems may differ considerably from those in Uganda. It therefore remains unclear whether commonly reported patterns, such as men exhibiting higher risk tolerance than women, hold true within the Ugandan university context, or whether local cultural and social dynamics produce different outcomes. (Wong 2011)

The extent to which these less conventional forms of financial experience shape risk tolerance among students has not been adequately explored (Harlow and Brown 1990, Gibson, Michayluk et al. 2013). Finally, and perhaps most importantly, no known study has comprehensively examined financial risk tolerance and its associated demographic and socio-economic specifically among undergraduate students at School of Statistics and Planning, Makerere University, or indeed within the broader Ugandan university context. This represents a significant gap, given the strategic importance of this population to Uganda's financial inclusion and investment promotion agenda. This study therefore seeks to fill this gap by providing an empirically grounded, context-specific analysis of financial risk tolerance among undergraduate students at School of Statistics and Planning, Makerere University.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodological approach adopted in conducting this study on financial risk tolerance and its associated factors among undergraduate students at School of Statistics and Planning, Makerere University. It presents the research design employed, describes the study area and population, and details the sampling procedure used to select respondents. The chapter provides a comprehensive justification for each methodological choice, ensuring that the approach adopted is appropriate for addressing the research objectives and hypotheses outlined in Chapter One.

3.2 Study Design

This study adopted a cross-sectional research design, employing a quantitative approach to data collection and analysis. A cross-sectional design was considered appropriate because it allows for the collection of data from a sample of undergraduate students at a single point in time, providing a snapshot of their financial risk tolerance levels and the factors associated with them, without requiring the lengthy time investment associated with longitudinal studies. This approach was consistent with the majority of existing studies on financial risk tolerance, which rely heavily on measurement instruments and regression-based analysis to establish associations between risk tolerance and its determinants.

3.3 Study Area

The study was conducted at the School of Statistics and Planning (SSP), under the College of Business and Management Sciences at Makerere University, located in Kampala.

3.4 Study Population

The study population comprised of all undergraduate students enrolled in the School of Statistics and Planning at Makerere University during the period of data collection. The population included students pursuing various undergraduate programs offered by the school, such as Bachelor of Statistics, Bachelor of Science in Actuarial Science, Bachelor of science in Population Studies, and Bachelor of science in Quantitative Economics. These students constituted the target population because they are likely to possess varying demographic and socio-economic characteristics that may influence their financial risk tolerance. Therefore,

studying this population provided valuable insights into the factors associated with financial risk tolerance among undergraduate university students.

3.5 Sampling procedure and selection

3.5.1 Sample size determination

The total population size (N) for this study comprised of all undergraduate students enrolled in the School of Statistics and Planning at Makerere University during the study period. The population was 1,355 students as obtained from official enrollment records maintained by the School of Statistics and Planning and Makerere University administration. These records were reliable and up-to-date information on the number of registered undergraduate students across the different programs and years of study. The obtained population size was then used in Slovin's formula to determine an appropriate sample size for the study. This approach ensured that the selected sample is representative of the target population while remaining manageable within the time and resource constraints of the study.

Slovin's formula for a finite population will be adopted. This formula is appropriate because the target population is known and finite. The mathematical formula is expressed as follows:

$$n = \frac{N}{1 + N(e)^2} \quad (3.1)$$

Where:

n = the required sample size, N = the total target population size (total enrollment of undergraduate students at SSP), e= the margin of error (level of precision), set at 5% (0.05) assuming a 95% confidence level.

$$\text{Therefore; } n = \frac{1355}{1 + 1355(e)^2}$$

n=308.83 students which is approximately 309 students

3.5.2 Sampling Technique and Selection

This study employed a combination of simple random sampling and stratified sampling techniques, applied sequentially as guided by the nature of the data collection process. Simple random sampling was used at the data collection stage. This approach ensured that the selection

of respondents is free from deliberate bias and that the sample is drawn from the broadest possible cross-section of the undergraduate student population at Makerere University.

3.6 Data analysis methodology

Following data collection, stratified sampling principles was then applied during the data analysis stage to organize and examine the collected data according to the natural groupings within the sample, specifically the colleges and academic disciplines to which respondents belong. This post-collection stratification allowed the study to examine and compare financial risk tolerance levels and associated factors across different academic colleges and disciplines, ensuring that the diversity of the undergraduate student population at Makerere University is meaningfully reflected in the analysis and that findings can be interpreted within the context of respondents' academic backgrounds. This approach was considered the most appropriate method for this study as it combines the objectivity of random selection with the analytical depth that stratification provides.

3.7 Data collection instrument

Primary data for this study was collected using a structured, self-administered questionnaire adapted directly from the psychometric scales utilized by Mahfuzur Rahman, Mohamed Albaity, Tarannum Azim Baigh and Md. Abdul Kaium Masud (2023) in their study published in the Journal of Risk and Financial Management, "Determinants of Financial Risk Tolerance: An Analysis of Psychological Factors" The instrument is divided into distinct sections: Section A captured the demographic profiles of the undergraduate students at the School of Statistics and Planning, while Section B employed a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to evaluate the knowledge and financial risk tolerance of the respondents.

3.8 Variables and their measurements

Financial Risk Tolerance is the dependent variable in this study and was measured using financial risk tolerance scores. It was measured using a composite financial risk tolerance score obtained from respondents' responses to financial risk tolerance statements on a Grable and Lytton financial risk tolerance scale (Rabbani and Nobre 2022, Doan and Yeasmin 2024, Kwak and Grable 2024). Higher scores indicated greater willingness to take financial risks, while lower scores indicated greater risk aversion. The Grable and Lytton scale is a standardized

questionnaire developed to measure how much financial risk an individual is willing to take when making financial decisions. It was designed to improve on earlier simple demographic proxies (like age or income) by directly assessing risk attitudes using behavioral and situational questions (Girginer 2025, Grable, Rabbani et al. 2026).

