ACADEMIC MOTIVATION AND SELF-REGULATION AS PREDICTORS OF STUDENTS' ONLINE LEARNING OUTCOMES IN SELECTED PUBLIC UNIVERSITIES OF WESTERN REGION OF KENYA

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A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of Educational Psychology School of Education, Masinde Muliro University of Science and Technology

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DECLARATION

I declare that this proposal is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

Signed: …….. **Date: ……..**

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REG NO: EDO/G/01-54954/2020

CERTIFICATION

The undersigned certify that they have read and hereby recommend acceptance of Masinde Muliro University of Science and Technology a proposal entitled **"Academic Motivation, Self-Regulation as Predictors of Students' Online Learning Outcomes OF Public Universities in Western region of Kenya."**

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DEDICATION

This thesis is dedicated to my sons, Robin, Roland, Ray, Samson, Junior and Jeremy for their tolerance and understanding during my long periods of absence from home and to extended family, aunties, uncles, my lovely brother Job for their Moral support and encouragement throughout the course.

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To my children, Robin, Roland, Ray, Samson, Junior and Jeremy, raising you is the best education I can ever have. Where your careers take you, whether to the courtroom, theatre, engineering or management, remember our heavenly father whom we draw our strength from. You encourage me to study hard even when I'm almost giving up.

Thank you!

ABSTRACT

Higher education institutions are undergoing radical transformations driven by the need to digitalize education and training processes rapidly. Universities continue to prioritize online learning as a means of meeting the diverse needs of students, ensuring accessibility, flexibility, and continuity in education. However, for students to effectively benefit from online learning, two crucial constructs play a pivotal role: academic motivation and self-regulation. These factors significantly influence students' ability to engage with, persist in, and succeed in online learning environment. Despite the growing emphasis on online education, many students in public universities in the Western region of Kenya face challenges related to self-discipline, engagement, and motivation, which affect their learning outcomes. Therefore, a need to establish the extent to which academic motivation and self-regulation predict students' online learning success. The purpose of this study was to investigate how academic motivation and self-regulation influence students' online learning outcomes in public universities within this region. Specifically, the study sought to: examine the influence of academic motivation on students' online learning outcomes, assess the impact of self-regulation strategies on students' online learning outcomes, and establish the relationship between academic motivation, self-regulation, and students' online learning outcomes. This study was guided by M.C. Cleland's and Atkinson's Need Achievement Theory. A mixed-methods research design was employed, targeting 4,536 respondents. The sample size was determined using Yamane's (1967) and Cochran's formula. Data was collected using questionnaires and key informant interview schedules. A pilot study was conducted to ensure reliability, with Cronbach's alpha used to test the internal consistency of research instruments. Face, content, and criterion validity of the instruments were ascertained. Data analysis involved correlation to assess relationships between variables and multiple regression to predict their interactions. The qualitative results from the interview showed that academic motivation and self-regulation influences students' online learning outcomes in public universities within this region. The results showed a strong positive relationship (correlation coefficients of 0.733 and 0.821, respectively) between students' online learning outcomes, academic motivation, and self-regulation behavior. This suggests that motivated and self-regulatedstudents are more likely to do better academically in online learning environments, as seen by the fact that students' online learning outcomes improve when their academic motivation rises. According to linear regression analysis, students' online learning results were positively and significantly impacted by both academic motivation and self-regulation behavior (regression coefficients of 1.137 and 1.271, respectively).The study found that self-regulation and academic motivation together explained around 75.2% of the variance in students' online learning results. For education stakeholders, these findings have important ramifications, especially when evaluating readiness for the competency-based curriculum (CBC) in Kenya by 2026, which includes the use of online learning techniques. The Teachers Service Commission (TSC), Kenya Institute of Curriculum Development (KICD), and Ministry of Education (MOE) may utilize these findings to create efficient teacher training plans for online instruction and to address challenges hindering the adoption of online learning.

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ABBREVIATIONS AND ACRONYMS

COVID 19	Corona Virus Disease 19
FGD	Focused Group Discussions
HEI	Higher Education Institutions
ICT	Information Communication Technology
KAFU	Kaimosi Friends University
KIBU	Kibabii University
KICD	Kenya Institute of Curriculum Development
MMUST	Masinde Muliro University of Science and Technology
MOE	Ministry of Education
MSLQ	Motivation Strategies for Learning Questionnaire
NACOSTI	National Commission for Science, Technology and Innovation
ODEL	Open and Distance Learning
ODL	Open Distance Learning
STI	Science Technology and Innovation
TSC	Teachers Service Commission
UNESCO	United Nations Educational, Scientific and Cultural Organization

CHAPTER ONE

INTRODUCTION

1.1 Overview

The chapter presents the background of the study, statement of the problem, objectives of the study, research questions, and significance of the study, scope of the study, assumptions, limitations, conceptual framework and definition of operational terms.

1.2 Background of the Study

Higher education institutions are undergoing radical transformations driven by the need to digitalize education and training processes in record time with academics that lack innate technological capabilities for online teaching (Aheto et al., 2021). Universities are required to strive to overcome this situation to be competitive and provide high-quality education during times of rapid digital transformation, disruptive technological innovations, and accelerated change especially due pandemics such as Covid-19 (Weyage, 2023). The measure to curb Covid-19 demanded restricted physical gathering in learning environments and this paved way for online learning systems in universities (Bundi, 2024).

The COVID-19 pandemic significantly disrupted traditional educational systems globally, including Kenya, where the shift to online learning became a necessity for continuity in education. During this period, students in public universities, particularly in

the Western Region of Kenya, faced various challenges such as limited access to technological resources, difficulties in self-regulation, and variations in academic motivation. These experiences highlighted the importance of understanding factors that influence online learning outcomes, such as self-regulation and academic motivation. As Kenya progresses towards Vision 2030 which aims to enhance education and training, addressing self-regulation and academic motivation challenges becomes crucial. This will help to achieve quality education and foster a conducive environment of effective online learning that equips students with necessary skills for the future (Weyage, 2023).

Higher learning institutions adopted e-learning systems to corroborate students and faculty's experiences during the COVID-19 pandemic. In a matter of weeks, entire education systems from elementary to higher education had completely adjusted to online teaching and learning (Ndwiga et al., 2024). The switch to online learning left many universities grappling academic achievement of students (Mishra & Koehler, 2006). Mishra and Koehler (2006) operationalized academic achievement as online learning outcomes measured by the constructs of frequency of attending online classes, taking exams, giving feedback and finally examined an analysis of results of online assessments.

According to UNESCO, Higher Education Institutions (HEIs) were closed completely in 185 countries in April 2020, affecting more than 1,000 million learners around the globe ((Marinoni et al., 2020). The reality of the new normal caused by COVID effects, led to a radical transformation of education and training such as digital transformation in global higher education (Dwivedi et al., 2011). E-learning took over once in-person instruction

was abruptly and forcibly discontinued. This pressure led to sudden pressure to quickly adjust to fully online learning environments (Carolan et al., 2020). Universities had to consider how to deliver high-quality education in the face of disruptive technological innovation, digital transformation, and rapid changes to the educational system.Many colleges struggled with disruptive educational innovation, which opened up new learning options and supplanted established teaching strategies and methods.

In the USA, Matuga (2009) and Aljuaid (2021) agreed that there was a complicated view of student's self-regulation towards completion of university course curriculum. Matuga (2009) defined self-regulation as student's ability to plan, monitor, and evaluate their own learning style, academic control beliefs and general student self-evaluation**.** Even though online programs had been implemented, it was not clear whether self-regulation and motivation influenced learning outcomes. The studies from the USA indicated that more studies were needed to be done to clearly map out the concept of self-regulation and academic achievement. By controlling their emotions and emotional influences, students with higher cognitive self-regulation performed better academically, according to earlier studies. They developed focused plans and were very motivated to learn.

Another perspective from Tanzania, Kisanjara et al. (2017) provided an integrated model for measuring the impact of e-learning on students' achievements in universities. Students' achievement was positively correlated with indicators including engagement, cognitive ability, performance expectations, control, fulfillment, enjoyment, self-worth, and confidence in the e-learning system.These findings applied to learners in Tanzania,

while this study changed location to Kenya and attempted to establish if the same constructs applied to the KAFU students' online learning outcomes.

Colleges and universities around the world have mostly embraced virtual lessons and Open and Distance e-learning (ODeL) by providing online courses. However, this was not the case in many public elementary and secondary schools, where classroom interactions between teachers and students were the preferred method of instruction. Kibuku (2020) presented some of the challenges such as: lack of adequate e-Learning policies, inadequate Information and Communication Technology (ICT) infrastructure, the ever evolving technologies, lack of technical and pedagogical competencies and training for e-tutors and e-learners, lack of an e-Learning theory to underpin the e-Learning practice, budgetary constraints and sustainability issues, negative perceptions towards e-Learning, quality issues, domination of e-Learning aims by technology and market forces and lack of collaboration among the e-Learning participants. Studies reviewed indicated challenges but it's not clear whether they emanated from students, lecturers or systemic ones (Wakanyi, 2023; Bundi, 2024; Weyage, 2023).

