Relationship Between Self-Directed Learning Readiness and Student Stress Among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County, Nairobi, Kenya.

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DECLARATION

I declare that this thesis is my original work and has not been submitted for academic credit at any other university or institution. All sources of information and references used in this document have been properly cited and fully acknowledged.

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DEDICATION

This research is dedicated to the first-year undergraduate students at private universities in Lang'ata Sub-county, namely the Catholic University of Eastern Africa, Riara University, Strathmore University, and Tangaza University. It serves as a token of appreciation for their willingness to participate in the study and for the valuable insights they contributed.

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ABSTRACT

The transition from teacher-led instruction in high school to self-directed learning readiness (SDLR) at the university level presents significant psychological challenges for first-year undergraduate students. This study investigated the relationship between self-directed learning readiness (SDLR) and student stress (SS) among first-year undergraduates in private universities in Lang'ata Sub-county, Kenya. Guided by four research objectives, the study assessed levels of SDLR and SS, examined the relationship between demographic characteristics and SS, and explored the correlation between SDLR and SS. Grounded by Self-Determination and Self-Efficacy theories, the study employed a quantitative correlational design. A stratified random sample of 387 students was drawn from a population of 4,217 from selected private universities in Lang'ata Sub-county. Data was collected using the SDLR and Student Stress Inventory scales and analyzed using SPSS-25. Descriptive statistics, including demographic characteristics, were analyzed using frequencies, while inferential statistics examining relationships were conducted using Chi-square, and Pearson's correlation tests. Findings revealed that the mean SDLR score was 1.97 (SD = 0.917), indicating substantial variability, while the mean SS score was 1.84 (SD = 0.524), revealing moderate stress levels. Significant relationship in SS was found based on age χ^2 (8, N = 382) = 44.65, $p < .00$, university attended ($F(3, 378) = 41.81$, $p < .001$), place of residence χ^2 (8, N = 382) = 23.60, $p = .003$, and mode of study χ^2 (2, N = 382) = 8.07, $p = .018$. However, no significant relationships were observed by gender or perceived family support. A modest but significant positive correlation was found between SDLR and SS ($r = .231$, $p < .001$), suggesting that increased readiness for self-directed learning may be associated with higher stress. These findings underscore the need to promote SDLR alongside targeted stress management interventions for first-year undergraduate students.

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ABBREVIATIONS AND ACRONYMS

CUEA:	The Catholic University of Eastern Africa
DVC-RI:	Deputy Vice Chancellor for Research and Innovation
NACOSTI:	National Commission for Science, Technology, and Innovation
SDL:	Self-Directed Learning / Self-Directed Learners
SDLR:	Self-Directed Learning Readiness
SDLRS:	Self-Directed Learning Readiness Scale
SDT:	Self-Determination Theory
SET:	Self-Efficacy Theory
SS:	Student Stress
SSI:	Student Stress Inventory
SSIS:	Student Stress Inventory Scale
TUREC:	Tangaza University Research and Ethics Committee

OPERATIONAL DEFINITION OF TERMS

Self-Directed Learning Readiness*:* The degree to which students are prepared and willing to learn independently, without extensive external guidance. It involves students taking responsibility for their education and possessing the skills to learn autonomously. In this study, SDLR was employed to evaluate first-year undergraduate students' preparedness and willingness to engage in independent learning.

Student Stress*:* The pressure or anxiety experienced by students due to academic demands, schoolwork, and other responsibilities. Common sources include examinations, deadlines, balancing school and personal life, and concerns about grades and future success. In this study, student stress was utilized to assess the levels of stress experienced by first-year undergraduate students in relation to their academic demands.

First-Year Undergraduate Student: An individual enrolled in the initial year of a bachelor's degree program, which is typically the first level of higher education after high school. First-year undergraduate students were the primary focus, as the research specifically targeted students in their first year of university enrollment.

Private University*:* A higher education institution that operates independently of government ownership, control, funding, or management. This study focused on four private universities: the Catholic University of Eastern Africa, Riara University, Strathmore University, and Tangaza University. In this study, these universities were the setting for investigating the relationship between SDLR and student stress, with a specific focus on first-year undergraduate students enrolled in the selected institutions.

OPERATIONALIZATION OF THE CONCEPTUAL VARIABLES

Self-Directed Learning Readiness: In this study, the concept refers to the extent to which students possess the attitudes, abilities, and personality traits necessary for self-directed learning. The Self-Directed Learning Readiness Scale (SDLRS), developed by Guglielmino and adapted by Manjunath et al. (2024), was employed to measure students' readiness for self-directed learning. The SDLRS questionnaire was self-administered, and participants received an online version in the form of a Google Form. It consisted of 58 items rated on a five-point Likert scale, where 1 indicated "strongly disagree," 2 "disagree," 3 "neutral," 4 "agree," and 5 "strongly agree." The SDLRS was scored by summing responses across all items. The minimum possible score was 58 and the maximum was 290. Higher scores represented a greater readiness for self-directed learning. In this study, the SDLRS was administered to first-year undergraduate students in private universities in Lang'ata Sub-county, Kenya.

Student Stress: This refers to any academic or non-academic changes or demands that lead to physical, emotional, psychological, or mental strain on students. It is also considered as the body's natural reaction to situations that demand attention or action (Scott, 2024). In this study, student stress was measured using the Student Stress Inventory (SSI) developed by Gadzella (1994), a standardized tool designed to assess stress among university students. Each item was rated on a 4-point Likert scale: 1 = Never (N), 2 = Somewhat Frequent (SF), 3 = Frequent (F), and 4 = Always (A). The minimum possible score on the scale was 40, and the maximum was 160. Higher scores reflected higher levels of stress, while lower scores, lower levels of stress. The SSI was self-administered using an online Google Form that was completed by first-year undergraduate students in private universities located in Lang'ata Sub-county, Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This section presents the introduction, contextual background, problem statement, research objectives, and questions. Similarly, it covers the significance, scope, and limitations of the study. The section concludes by discussing the assumptions made during the research and acknowledging any constraints faced.

1.2 Background to Study

The relationship between self-directed learning readiness (SDLR) and student stress (SS) is an important area of study, especially among first-year undergraduate students in private universities. In recent years, private universities have gained significant popularity in higher education, drawing a varied range of students with varying backgrounds and motivations. As students transition from high school to university, they often face new challenges that could lead to increased levels of stress (Chen et al.,2023).

A current problem faced by first-year undergraduate students in private universities in the Lang'ata sub-county is the transition from teacher-directed learning to self-directed learning (SDL). This presents significant psychological challenges for students. In teacher-directed environments, students rely heavily on structured guidance, clear instructions, and external motivation (Barbayannis et al., 2022). However, in SDL, students assume control over their educational journey, setting objectives, managing time, as well as finding intrinsic motivation (Chen et al.,2023). From a day-to-day perspective, this shift often causes anxiety, stress, and

feelings of uncertainty as students adjust to new expectations. The lack of external direction may lead to feelings of isolation and being overwhelmed, especially for students who have not developed strong self-regulation or time management skills. Moreover, the pressure to meet academic demands independently may exacerbate stress levels, impacting students' overall well-being and academic performance (Barbayannis et al.,2022). As a result, there is a pressing issue regarding insufficient thorough study on the relationship between SDLR and SS in this specific context.

Self-directed learning readiness as stated by Barbayannis et al. (2022), revolves around students developing plans tailored to their own learning necessities. Students utilize available resources with freedom and responsibility to choose their learning approaches that lead to transformative experiences. Chakraborty et al. (2023) highlight that SDLR reflects an individual's attitude, skills, and traits necessary for SDL. It also entails students taking charge of identifying their learning needs and setting goals. Besides, students take the initiative to find resources, choose strategies, and evaluate their progress, either independently or with support. According to Manjunath et al. (2024), SDL possesses the capacity for students to handle challenging tasks and apply their knowledge. Furthermore, students seek deeper understanding and put in additional effort, all of which contribute to academic success. Therefore, beginners shift from being passive recipients of education to active participants by moving away from depending on lecturers for guidance on what and how to learn.

On the other hand, Isnayanti and Harahap (2018) emphasize that first-year students face significant changes in their educational experience, including adjustments to culture, lifestyle, and learning environments, which may result in stress. Mayya et al. (2022), and Van (2024) state that student stress occurs when academic, relational, psychological, and physical demands surpass a

student's ability to adapt. Van (2024) describes students' stress as a negative emotional, cognitive, behavioral, and physiological reaction to pressure. High stress levels among students are linked to depression, insomnia, substance abuse, self-harm, and suicidal thoughts, all of which may affect learning ability (Cadorin et al., 2017). Common stressors include heavy academic workloads, fear of failure, and poor performance. Along with that, Mayya et al. (2022) highlights that other stressors include financial issues, poor time management, long study hours without adequate relaxation, and pressure to engage in rote learning. Equally, Scott (2024) and Barbayannis et al. (2022) indicate that stress may lead to feelings of frustration, anxiety, and burnout in students, leaving them physically drained, overwhelmed, and unable to handle their responsibilities.

Consequently, Yang (2024) suggests that the readiness of students for SDL is closely linked to academic achievement, enthusiasm for learning, problem-solving abilities, and personal confidence. When this readiness is insufficient, it often leads to stress. Berdida (2023) indicates that student stress among first-year undergraduate students has a significant relationship with self-directed learners' readiness. Conversely, a quantitative study conducted in China by Chen et al. (2023), involving 3,051 undergraduate students revealed that the average academic stress score was high. The findings manifested that those participants had an average SDL ability score of 3.72 ± 0.57, while their average academic stress score was 2.91 ± 0.45, indicating a comparatively elevated level of academic stress within the students. Additionally, the study found a negative correlation between SDL ability and academic stress.

Another quantitative study was carried out in China by Li et al. (2022), among 473 undergraduate students from Wuhan universities. This was on the link between SDL and academic performance. The findings indicated that SDL had a direct meaningful contribution on the academic performance of the students with $\gamma = 0.19, p < 0.01$, and 32% of the variation in

academic performance could be explained by SDL. Besides, SDL demonstrated a direct positive effect on mental health, manifesting $\gamma = 0.39, p < 0.001$, and mental health positively directly influenced academic performance of $\gamma = 0.39, p < 0.001$, with both effects showing significant outcomes. This study suggested that SDL, mental health, and academic achievement were linked with individuals who show higher learning initiative having better mental health.

A mixed methods study carried out by Ahmad et al. (2023) in Malaysia, indicated that student stress was closely related to their readiness for SDL. The study involved 944 undergraduates, out of which 484 first-year students indicated that they still needed a facilitator's guidance and were not fully prepared for independent learning. The study revealed that 25% of students had low SDLR and required additional support and guidance manifesting a revelation of stress. Besides, 23% of students had high SDLR and experienced reduced stress. The study manifested a meaningful relationship between SDLR and student stress.

Furthermore, Tomas and Protos (2023) conducted research among 166 undergraduate students at the University of Namibia in Africa to explore the relationship between self-directed or self-regulated learning and academic stress. The findings showed that there was a notable relationship between stress and self-regulated learning, as well as between stress and learning flow, with correlation values ranging from $r = 0.23$ to 0.26 ($p < .05$). The results expressed a substantial relationship between self-regulated learning readiness and academic stress, as well as learning engagement. Also, the study unveiled a notable correlation between stress and self-regulated learning, and between academic stress and learning flow essential in SDLR.

In Kenya, research on the relationship between SDLR and student stress is starting to emerge, especially within higher education settings. A study by Sharon et al. (2023) at a private university among 344 undergraduate students, with 49.9% highest turnout of first year revealed

that first-year students significantly had higher levels of stress compared to other academic years. This was mostly on financial problems and academic pressure and questioned the student readiness for SDL. The study suggested a correlation between SDLR and student stress.

The reviewed literature revealed several gaps that this study aimed to address. Many previous studies were conducted in countries with educational systems significantly different from Kenya's, limiting their applicability to the local context. The experiences of first-year students, who often face considerable challenges in adjusting to university life, were largely overlooked. In addition, the unique academic environments and stressors of private universities such as the Catholic University of Eastern Africa (CUEA), Tangaza, Strathmore, and Riara had not been thoroughly examined. Earlier research relied on cross-sectional designs and focused primarily on medical students, limiting the generalizability of findings and the ability to infer causal relationships between self-directed learning readiness (SDLR) and student stress (SS).

As reported by Nganga (2024), recent challenges in Kenya, particularly the public outcry over the new higher education funding model, have significantly contributed to the financial uncertainty and stress experienced by first-year university students. This situation is closely tied to self-directed learning (SDL), as financial instability and institutional disruptions such as staff strikes may negatively affect students' ability to take charge of their learning and engage effectively in independent study.

Understanding the relationship between SDLR and SS among first-year students is crucial. It could help enhance their capacity to manage stress and adapt to academic demands. While stress, when managed well, could act as a motivator for success, inadequate support might lead to burnout and reduced academic performance. By focusing on first-year students in private universities

within Lang'ata Sub-county, Kenya, and employing a quantitative approach, this study provided a localized, data-driven understanding of the relationship between SDLR and SS.

1.3 Statement of the Problem

Self-directed learning readiness (SDLR) has been increasingly recognized as a critical determinant of academic success among undergraduate students. It enables students to take initiative, manage their learning processes, and adapt effectively to the demands of higher education (Premkumar et al., 2018). Research consistently shows that students with high SDLR experience lower levels of stress and anxiety during the transition to university, as they are better equipped to navigate unfamiliar academic environments (Khorasani et al., 2023; Nasim & Eslaminejad, 2016; Timmermans, 2023). Understanding the relationship between SDLR and stress can help students cultivate lifelong learning skills and perform better academically.

Despite these benefits, many first-year university students struggle to adapt from structured, teacher-directed instruction in secondary school to the autonomous learning approach typical of higher education. This shift often leads to academic pressure, emotional distress, and a lack of familiar support systems, which contributes to anxiety, self-doubt, and feelings of isolation (Simiyu, 2024; Mulaudzi, 2023). Globally, stress among first-year students is a growing concern, with Rajanayagam et al. (2023) reporting stress levels ranging from 27% to 73%. In Africa, Kavindi et al. (2024) found that 53.2% of students at Samara University in Ethiopia experienced high stress, while 14% of Tanzanian university students reported similar difficulties. In Kenya, Mutie et al. (2023) documented undergraduate stress levels between 33% and 35.4%.

In Lang'ata Sub-county, first-year students in private universities face similar academic and psychological challenges. However, little empirical research has examined the relationship

between SDLR and SS within this specific context. This study addressed that gap by investigating the correlation between SDLR and SS among first-year undergraduates in private universities in Lang'ata Sub-county. Using a quantitative approach, the study provided a comprehensive analysis of the levels and associations between these variables.

1.4 Research Purpose

The study aimed to establish the relationship between self-directed learning readiness and student stress among undergraduate students in private universities in Lang'ata Sub-County, Nairobi, Kenya.

1.5 Objectives of the Study

The study was guided by one general objective and four specific objectives.

1.5.1 General Objective

The general objective of this study was to investigate on the relationship between self-directed learning readiness (SDLR) and student stress (SS) among undergraduate students in private universities in Lang'ata Sub-County, Nairobi, Kenya.

1.5.2 Specific Objectives

This study responded to the following specific objectives:

1. To determine the levels of SDLR among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya.
2. To examine the levels of SS among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya.

3. To assess the relationship between demographic characteristics and SS among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya.
4. To measure the relationship between SDLR and SS among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya.

1.6 Research Questions

This study was guided by the following four research questions:

1. What were the levels of SDLR among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya?
2. What were the levels of SS among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya?
3. What was the relationship between demographic characteristics and SS among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya?
4. What was the relationship between SDLR and SS among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya?

1.7 Significance of the Study

This study measured the relationship between SDLR and SS among first-year undergraduate students in private universities in Lang'ata Sub-county, Kenya. The findings of this research are valuable to the following stakeholders:

First-Year University Students: The study recognizes that first-year university students face unique academic and emotional challenges as they transition to higher education. Understanding the relationship between self-directed learning readiness (SDLR) and student stress

(SS) provides insights that could help students assess their own readiness levels and stress responses. This awareness may support the development of personal strategies for becoming more self-directed, ultimately contributing to improved academic performance and well-being.

Parents/Guardians: The study acknowledges the influential role that parents and guardians play in the academic and emotional development of university students. Insights into the relationship between SDLR and SS could help them better understand the challenges their children face. This understanding may encourage the provision of supportive home environments that promote self-directed behaviors while offering emotional and psychosocial support aimed at reducing stress and enhancing student well-being.

Student Support Systems: Academic advisors, counselors, lecturers, and mentors may use the study's insights to tailor support services that address students' varying levels of readiness and stress. These stakeholders could implement personalized guidance, student-centered teaching methods, and mental health initiatives that contribute to a more supportive academic environment.

University Policy Makers: The study highlights the importance of understanding the relationship between SDLR and SS among first-year university students. Insights from the findings could inform policy makers in reviewing institutional policies, student services, and academic programs. This knowledge could guide the development of supportive structures and targeted interventions that enhance student well-being, improve academic outcomes, and promote student retention.

1.8 Scope and Delimitation

In a research paper, the scope clarifies the context, focus, and limits of the study, specifying the variables and research questions to be addressed (Selvam, 2017). In contrast, delimitations

establish the boundaries by identifying what will be excluded, providing reasons for these exclusions, and considering their potential influence on the results (George, 2023). This study examined the relationship between self-directed learning readiness and student stress among first-year undergraduate students in private universities located in Lang'ata Sub-County, Nairobi, Kenya. The study adopted a quantitative research design, utilizing a structured online questionnaire administered via Google Forms.

To align with the study's objectives and maintain data integrity, specific inclusion and exclusion criteria were applied. The inclusion criteria targeted first-year undergraduate students who were enrolled either full-time or part-time in any of the four selected private universities within Lang'ata Sub-County: The Catholic University of Eastern Africa (CUEA), Riara University, Strathmore University, and Tangaza University College. Participation was voluntary and limited to those who consented to take part in the research. On the other hand, the exclusion criteria ruled out students in their second year or above, as well as those enrolled in public universities and university colleges. It also excluded students from medical training institutions, technical and vocational education and training colleges, and private universities located outside Lang'ata Sub-County.

These delimitations were necessary to maintain a focused and homogeneous sample relevant to the study objectives. First-year students were selected because they are at a critical transition point, where stress levels and challenges related to self-directed learning are likely to be most significant. Limiting the study to private universities within a single geographical area also enhanced consistency in institutional settings and logistical feasibility. While these choices may restrict the generalizability of the findings to other contexts, they allowed for an in-depth and contextually relevant analysis of the research problem.