3.8.1 Measurement of Study Variables

Table 3.1: Variables and their measurements

Variable Label		Coding	Data types
Demographic factors			
Age		1.20-22 years 2.23-24 years 3.25 years and above	Continuous
Gender		1.Female 2. Male	Binary
Religion		1.Catholic 2.Anglican 3.Muslim 4.Sda 5.Pentecostal 6.Other	Ordinal
Place of Residence		1.University Hall of residence 2.Hostel 3.Commuting (coming from home) 4.Renting independently	Nominal
Socio economic factors			
Main Source of financial support		1.Parents/ Guardians 2.Personal Business 3.Scholarship/ Bursary 4.Other	Nominal
Parents' income level		1.Less than UGX 500,000 2.UGX 500,000-990,0000 3.UGX 1000000-1900000 4.UGX 2000000-4900000 5.UGX 5000000 and above	Ordinal
Financial knowledge factors			

Variable Label		Coding	Data types
Financial literacy		1.Saving understanding 2.Inflation understanding 3.Budget definition 4.Diversification understanding 5.Interest earned on mobile money earnings 6.Intention of an emergency fund	Nominal
Previous financial training		1.Ever attended financial training and how many times 2.Type of financial training attended	Nominal
Financial attitude		1.Carefully planning spending 2.Saving importance 3.Spending preference to saving 4.Setting financial goals and working towards achieving them	Nominal
Financial experience factors			
Participation in saving groups		1.If one has ever saved money with any saving groups	Binary
Experience with saving		1.If one has ever saved money with mobile money or other arrangements	Binary
Mobile money usage		1.How often one uses mobile money services 2.If one has ever borrowed money from mobile money	Nominal
Bank account ownership		1.If one owns a bank account	Binary
Previous borrowing experience		1.If one has borrowed money before	Binary
Financial risk tolerance	Dependent variable	1.Willingness to take up risks when making financial decisions	Categorical

3.9 Data collection methodology

The structured questionnaire was digitized and deployed in kobo collect on mobile smart devices. A pilot test of the digitized kobo collect questionnaire was conducted on a small group of undergraduate students who share similar characteristics with your target population but will not be included in your final analysis. Prior to participation, respondents will be informed about the purpose of the study and their consent will be obtained. They will also be assured that all information provided will be treated with confidentiality and used solely for academic purposes.

3.10 Data Management

Data management involved organizing, cleaning, coding, and preparing the collected data for analysis. After data collection, responses stored in Kobo Collect were exported to Microsoft Excel and subsequently transferred to (version: Stata 15). for statistical analysis. Data cleaning involved checking for duplicate records, identifying incomplete questionnaires, verifying consistency of responses, and detecting possible outliers. Variables were coded appropriately to facilitate analysis.

3.10.1 Missing Data

For continuous variables, missing values were replaced using mean imputation, while for categorical variables, missing values may be replaced using mode imputation where appropriate. The choice of method depended on the nature and extent of the missing data observed during data cleaning.

3.11 Data Analysis

Data was analyzed using Stata statistical software (version: Stata 15). The analysis was conducted in three stages, namely univariate, bivariate, and multivariate analysis.

3.11.1 Univariate Analysis

Univariate analysis was conducted to describe the characteristics of each variable independently.

For categorical variables, results were presented using frequencies, percentages, tables, bar charts and pie charts.

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

3.11.2 Bivariate Analysis

Bivariate analysis was conducted to assess the association between each independent variable and financial risk tolerance. Chi-square test was used to examine associations between categorical variables and financial risk tolerance categories.

Chi-Square Test of Independence

$$X^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \quad (3.2)$$

Where:

X^2 = Chi-square statistic, O_{ij} =Observed frequency, E_{ij} = Expected frequency

3.11.3 Multivariate Analysis

Since financial risk tolerance was measured as an ordered categorical variable (low, moderate, and high risk tolerance), Ordinal Logistic Regression was used to examine the factors associated with financial risk tolerance among undergraduate students. The model is appropriate because the dependent variable possesses a natural ordering while the intervals between categories are not assumed to be equal.

$$\ln\left(\frac{P(Y \leq j)}{P(Y > j)}\right) = \alpha_j - (\beta_1 + \dots + \beta_k X_k) \quad (3.3)$$

Where:

Y = Financial Risk Tolerance Category, j =Category threshold, α_j = Intercept, $\beta_1 - \beta_k$ = Regression coefficients, X_i = Explanatory variables

3.12 Ethical considerations

Several ethical considerations were observed throughout the course of this study to ensure the protection and rights of respondents. Prior to data collection, approval will be sought from the relevant academic authorities at Makerere University, including my research supervisor and, where applicable, the relevant departmental or institutional research ethics committee.

Informed consent was obtained from all respondents prior to their participation in the study. Each respondent was provided with information regarding the purpose of the study, the voluntary nature of participation, and their right to withdraw from the study at any point without any consequences. Respondents were assured that their participation will involve no foreseeable risks beyond those encountered in ordinary daily life.

Confidentiality and anonymity were strictly maintained throughout the study. No personally identifying information, such as names or student registration numbers, were collected on the questionnaires, and all data collected will be used solely for the purposes of this academic research. Completed questionnaires and data files were stored securely and accessed only by the researcher and, where necessary, the research supervisor. Finally, all sources of information used in the literature review and elsewhere in this study were properly acknowledged through appropriate citation, in order to avoid plagiarism and to give due credit to the original authors of the works referenced.

3.13 Limitations of the study

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

First, the study employed a cross-sectional research design, which involved collecting data at one point in time. Consequently, the study was limited to examining associations between financial risk tolerance and the selected factors and could not establish causal relationships.

Second, 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.

Third, the study was conducted among undergraduate students in the School of Statistics and Planning at Makerere University. Therefore, the findings were limited to the study population and may not be generalizable to students from other schools, universities, or the general population.

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

Despite these limitations, appropriate measures such as pre-testing the questionnaire, ensuring confidentiality and anonymity, and using standardized data collection procedures were employed to enhance the validity and reliability of the study findings.