Rapid advancements in ICT improved university teaching and learning efficiency and educational access, which in turn raised student success. Improved academic attainment was linked to strong national economic growth, a shift to a knowledge-based economy, and meaningful employment for graduates. Because of this, the majority of governments and academic institutions in industrialized nations started making investments in ICTs, namely e-learning platforms. Because they shift the focus from teacher-centered to

student-centered teaching and learning, e-learning systems have become a significant phenomena in recent years (Aheto et al., 2024).

Furthermore, this change aids kids in improving their higher order thinking abilities, such as creativity, problem-solving, communication, and information processing. According to Wakanyi (2023) and Amukune (2022), the system does in fact alter the way that education is administered, taught, and learned. It facilitates the sharing of educational resources between staff and students, makes effective use of time, and enhances the quality of instruction. To determine if this is true for MMUST, KIBU, KAFU and Alupe students' online learning outcomes is the aim of the current study.

Online learning has to be accompanied by motivation of the learners. Weranga et al. (2020) defined motivation as the fundamental reasons of behavior. Weranga et al. (2020) also defined motivation as a state that energizes, directs, and sustains behavior. Motivation gets someone moving, points in a certain direction, and maintains him/her in a state to put much effort (Weranga et al., 2020). Motivation is power in learning that gives students power and strength to study (Amukune, 2022). Learning with passion encourages students to explore learning materials and achieve their potential, particularly when supervised by qualified teachers. Motivation requires a circumstance that may draw pupils in; it cannot be produced on its own. Students who are self-regulated convert their mental faculties into academic talents relevant to their tasks.

According to Cassidy (2011), the general influences of self-regulated on learning is student knowledge about themselves, the subject area, the task, strategies for learning and

the context in which they will apply learning. Other influence is intrinsic motivation to learn where students value learning and not just performance (Cassidy, 2011). Universities are still unable to find the link between motivation and online learning. The current study aims to ascertain the relationship between academic motivation, self-regulation, and learning outcomes.

Less study has been done on the learning result of academic achievement in online learning in Kenya. A study by Lyesenko et al. (2021) on learning outcomes defined online learning as student-lecturer engagement in the learning process using the internet, either synchronously or asynchronously. The researchers also shared their study's results, which indicated that e-portfolios might be an intervention that helps kids strive for success in school and beyond and move closer to the national goals established by Kenya Vision 2030.Use of software also draws on the broadened understanding of self-regulation including socially-shared self-regulation and co-regulation which may reinforce the contextual relevance of the e-portfolio (Lyesenko et al., 2021). Other studies done in Kenya voiced the challenges facing online learning and their outcomes (Muchanji, 2017; Kibuku et al.; Mabeya, 2020; Makokha&Mutisya, 2016; Mukhale, 2017).

The current study looked at online learning outcomes in general and specifically sought to link outcomes to self-regulation and academic motivations. This served as the basis for the current study because psychologists, educational researchers, and guidance and counseling specialists have all conducted research in these fields. However, public

universities in the western part of Kenya have not received much attention. Other driving factors that affected the caliber of the e-learning system at the universities were the participation of instructors, the accessibility of university support services, and the characteristics of the study space. The significance of learning outcomes based on online learning was underlined by the examined study. This study was therefore required to identify academic motivation and self-regulation as factors influencing students' online learning results at four universities in the western region of Kenya.

1.3 Statement of the Problem

The framework of Kenya's Vision 2030 required universities to introduce self-based learning as a method for teachers to interact with students and increase accessibility to education (Amukune, 2022). The COVID-19 pandemic, however, greatly expedited the transition to online learning., which necessitated the abrupt transition to digital learning platforms. Universities had to rapidly adopt technological solutions, including Learning Management Systems (LMS), video conferencing tools, and other e-learning resources to ensure continuity in education (Kariuki et al., 2024). While this transition aimed at sustaining academic progress, it posed significant challenges, particularly for students and educators who were unprepared for such a sudden digital shift.

Local studies highlighted several challenges encountered during this transition. For instance, infrastructure limitations, lack of digital literacy among both students and faculty, and internet accessibility issues were prevalent (Amukune, 2022). Additionally, student-related factors such as motivation and self-regulation played a crucial role in their

ability to successfully adapt to online learning environments. Despite being digital natives, many students struggled to stay engaged in online learning due to inadequate self-discipline, low intrinsic motivation, and difficulties in managing their own learning processes (Ferrandino, 2021). According to Ferrandino's survey of 2,742 university students, 31.4% (862 students) had to retake their online exams, while 16% consistently performed poorly despite multiple attempts. Furthermore, 48% were unprepared to undertake online assessments due to challenges in interacting with digital tools effectively.

Previous research have largely focused on technological and accessibility issues, with little emphasis paid to the psychological aspects of academic motivation and self-regulation as significant markers of online learning effectiveness. Examining the extent to which public university students have the self-control and drive required to thrive in online learning settings was essential in light of Vision 2030's mission to modernize education and improve the educational experience. Students may continue to experience difficulties with engagement and performance if these psychological aspects are not fully recognized and handled, undermining Vision 2030's goals of building a strong, cutting-edge educational system. Therefore, this study investigated the relationship between students' academic motivation and self-control and the results of online learning at public universities in Western Kenya. By tackling these psychological aspects, the study aimed to close current research gaps and support the creation of more student-centered, successful online learning interventions that align with goal 2030's goal for an innovative educational system.

1.4 Purpose of the Study

The purpose of this study was to examine the extent to which academic motivation and self-regulation predicts students' online learning outcomes in public universities of Western region, Kenya.

1.5 Objectives of the Study

The study was guided by the following specific objectives.:

i. To ascertain the extent to whichSelf-regulation behavior influences student online learning outcomes in Public Universities of Western region, Kenya.

ii. To establish the influence of Academic motivation on student online learning outcomes in Public Universities of Western region, Kenya

iii. To establish the influence of academic motivation and self-regulation on students online learning outcomes in Public Universities of Western region, Kenya.

1.6 Hypothesis of the Study

HO_1: Self-regulation behaviorhas no significant influence on students'online learning outcomes in Public Universities of Western region, Kenya.

HO_2: Academic motivation has no significant influence on students' online learning outcomes in Public Universities of Western region, Kenya.

HO_3: Academic Motivation and self-regulation behavior have no significant influence onstudents' online learning outcomes in Public Universities of Western region, Kenya.

1.7 Assumptions of the Study

The study was guided by the following assumptions:

i. The study made the assumption that students answered all questions on their academic motivation, self-regulation practices, and learning outcomes honestly and accurately.

ii. It was believed that the measures or techniques used to assess online learning outcomes, academic motivation, and self-regulation were reliable (generate consistent findings over time) and valid (measure what they are supposed to measure).

iii. The study made the assumption that Western Kenyan public university students had sufficient experience with online learning environments to offer insightful information about their online learning results.

iv. The study makes the assumption that the sample of students drawn from public universities in Western Kenya is typical of the broader student body in that area, enabling the results to be applied more broadly.

v. The participants in this study voluntarily took part in the investigation and provide accurate answers.

vi. The universities would have maintained current records of the actions and performance of their online learners.

1.8 Significance of the Study

The research contributes to the expanding field of online education by analyzing the influence of academic motivation and self-regulation on student performance. Although earlier research has examined these factors in developed nations, empirical data from the African context remains scarce. By concentrating on public universities in Kenya, the study offers context-relevant insights that address an essential void in educational research.

The research is based on well-established psychological and educational theories, including self-determination theory and self-regulated learning theory. It offers empirical evidence for these theories in an online learning context, thus improving their relevance across various cultural and institutional frameworks. The results aid in enhancing theoretical models by illustrating the interaction between motivation and self-regulation in affecting learning results in a digital learning environment.

The results provide essential insights for education policymakers to shape interventions and policies that improve student outcomes in online learning. The research emphasizes the significance of promoting self-regulated learning and intrinsic motivation via curriculum development, learner support systems, and teacher training initiatives. Strategies that tackle these psychological elements can result in more efficient and fair online learning experiences.

University leaders and educational managers can utilize the results to guide choices related to student assistance, curriculum development, and technological systems. Comprehending the functions of motivation and self-regulation can aid institutions in

creating strategies that improve student involvement and educational achievement, especially in remote or resource-limited settings.

The research paves the way for additional exploration into various psychological, social, and environmental elements that affect online learning. Future research might explore factors like digital competence, organizational assistance, or cultural impacts. Longitudinal studies could examine how motivation and self-regulation change over time and influence long-term academic success in online environments.

1.9 Limitation of the Study

The total number of useful responses was affected by low response rates and incomplete questionnaires. It was difficult to obtain a representative sample since some students were either unwilling to participate or did not complete the questionnaire. Emails and student messaging apps like Telegram and WhatsApp were used to send follow-up reminders, while class leaders and university contacts assisted in organizing participants.

The use of self-reported information on academic motivation and self-control increased the possibility of erroneous or biased answers. Due to social desirability or self-perception, participants may have overstated or understated their actions. The study used standardized measurement instruments to reduce this, and participants were given confidentiality and anonymity guarantees to promote truthful reporting.

Data collection was hampered by the academic calendar's time constraints. Survey distribution coincided with examination periods, semester breaks, and other academic responsibilities, reducing student availability. Greater participation was made possible by

extending the data collection period and modifying the scheduling to coincide with less difficult academic times.