1.9 Assumptions of the Study

This study was grounded by the following assumptions:

1 The first-year undergraduate leaners in private universities in Lang'ata sub-county, Kenya would be ready to take part voluntarily in the study.

2 That the participants would have the time, drive, and capacity to read and complete the questionnaires accurately.

3 That there would be a relationship between SDLR and SS among the first-year undergraduate students in private universities.

4 The survey questionnaire for SDLR and SS would provide true information regarding SDLR and SS among the first-year undergraduate students at private universities in Lang'ata sub-county, Kenya.

1.10 Chapter Summary

This chapter examined the relationship between self-directed learning readiness and student stress among first-year undergraduate students, providing an overview at global, regional, and local levels. The review highlighted that SDLR is significantly related to SS, although existing research on this relationship remains limited. Chapter Two will present the literature review, examining the theoretical foundations underpinning the study, an empirical review of literature aligned with the research questions, and the conceptual framework that guided the research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter examines the relationship between self-directed learning readiness (SDLR) and student stress (SS) among first-year undergraduate students in private universities. It provides a detailed review of relevant theoretical literature and empirical studies, aligned with the study's objectives and conceptual framework.

2.2 Theoretical Framework

Psychological theories according to Cherry (2022), are evidence-based ideas that narrate an occurrence of human behavior. These theories are based on assumptions, which are supported by verification. They describe a behavior and make predictions about its future. This study, therefore, was guided by Self Determination and Self Efficacy Theories.

2.2.1 Self-Determination Theory

The Self Determination Theory (SDT) was established by psychologists; Edward L. Deci and Richard M. Ryan, in 1985 in the United States (O'hara, 2017). . This was to challenge the prevailing idea that the greatest way to have people execute their responsibilities is to encourage their behavior with incentives. It, therefore, originated out of the yearning in the study of intrinsic motivation, described as performing an activity for its own sake, out of one's own desire, and satisfaction (O'hara, 2017). SDT is an empirical observation-based theory of motivation and psychological enhancement. It is predominantly pertaining to the notion of optimal human functioning and progression (Owen, 2020).

SDT as underpinned by Werth and Williams (2021) distinguishes between autonomous and controlled motivation, where autonomous motivation can be either intrinsic or extrinsic. Intrinsic motivation involves engaging in activities for the inherent enjoyment and fulfillment they provide, aligning with core values like excellence, community service, lifelong learning, personal interests, and morality. Li et al. (2022) argue that SDT suggests that individuals are naturally inclined to act freely, making students more motivated by tasks they voluntarily choose. For university students, setting their own learning objectives and employing strategies like self-monitoring can improve outcomes. Autonomous, independent learning approaches are crucial, especially for adult students in university settings.

Likewise, Owen (2020) and Tisocco and Liporace (2023), in their exploration of inherent motivation, highlight that individuals who internalize the value of an activity are more likely to act with greater autonomy. Initially, these individuals are driven by external factors, such as rewards or grades. However, once they internalize the value of the task, their motivation shifts, leading to more autonomous behavior. This shift in motivation is particularly relevant in educational contexts, where students who become self-driven take charge of their learning, activities, and overall well-being. Li et al. (2022) accentuates that self-directed and natural learning can foster constructive feelings and attitudes in relation to learning. These constructive emotions contribute to mental well-being, helping to reduce stress for students. Therefore, they know when to rest, study, socialize, and sleep without being followed by anyone while prioritizing the most important activities with freedom and responsibility. In this case, Eslaminejad (2017) illuminates that when external restrictions are absent, students can view their actions as self-directed.

On the other hand, controlled motivation arises from circumstances where individuals are influenced by external factors or outside influences (Deci & Ryan, 2015; Werth & Williams, 2021). This is an ambition to have a certain behavior on the basis that one will project a certain behavior in different circumstances that will elicit a reward (Ackerman, 2018). These sources of rewards in the field of academia could include working hard in academics to be offered a performance rebate, attraction of different employers for job internships and placements, or simply gaining respect and admiration from the other students as well as lecturers.

According to Owen (2020), people motivated to execute a task and receive a reward or avoid punishment will experience their behavior as controlled. It is important, as Owen (2020) claims that this motivation may not endure a task when the incentive or danger of punishment has been retrieved, hence the individual may become less self-directed. Therefore, well-motivated students are ready for SDL and embrace autonomy, taking ownership of their educational journey while actively seeking out resources and opportunities to enhance their knowledge and skills.

Consequently, there are three basic needs present in every human being that include autonomy, competence, and relatedness. Relatedness in this study refers to satisfaction that is vital ingredient for effective and efficient functioning, and well-being. Furthermore, when these basic needs are met, there is a promotion of the maximum motivational characteristics and states of autonomous and intrinsic motivation learning (Deci & Ryan, 2015; Werth & Williams, 2021). This enhances the capacity for SDL. Li et al. (2022) indicate that SDT suggest intentional and participatory learning actions contribute to better studying outcomes. Students who are proactive in their learning tend to fulfill their aspirations together with those of their parents, guardians, and community. This results in supportive emotional feedback and validation that

enhances mental wellbeing promoting academic success by fostering a healthy psychological state.

Subsequently, Owen (2020) underscores that SDT has been broadly applied in the field of academia. Several studies across the globe and all age groups have exhibited that high-quality motivation fosters readiness for SDL, as individuals that are intrinsically motivated are likely to take higher initiative in their learning process. When students are driven by personal interests and internal goals, they often engage in SDL behaviors. This intrinsic motivation enhances their readiness to take responsibility for their learning, leading to greater independence, persistence, and effective learning outcomes.

SDT was found to be suitable for this study as it explained SDLR by focusing on the intrinsic and extrinsic motivations that drive students' behaviors and autonomy in learning. By examining how motivation influences self-directed learning readiness, SDT offered valuable insights into how students engage in learning and develop autonomy. However, since SDT did not directly address student stress, a second theoretical framework was incorporated to account for this variable.

2.2.2 Self-Efficacy Theory

Self-Efficacy Theory (SET) was introduced by the Canadian American Psychologist, Albert Bandura in 1977. This was during his tenure as a professor at Stanford University (Garrido, 2023). Lippke (2020) underpins that Bandura's Social Cognitive Theory and SET emphasize the importance of self-efficacy and outcome expectations in initiating and sustaining behavior. Bandura identified self-efficacy as crucial for setting, pursuing, and achieving goals, while equally highlighting its role as a key focus in interventions. Cherry (2024) describes self-efficacy as

referring to an individual's belief in their capacity to accomplish tasks or reach goals. It involves one’s confidence in the ability to manage actions, influence surroundings, and remain motivated.

Better Help Editorial Team (2024) spotlighted that SET posits that self-efficacy develops during childhood and continues to evolve throughout life, influenced by a range of personal and interpersonal factors. Researchers have noted as highlighted by Bhati and Sethy (2020) that SET, one of Bandura's key contributions to the fields of academic achievement, learning, and motivation, plays a crucial role in students' engagement and skill development. This manifests that students with low self-efficacy may feel overwhelmed by rejection and obstacles, potentially leading to depression or anxiety which are major signs of stress. Correspondingly, Bhati and Sethy (2020) further denote that individuals with high self-efficacy are better equipped to recover from drawbacks, stay motivated, and achieve their goals despite challenges. These individuals are capable of effectively managing their stress, even during catastrophic events in their lives. They eventually attain academic success with ease.

According to Dong (2024) and Peng (2023), SET indicates that an individual's belief and confidence in their ability to complete tasks greatly influence their overall happiness. Individuals with strong self-efficacy are more inclined to trust in their ability to overcome challenges, leading to a stronger sense of accomplishment and well-being. In contrast, those with low self-efficacy often feel helpless, lack confidence, and experience negative effects on their well-being, resulting in increased stress when they cannot cope with academic adversities. Bhati and Sethy (2020) highlight that students with high self-efficacy manage stress better, persist through challenges, and maintain better mental health, while those with low self-efficacy may experience greater stress due to self-doubt and fear of failure.

Bandura, as featured by Tavakoly et al. (2024), describes four primary sources through which individuals cultivate their self-efficacy beliefs. This is by analyzing information from these key influences that include mastery and vicarious experiences, verbal persuasion, and physiological, and emotional states. Better Help Editorial Team (2024) emphasizes that one of the key sources of self-efficacy is gaining mastery through experience. Mastering skills, regardless of their complexity, boosts self-efficacy and helps individuals see themselves as capable and able to reach their goals. This reduces stress by promoting healthy psychological well-being. Furthermore, Tavakoly et al. (2024) declares that self-efficacy plays a crucial role in initiating behavior change. Individuals with low self-efficacy are less likely to put effort into adopting new healthy behaviors or modifying unhealthy ones. This may cause stress in their struggle for change, especially as they transition to institutions of higher learning, hence affecting their psychological well-being.

Moreover, Garido (2023) argues that individual beliefs in their abilities significantly impact those abilities. Ability is not a static trait; performance can vary greatly. Those with a strong sense of self-efficacy tend to recover from setbacks more effectively. In this case, students can adapt to new environments, and new ways of learning, get connected to the support system, and take charge of their learning. Students focus on how to manage challenges rather than dwelling on potential problems.

The self-efficacy theory was considered suitable for studying student stress, as it focuses on students' confidence in their ability to handle academic challenges. High self-efficacy has been shown to lead to better stress management through effective coping strategies, while low self-efficacy can increase stress by creating feelings of being overwhelmed. This theory proved

valuable in understanding how students' perceived competence affected their stress levels and informed strategies aimed at reducing stress by enhancing confidence.

2.3 Empirical Literature Review of the Research

This section presents an empirical review of literature aligned with the study's research objectives. These objectives are to determine the level of self-directed learning readiness (SDLR) among first-year undergraduate students, examine the level of student stress (SS), assess the relationship between demographic characteristics and SS, and explore the relationship between SDLR and SS among first-year undergraduate students.

2.3.1 Levels of Self-Directed Learning Readiness among Undergraduate Students

Undergraduate years, as stated by Arsian and Asici (2022), are described as a transitional phase that involves various challenges that may draw young adults into confusion and turmoil as they get involved in self-directed learning (SDL) initiatives. It is salient that transition periods can greatly influence the well-being of students. Tekkol and Demirel (2018) emphasize that self-directed learners (SDL) are individuals who set clear goals, take initiative, act on their plans, and remain open to learning while being motivated, self-confident, and self-controlled. Understanding the levels of self-directed learning among first-year undergraduate students is particularly important, as it helps to assess their readiness for independent learning early in their academic journey. This could guide interventions to enhance their SDL skills, which are crucial for fostering independence, critical thinking, and lifelong learning throughout their university experience and beyond.

A quasi-experimental study was carried out in India by Manjunath et al. (2024) during 2021 to 2022. This was among 100 first-year undergraduate students including 28 male and 72

female. The median SDLR score in the study was found to be 149, with 46% of participants scoring above 150 and 54% below the acceptable level for SDL readiness. The study found that 54% of the students had SDLR scores below the acceptable level of readiness for SDL.

Sadeghi et al. (2024) conducted a cross-sectional study involving 110 undergraduate nursing students from Kermanshah University of Medical Sciences in Pakistan. The study aimed to assess SDLR and found that 96.4% of participants demonstrated readiness for self-directed learning, with a mean SDLR score of 162.3 ± 6.1 out of 200. The study concluded that the students generally possessed a strong capacity for managing their own learning processes.

Moreover, a cross-sectional descriptive study conducted by Yang et al. (2024), among 900 undergraduate students in China utilized an online questionnaire that assessed perceived stress, psychological capital, and self-directed learning ability. The findings indicated that undergraduate nursing students had average scores of 40.07 ± 5.90 for perceived stress, 99.89 ± 16.59 for psychological capital, and 87.12 ± 9.20 for self-directed learning ability. The study concluded that undergraduate students experienced high levels of stress, demonstrated low psychological capital, and exhibited moderate self-directed learning abilities.

Equally, Premkumar et al. (2018) carried out a mixed methods study among 453 Indian medical students to assess SDLR: $n = 166$ (43.5%) scored below average (58–201), $n = 61$ (16.0%) fell within the average range (202–226), and $n = 155$ (40.5%) scored above average (227–290), indicating a bimodal distribution of SDLR levels. This is with students clustering at both low and high ends of the scale. This suggests that students' readiness for self-directed learning tends to be polarized, with fewer students demonstrating moderate levels of preparedness**.**

In addition, a descriptive, cross-sectional study conducted by Win and Ahmad (2023) at Asia Metropolitan University (AMU) in Johor Bahru, Malaysia, assessed SDLR among 320 students. The maximum SDLR score was 150, and students scoring 150 or higher were deemed ready for SDL. The results indicated that 65% of AMU students were prepared for SDL, while 35% were not. The overall mean score for the 40 - item SDLR assessment was 157.9 ± 20.5. In comparison, the mean scores for specific components such as self-management, desire for learning, and self-control were 57.6 ± 7.9, 48.5 ± 6.4, and 51.9 ± 7.8, respectively. This indicated that most undergraduate students at AMU favored SDL over traditional learning methods and displayed a high level of readiness for SDL.

In Nigeria, Ojekou et al. (2019) conducted a quasi-experimental study to examine the level of SDLR among undergraduate students in the School of Nursing in South-West Nigeria. A total of 229 students participated in the study. The findings revealed that the nursing students' SDLRS was average, with a mean of 203 ± 23.0.

Likewise, Lembani et al. (2023) conducted a study in Zambia using a mixed methods approach, incorporating both quantitative and qualitative analysis, involving 366 participants. The research focused on students' preparedness for SDL and the challenges of Information and Communication Technology (ICT) in the country. The findings revealed that 72% of students with prior knowledge of basic Open Distance e-learning (ODeL) concepts expressed satisfaction with the e-learning environment, while 28% of traditional students found the learning mode difficult. The study manifested that there was a statistically significant positive correlation ($\rho = 0.00$) between ICT competencies and SDL.

Furthermore, a quasi - experimental study was conducted by Abdullah et al. (2018) to assess the impact of SDL on the readiness of nursing students in Sudan in 2014 to 2016. The study

involved students from Shendi University as the case group (100 students) and Alneelain University as the control group (104 students). Before the intervention, more than half of the students (56%) exhibited low readiness for SDL. Following the intervention, there was a relative improvement in SDL readiness, with the case group showing a significant increase of 13% low and 42% moderate. The findings revealed that students in the intervention group scored significantly higher in SDL readiness of 85.2% relative to the control group with 50.9%.

Besides, a study was carried out by Abiri et al. (2024) through a cross-sectional analytical study involving 404 nursing students at the Bondo and Siaya campuses of Kenya Medical Training College. Most participants were female 67.1%, n = 271 compared to males 32.9%, n = 133. The study found that 73.5% of students exhibited a high level of SDLR, with an average score of 157.

Numerous studies have examined the levels of self-directed learning readiness among undergraduate students, particularly in Asia and Africa. However, much of this research focused on specific fields, such as medical education. A significant gap remained regarding SDLR across a broader range of disciplines, especially within Kenyan universities. Understanding SDLR levels in the Kenyan context proved crucial for improving educational practices and addressing the unique challenges faced by students. Additionally, findings from other countries were not directly applicable due to cultural and institutional differences. Therefore, this study investigated the levels of SDLR among undergraduate students in private universities in Lang'ata Sub-county, Kenya.

2.3.2 Levels of Student Stress among Undergraduate Students

Stressors in higher education are both common and inevitable. Sakitri (2020) notes a recent increase in challenges within these institutions, making it crucial to address student concerns. These challenges often stem from stressors, and how a person responds depends on whether they

view the event as a challenge or a threat. When perceived as a challenge, stress can lead to positive outcomes such as increased motivation and better performance. However, when seen as a threat, it can result in negative effects like anxiety, depression, social dysfunction, and even suicidal thoughts. Scot (2024) underscores that stress is a dynamic condition where individuals face significant yet uncertain demands, opportunities, or resources. The unfortunate reality is that this stress can negatively affect students' health, well-being, relationships, and academic performance. Investigating stress levels among first-year undergraduate students is essential, as they are at a transitional stage in their academic journey, often facing new environments, academic pressure, and social adjustments.

A longitudinal study by Garett et al. (2017), involving 197 first-year college students in the United States in 2015 reported an average stress level of 3.4 (SD = 0.99), indicating moderate stress levels within this group. In a separate study, Jackson and Serenko (2023) explored coping strategies among 1,164 Canadian students and found increased feelings of loneliness and disengagement. Specifically, 69% of students reported feeling lonely, 77% experienced anxiety, 63% expressed concerns about their own health, and 79% were worried about the health of their loved ones. Additionally, a cross-sectional survey of 1,000 international students in Canada revealed that approximately 50% were at risk of developing an anxiety disorder, while about 55% were at risk of depression. These results suggest that students experienced moderate stress levels and significant psychological challenges.

Asif et al. (2020) investigated the prevalence of depression, anxiety, and stress among undergraduate students in Sialkot, Pakistan in 2019. The study reported mean scores of 15.08 for depression, 18.24 for anxiety, and 19.02 for stress. The prevalence rates were 75% for depression, 88.4% for anxiety, and 84.4% for stress. These findings suggested that a substantial proportion of

university students in Sialkot were significantly affected by mental health concerns, with notably high levels of stress. Similarly, Azudin et al. (2023) conducted a cross-sectional study during the COVID-19 pandemic involving 272 first-year students in Malaysia. Their findings revealed that 91.5% of participants experienced elevated levels of stress.

A descriptive cross-sectional design was employed by Alkhawaldeh et al. (2023) to collect data from students at Sultan Qaboos University (SQU) in Asia in 2022. This study examined the levels of stress, stressors, and coping styles among 676 university students. Approximately three-quarters of the students reported experiencing moderate stress (n = 508; 75.1%), while 13.5% (n = 91) reported severe stressors, and only 11.4% (n = 77) reported mild stress. Students with chronic illnesses exhibited a statistically higher average level of stress compared to those without chronic conditions (674) = 3.173; p = 0.003). The findings indicated that a significant majority of students had moderate stress levels (75.1%), followed by severe stress (13.5%) and mild stress (11.4%), highlighting the overall high levels of stress among the students.

Consequently, in Africa, Mutinta (2022) conducted a cross-sectional study involving 844 undergraduate students from four universities in the Eastern Cape Province. The findings indicated that 53.3% of the students experienced mental distress with 95% CI: 47.0%, 58.1%. The study also highlighted that the prevalence of mental distress among these students was higher than what had been reported in most previous studies on South Africa's student population.