CHAPTER FOUR: PRESENTATION AND DISSEMINATION OF FINDINGS

4.1 Introduction

This chapter presents the analysis and findings of the study on financial risk tolerance and its associated factors among undergraduate university students at the School of Statistics and Planning, Makerere University. Data were cleaned, coded, and analyzed using Stata version 15. The chapter begins by presenting the response rate and the socio-demographic characteristics of the respondents, followed by the respondents' financial knowledge and financial experience characteristics. It then presents the levels of financial risk tolerance among the respondents and examines the associations between financial risk tolerance and the independent variables using appropriate statistical techniques. Finally, a multivariable ordinal logistic regression analysis is conducted to identify the factors independently associated with financial risk tolerance, and the findings are presented in tables and interpreted in line with the study objectives.

4.2 Response rate

A total of 309 questionnaires were expected based on the calculated sample size. However, 313 questionnaires were distributed to cater for possible non-response or incomplete questionnaires. Of the questionnaires distributed, 298 were completed and suitable for analysis, representing a 95.2% response rate, while 15 questionnaires (4.47%) were incomplete and were excluded from the analysis. The response rate of 95.2% is considered very high, indicating excellent participation by the respondents and providing sufficient data for reliable statistical analysis.

According to Babbie(Palacios, Colon et al. 2026), a response rate of 70% or higher is generally considered very good for survey research. Therefore, the achieved response rate of 95.5% was adequate to support the objectives of this study.

4.3 Univariate analysis

4.3.1 Demographic factors

Regarding demographic characteristics, table 4.1 below shows that most respondents (59.06%) were aged 23–25 years and only 3.69% were above 25 years. The sample was predominantly

female at 66.78%, with males accounting for 33.22%. In terms of religion, Catholics (41.95%) constituted the largest proportion of respondents while Muslims were the least constituting (2.01%). More than half of the respondents (54.36%) resided in hostels, while 8.39% rented accommodation.

Table 4. 1: Univariate analysis for demographic factors

Variable	Frequency(n)	Percentage (%)
Age Category		
20–22 years	111	37.25
23–25 years	176	59.06
Above 25 years	11	3.69
Religion		
Anglican	114	38.26
Catholic	125	41.95
Muslim	6	2.01
Other	17	5.7
Pentecostal	28	9.4
SDA	8	2.68
Gender		
Female	199	66.78
Male	99	33.22
Place of residence		
Hall	76	25.5
Home	35	11.74
Hostel	162	54.36
Renting	25	8.39

4.3.2 Socio-economic factors

With respect to socio-economic characteristics as shown in table 4.2 below, the majority of respondents (82.21%) reported parents as their main source of financial support. Smaller proportions were supported through scholarships (10.74%), businesses (5.70%), and other sources (1.34%).

Table 4. 2: Univariate analysis for socio-economic factors

Variable	Frequency(n)	Percentage (%)
Main source of financial support		
Parents	245	82.21
Scholarship	32	10.74
Business	17	5.7
Other	4	1.34

4.3.3 Financial knowledge factors

The findings on financial knowledge as shown in table 4.3 below indicate generally high levels of financial literacy among respondents. Most respondents correctly identified the meaning of a budget (85.57%), diversification (85.57%), an emergency fund (92.62%), and the correct savings interest calculation (71.48%). However, knowledge of inflation and mobile money savings interest was comparatively lower. While 57.05% correctly identified the effect of inflation, 26.51% were uncertain. Similarly, only 44.97% correctly understood that mobile money savings may earn interest depending on the product, whereas 43.62% incorrectly believed that such savings never earn interest.

Table 4. 3: Univariate analysis for financial knowledge factors

Variable	Frequency(n)	Percentage (%)
Understanding of Savings Interest		
Correct answer (UGX 110,000)	213	71.48
UGX 100,000	21	7.05
UGX 105,000	14	4.7
Don't know	50	16.78

Understanding of Inflation		
Decrease	170	57.05
Don't know	79	26.51
Increase	34	11.41
Same	15	5.03
Understanding of a Budget		
Correct answer (Spending plan)	255	85.57
Saving	25	8.39
Don't know	13	4.36
Loan agreement	5	1.68
Understanding of Diversification		
Correct answer (Spreading money across different options)	255	85.57
Don't know	24	8.05
Putting all money into one activity	10	3.36
Borrowing money from several people	9	3.02

4.3.4 Financial Experience Factors

Regarding financial experience as shown in table 4.4 below, most respondents (75.84%) reported saving using mobile money, and 72.15% had previous borrowing experience. Furthermore, mobile money was used frequently, with 44.63% reporting daily use and 7.72% reported monthly and rare usage, respectively.

Overall, the findings suggest that the respondents were predominantly young adults who largely depended on parental financial support, demonstrated relatively high levels of financial knowledge, and had considerable experience using financial services such as mobile money and borrowing.

Table 4. 4: Univariate analysis for financial Experience factors

Variable	Frequency(n)	Percentage (%)
Saving with Mobile Money		
Yes	226	75.84
No	72	24.16
Frequency of Mobile Money Usage		
Daily	133	44.63
Weekly	112	37.58
Monthly	30	10.07
Rarely	23	7.72
Borrowing Experience		
Yes	215	72.15
No	83	27.85

4.4 Analysis of the study specific objectives

4.4.1 Level of financial risk tolerance among undergraduate university students

Tables 4.5 and 4.6 present the level of financial risk tolerance among undergraduate students in the School of Statistics and Planning. The majority of respondents (189, 63.42%) exhibited a moderate level of financial risk tolerance, indicating that most students were willing to accept a balanced level of financial risk when making financial decisions with relatively few students displaying low levels of financial risk tolerance. This may be because undergraduate students are in a transitional stage of financial independence, where they are beginning to manage their own finances but still have limited financial resources and experience. As a result, they are likely to balance the desire for financial gains with the need to avoid excessive financial losses.

Table 4. 5Financial risk tolerance categories

Financial risk tolerance level	Frequency(n)	Percentage (%)
Very Low	4	1.34
Low	30	10.07
Moderate	189	63.42
High	75	25.17

Table 4. 6: Descriptive Statistics of Financial Risk Tolerance Scores

Statistic	Value
Mean	2.12
Median	2.00
Standard Deviation	0.63
Minimum	0
Maximum	3

4.4.2 Bivariate Analysis**4.4.2.1 Association between demographic factors and financial risk tolerance**

Chi-square test was used to examine the association between socio-demographic characteristics and financial risk tolerance among undergraduate students. The results showed that gender was significantly associated with financial risk tolerance ($\chi^2 = 19.705$, $p < 0.001$). Male students exhibited a higher proportion of high financial risk tolerance (40.40%) than female students (17.59%). However, age ($\chi^2 = 11.439$, $p = 0.076$), religion ($\chi^2 = 17.096$, $p = 0.313$), and place of residence ($\chi^2 = 4.511$, $p = 0.875$) were not significantly associated with financial risk tolerance at the 5% significance level.