During data collecting, problems with language and comprehension surfaced. Due to disparities in language skills or educational backgrounds, some students had trouble understanding some of the questionnaire's questions. To pre-test the instrument and add any problematic items, a pilot study was carried out. Clarifications were also provided to aid in understanding throughout distribution.

1.10 Scope of the Study

This study was conducted in four public universities in the Western region of Kenya: Masinde Muliro University of Science and Technology, Kibabii University, Kaimosi Friends University, and Alupe University. These universities were selected due to their strategic geographical locations within the region, as well as their active engagement in online learning platforms during and after the COVID-19 pandemic. The inclusion of these institutions was intended to capture a wide range of experiences and perspectives, reflecting the diverse student populations, resources, and technological infrastructure available. The selection of these public universities in the Western region of Kenya was based on their proactive engagement in online learning initiatives during the research timeframe, ease of data gathering, and representation throughout the counties in the area. By focusing on these universities, the study sought to explore how self-regulation and academic motivation influenced students' online learning outcomes, providing insights that could inform future educational strategies in the surrounding region.

1.11 Theoretical Review

The self-regulation theory, John Atkinson's Theory of Achievement Motivation, and the social cognitive theory served as the framework for this study.

1.11.1 Self-Regulation Theory

Self-Regulation Theory (SRT) was initially proposed by Albert Bandura in 1986 as part of his broader work on social cognitive theory. The theory posits that individuals actively regulate their thoughts, emotions, and behaviors in pursuit of set goals. Self-regulation involves multiple constructs, including goal setting, self-monitoring, self-efficacy, self-control, and self-reflection. These constructs collectively influence an individual's ability to manage their learning processes effectively.

According to the study, self-regulation is especially important in an online learning setting because students are required to individually manage their time, motivation, and study techniques. In order to succeed academically in online learning, students must demonstrate greater degrees of self-discipline and intrinsic drive than in traditional classroom settings. Thus, in virtual learning environments, self-regulation is a key indicator of students' academic achievement.

These are some ways that the SRT structures match the study variables. The ability of students to observe and modify their emotions, behaviors, and cognitive methods in order to improve learning outcomes is known as self-regulation. Students' perseverance and involvement in online learning activities are influenced by motivation, a crucial factor in determining self-regulatory behaviors. Academic outcome, the study's dependent variable, is affected by students' levels of motivation and self-control.

The relationship between the dependent variable (online learning outcomes) and the independent factors (academic motivation and self-regulation) is explained by the hypothesis. In particular, motivated and involved students are more likely to perform well academically in online learning when they have excellent self-regulation abilities.

However, Self-Regulation Theory has some limitations when applied to this study. One major limitation is the assumption that individuals have complete control over their learning behaviors and outcomes. In an online learning environment, external factors such as internet connectivity, institutional support, and technological proficiency also play a significant role, which the theory does not fully address. Furthermore, SRT primarily focuses on motivation as a central construct but does not comprehensively explain other external influences on academic performance.

Other theories, such the Social Cognitive Theory and the Achievement Motivation Theory, were incorporated into this study in order to overcome these constraints. SRT is enhanced by Social Cognitive Theory, which takes into account how social and environmental factors influence learning practices. In a similar vein, Achievement Motivation Theory builds on this discussion by investigating how both internal and external motivation impact students' academic performance and persistence in online learning. By combining many theoretical perspectives, this study provided a more thorough understanding of how academic motivation and self-regulation affect online learning outcomes among students at public universities in Western Kenya.

The application of Self-Regulation Theory in this research is warranted because it offers a solid framework for comprehending how learners manage their own educational processes, especially in online settings where independence and self-discipline are vital. This theory describes how students establish objectives, track their progress, and modify their actions to attain educational achievement, fundamental elements that closely connect to both academic motivation and self-regulation. By highlighting internal processes like goal-setting, self-monitoring, and self-efficacy, the theory clarifies how motivated learners adopt strategic learning behaviors that result in improved outcomes in online learning environments. The theory is woven into the research by directing the formulation of objectives, influencing the choice of variables, and influencing the analysis of results. It links academic motivation (as a catalyst for goal-oriented actions) and self-regulation (as the process that transforms motivation into productive learning methods), providing a clear perspective to analyze and forecast students' online learning results.

1.11.2 Mc Cleland's and Atkinson's Need Achievement Theory

The key concept of this theory is to explain why some people are more driven to succeed than others. Its foundation is comprised on two psychological principles: the desire for achievement and the desire to avoid failure (Werang et al., 2020). Achievement motivation determines how well pupils do in reaching high learning results. Learning and motivation can affect one another. Students will be more driven to keep studying after they gain knowledge and feel more competent. The ability, forces, energy, or complicated state and readiness of an individual to act in order to accomplish certain goals is known

as motivation. The need to improve one's skills in a certain activity is known as achievement motivation. Moreover, John Atkinson's theory of accomplishment motivation explains that an individual's attitude is determined by his expectations of obtaining something. The activity inspires worries of failure as well as optimism for achievement (Petrus et al., 2016). The two theories' strengths lie in their examination of the need to accomplish, the reason behind achieving, and the circumstances surrounding the individual that may stimulate motivation to succeed, rather than only focusing on motivation. The concepts emphasize how crucial the selected medium and the desired result are to increasing motivation.The theory's flaw is that, although it identifies demands for things like accomplishment, connection, and power, it ignores some of the most fundamental needs of people. This covers necessities like food, housing, and safety. If these fundamental wants are not met, then higher-level requirements like power may become unnecessary. These needs were controlled for in this study.

This study justifies the use of McClelland's and Atkinson's Need Achievement Theory as it offers a psychological basis for comprehending academic motivation and its role in propelling students towards success in demanding learning contexts like online education. The theory suggests that people who have a strong need for achievement tend to establish difficult goals, continue striving despite challenges, and take charge of their learningactions that strongly correlate with academic motivation and self-regulation. In online learning environments, where external structure is limited, this intrinsic motivation is crucial for student involvement and achievement. The theory aids the research by clarifying the motivational factors that affect students' desire to take initiative, oversee

their learning time, and maintain concentration in a digital environment. It is incorporated into the research by defining the conceptual framework, guiding the understanding of how motivational requirements convert into self-regulated learning actions, and assisting in clarifying differences in online learning results among students with varying achievement needs.

1.11.3 Self-regulation Theory and Mc Cleland's, Atkinson's Need Achievement Theory

The current study examined self-regulation and DOER learning strategies and the effect on learning outcomes. The study established the learning strategies that were used during the COVID 19 period, when face to face learning was not possible. Learners were to make personal effort in accessing learning online. This called for self-regulation and motivation otherwise learning would not be successful. The study was built on the two theoretical concepts broken down into goal setting, help seeking, self-study strategies, managing physical environment of study and motivation/effort regulation. Students who were able to set their own goals on when to complete assignments were self-regulated and had self-efficacy. One has to be willing to seek help in areas where they find difficulty because they want to be successful and reach their goals. To manage the study environment, in this case an environment of studying online without supervision takes a lot of self-regulation otherwise many students would not manage to attend classes on time and attempt all assignments effectively without both self-regulation and motivation to study.Self-efficacy has been a major focus of educational studies. Scholars have shown that self-officious students work more, endure longer, exhibit more optimism, accomplish

more, and experience less anxiety, independent of prior accomplishment or aptitude (Pajeres, 1997). According to research, educators should focus more on how students perceive their own level of competence than their actual level since perceptions have a greater chance of influencing students' motivation and future academic decisions. The decisions that students make in life and the path they choose are significantly influenced by their level of self-efficacy. Generally speaking, they shun activities in which they lack confidence and participate in those in which they do. This is especially important when students are in high school and college, when they have more academic possibilities.

The study examined on achievement motivation as the most effective strategy for fostering accomplishment behavior by fusing a strong desire for success with a decreased fear of failure. Because they believe they can complete the tasks, kids with high achievement motivation will select the most challenging assignments, giving them a sense of accomplishment. On the other hand, pupils with low accomplishment motivation typically select easy and straightforward assignments and put in little effort to succeed. When it comes to studying, motivation is what gives pupils the will and strength to study. Students who are fully engaged in their studies are more capable and are more inclined to investigate learning materials, particularly when supervised by qualified educators. Motivation is not created on its own; rather, it requires an environment that can draw in kids. First and foremost, kids study because they are curious and want to learn more. Secondly, pupils learn how to score well, advance to the next level, or receive a certificate.

The integration of both Self-Regulation Theory and McClelland's and Atkinson's Need Achievement Theory is warranted in this research since they together offer a thorough framework for grasping the internal mechanisms that affect students' results in online learning. Self-Regulation Theory describes how learners organize, track, and manage their learning activities abilities that are especially crucial in online environments where learners need to be independent and self-motivated. Simultaneously, Need Achievement Theory illuminates the motivating factors that encourage students to engage in and continue with academic tasks, especially those motivated by a strong need for achievement. Collectively, these theories explore how academic motivation (the drive to achieve) combines with self-regulation (the methods to achieve) to affect learning results. Incorporating these theories into the study directs the formulation of research goals and hypotheses, influences the conceptual framework, and guides the analysis by connecting motivation and self-regulation to quantifiable results in online learning settings. This combined theoretical framework improves the research's capacity to clarify not only what affects online learning success, but also how and why these elements function.