Accordingly, Adedamola et al. (2022) conducted a study involving 111 undergraduate students in Nigeria with 37 (33.3%) males and 74 (66.7%) females. The stress levels indicated that 0.9% of respondents had a low level of stress, while the majority (69.4%) reported moderate stress, and 29.7% experienced high stress. Among the types of stress, academic stress (mean score: 8.05) and social stress (mean score: 6.14) were higher compared to physical stress (mean score: 5.08)

and psychological stress (mean score: 3.44). The results indicated that most students experienced moderate levels of stress.

In Tanzania, a cross-sectional study was conducted by Mboya et al. (2020) among 402 undergraduate students at Kilimanjaro Christian Medical University in 2019. The study found that 14% of participants screened positive for mental distress. Conversely, students with a family history of mental distress (OR = 2.60, 95% CI 1.04 – 6.57) and those who experienced lower-than-expected grades (OR = 3.61, 95% CI 1.91 – 6.83) had a higher likelihood of mental distress. The study revealed that approximately 1 in 10 students screened positive for mental distress, indicating high-stress levels.

In Kenya, a cross-sectional survey was carried out by Josiah et al. (2018) among students from academic levels one to five at the University of Nairobi in Kenya. The sample included 319 male and 265 female students, totaling 584 participants selected from six schools within the university. The results indicated that 64.4% of students experienced moderate to high levels of stress, while 35.6% reported low stress levels.

The reviewed studies were conducted in Asia and Africa, with limited research in Kenya, particularly within private universities, as most focus has been on public institutions. This created a notable gap in understanding stress levels among students in private universities, especially in Lang'ata Sub-county, highlighting the need to explore unique stressors in these institutions. Additionally, while previous studies predominantly employed cross-sectional designs, this study adopted a quantitative approach to provide a more systematic understanding of stress levels.

2.3.3 Relationship Between Demographic Characteristics and Student Stress among Undergraduate Students

Students in higher education are considered, as stated by Singh (2020), a high-risk group for psychological and mental health issues due to their age, making them more prone to stress. The transition into a new academic environment can lead to both physical and psychological challenges. Well-being is dynamic and varies among students throughout their academic journey, influenced by several demographic factors. Understanding the relationship between well-being and these demographic characteristics is essential. This study examined how factors such as age, gender, university, place of residence, and mode of study affect student stress.

Stang et al. (2025) conducted a quantitative cross-sectional study involving 649 university students in Germany to examine the relationship between stressors and coping strategies among full-time and part-time students. The results indicated a significant effect on study mode, with full-time students reporting higher stress levels compared to their part-time counterparts ($F(7, 218) = 2.94$, $p = .006$).

A cross-sectional, questionnaire-based study was conducted at the Department of Nursing, University of Tabuk, Saudi Arabia by Thangam (2023). Data was collected which included demographic details and the Self-Efficacy Questionnaire for Online Learning (SeQoL). Out of 250 students who responded, 76% were female, aged 20-21 years. Significant factors associated with self-efficacy were the year of education ($p < 0.001$), the device used for online learning ($p = 0.031$), previous online education experience ($p = 0.038$), and hours spent on online learning ($p = 0.036$). In contrast, age and gender did not show a significant relationship with self-efficacy, as evidenced by p-values of 0.187 and 0.609, respectively.

In a mixed method study conducted by Malik (2023) in Asia among 220 students, it was manifested that senior male students (n = 38; 76%) exhibited significantly higher anxiety levels (p = 0.001) compared to senior female students (n = 32; 64%). Anxiety levels were also higher among junior male students (n = 43; 86%) compared to junior females (n = 38; 76%), but this difference was not statistically significant (p = 0.42). The severity of anxiety reported by junior males (n = 43; 86%) was slightly higher than that of senior males (n = 38; 76%), with a marginally significant difference (p = 0.05). However, the study concluded that female students experienced significantly higher stress levels than their male counterparts.

A cross-sectional study by Mutinta (2022) examined mental distress among 844 undergraduate students from four universities in the Eastern Cape Province in South Africa. The research utilized an online self-reporting questionnaire to evaluate students' mental distress. The study found a prevalence rate of 53.3% (95% CI 47.0%, 58.1%) revealing that female students were more susceptible to mental distress compared to male students.

Furthermore, Fasoro et al. (2019) conducted a study at a private university in Nigeria, which revealed that 67% of first-year medical students felt their training was stressful. The study found that a higher percentage of females (68.6%) reported stress compared to males (62.7%); however, this difference was not statistically significant (p = 0.412). Furthermore, the discovery was that students aged 18 and above (71.9%) reported experiencing higher stress than those under 18. The study indicated that the prevalence of perceived stress among first-year undergraduate medical students at this private university was 67%, with more female students than male students reporting stress.

Additionally, Amankwah et al. (2022) conducted a descriptive survey at Appiah-Menka University in Ghana to examine how students' gender and mode of study influence their stress

levels. The study involved 940 undergraduate students (504 males and 436 females) with an average age of 24.3 years. The findings indicated that there was no statistically significant difference between stress and gender (938) = -.752, p = .452) or between stress and mode of study (938) = -1.412, p = .158).

Consequently, Magambo et al. (2020) conducted a quantitative study in Tanzania with 372 respondents, including 351 undergraduate students. The study found that 69.5% of students living in rented accommodations experienced higher stress levels than those in other living arrangements. Similarly, Ezelote et al. (2021) conducted a comparative cross-sectional study in Nigeria collecting data simultaneously from two institutions, Imo State University (n = 121) and the Federal University of Technology, Owerri (n = 832), with a total sample of 953 students. The findings revealed a significant difference in the prevalence of stress and coping strategies between students from the two universities ($p < .001$) hence creating a relationship.

A study by Mutiso et al. (2023) surveyed 9,741 students from Kenyan universities, colleges, and high schools, with an average age of 21.4 years (ranging from 16 to 43), of whom 53.5% were male. Many participants (93.3%) were single, and 79.9% lived with both parents, with 51.7% aged between 21 and 24 years. The results indicated a significant association between stress and gender: males (n = 5,172; 53.5%) had a mean stress level of 25.1 ± 26.4 ($p < 0.001$), while females (n = 4,500; 46.5%) reported a mean stress level of 27.2 ± 28.1. The study concluded that being female was associated with higher stress levels.

Despite substantial research exploring the relationship between demographic characteristics and student stress in various regions, particularly in Asia and Africa, there was a notable lack of studies addressing this issue among undergraduate students in private universities in Lang'ata Sub-County, Kenya. Existing literature often neglected the unique socio-cultural and

educational contexts of this region, which may shape how factors such as age and gender influence student stress levels. This study adopted a quantitative research design to provide a more robust and generalizable understanding of student stress in the context of private universities in Lang'ata Sub-county.

2.3.4 Relationship Between Self-Directed Learning Readiness and Student Stress among Undergraduate Students

Spontaneous learning, as highlighted by Li et al. (2022), emphasizes that students with strong SDLR engage in active learning behaviors such as self-monitoring to regulate their psychological state and improve academic outcomes. Research has pointed out that a self-monitoring learning style not only improves students' academic performance but also enhances their mental wellbeing by reducing stress and promoting overall well-being.

A study was conducted by Li et al. (2022) involving 473 students in Wuhan, China, to explore the relationship between mental health, SDL, and academic performance. The findings indicated that self-directed learning had a direct positive effect on mental health ($\gamma = 0.39$, $p < 0.001$), and mental health, in turn, positively influenced academic performance ($\gamma = 0.39$, $p < 0.001$), with both effects being statistically significant. The indirect effect of self-directed learning on academic performance through mental health was calculated to be 0.15 ($\gamma = 0.39 \times 0.39$, $p < 0.01$). These results suggested that SDL significantly enhances mental health, which contributes positively to academic success.

In another study, a cross-sectional study was conducted by Chen (2023) among 3,051 nursing students in Zhengzhou City, Henan Province, China, with a notable bias towards female participants. The research aimed to analyze the correlation between self-directed learning ability,

self-efficacy, and academic stress among undergraduate students. The findings revealed that students with greater levels of SDL ability and self-efficacy experienced significantly lower levels of academic burnout ($p < .01$). This suggested a close relationship between the two variables.

Additionally, Kabir (2021) conducted a study involving 1,162 undergraduate students in Bangladesh, in South Asia. The findings manifested that as students' perceived e-learning stress increased, their average e-learning readiness significantly decreased ($\beta = -0.43$, 95% CI: - 0.66, - 0.20). The study highlighted that students did not appear adequately prepared, as none of the e-learning readiness scale items reached the maximum mean score (5.0). This research suggested a strong association between e-learning readiness and perceived e-learning stress among university students.

A quantitative non-experimental study involving 150 students at the University of Mpumalanga in South Africa was conducted by Makhubele (2024) to investigate first-year university students' online SDLR and stress levels. The findings indicated that over two-thirds of the students demonstrated a medium level of SDLR, with an overall mean score of 2.91, a standard deviation of 0.79, and a variance of 0.77. This suggested that first-year students were generally not self-directed learners. It complicated their transition to tertiary education that contributed to increased stress, hence creating a relationship between SDLR and SS.

A cross-sectional analytical study was conducted by Abiri et al. (2024) involving 404 nursing students from the Bondo and Siaya campuses of Kenya Medical Training College in Kenya. The study aimed to examine institutional factors affecting SDLR among these students. The findings revealed that the key factors influencing SDLR were access to the institution's internet connectivity (OR=0.635; 95% CI=0.407-0.991; p=0.046) and mentorship for self-directed

learning (OR=0.402; 95% CI=0.213-0.76; p=0.005). These factors also contributed to student stress, highlighting the relationship between SDLR and stress.

2.4 Research Gap

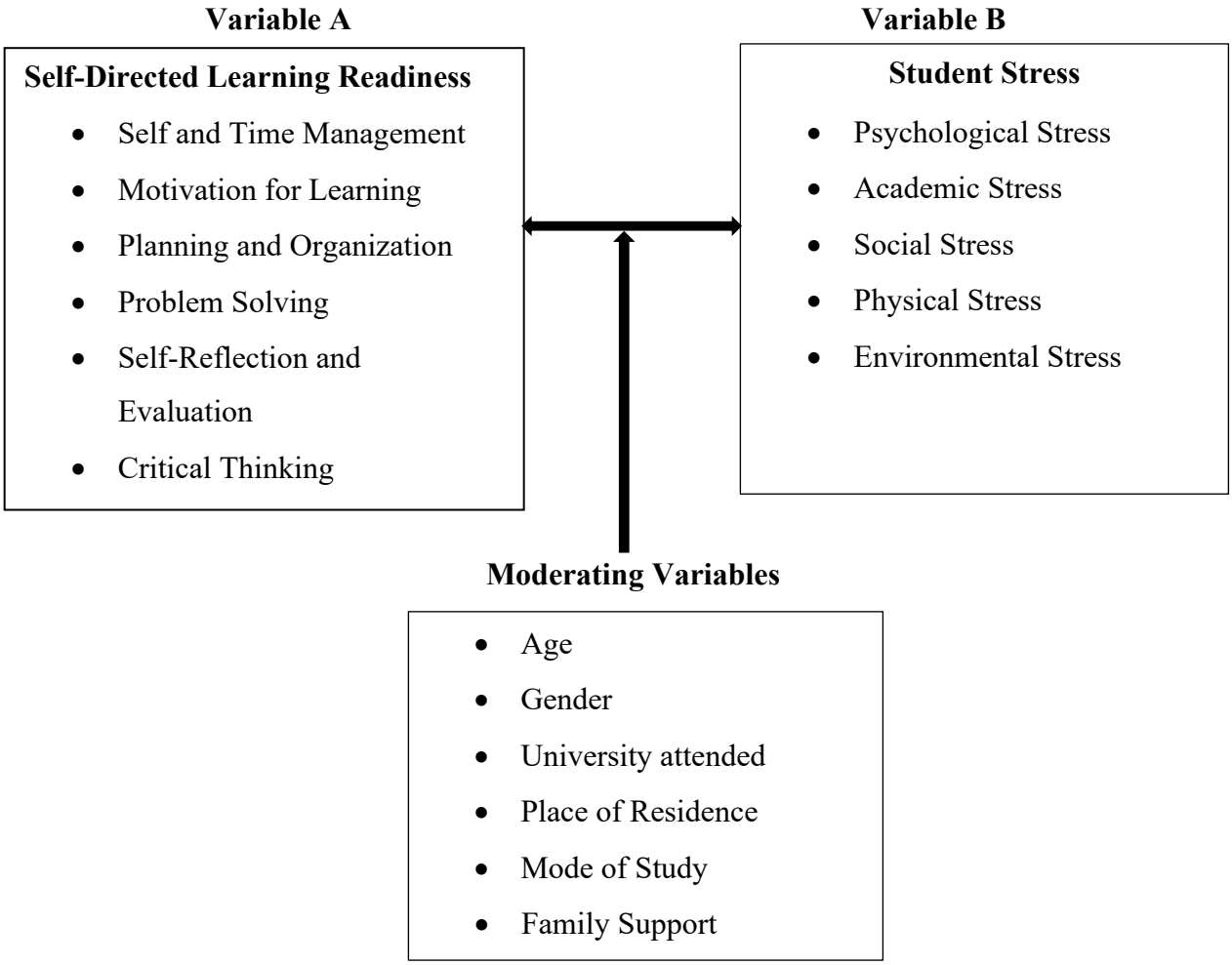
There was a significant research gap regarding the relationship between SDLR and student stress in African universities, particularly in private institutions within Lang'ata Sub-County, Kenya. While studies conducted in Asia and Africa had established a clear link between SDLR and SS, similar research in the Kenyan context remained limited. Moreover, many existing studies relied on cross-sectional research designs, often focusing on medical schools, which highlighted the need for research across a broader range of academic programs. This gap was critical, as students in Kenyan private universities face unique challenges, including diverse cultural backgrounds and varying levels of institutional support. This study used a quantitative research design to address these gaps, offering valuable insights into how fostering SDLR skills may help reduce stress among undergraduate students.

2.5 Conceptual Framework

A conceptual framework demonstrates the anticipated association between the variables applied in the research. It defines the appropriate objectives for the study process and plots out how they integrate and to draw consistent conclusions (Swaen & George, 2024). The framework of this study is demonstrated below.

Figure 1

Conceptual Framework



Source: Author (2024)

Figure 1 illustrates the conceptual framework that guided this study, focusing on the relationship between self-directed learning readiness and student stress. The framework proposes that students with higher levels of SDLR, as demonstrated through key competencies such as self-management, planning, and problem-solving, are better equipped to navigate academic and personal challenges. As a result, they tend to experience lower stress. Conversely, students with

lower SDLR are more likely to face elevated stress, including academic, psychological, and social pressures, due to difficulties in managing the demands of independent learning. The relationship between SDLR and SS is further moderated by demographic variables such as age, gender, and place of residence, which may influence how students develop and apply self-directed learning skills and how they respond to stress.

2.6 Chapter Summary

This chapter reviewed empirical literature and relevant theoretical frameworks related to the research variables. It presented a theoretical framework emphasizing two key theories that underpin the study. A gap in the existing literature was identified, underscoring the necessity of this research to address the missing knowledge. The chapter also introduced a conceptual framework illustrating the relationship and interaction between SDLR and SS. The subsequent chapter focuses on the research methodology.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter outlines the methodology employed in the study. It describes the epistemological foundation that guided the investigation, the target population, and the selection criteria. The chapter also details the research design, study site, and sampling strategy. Furthermore, it explains the instruments used, the pretesting procedures, and the measures taken to ensure reliability and validity. Data collection, analysis, and management procedures are discussed, followed by an overview of the ethical considerations observed during the study.

3.2 Epistemology of the Study

Epistemology, the theory of knowledge, focuses on how knowledge is acquired and its sources. In research, one's worldview and understanding of knowledge significantly influence data interpretation (Brown, n.d.). This study adopted positivism as its philosophical framework. According to Brown (n.d.), positivism aligns with quantitative research and approaches knowledge and the world from a scientific perspective. Data collection relied on statistical methods and involved 382 participants. The study used a deductive approach consistent with hypothesis testing, assessing whether a statistically significant relationship exists between self-directed learning readiness (SDLR) and student stress (SS) among first-year undergraduate students in private universities in Lang'ata Sub-County.

3.3 Research Design

According to Selvam (2017), a research design provides the overall structure of a study. It offers a systematic and detailed plan for how data is gathered, analyzed, and how findings are presented. This study utilized a quantitative paradigm. Data collection and analysis were

conducted using quantitative methods. Since the study aimed to investigate the relationship between two variables, SDLR and SS among undergraduate students in private universities, it employed a correlational survey design. This design was selected because it measures and relates variables without implying causality, generating mathematical or computable data analyzed through statistical methods. Moreover, it sought to determine the degree of association between the study variables rather than establishing a causal relationship.

3.4 Location of Research Study

The research was conducted in Lang'ata Sub-county, located in Nairobi County, Kenya, as it was deemed suitable for addressing the study objectives. According to Metych (2023), Lang'ata is a neighborhood situated southwest of the Nairobi Central Business District and east of Karen, approximately 18 kilometers from the city center. Covering an area of 196.80 square kilometers, Lang'ata Sub-county has one of the highest urban populations in Kenya. Due to its proximity to Nairobi City, Lang'ata shares many of its characteristics; therefore, descriptions of the research setting also reflected those of Nairobi County (Appendix J).

Nairobi, as emphasized by Ominde and Ntarangwi (2024), is the capital of Kenya, located in the south-central region of the country. It lies in the highlands at an elevation of approximately 1,680 meters above sea level and is situated about 480 kilometers northwest of Mombasa, Kenya's principal port on the Indian Ocean. According to the World Population Review (2023), Nairobi has a population of 5,325,160, which continues to grow. The city's elevation is 1,684 meters (or 5,525 feet) above sea level. As the capital of a political entity, Nairobi also features an elevation of 338 meters higher than the average city elevation in Kenya.

3.5 Target Population

A population is described as a group of people, units, or subjects constrained to a geographical region or institution who share a common attribute. Therefore, the target population comprised all individuals who met the specified criteria outlined in this study (Alvi, 2016; Willie, 2023). The focus group for this research consisted of 4,217 first-year undergraduate students attending private universities in Lang'ata Sub-county, specifically from the Catholic University of Eastern Africa (CUEA), Riara University, Strathmore University, and Tangaza University. This population included students with diverse demographic characteristics, encompassing various ages, genders, and family support backgrounds. Additionally, these students resided in different places and pursued their studies through various modes, either as part-time or full-time students.