Table 4. 7: Bivariate analysis for demographic factors

Variable	Variable label	Financial risk tolerance			Chi-square (χ^2)	p-value
		Low	Moderate	High		
Age	20-22	15((13.5%)	75(67.6%)	21(18.9%)	11.4	0.076
	23-25	19(10.8%)	107(60.8%)	50(28.4%)		
	25 and above	0(0%)	7(63.6%)	4(36.4%)		
Gender	Female	25(12.6%)	139(69.9%)	35(17.6%)	19.7	<0.001
	Male	9(9.1%)	50(50.5%)	40(40.4%)		
Religion	Catholic	15(12%)	86(68.8%)	24(19.2%)	17.1	0.313
	Anglican	15(13.16%)	64(56.14%)	35(30.70%)		
	Muslim	0(0.0%)	6(100%)	0(0.0%)		
	Pentecostal	2(7.1%)	16(57.1%)	10(35.7%)		
	Sda	2(25.0%)	4(50%)	2(25.0%)		
	Others	0(0.0%)	13(76.5%)	4(23.5%)		
Residence	Hall	8(10.5%)	50(65.8%)	18(23.7%)	4.511	0.875
	Hostel	18(11.1%)	107(66.1%)	37(22.8%)		
	Coming from home	18(14.3%)	19(54.3%)	11(31.4%)		
	Renting independently	3(12%)	13(52%)	9(36%)		

4.4.2.2 Association between socio- economic factors and financial risk analysis

Chi-square test was conducted to determine whether socio-economic factors were associated with financial risk tolerance among undergraduate students. The results showed that parents'/guardians' monthly income was not significantly associated with financial risk tolerance ($\chi^2 = 15.141$, $p = 0.234$). Although variations were observed across income categories, with students from households earning 5,000,000 UGX and above recording the highest proportion of moderate financial risk tolerance (72.09%), the differences were not statistically significant. Similarly, the main source of financial support was not significantly associated with financial risk tolerance ($\chi^2 = 12.270$, $p = 0.199$). This suggests that the source of financial support, whether from parents, scholarships, business activities, or other sources, did not significantly influence students' levels of financial risk tolerance. Therefore, the study fails to reject the null hypothesis that socio-economic factors are not associated with financial risk tolerance among undergraduate students.

Socio-economic factors

Table 4. 8: Bivariate analysis for socio-economic factors

Variable	Variable label	Financial Risk Tolerance			Chi-square ((χ^2))	p-value
		Low	Moderate	High		
Parents'/guardians' monthly income	1000000-1900000	12(17.1%)	42(60%)	16(22.9%)	15.1406	0.234
	2000000-4900000	9(16.1%)	35(62.5%)	12(21.4%)		
	500000-990000	3(5%)	36(60%)	21(35%)		
	5000000 and above	4(9.3%)	31(72.1%)	8(18.7%)		
	Less than 500000	6(8.7%)	45(65.2%)	18(26.1%)		
Main source of financial support	Business	1(5.9%)	9(52.9%)	7(41.2%)	12.2697	Pr = 0.199
	Parents	30(12.3%)	158(64.5%)	57(23.3%)		
	scholarship	3(9.4%)	19(59.4%)	10(31.3%)		
	other	0(0.0%)	3(75%)	1(25%)		

4.4.2.3 Association between financial knowledge factors and financial risk tolerance

A chi-square test of independence was conducted to examine the association between financial knowledge factors and financial risk tolerance among undergraduate students. The findings indicate that inflation understanding was significantly associated with financial risk tolerance

($\chi^2 = 21.246$, $p = 0.012$). This suggests that students' understanding of inflation differed significantly across financial risk tolerance categories. On the other hand, **budget knowledge ($\chi^2 = 10.473$, $p = 0.314$), diversification knowledge ($\chi^2 = 16.029$, $p = 0.066$), mobile money savings interest knowledge ($\chi^2 = 6.306$, $p = 0.709$), and emergency fund knowledge ($\chi^2 = 14.760$, $p = 0.098$) showed no statistically significant association with financial risk tolerance since their p-values were greater than 0.05. Overall, the results suggest that although students demonstrated varying levels of financial knowledge, only inflation understanding was significantly related to their financial risk tolerance levels.

Table 4. 9: Bivariate analysis for financial knowledge factors

Variable	Variable Label	Financial risk tolerance			Chi-square (χ^2)	p-value
		Low	Moderate	High		
Inflation understanding	Decrease	18(10.6%)	99(58.2%)	53(31.2%)	21.2456	0.012
	Increase	3(8.8%)	24(70.6%)	7(20.6%)		
	Same	0(0%)	11(73.3%)	4(26.7%)		
	Don't know	13(16.5%)	55(69.6%)	11(13.9%)		
A budget is	Loan agreement	0(0%)	5(100%)	0(0%)	10.4729	0.314
	Saving	4(16%)	11(44%)	10(40%)		
	Spending plan	28(11%)	163(63.9%)	64(25.1%)		
	Don't know	2(15.4%)	10(76.9%)	1(7.7%)		
Diversification is	Borrowing money	1(11.1%)	7(77.8%)		16.0285	0.066
	Putting all money into one activity	4(40%)	2(20%)	4(40%)		
	Spreading money across different options to reduce risk	27(10.6%)	162(63.5%)	66(25.9%)		
	Don't know	2(8.3%)	18(75%)	4(25.2%)		
Mobile money savings interest	Always lose money	1(16.7%)	4(66.7%)	1(16.7%)	6.3056	0.709
	Earn no interest	17(13.1%)	82(63.1%)	31(23.9%)		
	May earn interest depending	13(9.7%)	84(62.7%)	37(27.6%)		