1.12 Conceptual Framework

As seen in Figure 1.1, the study employed a conceptual framework in which students' online learning outcomes were the dependent variable while academic motivation and self-regulation were categorized as independent variables.

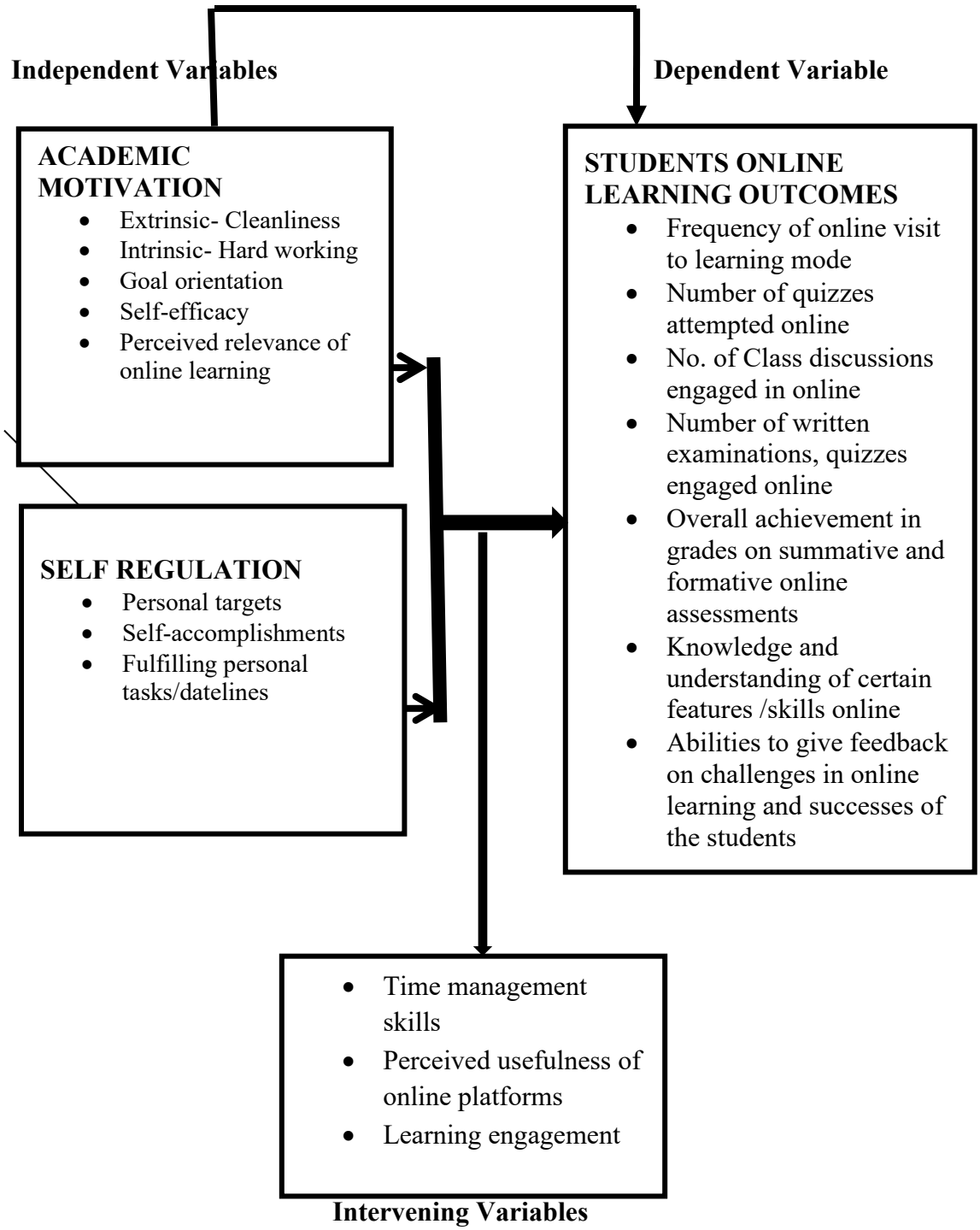

Figure 1. 1. Conceptual Framework

The conceptual framework in figure 1.1 above represents the researchers' conceptualization of how study variables interacted. The dependent variable was online learning outcomes. The independent variables were; students' academic motivation and self-regulation. Variables such as parental regulation on whether students will attend classes or not, college policies on attendance of classes up to certain points when one can be de-registered for the course, and government directives all influences levels of self-regulation and academic achievement in the use of online learning strategies. As for intervening variables, students who manage their time well due to high self regulation behavior are likely to meet deadlines thus success in online learning. Motivation and self regulation may determine how they value online learning tools such as goggle meet, zoom, smart phones, etc. Students who are motivated and have high self regulation behavior are likely to engage in learning activities such as discussions, self help to complete tasks.

1.13 Operational Definition Of Terms

Academic Motivation This refers to degree to which a student puts more effort on learning to obtain a successful online learning outcome in their respective university.

Digitization This refers to process of change from face-to-face learning towards online learning in the universities.

Digital Natives These refers to the category of students who have spent nearly their entire lives surrounded by computers and other digital devices and have the ability to comprehensively

	navigate through the online school systems.
Influence	This refers to ability and power to cause change on another, in this study self-regulation and academic motivation were studied as having influence on academic achievement
Online Learning	This refers to a process in which the student and lecturer engage in the learning process using the internet, synchronously or asynchronously
Online Learning outcomes	This refers to description of what the students will be able to demonstrate after the online program. The study referred to Bloom's Taxonomy of Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation as the areas of competency following the online learning classes, students' participation in online learning platform, number of exams attempted and learning outcomes from grades of formative and summative assessment
Self-regulation	This refers to student's ability to plan, monitor, and evaluate their own learning style, academic control beliefs and general student self-evaluation

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature on academic motivation and self-control as indicators of online learning outcomes for students at public universities in Western Kenya. The literature covers local, regional, continental, and international research pertaining to the research the topic.

2.2 Online Learning During the Pandemic Period

Early in 2020, the COVID-19 epidemic broke out over the world, upending established educational systems and forcing a swift switch to online schooling. To maintain educational continuity, higher education institutionsincluding public universities in Kenya's western regionadopted a variety of online learning approaches and platforms. Throughout the pandemic, universities both locally and abroad supported online learning using a range of digital communication technologies and learning management systems (LMS). Among the most popular platforms were learning management systems, video conferencing tools, content delivery systems, and institutional e-learning portals.In order to guarantee good engagement and learning results, each of these platforms needed learners to have particular abilities and attributes. There are now a number of online learning methods that require different qualities of learners to succeed. Online learning has many benefits, but students still have to deal with concerns including the digital

divide, poor internet access, inadequate study spaces, and trouble adjusting to self-paced learning. Various solutions were put in place by universities to address these issues, including recorded lectures, subsidized data bundles, and hybrid learning techniques.

The pademic-related transition to online learning showed the importance academic motivation and self-control are to students' performance in online learning contexts.

2.3 Influence of Self-Regulation Behavior on Students Online Learning Outcomes

Self-regulated learning is distinct from cognitive ability or academic achievement. Rather, it describes a self-guided method via which students convert their cognitive capacities into academic proficiencies relevant to a certain topic (Shahranavard et al., 2018). Generally speaking, a student's self-regulated learning is influenced by their self-awareness, the task, the subject matter, their learning strategies, and the environment in which they apply their learning. Because students are inherently motivated, value learning above achievement, and take charge of their education rather than relying on outside influences, learning motivation is also essential. Willpower, or volition, is another essential element of self-regulated learning, according to Kisanjara et al. (2017).

In higher education, the concept of self-regulated learning is becoming increasingly relevant due to the unique challenges that students encounter (Cassidy, 2011). Self-regulated learning has been emphasized by several theoretical stances, and it is generally accepted that students' views of themselves as learners are crucial to this process. This study examined the psychological ideas of self-regulation and motivation in relation to online learning outcomes.

Matuga (2009) examined the academic achievement, self-control, and goal orientation of 40 second-year US university science students enrolled in online courses. The purpose of the study was to look at how changes in goal orientation and self-regulation connect to academic success. This study was quasi-experimental and used a pretest-posttest paradigm. The target market consisted of secondary school students who were enrolled in six-week online university courses taught by a two-person team made up of a secondary classroom teacher and a university science professor. Self-report questionnaires were used to gather the data, and inferential statistics like regression analysis and correlation were used to assess the findings.

According to the findings, students found it more difficult to keep to their schedules and were less inclined to seek help as the semester progressed. While high and average performers lost trust in their ability to self-regulate, low achievers gained confidence. The research recommended that online courses use organized self-regulated learning approaches to assist students in planning, tracking, and evaluating their learning.

This study focused on university students in Kenya, even though Matuga (2009) examined the self-regulation of people in lower schools. Unlike Matuga’s work, which relied on self-reports, the new study will use a range of metrics to address subjectivity and increase data reliability. Additionally, although Matuga's research was limited to online scientific courses, this study looked at self-regulation across a range of domains, providing a more thorough understanding of the outcomes of online learning.