3.6 Sampling Design

Sampling design, as described by Kabir (2016), refers to the strategies and procedures employed by researchers to select samples from a target population. This process can be conducted using either probability or non-probability methods. Accordingly, this study adopted a probability sampling approach to ensure that every individual in the population had a non-zero chance of being selected. This enhanced the generalizability and validity of the findings across the four universities. The selection of an appropriate sampling design preceded data collection and was aligned with the nature of the study. This section presents the sampling frame, the determination of sample size, and the sampling technique used.

3.6.1 Sampling Frame

The sampling frame, as described by Selvam (2017), is the comprehensive list of elements from which a sample is designated. In this research, the list of private universities located in Lang'ata Sub-county served as the sampling frame.

Table 1

The Target Population of the Research Study

Name of the University	Targeted Population	Percentage of 4,217
CUEA	1,029	24.40%
Riara University	1,207	28.62%
Strathmore University	1,514	35.90%
Tangaza University	467	11.08%
Total	**4,217**	**100%**

Source: Author (2024)

Table 1 above outlines the target population for this study, which consisted of first-year undergraduate students who attended private universities in Lang'ata Sub-county. Strathmore University represented the largest portion of the target population, while Tangaza University represented the smallest.

3.6.2 Sample Size Determination

Sample size denotes the quantity of study participants, reflection basics, or items that a researcher purposes to investigate to facilitate the projection of results to the broader population (Bryman, 2016). The Krejcie and Morgan (1970) formula was employed to ascertain the study's sample size. This formula utilizes a 95% confidence interval and an approximate error of 5%.

$$S = \frac{x^2 NP\,(1 - P)}{d^2\,(N - 1) + x^2 P\,(1 - P)}$$

Where: -

S = represents the necessary sample size

x^2 = The critical value of the Chi-square distribution for 1 degree of freedom at the desired confidence level (for example, 95%) is 3.841.

N = The size of the population

P = The population proportion (utilizing 0.50 to achieve the maximum sample size)

1 – P = The anticipated percentage of failures

d^2 = The square of the highest permissible margin for error between the actual percentage and sample proportion (set at 5% in the study).

Therefore, with a target population of 4,217 for the study and employing a 95% confidence level with an approximate margin of error of 0.05, the results are calculated as follows:

$$S = \frac{1.96^2 \text{ X } 4217 \text{ x } 0.5(1\text{-}0.5)}{0.05^2 \text{ X } 4217 + 1.96^2 \text{ x } 0.5(1\text{-}0.5)} = \frac{4050.0068}{11.5029} = 352.09$$

Accordingly, the research's sample size was adjusted to 352 respondents.

To mitigate the issue of attrition during data collection within the sample size, an additional 10% of questionnaires were included. According to Mugenda and Mugenda (2003), attrition in sample size refers to loss, non-response, misplacement, or damage of research questionnaires during data collection or analysis. To address this issue, a 10% increase in the sample size is

recommended. This means 10% of 352, which is 35 was added to 352 making a total of 387 respondents.

To determine the distribution of the sample size within each stratum, the following formula was used.

$$S = TSS \times \frac{Z}{Y}$$

Where: -

S = Sample size

TSS = Total Sample Size

Z = Target Population

Y = Total Population

Table 2

Sampling Size Determination

Name of the University	Targeted Population	Sample Size	Percentage of 4,217
CUEA	1,029	94	24.40%
Riara University	1,207	110	28.62%
Strathmore University	1,514	140	35.90%
Tangaza University	467	43	11.08%
Total	**4,217**	**387**	**100 %**

Source: Author (2024)

Table 2 above shows the sample size determination for this study, which focused on first-year undergraduate students who attended selected private universities in Lang'ata Sub-county.

It is important to note that this study initially allocated a total of 387 participants across four private universities using proportional allocation based on student population sizes, in accordance with Krejcie and Morgan (1970). However, due to institutional constraints, Strathmore University limited participation to 50 students, resulting in a shortfall of 90 participants. Consequently, the sample was redistributed proportionally among the remaining universities, CUEA, Riara University, and Tangaza University, based on their initial allocations. This approach is consistent with recommendations in sampling methodology, which advocate for maintaining overall sample integrity through proportional adjustments when certain strata cannot be fully accessed (Cochran, 1977).

Table 3

Sample Size Redetermination and Redistribution

Name of the University	Original Sample	Original % of Total	Adjusted Sample	Adjusted % of Total
CUEA	94	24.29%	128	33.07%
Riara	110	28.42%	150	38.76%
Strathmore	140	36.18%	50	12.92%
Tangaza	43	11.11%	59	15.25%
Total	**387**	**100%**	**387**	**100%**

Source: Author (2024)

Table 3 illustrates the finalized sample size redetermination and redistribution for this study, which investigated first-year undergraduate students enrolled in private universities within Lang'ata Sub-county.

3.6.3 Sampling Technique

This study employed a multi-stage sampling technique, which involved selecting participants from a large population by dividing it into smaller clusters and then drawing samples from these clusters (Bobbitt, 2021). This approach ensured that each learner had an equitable chance of being selected.

To achieve representativeness across academic programs, the study employed cluster and stratified random sampling techniques. Initially, clusters were formed based on schools within the four private universities: CUEA (1,029), Riara University (1,207), Strathmore University (1,514), and Tangaza University (467) students. Once these clusters were established, sampling was further refined by applying stratified random sampling within the universities. This method involved dividing the population into homogeneous groups based on shared characteristics, such as academic programs or educational levels, to ensure a balanced and representative sample (Hayes, 2024).

3.7 Research Instruments

Three assessment tools were utilized in this study. The first was the Self-Directed Learning Readiness Scale (SDLRS), developed by Dr. Lucy Guglielmino in 1977 in the United States. According to Statistics Solutions (n.d.), the SDLRS is a Likert-type scale consisting of 58 items, with responses measured on a 5-point scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The scale evaluates factors that contribute to self-directed learning, such as motivation and

self-management. It was designed to assess an individual's perception of their abilities and attitudes related to self-directed learning. The SDLRS has been widely used in corporate training programs and adult education to measure students' abilities to manage their own learning and has been translated into several languages for broader applicability.

The second instrument employed was the Student Stress Inventory Scale (SSIS), developed by Bernadette M. Gadzella in 1991 in the United States. The SSIS was designed to measure stress levels among students in higher education. It consists of 40 items rated on a 4-point scale: 1 = Never (N), 2 = Somewhat Frequent (S), 3 = Frequent (F), and 4 = Always (A). The scale is divided into four subscales: Physical Stressors, which assess physiological responses to stress; Interpersonal Relationships, focusing on social stress; Academic Stressors, related to coursework and examinations; and Environmental Factors, which cover external stressors such as financial difficulties and living conditions (Arip et al., 2015). The SSIS has been used broadly to evaluate how stress affects student well-being and academic performance. The results were intended to inform strategies for better supporting students' stress management (Arip, 2018).

The third tool was the demographic characteristic questionnaire by the researcher that assessed socio-demographic characteristics, encompassing items 1 to 6. This included age, gender, university of study, mode of study, residence, and family support. This section aimed to examine the relationship between these demographic characteristics and student stress.

3.7.1 Reliability and Validity of Instruments

According to Taherdoost (2016), reliability refers to the extent to which a measurement consistently produces stable and consistent results upon repetition. Evaluating reliability was essential in this research to ensure consistency across the various components of the measurement

tools. In this study, reliability was assessed using Cronbach's alpha coefficient to determine the internal consistency of the scales. A Cronbach's alpha value of 0.70 or higher was considered indicative of adequate reliability and acceptable internal consistency.

Research by Zhoc and Chen (2016), conducted among 1,760 undergraduate students in Hong Kong, validated the reliability of Dr. Lucy Guglielmino's SDLR scale. This was across various regions, including Japan, Korea, Singapore, Taiwan, and Thailand. Their findings indicated that the scale was internally consistent, as demonstrated by Cronbach's alpha results, which ranged from 0.84 to 0.87. Similarly, Fooladvand and Nadi (2019), in a study among 178 leaners in Iran, affirmed the reliability of the SDLR scale, reporting a Cronbach's alpha of 0.94 for the entire scale, indicating its effectiveness for assessing SDLR abilities among undergraduates. Additionally, Arip et al. (2015) tested the reliability of the SSIS with 50 Malaysian undergraduate leaners. It manifested strong reliability with a Cronbach's alpha of 0.857, where most values were above the acceptable threshold of 0.7.

Validity as explained by Taherdoost (2016) denotes the degree to which collected data accurately illustrates the true domain of study. Validity ensures that the measurement tools align with the research objectives, thus improving the accuracy of the findings. This study evaluated validity through content, construct validation, and internal consistency checks of the questionnaires. Careful operationalization and review of questionnaire items ensured that the variables were properly measured.

A study by Zhoc and Chen (2016) confirmed the validity of the SDLR scale by demonstrating its high correlation with the SDLRS ($r = 0.82$, $p < 0.01$). They also established criterion validity, linking the scale to cumulative GPA, with correlations ranging from $r = 0.20$ to 0.40 across undergraduate, middle, and high school students. Equally, Crack (2022) validated the

SSI questionnaire with 100 female undergraduate leaners in Canada through an Expert Assessment Panel, which found the tool to have strong content validity with a score of 80.5%.

3.7.2 Pretesting of Instruments

As outlined by Hu (2014), pretesting involves evaluating study questions and questionnaires on a subset of the study population. This process assesses the reliability and validity of the instruments before their full application in the main study and facilitates necessary adjustments to improve the credibility of the results.

In this study, a pretest of SDLR scale, SS inventory as well as the demographic characteristic tool, was conducted using a purposive sample of 39 full-time students. The students were from the School of Business at Daystar University – Valley Road campus representing approximately 10% of the total sample size (N = 387). The pretest aimed to identify any ambiguities or difficulties in the questionnaire and to ensure the clarity, relevance, and appropriateness of the items. Additionally, it served to assess the reliability and validity of the research instruments. The Self-Directed Learning Readiness Scale, comprising 58 Likert-scale items, underwent reliability analysis and yielded a Cronbach's alpha coefficient of $\alpha = .966$, indicating excellent internal consistency. Similarly, the 40-item Student Stress Inventory demonstrated strong reliability, with a Cronbach's alpha of $\alpha = .88$, suggesting that the scale effectively measures the construct of student stress.

To conduct the study, ethical approval for the pretest was obtained from the Office of the Deputy Vice Chancellor, Academic, Research, and Student Affairs, following the submission of the required prior approvals. Upon approval, the Google Forms link was distributed through the School of Business WhatsApp group for data collection. Participants were informed about the

nature and purpose of the study and provided informed consent before participation. They were assured of their right to withdraw at any time without penalty and were guaranteed confidentiality and anonymity throughout the pretest process.

3.7.3 Scoring of the Instrument

The scoring of the scales is demonstrated below in the form of a table.

Table 4

Scoring of Instrument

Scale	Total Range	Score Range	Level
SDLR	58 - 290	227 - 290	Above average
		202 - 226	Average
		58 - 201	Below average
SSI	40 - 160	122 -160	Severe stress
		81 - 121	Moderate stress
		40 - 80	Mild stress

Author © Lucy M. Guglielmino (1977) for SDLR; Arip, M. (2018) for Student Stress

Table 4 presents score ranges for the SDLR and SSI scales, providing insights into learning readiness and stress levels. For SDLR, the levels are categorized as above-average, average, and below-average readiness. The SSI categorizes stress levels as severe, moderate, and mild.

3.8 Data Collection Procedure

The data collection process began with the researcher obtaining official clearance from the Tangaza University Research and Ethics Committee (TUREC), in accordance with institutional

protocols. This was followed by authorization from the National Commission for Science, Technology and Innovation (NACOSTI) to conduct the study among first-year undergraduate students in private universities located within Lang'ata Sub-county.

With both approvals in place, the researcher contacted three of the four targeted private universities: Catholic University of Eastern Africa (CUEA), Riara University, and Strathmore University. Tangaza University was excluded from this outreach because ethical approval had already been granted through TUREC. For each of the three universities, official request letters together with copies of the NACOSTI permit and TUREC clearance, were sent to the respective Deputy Vice Chancellors for Research and Innovation (DVC RI).

Upon receiving institutional permission, the researcher coordinated with the Dean of Students at each university to facilitate the sampling process. The researcher provided a sampling framework based on the different universities, using the number of enrolled first-year students across different schools and academic programs. While the deans assisted in implementing the sampling plan because they had access to accurate enrollment data, they did not select the participants arbitrarily. The researcher specified the required number of participants per academic unit, and the sampling was conducted accordingly. The final list of participants was then used for survey distribution.

The survey was administered online using a Google Forms link. To enhance participation and streamline communication, the researcher engaged one research assistant, who was the President of Strathmore University's Student Association. His role involved mobilizing students to participate in the survey, sharing the Google Forms link with the selected participants, and responding to basic inquiries related to the process. Although the survey was conducted online,

the research assistant's involvement was instrumental in encouraging participation and clarifying logistical questions raised by participants through email.

Before the launch of the survey, the researcher conducted a physical training session with the research assistant. This session was held in person and covered the objectives of the study, ethical considerations including informed consent, voluntary participation, confidentiality, and data security, as well as detailed instructions on how to communicate with participants effectively and support them in case of difficulties accessing or completing the form.

Survey invitations were sent to the selected participants via customized group emails for each university. These emails included a cover letter, informed consent form, and a brief introduction of the research assistant. His email address was included in all communications to allow participants to reach out for clarifications or technical support.

Throughout the data collection period, the researcher remained available to respond to inquiries and provide additional support as needed. Follow-up reminders were issued through the research assistant to enhance participation. This structured and collaborative approach ensured that data collection was conducted ethically, transparently, and efficiently.

3.9 Data Analysis

Data analysis, as defined by Eldridge (2024), involve systematically collecting, cleaning, modelling, and deriving meaning from data, primarily using statistical techniques. In this quantitative study, both descriptive and inferential statistical techniques were employed to interpret the findings. The IBM F Statistics 25 software was utilized for statistical assessment.

Descriptive statistics were employed to illustrate the participants' perspectives by calculating the frequency of demographic variables, as well as the mean and standard deviation of

the research instruments based on the questionnaire administered. These statistics were presented using tables, figures, and graphs to depict numbers, percentages, and averages. The descriptive method facilitated the analysis of the research objectives, particularly in assessing the level of SDLR and examining the level of SS among undergraduate students in selected private universities in Lang'ata Sub-County. Table 5 below outlines the data analysis procedure comprehensively.

Table 5

Data Analysis

Data analysis	Variable type	Purpose of the test	Type of the test
Demographic Characteristics	Categorical Scale	Gather information about demographics. characteristics	Frequencies, percentiles, Central tendency (M, SD)
Objective One	One categorical and one scale	To measure the levels.	Descriptive statistical score
Objective Two	One categorical and one scale	To measure the levels	Descriptive statistical score
Objective Three	Scale	To test the relationship between demographic characteristics and SS	Chi-square
Objective Four	2 Scales	Test relationship between two scale variables	Person's Correlation Coefficient

Source: Author (2024)

Table 5 presents a comprehensive overview of all analyses conducted in this study, including the variable types, the rationale for each test, and the specific methods employed. Descriptive statistics were used to generate numerical data for each demographic category. A Chi-square test of independence was employed to examine potential associations between

categorical demographic variables and SS. Pearson correlation coefficient was utilized to explore how variations in predictor variables corresponded with changes in the response variable's mean. These methods were particularly effective in illustrating the link between SDLR and SS within the study population.

3.10 Ethical Considerations

Ethics, as defined by Mugenda and Mugenda (2003), pertain to the branch of belief concerned with the principles guiding a researcher's behavior. This study upheld these principles to ensure ethical rigor throughout the research process. The American Psychological Association (APA) Code of Ethics (2017) guided the study, particularly in fostering trust, respecting participants' rights and dignity, and maintaining integrity in data collection and analysis. These measures ensured that no harm was caused to the participants.

To adhere to institutional and national ethical standards, the researcher first obtained ethics clearance from the Tangaza University Research and Ethics Committee (TUREC), followed by research authorization from the National Commission for Science, Technology and Innovation (NACOSTI). Subsequently, letters of permission were secured from all participating universities, except for Tangaza University, which had already granted ethical approval. These approvals confirmed compliance with institutional and regulatory requirements for conducting ethical research.

Prior to data collection, participants were contacted via email and provided with a detailed explanation of the study's purpose, procedures, and potential risks. The email included an informed consent form outlining participants' rights, including the right to decline participation or withdraw from the study at any point without penalty. The researcher also provided contact

information to allow participants to ask questions or seek clarification before proceeding. Consent was obtained electronically through a designated section on the Google Forms platform. To ensure continuous informed consent, the rights of participants were reiterated within the survey instructions. After the survey, participants received a debrief email explaining how the data would be stored, anonymized, and used solely for academic purposes. This also served to reaffirm that their consent remained valid for the continued use of their anonymized responses.

Confidentiality was maintained throughout the study. The Google Forms survey was configured not to collect any personal identifiers such as names and email addresses. Each participant was assigned a unique numerical code to protect identity. Only anonymized data were collected, stored, and used in the analysis. The survey platform was encrypted, and all data was downloaded to password-protected and encrypted devices were accessible only to the researcher. No identifiable data were shared, and only aggregate results were reported. Any documents that could potentially link responses to individuals were securely deleted after data processing.

To ensure anonymity, no direct personal data was collected. The design of the Google Form restricted any automated collection of identifying information. Each participant's response was associated only with a numerical code. This approach ensured that all responses remained anonymous throughout the data lifecycle from collection and storage to analysis and reporting. The final dataset used in statistical analysis contained no information that could be traced back to individual participants.

Data quality was assured through pretesting the online survey to verify the clarity, validity, and reliability of the questions. The data collection platform was secure, and responses were monitored to identify inconsistencies or incomplete entries. All data was reviewed and cleaned

before analysis. Only anonymized data was used, and findings were analyzed at the aggregate level to maintain ethical standards in reporting.

In case any survey questions related to self-directed learning or student stress triggered emotional discomfort, participants were reminded in advance of their right to discontinue the survey at any point without any consequence. In addition, contact details were provided within the consent and debriefing emails for participants to reach out if they experienced any form of emotional distress before, during, or after completing the survey.

3.11 Chapter Summary

This chapter outlined the researcher's approach to the study. It explained the epistemological foundation that guided the investigation, described the target population and selection criteria, and detailed the study design, research site, and sampling framework. The chapter also discussed the research instruments used, the pretesting process, and the measures taken to ensure reliability and validity. Additionally, it covered the procedures followed for data collection, analysis, management, and concluded with a discussion of ethical considerations. The next chapter presents the study findings, analyzing the data in relation to the research questions and objectives.