Variable	Variable Label	Financial risk tolerance			Chi-square ((χ^2))	p-value
	on the provider				14.7602	0.098
	Don't know	3(10.7%)	19(67.9%)	6(21.4%)		
An emergency fund is used to	Buy luxury items	2(28.6%)	2(28.6%)	3(42.9%)		
	Invest in shares	1(11.1%)	3(33.3%)	5(55.6%)		
	Meet unexpected expenses	4(1.5%)	25(9.1%)	180(65.2%)		
	Pay taxes	2(33.3%)	4(66.7%)	0(0%)		

4.4.2.4 Association between financial experience factors and financial risk tolerance

A chi-square test of independence was conducted to examine the association between financial experience factors and financial risk tolerance among undergraduate students. The findings revealed that mobile money services usage frequency was significantly associated with financial risk tolerance ($\chi^2 = 21.416$, $p = 0.011$). This indicates that students' levels of financial risk tolerance differed significantly depending on how frequently they used mobile money services. Similarly, borrowing experience showed a statistically significant association with financial risk tolerance ($\chi^2 = 13.047$, $p = 0.005$), suggesting that students with borrowing experience had different financial risk tolerance levels compared to those without such experience.

However, saving with mobile money was not significantly associated with financial risk tolerance ($\chi^2 = 0.017$, $p = 0.999$). Additionally, possession of a bank account did not show a statistically significant association with financial risk tolerance at the 5% significance level ($\chi^2(3) = 7.769$, $p = 0.051$). Although the relationship between bank account ownership and financial risk tolerance was close to significance, it did not meet the required threshold. Overall, the results suggest that certain financial experiences, particularly mobile money usage frequency and borrowing experience, are associated with students' financial risk tolerance levels.

Table 4. 10: Bivariate analysis for financial experience factors

Variable	Variable label	Financial risk tolerance			Chi-square ((χ^2))	p-value
		Low	Moderate	High		
Mobile money service usage	Daily	16	73(54.9%)	44(33.1%)	21.4161	0.011
	Weekly	12(10.7%)	79(70.5%)	21(18.8%)		
	Monthly	3(10%)	20(66.7%)	7(23.3%)		
	Rarely	3(13.1%)	17(73.9%)	3(13.0%)		
Saving with mobile money	Yes	26(11.5%)	143(63.3%)	57(25.2%)	0.0171	0.999
	No	8(11.1%)	46(63.9)	18(25%)		
Borrowing experience	Yes	18(8.4%)	133(61.9%)	64(29.7%)	13.0472	0.005
	No	16(19.3%)	56(67.5%)	11(13.3%)		
Possession of a bank account	Yes	20(9.2%)	142(65.4%)	55(25.4%)	7.7690	0.051
	No	14(17.3%)	47(58%)	20(24.7%)		

4.4.3 Multivariate analysis

The table below presents the results of the ordered logistic regression analysis examining factors associated with financial risk tolerance among undergraduate students. The overall model was statistically significant (LR $\chi^2 = 33.249$, $p < 0.001$), indicating that the selected predictors jointly explained variations in financial risk tolerance. The model had a pseudo R^2 of 0.060, suggesting that approximately 6.0% of the variation in financial risk tolerance was explained by the variables included in the model.

Among the predictors, gender, inflation understanding, and borrowing experience were statistically significant. Male students had significantly higher odds of reporting a higher level of financial risk tolerance than female students ($\beta = 0.723$, $p = 0.007$). Students who did not know the effect of inflation had significantly lower odds of having higher financial risk tolerance than those who correctly identified that inflation decreases purchasing power ($\beta = -0.691$, $p = 0.021$). In addition, students with borrowing experience had significantly higher odds of exhibiting higher financial risk tolerance than those without borrowing experience ($\beta = 0.873$, $p = 0.002$). However, the frequency of mobile money service usage was not significantly associated with financial risk tolerance ($p > 0.05$).

4.4.3.1 Ordered logistic regression

Table 4. 11: Multivariate ordinal logistic model for factors associated with financial risk tolerance

Variable		Odds Ratio	Standard error	Z-value	p-value	95% CI
Gender	Female	Reference category				
	Male	0.723	0.268	2.69	0.007	0.197-1.248
Mobile money service usage	Daily	Reference category				
	Weekly	-0.325	0.271	-1.20	0.231	-0.855-0.206
	Monthly	-0.109	0.423	-0.26	0.796	-0.937-0.719
	Rarely	-0.451	0.478	-0.94	0.345	-1.387-0.485
Inflation understanding	Decrease	Reference category				
	Don't know	-0.691	0.299	-2.31	0.021	-1.276- -0.105
	Increase	-0.064	0.394	-0.16	0.871	-.837-0.709
	Same	0.118	0.536	0.22	0.825	-0.932-1.168
Borrowing experience	No	Reference category				
	Yes	0.873	0.288	3.03	0.002	0.308-1.439

Table 4. 12: Model statistics

Statistic	Value
Number of observations	298
Chi-square	33.249
Prob>Chi-square	0.000
Pseudo R-squared	0.60
Mean dependent variable	2.124
Standard Deviation	0.626
Akaike Information Criterion	540.053
Bayesian Information Criterion	580.721

4.5 Summary of findings

This study achieved a high response rate, with 298 completed questionnaires obtained from the 313 questionnaires distributed, giving a response rate of 95.2%. After data cleaning, 298 responses were included in the final analysis.

The findings showed that the majority of respondents were female (66.8%), while males constituted 33.2%. Most respondents were aged 23–25 years (59.1%), followed by those aged 20–22 years (37.3%). The majority of students were from the Actuarial Science program (35.9%) and Statistics program (34.2%). Most respondents were residing in hostels during the semester (54.4%), and parents/guardians were the main source of financial support for most students (82.2%).

Regarding the level of financial risk tolerance, assessed using the Grable and Lytton Financial Risk Tolerance Scale, the majority of respondents had moderate financial risk tolerance (63.4%). High financial risk tolerance was observed among 25.2% of respondents, while 10.1% had low financial risk tolerance.