According to Cassidy (2011), self-regulated learning is becoming increasingly significant in higher education because of the unique expectations imposed on college students. With a focus on learning style, academic control beliefs, and student self-evaluation, the study sought to investigate the fundamental ideas of self-regulated learning. Multiple regression and factor analysis were used to evaluate the data, and descriptive survey research was used to recruit university students for the study.

The study found that by assisting students in creating efficient learning techniques, self-regulated learning improves academic attainment. In order to promote student autonomy and academic achievement, it suggested introducing self-regulated learning components into university courses. This study investigated the function of self-regulated learning in online learning among Kenyan university students, in relation to Cassidy's (2011) study, which concentrated on self-regulated learning in conventional higher education settings. This study also looked at other aspects such student involvement, cognitive performance anticipation, and institutional support, whereas Cassidy focused on learning styles and academic control views.

Kisanjara et al. (2017) developed an integrated model for evaluating e-learning's impact on student achievement in Tanzanian universities. The study examined various factors, including student involvement, expectations for cognitive performance, student autonomy, contentment, pleasure, self-worth, and trust in online learning platforms. Utilizing surveys and statistical modeling methods like structural equation modeling (SEM) to examine correlations between variables, a quantitative study design was used.

The results showed that pupils' academic performance was greatly impacted by these factors. According to the study, self-regulated learning techniques should be encouraged and institutional support for e-learning platforms should be strengthened. This study investigated Kenyan public universities to determine whether comparable characteristics affect online learning outcomes, whereas Kisanjara et al. (2017) concentrated on Tanzanian universities. Additionally, their study delved deeper into psychological ideas like motivation and self-regulation, while their research concentrated on the technological aspects of e-learning.

Mutwelele (2014) investigated the relationship between academic achievement, self-regulated learning, and academic motivation in secondary school. The study's theoretical framework was based on self-determination theory and social cognitive theory. Secondary school students' questionnaire responses were gathered using a correlational study approach, and the results were analyzed using multiple regression models. Academic achievement, self-regulated learning, and academic motivation were found to be significantly correlated. The innate drive for achievement was the most significant predictor of academic accomplishment among all the elements of academic motivation. The study discovered that academic motivation and self-regulation differed by gender, with male students being favored. It suggested that in order to improve student success, schools should encourage academic motivation and self-regulated methods of learning.

Mutwelele (2014) investigated secondary school pupils; this study concentrated on college students, who had more studying freedom. Unlike Mutwelele's study, which looked at academic accomplishment in general, this one looked exclusively at the results

of online learning in public universities. Furthermore, by combining data from several sources, such as administrators, lecturers, and students, to triangulate results, Mutwelele's research was filled in.

The reviewed studies highlighted various aspects of self-regulated learning, but gaps remained regarding its influence on online learning outcomes in Kenyan public universities. While previous research focused on secondary students (Mutwelele, 2014), traditional university settings (Cassidy, 2011), and technological aspects of e-learning (Kisanjara et al., 2017), little attention was given to the psychological constructs of self-regulation in online learning. Additionally, most studies relied on self-report data, which might have introduced subjectivity.

Unlike previous studies in the USA, Tanzania, and among secondary students, this research examined self-regulation among university students in Kenya. The study considered multiple psychological constructs, including student engagement, motivation, and institutional support, in relation to online learning outcomes. To reduce subjectivity, this study employed multiple instruments, including surveys, interviews, and focus group discussions, ensuring a comprehensive analysis of self-regulation and online learning outcomes. By understanding how self-regulation influences online learning in Kenyan public universities, this study provided valuable insights for educators, policymakers, and institutions in designing interventions that enhance online learning success. Thus, this study aimed to generate new knowledge on how self-regulated learning impacts online

learning outcomes in Kenyan public universities, contributing to a deeper understanding of effective online education strategies.

2.4 Influence of Academic Motivation on Student Online Learning Outcomes

Scholars have defined the term motivation in a variety of ways. Motivation is defined by Werang et al. (2020) as the underlying causes of conduct or as a condition that energizes, guides, and maintains behavior, encouraging an individual to perform with perseverance and effort. In the context of online learning, where students frequently have to negotiate self-directed educational experiences with little in the way of in-person connection, motivation is especially important.

Werang et al. (2020) conducted a study in Indonesia examining the impact of students' learning motivation on their academic outcomes. Their study used a correlational methodology and included a high school student sample. Data was gathered using self-reported questionnaires that assessed academic achievement and motivation levels. Students' academic performance and motivation were found to be significantly positively correlated. However, their study focused on motivation's effect on general learning rather than online learning. This study extended this by incorporating self-regulation and examining their combined effect on online learning outcomes, therefore addressing an existing research gap.

Artino and Stephens (2009) conducted a study in the United Kingdom that explored differences between undergraduate (n = 87) and graduate (n = 107) students regarding

their academic motivation and self-regulation in online learning environments. Cognitive processing techniques (elaboration and critical thinking), motivational beliefs (task value and self-efficacy), and engagement behaviors (procrastination and choice behaviors) were all examined using a comparative research design. The findings showed that undergraduate students were more likely to enroll in future online courses and had higher task value choices, whereas graduate students demonstrated reduced procrastination rates and higher levels of critical thinking. his research highlighted how motivation and self-regulation vary across academic levels. However, this study strictly examined undergraduate students to control for motivational differences that may be more pronounced among postgraduate students in Kenya.

In Iran, research by Irfan (2019) examined the relationship between university students' self-regulated learning and motivation. The study's primary focus was on goal orientation, self-efficacy, intrinsic value, test anxiety, and self-regulated learning components, such as self-regulation and the use of cognitive techniques. A weak link between self-regulation and the employment of cognitive methods was found by the study's correlation analysis. However, there was no clear correlation found in this study between learning outcomes and self-regulation and motivation.This study looked for a clear connection between online learning results, self-regulation, and motivation.

Aljuaid (2021) examined self-efficacy and self-regulation as predictors of academic motivation among undergraduate students in the United States. The study's use of structural equation modeling revealed that students' academic motivation was strongly influenced by their levels of Both self-efficacy and self-control. Motivation was

demonstrated to be best predicted by self-efficacy. Instead than concentrating on online learning results, their study examined academic motivation. This study moved the emphasis to online education and examined the effects of self-regulation and motivation on student performance.

Petrus et al. (2016) conducted a study in Indonesia exploring the relationship between achievement motivation and learning outcomes. The study defined motivation as the process that pushes and sustains effort toward academic goals. Using a survey research design with university students, the study found that motivation positively influenced academic performance by increasing engagement, persistence, and effort. The study recommended the integration of motivation-enhancing strategies in education. However, it focused on general academic settings rather than online learning environments. This study adapted their insights to examine how motivation interacted with self-regulation to influence online learning outcomes.

Hariri et al. (2020) investigated the role of motivation, including value, expectancy, and affective components, in students' learning processes in Indonesia. The study employed an experimental design where different instructional strategies were tested for their effects on students' motivation and learning outcomes. Findings emphasized the necessity of motivation-enhancing instructional strategies. The current study built on these findings by analyzing whether motivation levels among university students in Kenya similarly influenced online learning performance.

Nwikpo et al. (2024) studied the academic performance and self-regulation of secondary school students in North Orumba North L. G. A. in Anambra State, Nigeria. This correlational study examined the association between academic outcomes and self-regulation using academic performance records and self-report surveys from 500 senior secondary school students. The results showed that self-regulation and performance were positively correlated. But whereas the research concentrated on secondary school students this one employed a mixed-methods approach to better understand academic motivation in online learning, focusing on Kenyan university students.

Bundi and Mutweleli (2023) conducted a study in Nyeri County, Kenya, titled Academic Motivation as a Predictor of Self-Regulated Learning Among Form Three Students in Nyeri County, Kenya. Guided by Self-Determination Theory, the study used a quantitative approach to analyze the relationship between academic motivation and self-regulated learning. Results supported the theory's assertion that intrinsic motivation fosters self-regulation. Unlike their study, this research employed a mixed-methods design and incorporates Self-Regulation Theory and McClelland's Need Achievement Theory to provide a broader analysis of how motivation and self-regulation predicted online learning outcomes among university students.

The reviewed studies established the importance of academic motivation and self-regulation in learning but left gaps in understanding their combined effect on online learning outcomes, particularly in Kenya. Prior studies focused on different academic levels (secondary vs. university), different geographic regions, and different methodologies (correlational vs. experimental vs. comparative). This study addressed

these gaps by investigating the connection between online learning results, self-regulation, and motivation among Kenyan undergraduate university students. Using a mixed-methods research design, this study extended earlier research by integrating several theoretical frameworks (Need Achievement Theory, Self-Determination Theory, and Self-Regulation Theory) to provide a thorough understanding of student motivation in online learning environments. It also provided both quantitative and qualitative insights.

By addressing these gaps, this study contributed to the growing body of knowledge on student motivation and self-regulation in online learning, offering practical insights for educators, policymakers, and curriculum designers aiming to enhance student performance in digital learning settings.