CHAPTER FOUR

FINDINGS

4.1 Introduction

This chapter details the findings of the research. It begins by examining the response rate and subsequently delves into a comprehensive overview of the demographic characteristics of the participants. The chapter then proceeds to articulate the study's key findings, which are presented by the research objectives. Finally, this chapter provides a concise summary of the material covered in this section.

4.2 Response Rate

This section presents the response rate of the Google forms distributed to the study participants. The distribution of the forms is detailed in Table 6.

Table 6

Response Rate

Sample Size	Distributed Questionnaires	Returned Questionnaires	Spoiled Questionnaires	Properly filled Questionnaires
387	387	382	0	382

As shown in Table 6, a total of 387 questionnaires were distributed to first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi. Out of these, 382 questionnaires were returned, representing a response rate of approximately 98.7%. All returned questionnaires were properly filled out and usable, with no spoiled or incomplete responses,

making the entire returned sample valid for analysis. According to Taherdoost and Madanchian (2024), obtaining a response rate of at least 70% in surveys is crucial to maintain the accuracy and trustworthiness of research results.

4.3 Reliability of Instruments

In this study, two key variables were measured using standardized scales: Self-Directed Learning Readiness (SDLR) was assessed with the Self-Directed Learning Readiness Scale (SDLRS), and Student Stress (SS) was evaluated using the Student Stress Inventory (SSI). The analysis was conducted using SPSS version 25, and the inter-rater reliability of the two scales was assessed. The results of this reliability analysis are summarized and presented in Table 7.

Table 7

Scales Reliability

No	Scale	Items	Cronbach's Alpha	Skewness	Kurtosis
1.	SDLR	58	0.976	– 0.283	- 0.041
2.	SSI	40	0.915	- .120	- .524

Hussey et al. (2025) highlight that a minimum alpha (α) of 0.90 is recommended for research scales, especially in settings where high reliability is essential. The SDLR scale, as shown in table 7, consisted of 58 items, and it yielded a Cronbach's Alpha of 0.976, indicating excellent internal consistency. This high alpha value suggests that the items within the scale are highly correlated and measure the same underlying construct reliably. The skewness value of – 0.283 and kurtosis value of – 0.041 indicate that the distribution of SDLR scores is approximately normal, with only slight negative skewness and virtually no departure from normal kurtosis. Similarly, the

SSI, which comprises 40 items, produced a Cronbach's Alpha of 0.915, also demonstrating excellent reliability. The skewness of – 0.120 and kurtosis of – 0.524 suggest a distribution that is close to normal, with a slight tendency toward being flatter than a normal distribution, but well within acceptable thresholds.

4.4 Demographic Characteristics

This section outlines the demographic characteristics of the participants, including age, gender, university, area of residence, mode of study, and their perception of support from family. The results are detailed in Table 8.

Table 8

Demographic Characteristics

	Frequency	Percentage
Age		
16 - 25 years	197	51.6
26 - 30 years	162	42.4
31 - 35 years	14	3.7
36 - 40 years	8	2.1
41 and above	1	.3
Gender		
Male	182	47.6
Female	200	52.4
University		
CUEA	126	33.0
Tangaza University	60	15.7
Riara University	144	37.7
Strathmore University	52	13.6
Place of Residence		
Hostel	135	35.3
Rental Houses	86	22.5
Family Home	120	31.4
Shared Accommodation	31	8.1
Others	10	2.6
Mode of Study		
Full-time	295	77.2
Part-time	87	22.8
Do You Feel Supported by Family?		
Yes	341	89.3
No	41	10.7

As shown in Table 8, a total of 382 first-year undergraduate students from private universities in Lang'ata Sub-county participated in this study. Participants ranged in age from 16 to over 40 years, and these ages were categorized into groups. Grouping continuous data into intervals transforms it into ordinal categories, which helps simplify analysis and highlight important patterns. The majority were aged 16 - 25 years (51.6%), followed by those aged 26 - 30

years (42.4%). Smaller proportions were aged 31 - 35 years (3.7%), 36 - 40 years (2.1%), and 41 years and above (0.3%), indicating that the sample was predominantly composed of younger students.

The gender distribution was relatively balanced, with 200 females (52.4%) and 182 males (47.6%), reflecting a slightly higher female representation among the respondents. Participants were drawn from four private universities. Riara University had the highest representation, accounting for 37.7% (n = 144) of the sample. This was followed by CUEA with 33.0% (n = 126), Tangaza University with 15.7% (n = 60), and Strathmore University with 13.6% (n = 52). This distribution reflects good coverage across multiple institutions, with most participants coming from Riara University and CUEA.

Regarding place of residence, 35.3% (n = 135) of the students lived in hostels, while 31.4% (n = 120) resided in their family homes. Another 22.5% (n = 86) lived in rental houses, 8.1% (n = 31) in shared accommodations, and 2.6% (n = 10) reported living in other types of housing. These findings indicate a diverse range of living arrangements, with the largest groups residing in hostels or at home with family. A significant majority of respondents were full-time students (77.2%), while 22.8% were enrolled in part-time programs. Most participants (89.3%, n = 341) reported feeling supported by their family, while 10.7% (n = 41) indicated they did not feel supported. This reflects strong perceived familial support among the student population.

4.5 Levels of Self-Directed Learning Readiness among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County.

The first objective of this study was to assess the levels of Self-Directed Learning Readiness (SDLR) among first-year undergraduate students in private universities in Lang'ata Sub-County, Nairobi. Descriptive statistical analysis was conducted to determine the distribution and central tendency of SDLR scores.

The goal of determining the levels of SDLR among first-year undergraduate Students was to assess how preparedness for self-directed learning is distributed within this population. Table 9 presents the distribution of SDLR levels among participants, categorizing them into different levels of SDLR severity.

Table 9:

Levels of Self-Directed Learning Readiness Scale

Levels of SDLR	Range	Frequency	Percentage (%)
Above Average	227-290	155	40.5
Average	202-226	61	16.0
Below average	58 - 201	166	43.5
Total	**58 - 290**	**382**	**100.0**

The analysis of SDLR levels among first-year undergraduate students revealed a varied distribution across the three predefined categories. As shown in table 9, n = 166 (43.5%) of the participants scored within the below-average range (58 - 201), indicating that nearly half of the students exhibited low readiness for self-directed learning. A smaller proportion, n = 61 (16.0%), fell within the average range (202 – 226), suggesting that relatively few students demonstrated

moderate levels of readiness. On the other hand, n = 155 (40.5%) of the respondents achieved scores within the above-average range (227 – 290), reflecting a substantial group of students who are highly prepared for SDLR. Overall, the results suggest a polarized distribution, with most students positioned at either end of the readiness scale and only a minority falling in the middle range.

4.6 Level of Student Stress among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County.

The second objective of this study was to assess the level of student stress among first-year undergraduate students in private universities in Lang'ata Sub-county, Nairobi. The goal of determining the levels of student stress among first-year undergraduate students is to assess how stress is distributed within this population. Table 10 presents the distribution of SSI levels among participants, categorizing them into different levels of SSI severity.

Table 10

Levels of Student Stress Inventory

Levels of SSI	Range	Frequency	Percentage (%)
Severe Stress	122-160	27	7.1
Moderate Stress	81-121	268	70.2
Mild Stress	40 - 80	87	22.8
Total	**40-160**	**382**	**100.0**

The analysis of student stress levels among first-year undergraduate students, as measured by the SSI, reveals that most participants experienced moderate stress. Specifically, 268 students (70.2%) scored within the moderate stress range (81 – 121), indicating that most respondents

reported experiencing stress symptoms at a manageable but concerning level. A smaller proportion, 87 students (22.8%), fell into the mild stress category, with scores ranging from 40 to 80. Only 27 students (7.1%) reported severe stress, scoring between 122 and 160, suggesting that a small but important segment of the population may be at risk of experiencing significant psychological strain. These findings highlight that while severe stress is relatively uncommon, stress in general is a prevalent issue among this group of students, with over 70% experiencing at least moderate levels of stress.

4.7 Relationship between Demographic Characteristics and Student Stress among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County.

The third objective of this study was to examine the relationship between demographic characteristics and student stress among first-year undergraduate students in private universities in Lang'ata Sub-County, Nairobi. To address this, Chi-Square Tests of Independence were performed to determine whether levels of student stress (classified as mild, moderate, or severe) were significantly associated with various demographic variables. Table 11 below presents the findings:

Table 11

Results of Chi-Square Test Determining Relationship Between Demographics and Student Stress

Demographics	Student Stress				Chi-square Test		
	Total	Mild Stress	Moderate Stress	Severe Stress	X^2	df	Sig.
Age of Participants							
16 to 25	197	67	122	8	44.654	8	.000
26 to 30	162	14	130	18			
31 to 35	14	1	12	1			
36 to 40	8	4	4	0			
41 and above	1	1	0	0			
Gender of Participants							
Male	182	42	124	16	1.677	2	.432
Female	200	45	144	11			
University of Participants							
CUEA	126	12	101	13	61.010	6	.000
Tangaza University	60	32	28	0			
Riara University	144	22	110	12			
Strathmore University	52	21	29	2			
Residence of Participants							
Hostel	135	31	99	5	23.602	8	.003
Rental Houses	86	19	62	5			
Family Home	120	23	18	16			
Shared Accommodation	31	7	23	1			
Others	10	7	3	0			
Mode of Study of Participants							
Full-time	295	74	205	16	8.071	2	.018
Part-time	87	13	63	11			
Feeling of Support from Family Members							
Yes	341	81	236	24	1.748	2	.417
No	41	6	32	3			

The findings presented in Table 11 reveal a statistically significant association between age and student stress levels, χ^2 (8, N = 382) = 44.65, $p < .001$. This suggested that stress levels

differ notably across various age groups. Likewise, a significant link was observed between the type of university attended and student stress, χ^2 (6, N = 382) = 61.01, p < .001, indicating that institutional differences might play a role in shaping students' stress levels.

A significant association was also noted between place of residence and student stress, χ^2 (8, N = 382) = 23.60, p = .003, suggesting that where students live during their studies may contribute to their stress levels. Moreover, the mode of study (full-time versus part-time) was found to be significantly related to student stress, χ^2 (2, N = 382) = 8.07, p = .018. This implied that the structure of students' academic schedules could influence the amount of stress they experience.

In contrast, the relationship between gender and student stress levels was not statistically significant, χ^2 (2, N = 382) = 1.68, p = .432, indicating that male and female students reported comparable stress levels within the sample. In examining the potential relationship between students' perceived family support and their self-reported stress levels, the analysis produced a Pearson Chi-Square value of 1.748. This result was based on 2 degrees of freedom and yielded a p-value of .417. As this p-value is greater than the standard threshold of .05, the finding is statistically insignificant. This suggested that there was no clear or meaningful association between the extent to which students felt supported by their families and the stress levels they experienced, χ^2 (2, N = 382) = 1.75, p = .417. In summary, age, type of university, place of residence, and mode of study were all significantly linked to student stress, whereas gender and feelings of perceived family support were not.

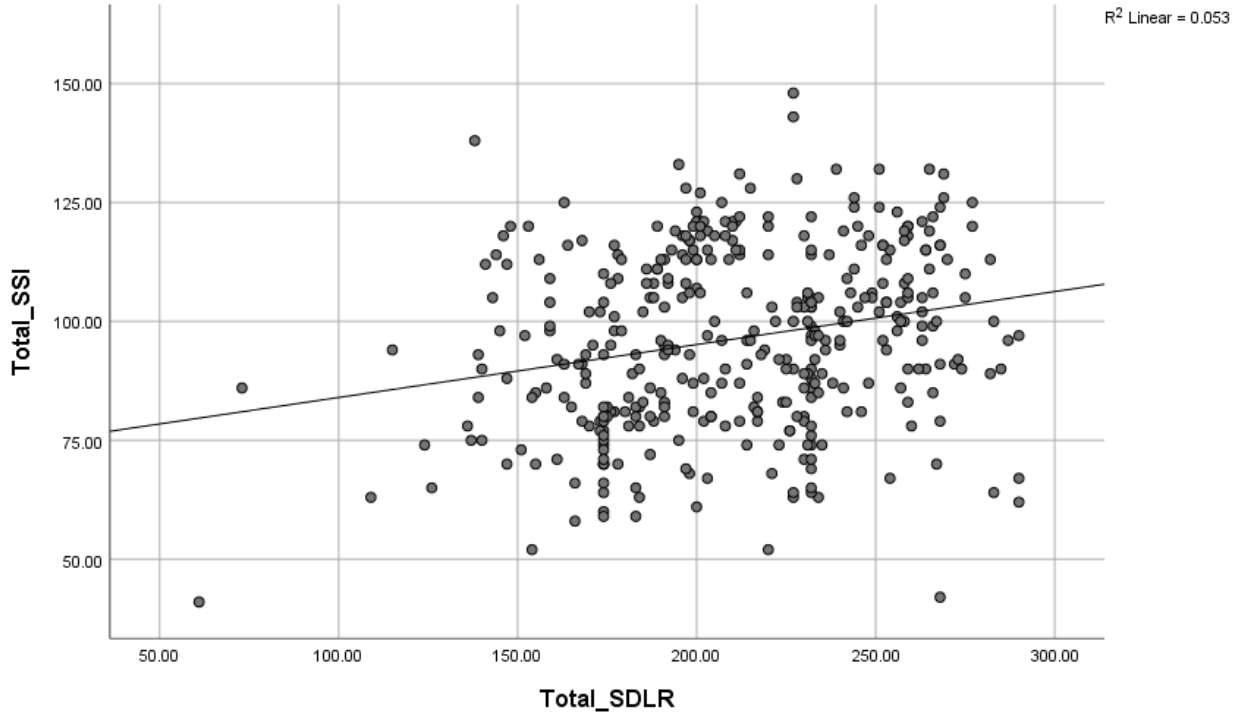
4.8 Relationship between Self-Directed Learning Readiness and Student Stress among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County, Nairobi, Kenya.

The fourth objective of this study was to examine the relationship between Self-Directed Learning Readiness (SDLR) and Student Stress (SS) among first-year undergraduate students in private universities in Lang'ata Sub-County, Nairobi, Kenya. To assess this relationship, Pearson's correlation and was employed. This section presents the findings from this analysis, providing insights into how variations in SDLR are associated with SS.

The scatterplot in Figure 2 offered a visual representation of the relationship between SDLR and SS. This plot serves as a preliminary visual analysis, highlighting potential trends or patterns in the data. It enabled the researcher to observe the direction and strength of the relationship between the two variables before delving into the detailed statistical results presented in the subsequent tables.

Figure 2

Relationship Between Self-Directed Learning Readiness and Student Stress



The scatterplot above in Figure 2 illustrated the relationship between Total SDLR scores and Total SS scores among first-year undergraduate students. Each dot represented an individual student's paired SDLR and stress scores. From the plot, a slight upward trend can be observed, suggesting a weak positive linear relationship between SDLR and SS. This implied that contrary to expectations, students with higher SDLR may also experience slightly higher stress. However, the relationship appeared to be weak and scattered, as the data points are widely spread around the regression line. The R^2 value is 0.053, indicating that only 5.3% of the variance in SS scores can be explained by differences in SDLR. This was a very small effect size, suggesting that while there was a measurable relationship, it was not strong, and other factors may play a more significant

role in influencing stress. Overall, the scatterplot provided an initial visual insight that was further clarified by the results of the Pearson correlation.

To further examine the relationship between SDLR and SSI among first-year undergraduate students, Pearson's correlation coefficient was used to assess the strength and direction of the association between the total SDLR score and the total SSI score. Table 12 presented the results of the Pearson correlation analysis, offering insights into how these two variables were related based on the participants' responses.

Table 12

Pearson's Correlation Coefficient for the Relationship between SDLR and SS

Correlations			
		Total_SDLR	Total_SSI
Total_SDLR	Pearson Correlation	1	.231
	Sig. (2-tailed)		.000
	N	382	382
Total_SSI	Pearson Correlation	.231	1
	Sig. (2-tailed)	.000	
	N	382	382
Correlation is significant at the 0.01 level (2-tailed).			

A Pearson correlation analysis as shown in Table 12 was conducted to assess the relationship between SDLR and SS among first-year undergraduate students. The results showed a positive and statistically significant correlation, $r(382) = 0.231$, $p < .001$, indicating that as SDLR scores increase, SS also tended to increase, albeit modestly. While the correlation was statistically significant at the 0.01 level, the strength of the relationship was weak, as indicated by the

coefficient value (r = 0.231). This suggested that although there was a measurable association between the two variables, higher SDLR was only weakly associated with higher SS in this sample.

4.9 Limitations of Study

A challenge arose with Strathmore University, which approved only 50 participants instead of the 140 specified by the sample size calculation. This significant shortfall posed a risk to the study's representativeness and statistical power. To manage this discrepancy, the researcher carefully reviewed the sampling framework and decided to redistribute the remaining participants among the other three universities. This redistribution was made in accordance with the Krejcie and Morgan (1970) formula to ensure that proportional representation and the integrity of the total sample size were maintained.

Equally, during the data collection phase, the timing coincided with students' preparations for their end-of-semester examinations, which significantly affected their availability and willingness to complete the questionnaires. The academic pressure and tight study schedules led to delayed responses and limited engagement. To address this challenge, the researcher implemented several mitigation strategies. Frequent reminders were sent to the students through emails to encourage participation. Additionally, the research assistant played a proactive role by organizing online meetings to directly engage with participants, clarify any concerns, and emphasize the importance of their contribution to the study.

4.10 Chapter Summary

Chapter Four presented the results of the study. The analysis began with the demographic characteristics of the participants, followed by an assessment of SDLR and SS levels. The findings revealed a polarized distribution in SDLR, with most students clustered at either the high or low ends of the readiness scale, and relatively few falling in the middle range. In contrast, most students reported moderate levels of stress. Chi-Square Test indicated significant relationships between several demographic characteristics and SS, including age, university attended, mode of study, and place of residence. However, gender and perceived family support were not significantly associated with stress levels. Finally, Pearson's correlation revealed a statistically significant but weak positive relationship between SDLR and SS, suggesting that students with higher SDLR tended to report slightly higher stress. The following chapter focused on discussing these findings.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

Chapter five marks the conclusion of this study, providing a thorough analysis and interpretation of the results detailed in chapter four. This chapter began by restating the research questions to guide the discussion and then revisits the conceptual framework introduced in chapter two. The discussion relates the study's findings to the previously reviewed literature, emphasizing areas of agreement, differences, and the study's contributions to the field. Lastly, the chapter proposes possible refinements or modifications to the theoretical frameworks, namely Self-Determination and Self-Efficacy theories, based on the insights derived from the research.