The bivariate analysis identified gender as a significant socio-demographic factor associated with financial risk tolerance. Male students were found to have significantly different levels of financial risk tolerance compared to female students. Other socio-demographic characteristics did not show statistically significant associations with financial risk tolerance.

Among financial knowledge factors, the analysis examined variables including financial literacy indicators, financial attitude, financial confidence, and previous financial training. The significant financial knowledge factors associated with financial risk tolerance were identified based on the bivariate analysis results and were considered for inclusion in the multivariable model.

For financial experience factors, variables including mobile money usage, saving experience, bank account ownership, saving with mobile money, and borrowing experience were assessed. The analysis showed that selected financial experience factors were associated with differences in financial risk tolerance, with significant variables considered for further modelling.

The multivariable ordinal logistic regression model identified gender as a significant predictor of financial risk tolerance. Male students had higher odds of being in higher financial risk tolerance categories compared to female students. Other variables included in the final model did not show statistically significant associations with financial risk tolerance after controlling for other factors.

CHAPTER FIVE: DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of findings, conclusions, and recommendations based on the study titled “Analysis of Financial Risk Tolerance and its Associated Factors among Undergraduate University Students: A Case Study of the School of Statistics and Planning, Makerere University.” The discussion compares the findings obtained in Chapter Four with existing literature on financial risk tolerance among university students and young adults.

5.2 Discussion of Findings

This section discusses the findings of the study in comparison to the findings from previous studies. The discussion focuses on the level of financial risk tolerance among undergraduate students, socio-demographic factors, financial knowledge factors, financial experience factors, and the predictors of financial risk tolerance identified from the multivariable ordinal logistic regression model.

5.2.1 Financial risk tolerance among undergraduate university students

The study assessed the level of financial risk tolerance among undergraduate students at the School of Statistics and Planning using the Grable and Lytton Financial Risk Tolerance Scale. The findings revealed that the majority of students demonstrated moderate financial risk tolerance, which suggests that most undergraduate students were neither highly risk-averse nor highly willing to accept financial uncertainty. This matches with the findings of (Stoian, Vintilă et al. 2026) which were that most students are highly risk averse. This indicates that students may be willing to consider financial opportunities involving some level of uncertainty but may still prefer relatively secure financial choices (Karul and Nawaz 2025). This was followed by students with high financial risk tolerance, while only a small proportion exhibited low financial risk tolerance which was in line with the findings of (Kwak and Grable 2024). However, these findings are against (Brous and Han 2022) whose findings were that students exhibit a lower risk tolerance.

These findings are consistent with studies among young adults and university students that have reported moderate levels of financial risk tolerance among students (Alsuwaidi, Ahmad et al. 2025). The similarity may be explained by the fact that university students are generally at an early stage of financial independence, where their financial decisions are influenced by limited income, educational background, and exposure to financial experiences. However, differences may occur across populations depending on economic conditions, financial education opportunities, cultural factors, and students' levels of financial independence (Klapper and Lusardi 2020).

5.2.2. Gender and Financial risk tolerance

The study found a statistically significant relationship between gender and financial risk tolerance. These findings matched with those of (Thanki, Shah et al. 2022) whereby his study found out that the role of gender in predicting determinant of financial risk tolerance was statistically significant. The ordinal logistic regression results showed that male students had higher odds of being in higher financial risk tolerance categories compared to female students. This in line with (Shah, Khalid et al. 2020) whose finds showed indeed that male students exhibit a higher risk tolerance than the female students. This suggests that male students were more likely to demonstrate greater willingness to accept financial uncertainty compared to female students.

This finding agrees with several previous studies that have identified gender differences in financial risk tolerance, with males often reporting higher levels of risk tolerance than females (Shah, Khalid et al. 2020). However, some studies have found weaker or insignificant gender differences, suggesting that gender effects may depend on the social and economic context of the population studied (Sent and van Staveren 2019). Among university students, factors such as financial education, access to financial information, and personal financial experiences may influence risk tolerance beyond gender alone (Mudzingiri, Muteba Mwamba et al. 2018).

5.2.3 Age, other socio-demographic factors and financial risk tolerance

The study did not find a statistically significant association between age and financial risk tolerance. Although older students may theoretically be expected to have greater financial

experience and confidence (Henager and Cude 2016), the results suggest that differences in age groups among undergraduate students were not sufficient to produce significant differences in financial risk tolerance. This is in line with (Ramudzuli 2016).

This finding may be explained by the relatively narrow age range of the respondents, where most students were within the typical undergraduate age bracket. Since many students share similar financial circumstances, including dependence on family support and limited exposure to independent financial responsibilities, age differences may have had minimal influence on their financial risk tolerance.

The study examined the relationship between financial knowledge factors and financial risk tolerance, including students' understanding of financial concepts such as inflation, saving, budgeting, and other financial literacy indicators. The findings showed that although many students demonstrated knowledge of basic financial concepts, financial knowledge variables did not remain statistically significant predictors of financial risk tolerance after controlling for other factors in the multivariable analysis. This matched with (Grable and Rabbani 2023) who suggest that that possessing financial knowledge alone may not automatically translate into higher financial risk tolerance. While financial literacy improves individuals' ability to understand financial decisions (Lusardi 2019), risk tolerance is also influenced by psychological characteristics, financial experiences, confidence, and personal circumstances.

These findings are consistent with previous studies that emphasize the role of financial literacy in improving financial decision-making but indicate that knowledge is only one component influencing financial behavior (Lusardi 2019). Students may understand financial concepts but still prefer safer financial choices due to limited income, fear of losses, or lack of practical financial experience (Mudzingiri, Muteba Mwamba et al. 2018).

5.2.4 Financial Experience Factors Associated with Financial Risk Tolerance

The study also assessed financial experience factors, including mobile money usage, saving experience, bank account ownership, and borrowing experience. These factors represent students' exposure to financial activities and their familiarity with financial decision-making.

The findings indicated that financial experience variables were generally associated with financial risk tolerance at the bivariate level which was exactly in line with the findings of (Noman, Chu et al. 2023); however, most did not remain significant predictors after controlling for other factors in the ordinal logistic regression model which in turn matched with findings from (Karki and Kafle 2020). This suggests that financial experiences alone may not sufficiently explain differences in students' financial risk tolerance (Montford and Goldsmith 2016).