2.5 Academic Motivation, Self-regulation and Students Online Learning Outcomes

Academic motivation and self-regulation play a crucial role in influencing students' learning outcomes, particularly in online learning environments. Motivation determines the level of effort and persistence a student invests in academic tasks, while self-regulation facilitates the ability to manage learning processes effectively. Theories such as the Self-Determination Theory (Deci& Ryan, 1985) and Zimmerman's Self-Regulated Learning Theory (Zimmerman, 2002) provide frameworks for understanding how these factors contribute to students' success in online learning.

Self-regulation, learning results, and academic motivation are predictively related, according to empirical research. Klimova et al. (2022), for example, looked the university students' capacity to engage in self-regulated online learning throughout the COVID-19 pandemic. The main objective of this study was to determine how effectively Czech and Slovak students could self-regulate their learning in an online environment to achieve academic success. The results revealed that students who had strong levels of self-regulation and motivation were more likely to meet their objectives for learning, indicating that these traits are significant determinants of online learning outcomes.

While studies in Europe highlighted the success of e-learning strategies, they also acknowledge challenges such as lack of motivation, time management issues, and limited technological resources. Addressing these challenges requires targeted interventions, including structured self-regulation training and motivational strategies to enhance students' engagement and performance in online learning environments. Studies in Europe indicated significant success in use of e-learning strategies, but not without a few challenges. Klimova et al. (2022) carried out a study on university students and their ability to perform self-regulated online learning under the COVID-19 pandemic. This study sought to determine whether students in Central Europein this case, Slovak and Czech students could use self-regulated learning during the COVID-19 pandemic to accomplish their learning objectives and enhance their academic performance. It also sought to offer some useful suggestions for fostering and sustaining students' self-regulated learning in this novel online setting. In terms of motivation, meaningfulness, and personal competences, the results showed that Central European students appeared to

be able to complete their online self-study. They stated that they were more conscious of their learning strengths and shortcomings, time management skills, and/or the importance of pursuing study. The results, however, showed that there is a pressing need for more research in the field of metacognitive techniques, including critical and reflective thinking, analysis, and evaluation. Since the teacher acts as a facilitator and encourages these metacognitive techniques by giving students constructive criticism, keeping track of their progress, and/or offering chances for reflection on their learning, the teacher's position is interchangeable in this regard. The Czech and Slovak pupils did not differ much from one another.Nevertheless, Slovak students appeared to be more goal-oriented and self-disciplined in their study, especially the female students. The study's drawbacks were its relatively modest size, as it was only carried out in two nearby European nations, and its imbalanced gender samples, which included a preponderance of females in the Slovak sample. The purpose of the current study is to determine whether such findings are present at KAFU but are skewed toward online learning, academic motivation, and self-regulation. In order to obtain a representative perspective on self-regulation, academic accomplishment, and online learning outcomes, the study will balance respondents based on their gender.

In a Taiwan university, a study was carried out by Wei & Chou (2020) on the use of a comprehensive structural model to determine whether online learning perceptions and online learning readiness affect students' online learning performance and course satisfaction. 356 Taiwanese undergraduate students enrolled in an asynchronous, cross-campus, general education online course voluntarily completed a survey. Students'

enthusiasm for learning and computer/Internet self-efficacy directly and favorably influenced their online discussion score and course satisfaction, according to the findings of the structural equation modeling study. Furthermore, it was demonstrated that students' computer/Internet self-efficacy acted as a mediator in how prepared they felt for online learning. This mediated the association between course satisfaction, online discussion scores, and perceptions of online learning. The study's findings demonstrated that students' self-efficacy had an effect on their level of course satisfaction. However, the current study examined learning outcomes and self-regulation; learning results will reflect pleasure in this study. The study used a structural model to analyze the data, which may contain errors due to the use of many statistical methods, including path analysis, correlation analysis, and confirmatory factor analysis, all of which are applied in one model and estimated at the same time. This is a drawback since the results might have been inaccurate. Correlation will be employed in this investigation

In Palestine, Alkhateeb& Abdallah (2021) conducted a study aimed at identifying factors influencing student satisfaction towards using learning management system model during the new normal. During the epidemic, professors and students participating in online learning received emails with online surveys. Students' overall happiness was 41.3%, while faculty members was 74.3%. While 92.9% of teachers expressed satisfaction with students' excitement for online learning, students' highest satisfaction levels were in the areas of communication and flexibility. While instructors were hindered by the increased effort and the time needed to create the teaching and evaluation materials, students were less satisfied due to technical issues. According to the thematic analysis, the following

topics emerged as having an impact on faculty and student satisfaction: study load and workload, improving engagement, and technological problems (SWEET). The study by Wei & Chou (2020) was conducted in a Palestinian university in the Middle East in Asia while this study was conducted in four universities in Western region of Kenya which is in Africa

Adopting a combination synchronous and asynchronous approach, incorporating different applications to engage students, and timely feedback are imperative to increasing student satisfaction, while institutional support and organizational policy could enhance faculty satisfaction. While this study was carried out in the new normal season, the current study sought to establish actual learning during the pandemic. The use of a self-assessment questionnaire was the study's drawback. Additional investigation was necessary to offer a comprehensive examination of the elements influencing satisfaction. In order to eliminate subjectivity, the present study will investigate the potential benefits of using a thorough qualitative method that includes focus groups and interviews. This study aimed to determine how motivated students are, whether they can self-regulate while learning online, and whether academic motivation and self-regulation are predictive of academic achievement. The reviewed study did not relate academic achievement, self-regulation, and online learning outcomes.

According to Muchanji (2017), ODL is used to offer educational possibilities that someone needs at anytime, anywhere. Education is provided to a wider population with a range of needs and circumstances. Because of the flexibility with regard to time and

delivery location, both students and employees can profit. ODL has thus provided chances to individuals who might not be able to quit their occupations to attend full-time, traditional education.

In an attempt to address the evolving and novel demands for education and training, UNESCO (2001) stated that open and distance learning can be an alternative approach under certain circumstances, a suitable replacement for face-to-face instruction, which is still the norm in the majority of educational systems. The majority of people who previously did not have access to educational opportunities now do so because of their residence, employment, financial status, social standing, and other reasons. This is made possible via open and distance learning.

For the information-driven age, open and distance learning remains the primary tool that has been utilized to close the gap between developed and developing societies (Amukune, 2022). Positive responses have been received to ODEL programs. The techniques employed satisfied both the teacher and the students. Students enrolled in open and remote learning courses expressed satisfaction with the instructor, the course material, and the teaching strategies.Additionally, students thought that using telecommunications to transmit the course material was acceptable. Perceptions of the entire course that is taught utilizing distant learning techniques showed very little variation (Muema, 2022). Although students rated the courses favorably, instructors believed that the courses were of either lesser or equivalent quality to those that had been taught on campus. In most respects, testing for open and distance learners is identical to

testing for classrooms where students attend in person. When it comes to learning outcomes, both on-campus and online learning are equally beneficial. The Dimensions of Distance and the Distance and Open Learning Scale were both mentioned as essential tools for evaluating learning. Technology-based learning that is accessible when needed or that can be accessed after the participant returns to work may improve transfer. Additionally recognized as crucial resources for learning assessment were the Open Learning and Distance Learning Scale and Dimensions of Distance. Technology-based learning that may be accessible when the participant returns to work or that is available just in time may improve transfer. ODL saves fifty percent more money and time than on-campus. Although Muchanji's (2017) findings suggest the importance of ODEL, they do not link ODEL and its performance to student variables like academic progress and self-regulation. This case study focuses on the University of Nairobi, a reputable institution that can accommodate ODEL. This research was a case study of KAFU University, a young and only university in Vihiga County, Alupe, Kibabii and MMUST universities, equally young.

Mabeya (2020) looked into how parents of elementary and secondary school-aged children experienced the government's and Kenyan schools' distant learning program. The majority of youngsters in Rangwe Sub-county used radio to access distant learning programs, according to the results. However, because their parents couldn't watch over them or oversee them, the kids' access to the remote learning programs fluctuated.

The findings indicated that the majority of parents expressed dissatisfaction over their inability to provide their children with the necessary instructional and assessment support so they could fulfill their educational obligations. Furthermore, even though the government and institutions implemented the programs, it was found that the government had not received any guidelines on how to help parents who did not have children enrolled in private schools learn. This suggests that there were differences among parents' perceptions of the program's capacity to continue their children's education. During the time of school closures, the consequences of COVID-19 and the absence of infrastructure (such as internet and power) made it much harder to provide the essential teaching materials.

On the other hand, the study used the Technology acceptance model and did convenience sampling of 30 parents in primary and secondary school. This study sought to establish self-regulation and engagement of students in Western region, A case study of four public universities in Western Region of Kenya. The limitation of her study was the small size of sample by convenience and the fact that the students and pupils' voices was not be heard in the study findings yet they are the main affected individuals in the study.