5.2 Demographic Characteristics of First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County.

This section presents and analyzes the demographic characteristics of first-year undergraduate students enrolled in private universities within Lang'ata Sub-county, Nairobi. It aims to offer a detailed understanding of the study population by exploring key attributes, including age, gender, university attended, place of residence, mode of study, and the feeling of being supported by the family.

The age composition of first-year undergraduate students varied across studies and contexts, reflecting diverse student populations. In this study, participants ranged from 16 to over 40 years old. Most were between 16 and 25 years of age (51.6%), followed by those aged 26 to 30 (42.4%). While it was encouraging to see mature students represented, younger students still made up the largest share. This demographic balance hints at a continuing trend as university

remains a common and immediate next step for many after high school. Such trends likely reflect the typical educational trajectory, where students transition directly from high school to university. This finding suggested that first-year undergraduate classes are largely composed of younger individuals. On the other hand, the gender distribution of respondents was nearly balanced, with females slightly outnumbering males, 200 females (52.4%) and 182 males (47.6%). This slight female majority may reflect broader enrollment patterns in certain academic programs or a higher response rate among female students, which can influence the overall representation and insights drawn from the data.

As it pertains to place of residence, 135 students (35.3%) reported living in hostels, 120 students (31.4%) in family homes, 86 students (22.5%) in rental houses, 31 students (8.1%) in shared accommodations, and 10 students (2.6%) in other types of housing. These figures reflect a diverse range of living conditions, with hostels being the most common. This distribution may reflect institutional arrangements that prioritize hostel accommodation or students' preferences for proximity to campus and academic resources. Additionally, the presence of students in family homes and rental units highlighted the varying degrees of independence, support, and environmental factors that may influence their academic experiences and stress levels.

A significant majority of respondents in this study were full-time students, with 295 students (77.2%), while only 87, accounting for 22.8%, were enrolled in part-time programs. This preference likely reflected a desire to fully engage with campus life, academic resources, and social networks during the critical transition into higher education. Besides, most participants n = 341 (89.3%) reported feeling supported by their family, while only n = 41 (10.7%) indicated a lack of support. This highlights that a strong majority of students perceived familial support as a key factor in their university experience.

5.3 Levels of Self-Directed Learning Readiness among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County.

This section presents findings from the first objective, which assessed Self-Directed Learning Readiness (SDLR) among first-year undergraduates in Lang'ata Sub-county. The results reveal an intriguing, polarized distribution of SDLR. Specifically, n = 166 (43.5%) of students scored below average (58–201), n = 61 (16.0%) fell in the average range (202–226), and n = 155 (40.5%) scored above average (227–290). This nearly split even between low and high readiness categories, alongside a noticeable dip in the average group, highlighted a distinct divide within the cohort. The mean SDLR level was 1.97 with a standard deviation of 0.917, reflecting substantial variability within the group and supporting the notion of two distinct subpopulations regarding readiness for self-directed learning.

The polarized pattern revealed among first-year undergraduate students in Lang'ata Sub-county suggests that students in this setting are either well-prepared to engage autonomously with their learning or face significant challenges in doing so, with relatively few demonstrating moderate readiness. The polarized findings align closely with Premkumar et al. (2018), who reported an almost identical polarized distribution among Indian medical students: n = 166 (43.5%) scored below average (58 - 201), n = 61 (16.0%) fell in the average range (202 - 226), and n = 155 (40.5%) scored above average (227 - 290). The consistency across these studies, conducted in different contexts, underscores the presence of distinct readiness groups rather than a uniform continuum in self-directed learning skills among students.

In contrast, a study by Sadeghi et al. (2024) conducted in Khyber Pakhtunkhwa, Pakistan, presented a different picture. Among undergraduate medical students, 61.3% exhibited good readiness for self-directed learning, 38.2% showed average readiness, and only 0.5% fell into the

poor readiness category. This distribution was skewed toward higher levels of readiness, indicating that most students in that context were well-prepared for self-directed learning tasks. Moreover, Yang et al. (2024), in their study in China, concluded that students had an average self-directed learning ability score of 87.12 ± 9.20. Differences in students' readiness for self-directed learning are frequently influenced by factors such as their educational environments, demographic characteristics, and cultural backgrounds, all of which play a role in shaping their ability to become autonomous and prepared for independent study (Cadorin et al., 2017). This distinction shows that learner readiness can be very different in various contexts. It also raises questions about how local factors might affect students in ways that are not easy to predict or understand. In general, this highlights the complexity involved in understanding how students prepare themselves for independent learning.

Self-Determination Theory (SDT) explains that motivation for self-directed learning depends on the satisfaction of three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2015; Werth & Williams, 2021). In this study, the polarized distribution of SDLR suggests that some students experienced high levels of autonomy and competence, feeling confident and in control of their learning, which supports strong intrinsic motivation. Conversely, students with low SDLR likely face unmet needs in these areas, resulting in lower confidence and motivation to direct their learning independently. Relatedness, the feeling of connection and support from peers and instructors also plays a critical role in fostering a supportive learning environment that encourages autonomy and competence. The distinct separation between low and high-readiness groups could be attributed to differences in how well students' psychological needs are met within their educational and social environments, including teaching approaches, peer interactions, and institutional support systems. These varying levels of

satisfaction contribute to the formation of two subpopulations rather than a continuous range of readiness. SDT thus provides a comprehensive framework to understand the underlying motivational differences that explain the variability in students' readiness for self-directed learning in this context.

5.4 Levels of Student Stress among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County.

This section, which was the second objective, discusses the levels of student stress among first-year undergraduate students in private universities in Lang'ata Sub-county. The study revealed that most of the students experienced moderate levels of stress. Specifically, 268 students (70.2%) scored within the moderate stress range (81 – 121), 87 students (22.8%) fell within the mild stress category (scores ranging from 40 to 80), and 27 students (7.1%) reported severe stress, with scores between 122 and 160. The overall mean stress level was 1.84 with a standard deviation of 0.524, suggesting that most students experienced stress levels clustered around the moderate range, with relatively low variability in stress scores among the students. These findings indicated a dominant pattern of moderate stress among most respondents. The distribution of scores also showed that only a small proportion of students reported extreme stress levels, either mild or severe.

Comparative studies from various regions demonstrate that moderate stress is a prevalent issue among university students worldwide. In Pakistan, Asif et al. (2020) found that undergraduate students reported average scores of 15.08 for depression, 18.24 for anxiety, and 19.02 for stress. The prevalence rates were 75% for depression, 88.4% for anxiety, and 84.4% for stress, indicating widespread psychological distress. These figures suggest that mental health

challenges are deeply embedded in the student experience, potentially affecting academic performance and overall well-being. A similar trend was observed in a study conducted at Sultan Qaboos University in Asia, where Alkhawaldeh et al. (2023) reported that 75.1% of students experienced moderate stress, 13.5% severe stress, and 11.4% mild stress. The distribution of stress levels in this context highlighted that most students were coping with persistent, manageable levels of stress that could escalate without proper support.

Likewise, in Kenya, Josiah et al. (2018) found that 64.4% of students at the University of Nairobi reported moderate to high stress levels, while 35.6% experienced low stress. This finding reinforces the notion that stress among university students is not limited to specific regions but is instead a widespread phenomenon influenced by common academic and social pressures. These consistent findings across diverse cultural and geographic contexts suggest that academic demands such as examinations, workload, and performance expectations are key stressors for students. The pattern observed reflects the pervasive nature of student stress, indicating a shared experience that transcends cultural and regional boundaries.

In contrast, Garett et al. (2017) reported that freshmen students in the United States experienced high stress level of 3.4 (SD = 0.99), indicating relatively elevated stress within this group. While these levels suggest notable psychological strain, it is important to consider the broader context in which students experience stress, including cultural norms around coping and institutional support systems. However, the extent of stress can vary dramatically between regions. For instance, the situation appears even more severe in Malaysia, where Azudin et al. (2023) found that an overwhelming 91.5% of students experienced high stress levels. This stark contrast between regions underscores that student stress is not uniform but is shaped by diverse cultural, social, and institutional influences. The multifaceted nature of student stress reflects the varying

local pressures and expectations that students face across different countries. When stress levels remain elevated over time, they can significantly affect students' mental health and academic performance, highlighting the importance of contextualizing stress within each unique environment.

Self-efficacy theory (SET), introduced by Bandura (1977), focuses on an individual's confidence in their ability to carry out actions necessary to handle future situations successfully. When applied to student stress, this theory helps explain how students interpret and respond to academic and environmental challenges. The current study found that 268 (70.2%) of first-year students in Lang'ata Sub-county experienced moderate stress, indicating that many students faced considerable demands that tested their coping abilities. According to Dong (2024) and Peng (2023), students with strong self-efficacy are more likely to view challenges as manageable opportunities, which enables them to employ effective coping mechanisms. In contrast, students with lower self-efficacy may perceive the same stressors as overwhelming, leading to increased stress levels.

Differences in stress levels reported in other regions for example, the higher stress among freshmen in the United States documented by Garett et al. (2017) and the high-stress prevalence found in Malaysian students by Azudin et al. (2023) may reflect variations in collective self-efficacy shaped by cultural, social, and institutional influences. Therefore, SET provides a valuable framework for understanding how students' beliefs in their abilities to handle academic pressures relate to their experienced stress. It is important to recognize that students' confidence in managing challenges can either buffer or amplify stress responses, depending on their environment. This perspective helps explain why similar academic demands might lead to very different stress outcomes across diverse student populations.

5.5 Relationship Between Demographic Characteristics and Student Stress among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County.

Analyzing the relationship between demographic characteristics and Student Stress (SS) among first-year undergraduate students in Lang'ata Sub-county was the third objective. It provided meaningful insights into how various factors influence stress. This analysis considered key demographic characteristics such as age, gender, university attended, place of residence, mode of study, and support by family, contributing to a unique understanding of student stress within this specific context.

The Chi-square test showed a significant relationship between age and student stress ($\chi^2 = 44.654$, $df = 8$, $p < .001$), with students aged 26 - 30 experiencing the most moderate stress and severe stress concentrated among those aged 16 - 25. This suggested that younger students, particularly those in early academic or transitional phases, tend to experience higher stress possibly due to academic pressure and life adjustments (Smith et al., 2021; Lee & Larson, 2019).

Likewise, a significant relationship was found between the type of university attended and student stress, $\chi^2(6, N = 382) = 61.01$, $p < .001$, suggesting that institutional factors were associated with variations in student stress. This association may be influenced by differences in campus culture, availability of support services, and academic expectations. These results are consistent with findings by Ezelote et al. (2021), who reported a statistically significant association in stress prevalence and coping strategies between students at two Nigerian universities ($p < .001$), emphasizing the role of institutional context in shaping student well-being.

Furthermore, the mode of study (full-time versus part-time) was significantly associated with student stress, $\chi^2(2, N = 382) = 8.07$, $p = .018$, indicating that how students engage with their

academic programs is related to their stress experiences. The demands and structure associated with different study modes may contribute to elevated stress levels, as students often balance academic responsibilities with external commitments. Stang et al. (2025) also identified a significant relationship between study mode and stress, suggesting that academic load and life circumstances jointly influence students' psychological well-being.

A significant relationship was also found between place of residence and student stress, $\chi^2(8, N = 382) = 23.60$, $p = .003$, indicating that living arrangements may influence how students experience stress. Bhattacharjee et al. (2021) likewise reported a significant association between residential conditions and mental health outcomes, reinforcing the role of living environments in shaping stress among university students.

The relationship between gender and student stress was not statistically significant, $\chi^2(2, N = 382) = 1.68$, $p = .432$, suggesting similar stress experiences across male and female students in this sample. This aligns with Amankwah et al. (2022), who also found no significant association between gender and stress among university students in Ghana, $t(938) = –0.752$, $p = .452$. However, Mutinta (2022) reported a significant relationship between gender and mental distress, indicating that contextual factors may shape how stress is experienced.

Equally, the relationship between perceived family support and student stress was not statistically significant, $\chi^2(2, N = 382) = 1.75$, $p = .417$, indicating that family support may not play a central role in stress regulation within this context. However, McCurdy et al. (2021) established a significant relationship between family support and reduced stress, suggesting that the role of family support in student well-being may depend on cultural and contextual factors. In summary, age, type of university, place of residence, and mode of study were all significantly related to student stress, whereas gender and feelings of perceived family support were not.

These results could be interpreted through Bandura's self-efficacy theory, which posits that individuals who believe in their ability to manage challenges tend to experience lower stress. The significant relationships between stress and factors such as age, university attended, place of residence, and mode of study may reflect variations in students' perceived coping capacities, a core element of self-efficacy. For instance, certain academic or living arrangements may limit opportunities for control, confidence, or effective time management, thereby increasing stress. In contrast, the absence of a significant relationship between gender or family support and stress may indicate that students draw more on internal or alternative external resources such as peer networks or institutional services, which are not directly represented by these demographic variables. Overall, self-efficacy theory provided a valuable framework for understanding how students' beliefs in their own effectiveness relate to stress across different contexts.

5.6 Relationship between Self-Directed Learning Readiness and Student Stress among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County.

The fourth objective of this study was to examine the relationship between self-directed learning readiness (SDLR) and student stress (SS) among first-year undergraduate students in private universities within Lang'ata Sub-county. Pearson's correlation was used to explore this relationship.

The Pearson correlation analysis revealed a weak but statistically significant positive relationship, $r(382) = 0.231$, $p < .001$, indicating that as SDLR scores increased, student stress also tended to rise. While the correlation was significant at the 0.01 level, its strength was modest, suggesting only a slight association between the two variables. This outcome was unexpected, as self-directed learning is generally assumed to mitigate rather than contribute to stress. One

possible explanation for this finding lies in the increased demands that come with self-regulation. These challenges are frequently linked to reduced perceptions of academic competence, which may heighten anxiety and stress. This suggests that while SDLR promotes autonomy, it may simultaneously introduce new stressors, particularly for students adjusting to unfamiliar academic environments.

The current results diverge from most previous research, which has typically identified a negative relationship between SDLR and SS. For example, Li et al. (2022) in China reported a significant negative association ($\gamma = –0.39$, $p < .001$), implying that students with higher SDLR experience lower stress. This finding highlights the protective nature of SDLR, suggesting that students who are more autonomous in their learning tend to manage stress more effectively, a relationship not mirrored in the present study. Similarly, Chen (2023) found that students with greater levels of SDLR and self-efficacy experienced significantly lower academic burnout ($p < .01$). This supports the view that strong internal learning resources can mitigate emotional exhaustion, reinforcing the psychological benefits of self-regulated learning. Additionally, Kabir (2021), in a study conducted in Bangladesh, found that increased stress related to online learning corresponded with lower readiness for e-learning ($\beta = – 0.43$, 95% CI [– 0.66, – 0.20]). This suggests a reciprocal relationship, where heightened stress not only results from low SDLR but may also undermine the development of learning readiness. This underscores the need to support students' emotional and cognitive adaptability in digital contexts.

The discrepancy between the current study's findings and those of prior research may be attributed to contextual factors. Most existing studies have been conducted in Asian contexts, particularly among medical students, where educational systems, cultural expectations, and access to resources differ significantly from those in Lang'ata Sub-county. Factors such as limited access

to academic support, unfamiliar university expectations, or inconsistent instructional guidance may increase stress even among otherwise self-directed students. In reflecting on this, it becomes clear that students in Lang'ata may face challenges that go beyond academic skills alone. A student's ability to thrive in a self-directed learning environment seems to depend not only on internal readiness but also on the presence of a supportive and well-structured academic ecosystem.

These findings underscore the importance of contextualizing the relationship between self-directed learning readiness and student stress. While SDLR is often associated with increased motivation, academic engagement, and long-term success, it does not inherently guarantee lower stress across all educational environments, according to the current study. Notably, students who are highly self-directed may still encounter considerable stress if they lack adequate structural, instructional, or emotional support. For instance, environments with inconsistent feedback, limited access to academic resources, or unclear expectations may overwhelm students who are otherwise capable of managing their own learning, thereby increasing their stress.

5.7 Suggestion for Improving the Theory

The Self-Determination Theory (SDT) assumes that providing students with autonomy enhances motivation and reduces stress by satisfying three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000). However, findings from this study, conducted among first-year undergraduate students in Lang'ata Sub-county, challenge this assumption. A weak but statistically significant positive correlation, $r(382) = 0.231$, $p < .001$, was found between self-directed learning readiness and student stress. This indicates that students with higher readiness for self-directed learning, an indicator of greater autonomy, also reported higher stress.

This unexpected outcome suggests that autonomy, while central to SDT, may not uniformly lead to lower stress in all educational contexts. In this setting, students navigating new academic expectations, limited resources, and inconsistent instructional support may find that autonomy increases pressure rather than alleviating it.