5.2.5 Predictors of Financial Risk Tolerance from the Multivariable Model

The ordinal logistic regression model identified gender as the significant predictor of financial risk tolerance among undergraduate students. Specifically, male students had higher odds of being classified into higher financial risk tolerance categories compared to female students, after controlling for other factors included in the model.

The finding indicates that gender differences in financial risk tolerance persist even after accounting for other demographic, knowledge, and experience-related factors. This was in proportion with findings from (Gupta, Singh et al. 2026) which suggests that factors associated with gender, such as financial confidence, attitudes towards uncertainty, and financial socialization, may influence students' willingness to accept financial risks (Alsuwaidi, Ahmad et al. 2025).

Other variables included in the model were not statistically significant predictors after adjustment. This was in agreement with the findings from (Ajaz Khan, Akhtar et al. 2025) implying that their observed relationships with financial risk tolerance may be explained by their interaction with other factors or may not have a strong independent effect within this population.

Overall, the findings highlight that financial risk tolerance among undergraduate students is influenced by a combination of personal characteristics, financial knowledge, and financial experiences, with gender emerging as the most important independent predictor in this study (Alsuwaidi, Ahmad et al. 2025).

5.3 Conclusions

The study examined the level of financial risk tolerance and its associated socio-demographic, financial knowledge, and financial experience factors among undergraduate students in the School of Statistics and Planning at Makerere University.

The study established that undergraduate students generally exhibited moderate financial risk tolerance, which suggests that most students are willing to accept a moderate degree of financial uncertainty when making financial decisions, but remain cautious in situations involving higher levels of risk. Relatively fewer students demonstrated high or low levels of financial risk tolerance.

The study also concluded that gender was the only socio-demographic factor significantly associated with financial risk tolerance. Male students were more likely to exhibit higher financial risk tolerance than female students. In contrast, age, religion, residence during the semester, parents' or guardians' monthly income, and source of financial support were not significantly associated with financial risk tolerance after controlling for other factors.

The study concluded that financial knowledge factors generally showed weak associations with financial risk tolerance. Although some financial knowledge variables demonstrated significant associations at the bivariate level, none remained statistically significant in the multivariable ordinal logistic regression model. This suggests that financial knowledge alone may not be a strong predictor of financial risk tolerance among undergraduate students in the study population.

The study concluded that financial experience was an important determinant of financial risk tolerance. Specifically, the frequency of mobile money service usage was significantly associated with financial risk tolerance. Students who used mobile money services less frequently, particularly those who used them rarely, were less likely to exhibit higher financial risk tolerance compared with students who used mobile money services daily. Conversely, borrowing experience was not a significant predictor after adjusting for other variables.

Overall, the study concludes that financial risk tolerance among undergraduate students is influenced more by behavioral financial experience and gender than by financial knowledge or

other socio-demographic characteristics. The findings suggest that practical financial engagement, particularly regular use of financial services such as mobile money, plays a greater role in shaping students' willingness to take financial risks than merely possessing financial knowledge. These findings provide evidence that interventions aimed at improving students' financial decision-making should focus not only on financial education but also on encouraging practical financial experiences that build confidence in managing financial risk.

5.4 Recommendations

The recommendations presented in this section are based on the findings of the study and are intended to promote sound financial decision-making among undergraduate students.

The School of Statistics and Planning should strengthen financial education by integrating practical financial literacy content into relevant courses and organizing seminars and workshops on personal financial management. Particular emphasis should be placed on concepts such as inflation, budgeting, saving, and financial decision-making to improve students' financial competence.

The study found that students with better financial knowledge exhibited higher financial risk tolerance, undergraduate students should actively seek opportunities to improve their financial literacy through university training program, online courses, financial awareness campaigns, and self-directed learning. Enhancing financial knowledge can support informed financial decision-making and responsible saving behavior.

The findings indicated that financial experience variables, including mobile money usage and ownership of bank accounts, were common among students. Financial institutions should therefore develop student-friendly financial products and educational program that promote responsible saving habits and improve students' understanding of financial services. Such initiatives can strengthen students' financial experience and encourage sound financial

The study established that the majority of students exhibited a moderate level of financial risk tolerance. University management should collaborate with financial institutions and relevant stakeholders to provide regular financial literacy program that equip students with the knowledge and skills needed to make informed financial decisions and effectively manage personal finances.

5.5 Suggestions for Further Research

Based on the findings and limitations of this study, the following areas are recommended for future research.

First, similar studies should be conducted among undergraduate students from other schools within Makerere University and across different universities in Uganda. Such studies would enable comparisons across academic disciplines and institutional settings, thereby improving the generalizability of findings on financial risk tolerance among university students.

Second, future researchers should consider employing longitudinal study designs to examine how financial risk tolerance changes over time. This would provide a better understanding of the causal relationships between financial risk tolerance and its associated factors, particularly as students' progress through their university education and experience changes in their financial circumstances.

Third, future studies should investigate additional factors that may influence financial risk tolerance but were not included in the present study. These may include personality traits, financial socialization, psychological characteristics, financial self-efficacy, and parental financial behaviors. Examining these factors may provide a more comprehensive understanding of the determinants of financial risk tolerance among young adults.

Finally, further research should extend beyond undergraduate students to include other population groups, such as postgraduate students, employed young adults, entrepreneurs, and individuals from the general population. Such studies would provide valuable insights into how financial risk tolerance varies across different demographic and socioeconomic groups.

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APPENDIX ONE: QUESTIONNAIRE

Introduction and Consent

Dear Participant,

My name is Akankunda Violah Princess and I am currently pursuing a Bachelor of science in Actuarial Science from Makerere University. As part of the requirements for my bachelor's degree, I am conducting a research on "Analysis of financial risk tolerance and its associated factors among undergraduate university students. A case study of the school of statistics and planning, Makerere University". Please note that your participation is voluntary and that the information provided will be kept strictly confidential and used solely for academic purposes. No names will be required.

Please select the most appropriate response.

Do you consent to participate in this study?

- 1.Yes 2.No

SECTION A: DEMOGRAPHIC CHARACTERISTICS

Q1. What is your age in complete years?