Kibuku (2020) presented a literature review of the challenges faced in the implementation and provision of e-Learning in universities in Kenya.The literature on e-learning problems was found and examined using the scoping review process. Inadequate e-learning policies, inadequate ICT infrastructure, constantly changing technologies, a lack of technical and pedagogical competencies and training for e-tutors and e-learners, a lack of an e-learning theory to support the practice, budgetary constraints and sustainability

issues, negative perceptions of e-learning, quality issues, the dominance of technology and market forces over e-learning goals, and a lack of cooperation among e-learning participants are some of the challenges that have been identified. E-learning offered numerous advantages, such as expanding the reach of numerous students in a flexible way, enhancing the efficacy of technology-assisted learning and instruction, boosting administrative efficiency, cutting down on public expenditures for education and training, and improving the caliber of research, among other things. However, despite all of the advantages, prospects, and promises associated with e-learning, e-learning efforts in Kenyan higher education institutions confront a number of obstacles that leave stakeholders unhappy when they fall short of their expectations. Most e-learning projects in third-world countries fell short of their expectations and either failed entirely or partially. Furthermore, 85.6% of e-tutors said they felt unmotivated to complete their e-learning responsibilities, while the majority of e-learners (90.8%) said they were unhappy with the quality of e-learning. The delayed adoption of e-learning in Kenyan higher education institutions can be attributed to several drawbacks. The studied literature only addressed general e-learning concerns; academic motivation was the investigation's main emphasis. Another goal of this study was to establish a relationship between online learning outcomes, self-regulation, and academic motivation.

Muchanji (2017) stated that both open and distance learning alleviated the government of the burden of building or funding brand-new physical facilities and offer chances for ongoing education. Nairobi University was the birthplace of open and distant learning, but student uptake was sluggish. Muchanji (2017) sought to identify the variables

influencing the University of Nairobi's open and remote learning program delivery. The purpose of the study was to determine the effects of infrastructure-related elements, teacher characteristics, the learning environment, and service support on the delivery of Nairobi University's open and distant education programs. The results demonstrated that ODL programs were implemented. Additionally, the teachers' attributes had a favorable and significant influence on how ODL programs were delivered. Additionally, the learning environment had a favorable and significant influence on how ODL programs were delivered. Additionally, service support has a favorable and significant influence on the implementation of remote and open learning programs. The results of the study showed that infrastructure-related factors had the most influence on how ODL programs were delivered, followed by the learning environment, teacher attributes, and service support. According to the study's recommendations, the University of Nairobi should ensure that there are enough computers available for use by non-teaching staff, students, and teaching staff. Additionally, the University of Nairobi ought to offer more spaces for tutoring and tutor-student relationships in order to enhance student service assistance. The studies mentioned previously did not include student-related factors that affected online learning. In addition to ODeL Delivery and related challenges in online learning, this study examined student attributes such as academic motivation and self-regulation. This study looked at how students' self-regulation strategies impact the learning environment and the outcomes of online education. The study involved graduate students. Finding out the academic motivation and self-regulation strategies of undergraduate

students at particular institutions while they were learning online was the aim of this study.

Cheng (2011) investigated the relationship between students' ability to self-regulate and their learning outcomes. The four traits utilized in this study to build self-regulation ability were learning motivation, goal-setting, action control, and learning strategies. The results of a study conducted in Hong Kong showed that students' learning motivation, goal-setting, action control, and learning strategies all significantly influenced their learning outcomes. Additionally, the study demonstrated a substantial correlation between students' learning performances and their motivation, goal-setting, action control, and learning strategies. The study also made a number of recommendations for improving students' learning abilities, which is one of the objectives of Hong Kong's educational reform. The recommendations included teaching students how to accurately self-monitor their learning, assisting them in creating specific and achievable learning objectives, offering guidance in choosing appropriate learning strategies, and promoting positive attitudes about learning outcomes. Self-regulated learners improved their learning habits by continuously assessing the efficacy of their learning. Teachers were interested in assisting students in developing their ability to self-regulate if they genuinely wanted to enhance their learning. In addition to Cheng (2011), this study made a connection between e-learning and learning outcomes and academic motivation and self-regulation. Furthermore, the respondents were high school students, even though the study's target audience was a small group of college students.

Mukhale (2017) to investigate the requirements of teachers in Kenyan universities in terms of professional development. The study concentrated on the challenges that teachers and students face in the classroom. In order to improve student learning outcomes, it also examined the lecturers' needs for professional development, their favorite ways to provide professional development programs, and the changes they need make to their teaching strategies. According to the report, lecturers must take a more student-centered approach, embrace the seminar style of instruction, employ practical strategies, be ICT compliant, and design and deliver courses that provide students with meaningful learning opportunities in order to improve student learning outcomes. Both in-person and online delivery methods were preferred by the lecturers for professional development courses. The bulk of the instructors had recently participated in professional development programs, according to the findings. Due to the enormous class size, learners had to deal with issues such inadequate instructional facilities, poor note-taking abilities, crowded classrooms, an excessive reliance on lecturers' notes, difficulty accessing learning resources, and a lack of customized attention.

In the same way, lecturers had to deal with issues like large class sizes, unmotivated or uncommitted students, a heavy workload, a lack of instructional materials, unruly students, poor classroom management, a lack of technical staff in labs, vandalized power accessories, student evaluation, poorly ventilated lecture halls, and instructional difficulties brought on by a lack of subject-matter expertise and university-appropriate teaching techniques. Teaching methods/pedagogy, subject content, technology, and research are the four areas of professional development requirements that were identified

in this study. Without making reference to self-regulation or e-learning, the evaluated study concentrated on lectures and their impact on university students' learning outcomes through the use of technology. This study demonstrated students' self-control, involvement, and the impact of online learning on learning outcomes.

According to a study on self-regulated learning in Kenyan classrooms utilizing an e-portfolio, four instructors and their students from two public secondary schools in Mombasa participated in the study (Lyesenko et al., 2021). Compared to their colleagues who used the tool seldom, the results showed a considerable improvement in both examination scores and self-regulation abilities over time. Exam outcomes improved when portfolio elements were used more frequently and thoroughly. Because communal talents are prioritized above individual abilities, collectivistic societies tend to report lower self-efficacy views, according to research on cross-cultural variations. Private ideas and sentiments about oneself and other people are not seen as relevant to a person's self-perception in collectivistic cultures, such as those found in Africa, Asia, and the West. Therefore, in collectivistic situations where family and group qualities are valued, it may be that teaching students to improve their academic self-efficacy and individual self-concept might be the key to improving academic performance and facilitating their self-development.

From this perspective, the findings imply that the adoption of this e-portfolio may be an intervention that might support each student's aspirations to achieve academic and personal success while moving closer to the national goals established by Kenya Vision

2030.While the study was based on the online learning outcomes of KAFU students while establishing academic motivation and self-regulating strategies, the respondents from secondary schools in Mombasa County were asked to create an e-learning portfolio. This was the gap that the study attempted to fill.

Makokha & Mutisya (2016) conducted a research on the state of e-learning at Kenyan public institutions. These were Maseno University (MAU), Kenyatta University (KU), Jomo Kenyatta University of Agriculture and Technology (JKUAT), Moi University (MU), Egerton University (EU), the University of Nairobi (UoN), and Masinde Muliro University of Science and Technology (MMUST). The results showed that e-learning is still in its infancy at Kenyan universities. Senate-approved e-learning policies that would have guided their organized deployment were absent from the majority of colleges. Few classes (10%) were given online, and only a small percentage of instructors (32%) and students (35%) used e-learning. Just lecture notes made up the majority of online modules (87%) that were submitted; they were not interactive. Kenyan universities once more lacked the necessary ICT infrastructure and expertise. According to the report, institutions should collaborate with the corporate sector to enhance ICT infrastructure, increase capacity, and standardize e-learning courses. The study's overall conclusions showed that public institutions have not yet made substantial progress toward e-learning as a pedagogical approach and have not completely embraced it. The majority of public institutions were unable to adopt e-learning consistently and systematically due to the absence of senate-approved e-learning policy. Furthermore, the small proportion of instructors and students utilizing e-learning hinted at the fact that e-learning in public

universities is still in its early. When modules were posted to learning management systems, they lacked interaction and were of poor quality. This survey, which was conducted in 2016 at public institutions prior to the establishment of KAFU University, found that the e-learning infrastructure and capability were still inadequate in terms of computers, Internet bandwidth, and ICT. The purpose of this study is to ascertain the current state of students' academic motivation, self-regulation, and online learning results from selected universities in Western Kenya.

2.6 Summary Critique of the Literature

The study reviewed literature related to the study objectives. The review established gaps in the following areas; in terms of content, for the objective on self-regulation, studies reviewed agreed on the importance of self-regulation on online learning outcomes (Cassidy, 2011; Kisanjara, Tossy, Sife, &Msanjila, 2017; Mutweleli, 2014). However, Matuga (2016) established that students were unable to self-regulate, but it was not established whether there was a connection with motivation. Mutweleli (2014) identified intrinsic motivation as the highest predictor of academic achievement and further added that boys were more self-regulated than girls. These studies were in no way related to online learning, which was the focus of the current study. On the second objective of the study on motivation, a few studies reviewed all converge on the strong relationship between motivation and learning outcomes. (Artino& Stephens, 2009; Hariri et al., 2020; Petrus et al., 2016 ;Werang et al., 2020)

However, some studies only explained the relationship between self-regulation and motivation (Aljuaid, 2021; Irfan, 2016).These studies did not link to online learning. Finally on learning outcomes, different studies had different findings on what impacts learning outcomes; Cheng (2011) related motivation to learning outcomes while Lyesenko et al. (2021) related learning outcomes to learning strategies. Mukhale (2017) related learning to learning conditions while Makokha and Mutisya (2016) linked poor e-learning capacity to poor learning outcomes. These studies had taken a general approach to learning outcomes.