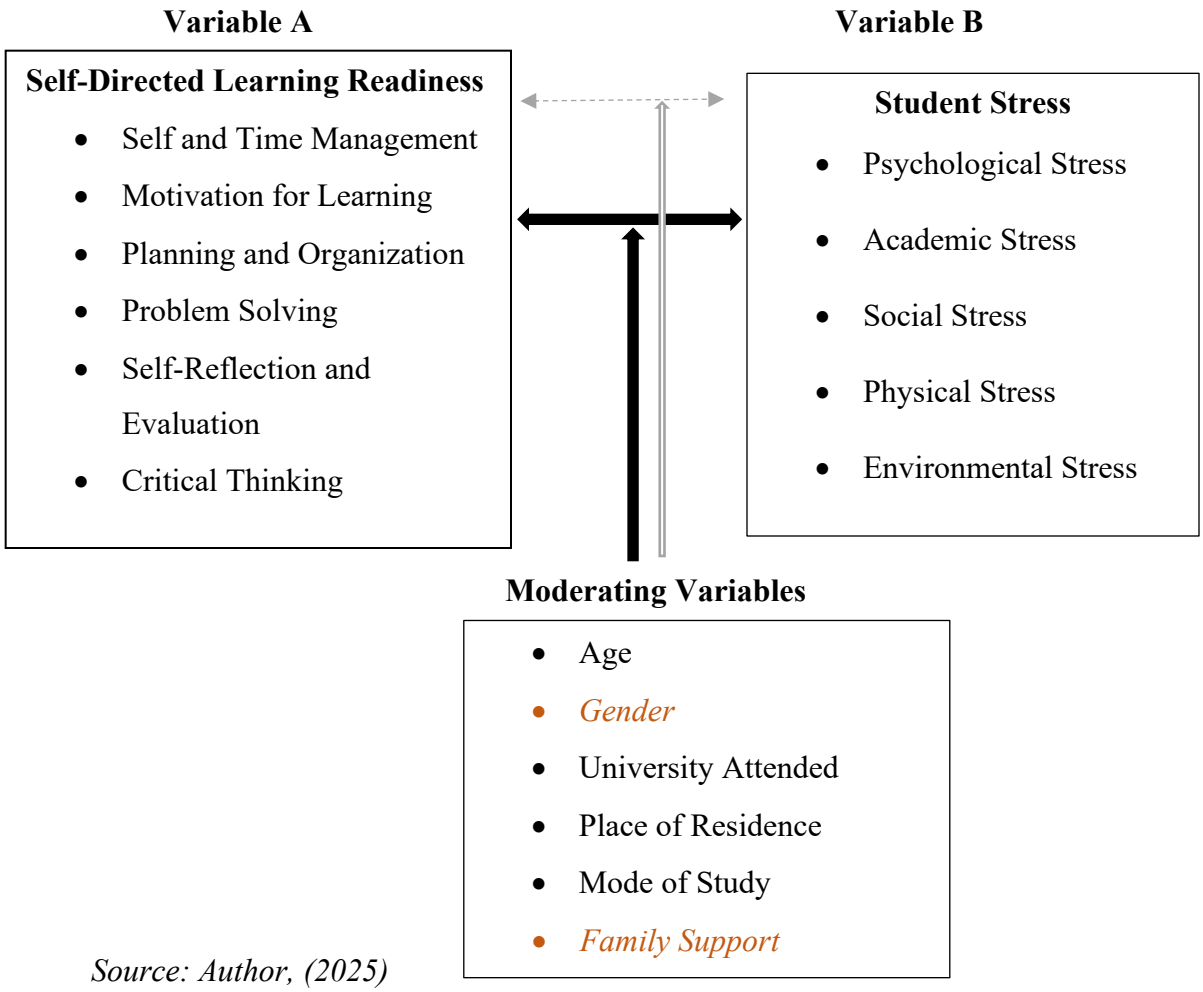
These findings raise important questions about how SDT functions in diverse academic environments. This is particularly those with different cultural and institutional dynamics from the contexts in which the theory was originally developed and validated. Much of the supporting evidence for SDT comes from Western and Asian educational systems, which may not reflect the lived experiences of students in private universities in Kenya. As such, while SDT offers a valuable framework for understanding motivation, the results from private universities within Lang'ata Sub-county indicate a need for theoretical refinement. A more context-sensitive and culturally responsive version of SDT could better account for the unique challenges students face. It should also provide a more accurate explanation of how autonomy, competence, and relatedness interact to shape stress and motivation in under-researched settings.

5.8 Revisited Conceptual Framework

As the study progresses, it is important to re-examine and critically evaluate the initial conceptual framework to determine whether it remains relevant considering new findings. This review will help assess whether the framework still accurately reflects the relationships between self-directed learning readiness and student stress, as well as the moderating effects of demographic factors. These factors include age, gender, university attended, place of residence, study mode, and perceived family support among first-year undergraduate students.

Figure 3

Relationship Between Self-Directed Learning Readiness and Student Stress



Source: Author, (2025)

The revised conceptual framework for this study illustrates the relationship between Self-Directed Learning Readiness and student stress, using bidirectional arrows to reflect the correlational nature of the study. These arrows are shown as dashed lines to indicate the weak but statistically significant and modest correlation observed between SDLR and SS, suggesting that while a relationship exists, it is not particularly strong. Specifically, the relationship indicates that as SDLR increases, SS tends to rise as well. The framework also identifies key demographic factors such as age, university attended, place of residence, and mode of study as significant

moderators of this relationship. Other variables like gender and family support are included but represented with distinct line styles to reflect their lack of significant relationship in this study.

5.9 Chapter Summary

This chapter has reiterated the key research questions that directed the study, re-examined the conceptual framework introduced in chapter two, and linked the results discussed in chapter four to existing scholarly literature. It has also proposed possible refinements to the theoretical model considering the study's outcomes. The concluding chapter will offer a summary of the findings, draw conclusions, and provide recommendations for future research and practical application.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

Chapter Six offers an integrated overview of the study's results by summarizing the main findings, outlining conclusions drawn from the data, and presenting specific recommendations. Its purpose is to consolidate the study's insights, provide practical guidance for relevant stakeholders, and identify directions for future research.

6. 2 Summary of Findings

The study investigated the relationship between self-directed learning readiness and student stress among first-year undergraduate students in Lang'ata Sub-county, Nairobi, Kenya. A quantitative research approach with correlational design was employed. Stratified random sampling was used to select a sample from a population of 387 undergraduate students from the Catholic University of Eastern Africa (CUEA), Riara University, Strathmore University, and Tangaza University. Data was collected using the Self-Directed Learning Readiness Scale, the Student Stress Inventory, and the researchers demographic characteristic questionnaire. The data was analyzed using SPSS (Version 25).

The study achieved a 98.7% response rate, with 382 participants completing the survey out of 386 intended participants. The demographic profile of the respondents showed age distribution as follows: 16 – 25 years, 26 – 30 years, 31 – 35 years, 36 – 40 years, and 41 years and above. In terms of gender, 200 respondents identified as female and 182 as male. Regarding the universities attended, 126 participants were from CUEA, 60 from Tangaza University, 144 from Riara

University, and 52 from Strathmore University. In terms of place of residence, 135 lived in hostels, 86 in rental houses, 120 in family homes, 31 in shared accommodations, and 10 in other residential settings. Among the participants, 295 were full-time students, while 87 were part-time. Additionally, 341 respondents reported feeling supported by their families, whereas 41 indicated they did not feel supported.

The first objective of the study was to determine the levels of self-directed learning readiness among first-year undergraduate students in private universities in Lang'ata Sub-county. The findings revealed a polarized distribution, with most students scoring either high or low on the readiness scale, and relatively few falling within the average range. The mean self-directed learning readiness (SDLR) score was 1.97 (SD = 0.917), indicating a near-even split between low and high readiness levels, with a noticeable dip in the average category. Specifically, 155 students scored above average, 61 scored within the average range, and 166 scored below average, according to the SDLR scale.

The second objective of the study sought to examine the levels of student stress among first-year undergraduate students at private universities in Lang'ata Sub-county. The results manifested the mean stress level was 1.84, with a standard deviation of 0.524, suggesting that most responses were clustered around the moderate range.

The third objective of the study was to examine the relationship between demographic characteristics and student stress among first-year undergraduate students in private universities in Lang'ata Sub-county. The findings revealed that certain demographic characteristics including age, university attended, place of residence, and mode of study had significant relationships with student stress. Precisely, significant associations were found for age, $\chi^2(8, N = 382) = 44.65$, $p < .001$; university attended, $\chi^2(6, N = 382) = 61.01$, $p < .001$; place of residence, $\chi^2(8, N = 382) =$

23.60, p = .003; and mode of study, $\chi^2(2, N = 382) = 8.07$, p = .018. In contrast, gender, $\chi^2(2, N = 382) = 1.68$, p = .432, and perceived family support, $\chi^2(2, N = 382) = 1.75$, p = .417, were not significantly related to student stress.

The fourth objective of the study was to examine the relationship between self-directed learning readiness and student stress among first-year undergraduate students in private universities in Lang'ata Sub-county. Pearson correlation analysis revealed a positive and statistically significant relationship, $r(382) = .231$, $p < .001$. This suggests that as self-directed learning readiness scores increase, student stress also tends to rise, although the association is relatively modest.

6.3 Conclusions

The study examined the levels of self-directed learning readiness and student stress among first-year undergraduate students, the relationship between demographic characteristics and student stress, and the relationship between the two variables. The conclusions which are in line with the findings not only capture the statistical and empirical evidence gathered but also provide critical insights into the implications of these findings for the first-year undergraduate students in Lang'ata Sub-county.

Based on the findings for the first objective, it can be concluded that first-year undergraduate students in private universities in Lang'ata Sub-county experience a polarized distribution of self-directed learning readiness levels, with most students scoring either high or low on the readiness scale, and relatively few falling within the average range. These findings call for targeted interventions to support students with low self-directed learning readiness and to foster balanced development across the student population.

Given the findings for the second objective, it can be concluded that first-year undergraduate students experienced moderate levels of stress, with a few exhibiting severe and low stress levels. These findings call for the implementation of proactive mental health support systems and stress management programs to address the needs of students, particularly those at risk of high stress.

Considering the findings for the third objective, it can be concluded that among first-year students in private universities in Lang'ata Sub-county, age, university attended, place of residence, and mode of study had significant relationship with student stress. However, demographic factors such as gender and perceived support from family did not appear to significantly relate to student stress.

Regarding the fourth objective, which aimed to measure the relationship between self-directed learning readiness and student stress among first-year undergraduate students in private universities in Lang'ata Sub-county, the study found a weak but statistically significant positive relationship. This indicated that as SDLR scores increased, student stress also tended to rise. These findings highlight the need for a balanced approach in promoting self-directed learning to ensure that increased readiness does not inadvertently contribute to higher stress among students.

This study reveals the complex relationship between SDLR and SS among first-year undergraduates in private universities in Lang'ata Sub-county. It emphasizes the need for both theoretical understanding and practical strategies to better support students' mental health. The findings suggest adopting a comprehensive approach that includes stress management programs and initiatives to develop self-directed learning skills, aimed at reducing stress and promoting overall student well-being among the first-year undergraduate students in Lang'ata Sub-county.

6.4 Recommendations

Based on the study's conclusions, the following recommendations are proposed:

First-Year Undergraduate Students: The findings of this study manifested the mean self-directed learning readiness level as 1.97 reflecting a near-even distribution between low and high readiness suggesting a polarized distribution in SDLR levels. This study recommends that to enhance self-directed learning readiness, students should begin by engaging in structured orientation programs that offer training in goal setting, time management, and independent study skills. Additionally, forming or joining peer study groups and mentoring relationships can foster collaborative learning and allow students with higher readiness to support those still developing these skills. Furthermore, students should be encouraged to actively seek academic advising and utilize available learning resources such as libraries, online tools, and workshops to strengthen their learning autonomy and confidence.

Student Support Systems: The study identified moderate stress levels among first-year students, pointing to a clear need for more robust and responsive support systems . Teaching staff, academic advisors, counselors, and mentors should use these insights to develop practical interventions that address both academic and emotional challenges. These should include supportive teaching approaches, accessible mental health services, structured mentoring, and skill-building opportunities. Emphasis should also be placed on effective communication, balanced workloads, and gradual academic support through scaffolding to ease students' transition into university. Collectively, these efforts should foster a more supportive and student-centered learning environment. Strengthening these systems not only improves student well-being but also enhances retention and academic performance over time.

Parents and Guardians: This study found that demographic characteristics were significantly related to student stress: university, residence, and mode of study. Parents and guardians should play an active role in supporting student well-being. They should encourage open communication, healthy routines, and help-seeking behavior. They should also stay informed about the student's academic progress, university environment, and living or study conditions, as these may vary depending on the student's age and level of independence. Parents should be mindful of key transitions, such as moving away from home or balancing part-time work, and tailoring their support accordingly. Finally, they should advocate for access to mental health and academic resources to help students manage stress and thrive both personally and academically.

University policymakers: Results of this study revealed a positive relationship between self-directed learning readiness and student stress, indicating that as students become more academically autonomous, their stress may increase. Policymakers should prioritize support structures such as mentorship programs, stress management workshops, and counseling services tailored to varying SDLR levels. Furthermore, institutions should adopt student-centered policies such as proactive academic advising, structured learning pathways, and early intervention systems to guide students while preserving independence. Ensuring balanced workloads, timely feedback, and inclusive teaching can also help reduce stress and support self-directed learning. By addressing both academic and emotional needs, universities can promote student success while minimizing stress.

6.5 Recommendations for Future Research

This study aimed to investigate the relationship between Self-Directed Learning Readiness and student stress among first-year undergraduate students in private universities within Lang'ata Sub-county. While this study utilized a quantitative design, a qualitative or mixed-methods approach could provide richer, more nuanced insights into students lived experiences. Focus groups or in-depth interviews could reveal how and why certain students struggle or thrive in self-directed learning environments and how that relates to their perceived stress.

Future studies should delve deeper into the specific internal and external factors that might explain the reasons behind an increase in self-directed learning readiness being associated with heightened student stress, as revealed in this study. This counterintuitive finding suggests that while students may be more prepared for autonomous learning, they might also experience increased pressure to perform, manage time independently, or meet higher personal and academic expectations.

Since this current study focused only on private universities, future studies could investigate whether students in public universities or from technical/vocational institutions exhibit similar relationships between SDLR and stress. Furthermore, comparative studies across faculties including health sciences versus humanities may reveal domain-specific stressors or readiness disparities.

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APPENDIX A

Informed Consent

Tangaza University

Title of Research: Relationship Between Self-Directed Learning Readiness and Student Stress Among First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County, Nairobi, Kenya

- This research is being done as a requirement for the counselling psychology master's degree
- The supervisors have given their approval. (Contact: iysma@tangaza.org)
- Informed Consent: The participant will be informed about the study's purpose, procedures, risks, and benefits, after which you can voluntarily agree to participate. It takes roughly 10 to 15 minutes to participate in the study.
- Confidentiality: All respondents' identities are entirely protected. Each participant's results will only be published in aggregate form; they will not be presented separately.
- Right to Withdraw: Your participation in this study is entirely optional and there is no penalty or consequences for withdrawing.
- Minimization of Harm: The researcher will ensure that any potential harm or discomfort to participants will be avoided and minimized, and that the benefits of participation outweigh any risks.
- Debriefing: The researcher will provide debriefing for any participants who request it to process any difficult emotions that may arise.

Name of the researcher: Kitetu Annah Mukeli

Position of the researcher: Student in Master's Degree Programme

Address of the University:

Tangaza University, Lang'ata, Nairobi, Kenya, 15055-00509,

Telephone number of the Program Leader:

Signed by researcher……...Date……..…

Statement to be signed by the participant

I approve that the coordinator has provided a thorough explanation of the undertaking and the actions I am required to embark on. I have gotten a communication sheet and possess satisfactory chance to ask for clarity about the research.

- I believe that my partaking is freely chosen, and I may retreat at any moment without explaining.
- I agree to participate in this project by engaging in the interviews.

[Participant's Signature] _____ Date: _____

APPENDIX B

Questionnaire for First-Year Undergraduate Students in Private Universities in Lang'ata Sub-County

Section A. Participant Demographic Information

Please select the most appropriate response to the following questions by marking (√) the corresponding option.

1. What is your age? ☐

2. Gender: Female ☐

Male ☐

3. What is the name of your university: CUEA ☐

Tangaza University ☐

Riara University ☐

Strathmore University ☐

4. Where do you stay? Hostel ☐

Rental houses ☐

Family ☐

Shared accommodation ☐

Others ☐

5. What is your mode of study? Full-time study ☐

Part-time study ☐

6. Do you feel supported by your family? Yes ☐

No ☐

Section B - Self-Directed Learning Readiness

For each statement, please circle how much you agree or disagree with that statement. Use the following scale:

1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

No.	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7	I solve problems using a plan.	1	2	3	4	5
8	I prioritize my work.	1	2	3	4	5
9	I have critical curiosity.	1	2	3	4	5
10	I have a deep desire for lifelong learning.	1	2	3	4	5
11	I see connections between ideas.	1	2	3	4	5
12	I can find meaning in the material.	1	2	3	4	5
13	I evaluate my work.	1	2	3	4	5
14	I persist in challenging tasks.	1	2	3	4	5
15	I use multiple resources to find answers.	1	2	3	4	5
16	I can set goals for myself.	1	2	3	4	5
17	I am open to new ideas.	1	2	3	4	5
18	I am organized in my work.	1	2	3	4	5
19	I enjoy learning new things	1	2	3	4	5
20	I can work independently.	1	2	3	4	5
21	I seek feedback to improve my work.	1	2	3	4	5
22	I have confidence in my ability to learn.	1	2	3	4	5
23	I am flexible in my approach to learning.	1	2	3	4	5
24	I take responsibility for my own learning.	1	2	3	4	5
25	I have a positive attitude towards learning.	1	2	3	4	5
26	I can manage my time effectively.	1	2	3	4	5

27	I am willing to try different learning strategies.	1	2	3	4	5
28	I seek opportunities to learn.	1	2	3	4	5
29	I reflect on my learning experiences.	1	2	3	4	5
30	I can apply my learning to new situations.	1	2	3	4	5
31	I use mistakes as a learning opportunity.	1	2	3	4	5
32	I have a sense of responsibility for my progress.	1	2	3	4	5
33	I ask questions to clarify my understanding.	1	2	3	4	5
34	I enjoy the challenge of learning.	1	2	3	4	5
35	I am self-motivated.	1	2	3	4	5
36	I set high standards for my work.	1	2	3	4	5
37	I can work at my own pace.	1	2	3	4	5
38	I am capable of self-assessment.	1	2	3	4	5
39	I am committed to my learning goals.	1	2	3	4	5
40	I seek out additional resources for learning.	1	2	3	4	5
41	I am proactive in solving problems.	1	2	3	4	5
42	I value learning as a means of personal growth.	1	2	3	4	5
43	I am curious about new topics.	1	2	3	4	5
44	I have a plan for my learning activities.	1	2	3	4	5
45	I manage distractions effectively.	1	2	3	4	5
46	I adapt to changes in learning situations.	1	2	3	4	5
47	I maintain a positive mindset towards challenges.	1	2	3	4	5
48	I use a variety of learning strategies.	1	2	3	4	5
49	I evaluate the effectiveness of my learning strategies.	1	2	3	4	5
50	I have clear objectives for my learning.	1	2	3	4	5
51	I am diligent in my studies.	1	2	3	4	5
52	I take the initiative in learning.	1	2	3	4	5
53	I am open to feedback.	1	2	3	4	5
54	I am disciplined in my learning habits.	1	2	3	4	5

55	I understand my learning needs.	1	2	3	4	5
56	I am committed to continuous improvement.	1	2	3	4	5
57	I integrate new information with what I already know	1	2	3	4	5
58	I am willing to take risks in learning.	1	2	3	4	5
59	I can identify my strengths and weaknesses.	1	2	3	4	5
60	I use available resources effectively.	1	2	3	4	5
61	I can concentrate on my work.	1	2	3	4	5
62	I have a passion for learning.	1	2	3	4	5
63	I engage in self-reflection.	1	2	3	4	5
64	I pursue learning goals with determination.	1	2	3	4	5

Section C: Student Stress Inventory

Read each statement and circle that best describes your experiences.