1. 20-22 2. 23-25
3. 25 and above

Q2. What is your gender?

1. Male
2. Female

Q3. What is your program of study?

- | | |
|--------------------------|-----------------------|
| 1.Statistics | 2. Actuarial science |
| 3.Quantitative Economics | 4. Population Studies |

Q 4. What is your Religion?

- | | |
|-------------------------|----------------|
| 1.Catholic | 2. Anglican |
| 3.Muslim | 4. Pentecostal |
| 5.Seventh Day Adventist | 6. Other |

Q 5. What is your place of residence during semester?

1. University Hall of Residence
2. Hostel
3. Commuting (coming from home)
4. Renting Independently

Q 6. What is your main source of financial support?

1. Parents/Guardians

2. Personal Business

3. Scholarship/Bursary

4. Other _____

Q 7. What is your average monthly income/allowance received?

1. Less than UGX 100,000

2. UGX 100,000–290,000

3. UGX 300,000–490,000

4. UGX 500,000–990,000

5. UGX 1,000,000 and above

Q 8. What is the range of your parents'/guardians' monthly income?

1. Less than UGX 500,000

2. UGX 500,000–990,000

3. UGX 1,000,000–1,900,000

4. UGX 2,000,000–4,900,000

5. UGX 5,000,000 and above

SECTION B: FINANCIAL EXPERIENCE

Q 9. Do you currently have a bank account?

1. Yes

2. No

Q10. How often do you use mobile money services?

1. Daily

2. Weekly

3. Monthly

4. Rarely

5. Never

Q.11. Have you ever saved money via mobile money or other arrangements?

1. Yes

2. No

Q 12. Have you ever borrowed money from any source?

1. Yes

2. No

SECTION C: FINANCIAL LITERACY KNOWLEDGE TEST

Instruction: Please choose the correct answer.

Q13. Suppose you deposit UGX 100,000 in a savings account earning 10% interest per year. How much will you have after one year?

1. UGX 100,000

2. UGX 105,000

3. UGX 110,000

4. Don't know

Q14. If inflation is 12% and your savings earn 8% interest, after one year your purchasing power will:

1. Increase

2. Remain the same

3. Decrease

4. Don't know

Q15. Which of the following best describes a budget?

1. A spending plan

2. A loan agreement

3. Saving

4. Don't know

Q16. What do you understand by diversification?

1. Putting all money into one activity 2. Borrowing money from several people

3. Spreading money across different options to reduce risk 4. Don't know

Q17. Mobile money savings accounts usually:

1. Earn no interest

2. May earn interest depending on the provider

3. Always lose money

4. Don't know

Q18. An emergency fund is mainly intended to:

1. Buy luxury items

2. Meet unexpected expenses

3. Pay taxes

4. Invest in shares

SECTION D: PREVIOUS FINANCIAL TRAINING

Q19. Have you ever attended any financial literacy training, workshop, seminar, or course?

1. Yes

2. No

Q20. If Yes, how many times have you attended?

1. Once

2. 2–3 times

3. 4–5 times

4. More than 5 times

Q21. What type of training have you attended? (Select all that apply)

1. Personal Finance

2. Budgeting

3. Saving

4. Other _____

SECTION E: FINANCIAL ATTITUDE

Please indicate your level of agreement

Statement	1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
Q22. I carefully plan how to spend my money					
Q23. Saving money is important to me					
Q24. I prefer spending today rather than saving					
Q25. I set financial goals and work towards achieving them					

SECTION F: FINANCIAL RISK TOLERANCE

Please indicate your level of agreement

Statement	1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
Q26. I am confident making financial decisions under uncertainty					
Q27.I would choose a financial option with higher returns even if it involved more risk					
Q28. I am willing to try new financial opportunities even when outcomes are uncertain					
Q29.I feel comfortable taking financial risks					

**APPENDIX TWO: ENROLLMENT REPORT FOR SEMESTER 1 ACADEMIC YEAR
2025/2026 PROGRAMME FOR THE THREE SCHOOLS**

**1. SCHOOL OF STATISTICS AND PLANNING (SSP) ENROLMENT
STATISTICS FOR SEMESTR 1 ACADEMIC YEAR 2025/2026**

ENROLLMENT REPORT FOR SEMESTER 1 ACADEMIC YEAR 2025/2026 PROGRAMME FOR THE THREE SCHOOLS

1. SCHOOL OF STATISTICS AND PLANNING (SSP) ENROLMENT STATISTICS FOR SEMESTR 1 ACADEMIC YEAR 2025/2026

S. NO.	PROGRAMME	YEAR OF STUDY	FEMALE	MALE	TOTAL
1	Bachelor of Science in Population Studies	1	70	41	111
		2	52	31	83
		3	32	34	66
2	Bachelor of Science in Actuarial Science	1	53	54	107
		2	47	31	78
		3	56	61	117
3	Bachelor of Science in Quantitative Economics	1	78	83	161
		2	55	70	125
		3	80	72	152
4	Bachelor of Statistics	1	60	67	127
		2	50	56	106
		3	68	54	122
5	Postgraduate Diploma in Statistics	1	3	10	13
6	Master of Demography and Population Studies	1	4	8	12
		2	4	5	9
7	Master of Science in Quantitative Economics	1	8	18	26
		2	5	6	11
8	Master of Science in Population & Reproductive Health	1	2	2	4
		2	2	1	3
9	Master of Statistics	1	32	39	71
		2	2	2	4
10	Doctor of Philosophy (school of Statistics and Applied Economics)	1	4	3	7
		2	1	1	2
		3	1	0	1
	GRAND TOTAL		769	749	1,518

APPENDIX THREE

MAKERERE

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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 BSc Statistics Student to Collect Data from Fellow Students

Ms. Akankunda Violah (Student Number: 2300705577) 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.

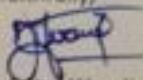
Her research is titled "Analysis of Financial Risk Tolerance Among Undergraduate University Students: A Case Study of Students at the School of Statistics and Planning, Makerere University."

We kindly request your permission to allow Ms. Akankunda Violah 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 Sciences;
Tel: +256-773-26321