1 = Never (N); 2 = Somewhat frequent (SF); 3 = Frequent (F); 4 = Always (A)

Below is a list of the ways you may have felt or behaved over this semester. Please circle one answer in each box:

No	Item	N	SF	F	A
	Physical				
65	Headaches	1	2	3	4
66	Back pain	1	2	3	4
67	Sleep problem	1	2	3	4
68	Difficulty breathing	1	2	3	4
69	Excessive worry	1	2	3	4
70	Stomach pain/nausea	1	2	3	4
71	Constant tiredness/fatigue	1	2	3	4
72	Sweating/sweaty hands	1	2	3	4
73	Frequent cold/flu/fever	1	2	3	4
74	Drastic weight loss	1	2	3	4
	Interpersonal Relationship				
75	I find it difficult to meet my high parents expectation	1	2	3	4

76	My parents treat me as a helpless person	1	2	3	4
77	I feel guilty if I fail to fulfill my parent's hope	1	2	3	4
78	My parents wish only for my success	1	2	3	4
79	I find it difficult to get along with groupmates in doing academic task	1	2	3	4
80	My friends did not care about me	1	2	3	4
81	I feel disturbed when having problems with my boyfriend/girlfriend	1	2	3	4
82	My family is not supportive	1	2	3	4
83	My lecturers/ teachers are not supportive	1	2	3	4
84	I feel frustrated by the lack of faculty management	1	2	3	4
	Academic				
85	I have a financial problem because of the expenses of the university	1	2	3	4
86	I find it difficult to juggle time between study and social activity	1	2	3	4
87	I feel nervous about delivering the class presentation	1	2	3	4
88	I feel stressed as the submission deadline neared	1	2	3	4
89	I feel stressed sitting for the examination	1	2	3	4
90	I find it difficult to juggle time between studying and society involvement	1	2	3	4
91	I lose interest towards courses	1	2	3	4
92	I feel the burden of academic workloads	1	2	3	4
93	I feel stressed dealing with difficult subject	1	2	3	4
94	I find it difficult to handle my academic problem	1	2	3	4
	Environmental				
95	I have a transportation problem	1	2	3	4
96	I feel stressed by the bad living conditions of the hostel	1	2	3	4
97	The surrounding noise distracted me	1	2	3	4
98	Pollution makes me uneasy	1	2	3	4
99	Hot weather makes me avoid going out	1	2	3	4
100	Messy living conditions distracted me	1	2	3	4
101	I feel frustrated with inadequate campus facilities	1	2	3	4
102	Crowding makes me feel uneasy	1	2	3	4
103	Waiting in a long line made me feel uneasy	1	2	3	4
104	I feel scared of being in an insecure place	1	2	3	4

APPENDIX C

Scale Use Authorization

Self-Directed Learning Readiness

Re: Permission to use Self-Directed Learning Readiness Scale

Mukeli Kitetu <kitetua@gmail.com> Thu, Sep 12, 2024, at 8:46 PM

To: guglielmino@rocketmail.com

Dear Dr. Guglielmino

I hope this message finds you well.

My name is Kitetu Annah Mukeli. I am currently a second-year master's degree student in the Counselling Psychology program at Tangaza University in Nairobi, Kenya.

I am writing to kindly request permission to use and modify your Self-Directed Learning Readiness Scale (SDLRS) for my research thesis. My study focuses on exploring the relationship between self-directed learning readiness and student stress among first-year undergraduate students.

I would greatly appreciate your approval of this adaptation and would be happy to provide any additional information if needed.

I look forward to your response.

Kind regards,

Kitetu Annah

APPENDIX D

Scale Use Authorization

Student Stress

Ref: Permission to use Student Stress Inventory

Mukeli Kitetu <kitetua@gmail.com> Thu, Sep 12, 2024, at 9:17 PM

To: shiksha2020@gmail.com

Dear Dr. Gadzella Bernadette,

I hope this message finds you well.

My name is Kitetu Annah Mukeli.

I am currently a second-year master's degree student in the Counselling Psychology program at Tangaza University in Nairobi, Kenya. I am writing to kindly request permission to use and modify your Student Stress Inventory for my research thesis. My study focuses on exploring the relationship between self-directed learning readiness and student stress among first-year undergraduate students.

I would greatly appreciate your approval for this adaptation and would be happy to provide any additional information if needed.

I look forward to your response.

Kind regards,

Kitetu Annah

APPENDIX E

Ethics Approval from Tangaza

TANGAZA UNIVERSITY

Teaching Minds, Touching Hearts, Transforming Lives.....

REF: TU/ISERC2025/01/0049 14th February 2025

To: Kitetu Annah Mukeli, Reg. No. Reg. No. YS79/00038/2023

Dear Kitetu,

Re: *"Refattonship Between left-Directed 1.earni"ng Readiness and :Stadent :Stress Ainonp Fimt-Year ttndergroduote learners in Private ttnizersities in Lonp'oto Sub-County, Nairobi, Kenya".*

This is to inform you that TU-ISERC has reviewed and approved your above research proposal. Your application approval number is *TU/f:fiERC202E/0J,/0049.* The approval period is 14t' February 2025 - 15'h February 2026. This approval is subject to compliance with the following requirements;

1. Only approved documents including (informed consents, study instruments, NITA) will be used
2. All changes including (amendments, deviations, and violations) are submitted for review and approval by TU-ISERC.
3. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to TU-ISERC within 72 hours of notification.
4. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to TU-ISERC within 72 hours
5. Clearance for export of biological specimens must be obtained from relevant institutions.
6. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
7. Submission of an executive summary report within 90 days upon completion of the study to TU-ISERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-Rortal.nacosti.so.ke and also obtain other clearances needed.

Yours sincerely

Dr. Daniel M. Kitonga (Ph.D., MBA)

Chair, TU - ISERC

TANGAZA UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE (TU-ISERC)
14 FEB 2025
P. O. Box 15055-00509
NAIROBI-KENYA

APPENDIX F

Letter of Introduction To NACOSTI

TANGAZA UNIVERSITY

Teaching Mirids, Touching Hearts, Transforming Lives.....

OFFICE OF THE CHAIRMAN

TANGAZA UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICS REVIEW COMMITTEE

E-mail: iserc anoaza ac.ke Website: www.tannaza.ac.ke

OUR Ref: TU/ISERC2025/01/0049 Date: 14th February 2025

The Commission Secretary,
National Commission for Science, Technology and Innovation
P.O. Box 30623,
Nairobi — Kenya.

Dear Sir/Pladam,

Re: Recommendation for Research Permit - Kitetu Annah Mukeli

This is to confirm that Kitetu Annah Mukeli is a PI in a researcher protocol which was submitted to TU-ISERC for review. The protocol was reviewed and approved for research permit.

Kitetu wishes to carry out a research under the title *"Relationship Between Set-Directed learning Readiness and Student Stress Among First-Year ttndergraduate learners in Private Ltnizersities in I.ang"ata :Sub-County, Nairobi; Kenya".*

I strongly recommend Kitetu Annah Mukeli to the Kenyan National Commission for Science, Technology and Innovation for issuance of a research permit. The permit will enable her to proceed to data collection for her study. Thanking you in advance for your cooperation.

Yours sincerely,

Dr. Daniel M. Kitonga (Ph.D., MBA)
Chairperson, TU-f:fiEPC

TANGAZA UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE (TU-ISERC)
★ 14 FEB 2025 ★
P. O. Box 15055-00509
NAIROBI - KENYA

APPENDIX G

NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **547172**

Date of Issue: **11/March/2025**

RESEARCH LICENSE

This is to Certify that Ms.. Annah Mukeli Kitetu of Tangaza University , has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: Relationship Between Self-Directed Learning Readiness and Student Stress Among First-Year Undergraduate Learners in Private Universities in Lang'ata Sub-County, Nairobi, Kenya. for the period ending : 11/March/2026.

License No: **NACOSTI/P/25/416547**

547172

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

APPENDIX H

Sample Letter Requesting Approval to Conduct Online Research

Kitetu Annah Mukeli
Tangaza University
Nairobi

24th February 2025

Deputy Vice Chancellor – Research and Innovation
Strathmore University
Nairobi

REF: Request to Conduct Online Study

Dear Deputy Vice Chancellor,

I am a master's degree student in Counseling Psychology at Tangaza University conducting a study on *"The Relationship Between Self-Directed Learning Readiness and Student Stress Among First-Year Undergraduate Students."*

I kindly request your approval to carry out this online research among first-year undergraduate students at your university. The study will be conducted with full respect for institutional guidelines, and all data collected will remain confidential and used solely for academic purposes.

Please let me know if there are any procedures I should follow. I appreciate your consideration and look forward to your response.

Yours faithfully,

Kitetu Annah Mukeli

APPENDIX I

Letters of Permissions from Universities

Permission from Daystar – Pretest

DAYSTAR UNIVERSITY
Excellence · Transformation · Servant-Leadership

Nairobi Campus
P.O. Box 44400 - 00100, GPO
Nairobi, Kenya.

Athi River Campus
P.O. Box 17 - 90145
Athi River, Kenya.

Tel: 0709 972 000
0716 170 313
0748 100 759
0724 256 408

E-mail: admissions@daystar.ac.ke OR
info@daystar.ac.ke

Website: www.daystar.ac.ke

7th April 2025

Annah Mukeli
Strathmore University
NAIROBI

Dear Annah,

RE: **PERMISSION TO CONDUCT A PILOT STUDY AT DAYSTAR UNIVERSITY**

Your request for permission to conduct your research entitled: ***"Relationship Between Self-Directed Learning Readiness and Student Stress Among First-Year Undergraduate Learners in Private Universities in Lang'ata Sub-County, Nairobi, Kenya"*** has been received.

We have examined your research proposal and have satisfactorily established the purpose of your research. We have also looked at your research tools critically and note that you have the relevant approval from your School.

Having done all the above, I wish to confirm that you have been granted permission to carry out the pilot study. The permission granted is for a period of one month from the date of this letter. Kindly share with the university the findings of this pilot study.

We wish you all the best in your pilot study and eventual completion of your research.

Yours sincerely,

Prof. Samuel Muriithi
Ag. Deputy Vice-Chancellor – Academic, Research & Student Affairs

Permission from CUEA

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

Office of the Deputy Vice-Chancellor
ACADEMIC & STUDENT AFFAIRS

OurRef: DVCA&SA/JMM/jm/024/2025

27th March 2025

Kitetu Annah Mukeli
Tangaza University
P. 0. Box 15055-00509
Nairobi, Kenya

Dear Kitetu,

Re: Permission to Collect Data at The Catholic University of Eastern Africa (CUEA)

Greetings from The Catholic University of Eastern Africa!

I am glad to inform you that your request to collect data from targeted participants at The Catholic University of Eastern Africa on the topic: ***"The Relationship between Self-Directed Learning Readiness and Student Stress among First-Year Undergraduate Learners in Private Universities in Lang'ata Sub-County, Nairobi, Kenya",*** has been granted. You are therefore expected to strictly observe the normal ethical cautions and discretions while conducting the research.

I wish you well with your study and I look forward to you sharing your findings with the Directorate of Research and Innovation of the Catholic University of Eastern Africa..

Sincerely,

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA
OFFICE OF THE DEPUTY VICE CHANCELLOR, ACADEMIC AFFAIRS & RESEARCH
P.O. BOX 62157 - 00200 NAIROBI
27 MAR 2025

Prof. Justus M. Munyoki
Deputy Vice Chancellor, Academic and Student Affairs
and Professor of Marketing

Cc. Director, Research

8 THE CATHOLIC UNIVERSITY OF EASTERN AFRICA (CUEA) P.O. BOX 62157 - 00200 Nairobi- KENYA
Tel: 0709 691 000/021, Fax: 8891084, Email: academics@cuea.eduWebsite:www.cuea.edu
Founded in 1984 by AMECEA (Association of Member Episcopal Conferences in Eastern Africa)

Permission from Riara University

27th March 2025

Kitetu Annah Mukeli

Dear Annah

Re: Request to Collect Data at Riara University

Greetings from Riara University

Your request to be allowed to collect data for your research titled "The Relationship between self-directed Learning Readiness and Student Stress among First-Year Undergraduate learners "at Riara University has been approved.

Please note that only approved data forms are to be used in the enrollment of individual consent. All consent forms signed by subjects/or witnesses should be retained on file. Further, any substantial changes in the scope of your research from what is presently provided will require approval from the University.

If the terms are acceptable to you, please sign a copy of this letter and return it to the office of the Deputy Vice Chancellor, Academic Affairs- Email: dvcaa@riarauniversity.ac.ke as soon as possible.

Regards

Prof. Wanja Tenambergen, PhD

Deputy Vice Chancellor, Academic Affairs

I, the undersigned hereby confirm acceptance of this offer and conditions stated herein

Signed.....

Date.....14th April 2025

Riara University, Mbagathi Way
P.O. Box 49940-00100 Nairobi, Kenya
Tel: +254 703 038 000 / 313
Email: dvcaa@riarauniversity.ac.ke
Website: www.riarauniversity.ac.ke
Facebook: Riara University
Twitter: @RiaraUniversity

Permission from Strathmore University

18th March 2025

Kitetu Annah Mukeli,
Master of Arts,
Counseling Psychology,
Tangaza University.
P.O. Box 150055 - 00509,
Langata South Rd, Nairobi.

Email: amukeli@strathmore.edu

Dear Annah Mukeli,

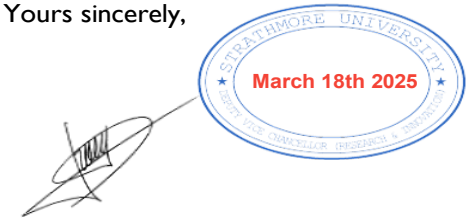
RE: AUTHORIZATION TO COLLECT DATA AT STRATHMORE UNIVERSITY

The Research and Innovation Department at Strathmore University has reviewed and granted you the authorization to collect data from 50 first-year undergraduate students for the purpose of the completion of your master's degree. The study *"The Relationship Between Self-Directed Learning Readiness and Student Stress Among First-Year Undergraduate Learners."* aims to investigate the relationship between self-directed learning readiness and student stress among undergraduate students in private universities in Lang'ata Sub-county, Nairobi, Kenya. The Office of the Dean of Students at Strathmore University will assist you with your data collection exercise.

The authorization is effective from **March 18th, 2025**, to **May 17th, 2025**.

Please sign the declaration form binding you to the ethical use of the data you collect from Strathmore University (meant strictly for the purposes of your study).

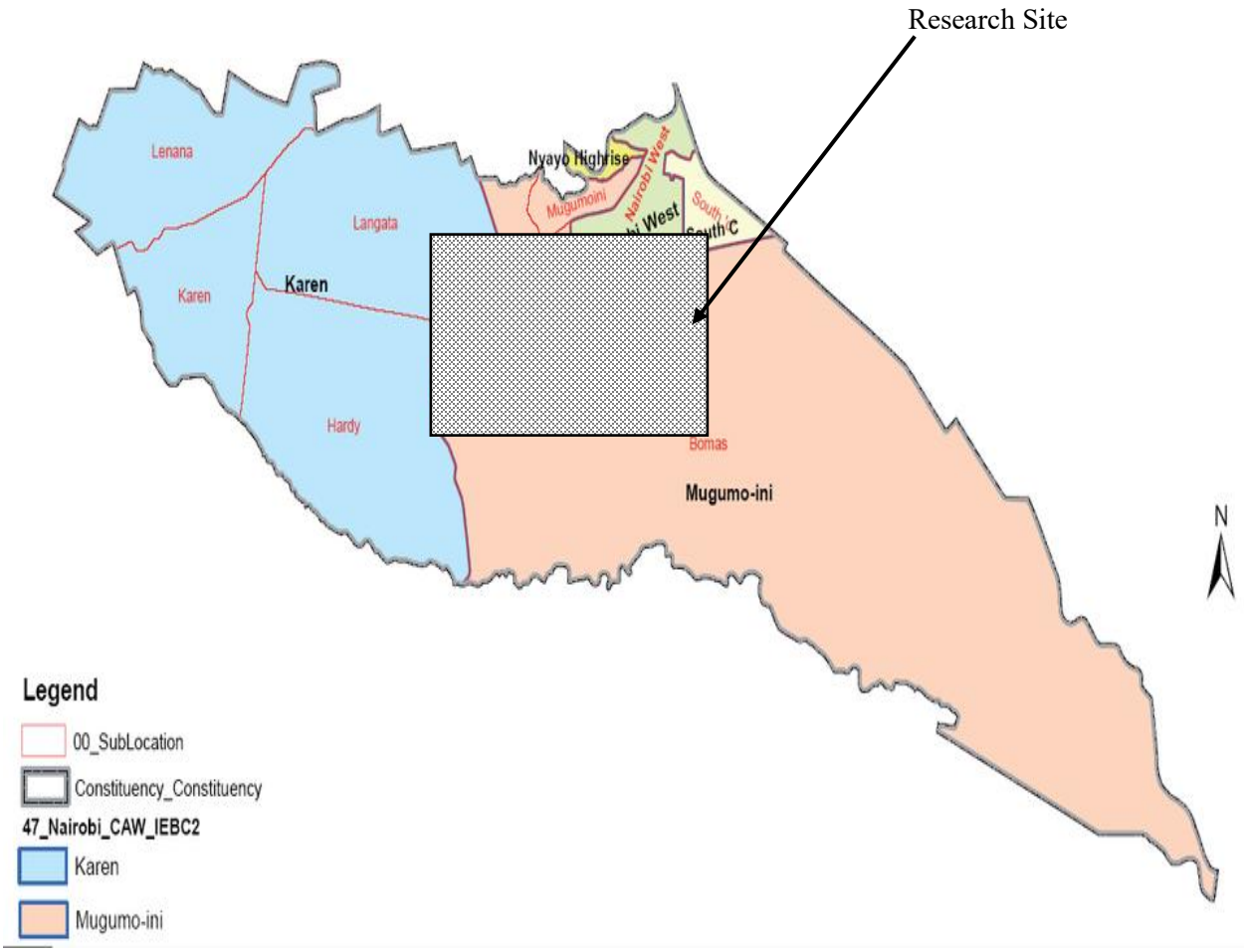
Yours sincerely,



Prof. Izael Da Silva
Deputy Vice-Chancellor - Research and Innovation

APPENDIX J

Map of Lang'ata Constituency



APPENDIX K

Plagiarism Report

Annah Kitetu

Relationship Between Self-Directed Learning Readiness and Student Stress Among First-Year Undergraduate Students in P...

Quick Submit

Quick Submit

Tangaza University College

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