This study was specific to online learning outcomes. On theories, this study did not find similar studies using the theories of self-regulation, Mc Cleland's and Atkinson's Need Achievement Theory and subsequently on the topic of the study. As regards time, there were very few studies in the timeline of the study (2020-2022) that brought out the real picture of online learning Studies. The current study proposed to establish the status of online learning post lockdown. On methodology, studies had used multiple regressions, cross sectional studies, descriptive surveys and various models of learning which was not employed in this study.

The limitations of these methodologies were identified and explained. The study also reviewed other studies with challenges on sampling such as very low sample size hence challenges on generalization. There were no studies in Kenya or in the study area on the topic of study hence the study sought to fill that gap. The study established that some

studies reviewed had limitations on the tools for data collection, hence this study triangulated by using a variety of tools for which other studies did not.

2.7 Critique of the Literature

2.7.1: Influence of Self-Regulation Behavior on Students Online Learning Outcomes in public Universities of Western region of Kenya

Table 2. 1: Critique of the Literature and Research gap

Title and Focus	Methodology	Findings	Research Gap
Kisanjara, S., Tossy, T., Sife, A., &Msanjila, S. (2017). An Integrated Model for Measuring the impacts of e-learning on students' achievement in developing countries.	Mixed methods research methodology.	Students' achievement was positively correlated with the majority of their involvement, cognitive performance expectations, control, enjoyment, contentment, self-esteem, and trust in the e-learning system. The study highlighted the value and relevance of self-regulated learning in higher education. Promoting the study of the components deemed most likely to advance our comprehension beyond a simple explanation of the mechanisms believed to be involved in self-regulated learning was the second objective.	The study focused on rapid developments on ICTs. A research gap
Cassidy, S. (2011). Self-Regulated learning in Higher education: Identifying Key components Processes.	Mixed methods research	Students' achievement was positively correlated with the majority of their involvement, cognitive performance expectations, control, enjoyment, contentment, self-esteem, and trust in the e-learning system.	This study was to establish the status of self-regulated learning in the study area

Title and Focus	Methodology	Findings	Research Gap
		The study highlighted the value and relevance of self-regulated learning in higher education. Promoting the study of the components deemed most likely to advance our comprehension beyond a simple explanation of the mechanisms believed to be involved in self-regulated learning was the second objective.	
Mutweleli, S. (2014). Academic Motivation and Self-Regulation learning as Predictors of Academic achievement of students in Public Secondary schools in Nairobi County	Ex-post facto research design was adopted	The development of the domains of academic motivation and types of self-Regulated learning strategies found to have positive value on academic achievement. Also, the domains of academic motivation, self-regulated learning, intrinsic motivation towards accomplishment had the highest positive predicative value on academic achievement as compared to academic motivation	Most studies that had explored Research in psychological factors had been done in developed countries hence left a gap locally, hence need for studies in the study area.
Cassidy, S. (2011). Self-Regulated learning in Higher education: Identifying Key components Processes.	phenomenological design	The study found that adolescent student moms encountered psychological obstacles at school and in their communities. The study indicated that adolescent student mothers and their families were stigmatized and humiliated. The disgrace they caused prevented their	health, self-esteem, and well-being? The persistence of psychological issues may be revealed via longitudinal research.

Title and Focus	Methodology	Findings	Research Gap
		family from providing emotional assistance. They developed psychological issues that may hinder their academic achievement. However, mistreatment by family members or close friends may had negative effects.	
Sahranavard, S., Miri, M., &Salihinya, H. (2018). The Relationship Between Self-Regulation and educational Performance in Studentslearning. *Journal of Health Promotion*	Case study	The results of the study revealed that, in comparison to their colleagues who used the tool seldom, test scores and self-regulation abilities increased with time. Exam outcomes improved with more frequent and thorough usage of the portfolio's features. Collectivistic cultures tend to report lower self-efficacy views due to the emphasis placed on collective talents rather than individual abilities, according to research on cross-cultural variations.	

2.7.2 Influence of Academic motivation on student online learning outcomes in public Universities of Western region of Kenya

Title and Focus	Methodology	Findings	Research Gap
Werang, B., Khumaeroh, D., &Suryami, D. (2020). Students' Learning Motivation and Learning Outcomes in Higher Education.	Phenomenological research design.	The findings of their study indicate that students' learning motivation impacts significantly positive on their learning outcomes	The current investigation incorporates self-regulation and only focuses on online learning, while the previous assessed study mainly focused on motivation and its effect on all aspects of learning.
Petrus, L., Degeng, I., &Setyosari, P. (2016). Relationship between Achievement motivation and learning outcomes on land law course students.	Quantitative research design	Based on the study's findings, motivation is the act of guiding someone's behavior in order to achieve and sustain a certain goal. Students that are motivated to learn have the strength and ability to study. maximum-effort learning will help pupils reach their maximum potential and encourage them to investigate learning materials, particularly while experienced teachers are watching. Motivation requires an environment that can draw in kids; it cannot be created on its own.	The purpose of the study was to determine the relationship between achievement motivation in Indonesia whereas this study was conducted in Kenya
Artino, A., & Stephens, J. (2009). Academic Motivation and Self-	Qualitative (descriptive statistics) using a phenomenological	The results showed that there were differences between undergraduate and graduate students in higher education, with the former having more adaptive	The study explored potential differences between undergraduate (n=87) and graduate (n=107) levels of

Title and Focus	Methodology	Findings	Research Gap
regulation: A comparative analysis of undergraduate and graduate students learning online.	approach as a methodology	self-regulated learning habits and better levels of academic motivation.	self-control and academic motivation among students while they are learning online
Irfan, T. (2019). The interconnection of Motivation and self-regulated learning among university level EFL students.	Descriptive phenomenological study	The results showed that the participants were reported to have satisfactory level of goal orientation, self-efficacy, intrinsic value, test anxiety, cognitive strategy usage and self-regulation.	The classroom remains a formal environment that still requires self-efficacy and self-regulation and these are all interrelated. The aspects of motivation and self-regulation were not linked to learning outcomes in this study.
Aljuaid, F. (2021). Self-Efficacy and self-regulation as predictors of academic motivation among undergraduate students in the United States	Qualitative research design.	This study established a theoretical framework to investigate the relationship between self-efficacy and self-regulation and academic motivation. Students' degree of self-efficacy and self-regulation can be used to predict their academic motivation. Self-efficacy was the most reliable measure of academic motivation.	The study's assumption was that academic motivation was predicted by self-efficacy and self-regulation, and its goal was to ascertain how academic motivation and self-regulation related to academic achievement.
Nwikpo, N., Okochi, E., Eluemuno, A., &Nwasor, V. (2024). Self-Regulation and Academic Performance of Secondary School	A correlation research design	The study's findings demonstrated a medium relationship between academic success and self-regulation and a substantial correlation between academic motivation and academic achievement among secondary school students. Additional research revealed no	The study addressed how academic motivation and self-control relate to secondary school academic achievement in Orumba North State, Nigeria.

Title and Focus	Methodology	Findings	Research Gap
Students in North Orumba North L. G. A. of Anambra State. Futurity of Social Sciences.		connection between secondary students' academic achievement and self-regulation.	
Bundi, R., &Mutweleli, S. (2023). Academic Motivation as a predicator of self-regulated Learning Among Form Three Students in Nyeri County, Kenya. Nairobi: Kenyatta University	Ex-post facto research design	The results of the study showed a favorable correlation between academic motivation and self-regulation learning practices. Thus, it was demonstrated that academic motivation and self-regulation were positively correlated, irrespective of study level, location, and cross-cultural variations. The study also discovered that students who were academically motivated made considerable use of self-regulation learning tools.	The report highlighted the psychosocial consequences of student parenting on academic achievement but does not elaborate. Emotional, psychological, and social aspects that affect student moms' academic performance should be studied. In addition to the hurdles, the study highlighted student mothers who accomplished academically despite parentin and examined their success tactics.

2.7.3 Relationship between Academic Motivation, Self-regulation and Students Online Learning Outcomes in Public Universities of Western region of Kenya

Title and Focus	Methodology	Findings	Research Gap
Klimova, B., Gerniak, E., &Dziuba, S. (2022). University Students and Their Ability to Perform Self-Regulated Online Learning Under the COVID-19 Pandemic.	Qualitative and quantitative (Mixed Methods)	The findings indicated that Central European students seemed to be able to perform their on-line self-study, especially in regard to personal competences, meaningfulness and motivation. The findings also revealed an urgent need for more work to be done in the area of metacognitive strategies, such as reflective and critical thinking, analyzing and evaluating.	The concern was whether Central European students—in this case, Slovak and Czech student—could use self-regulated learning during online learning during the COVID-19 epidemic to meet their learning objectives in a manner similar to those of West European students.
Wei, H. C., & Chou, C. (2020). Online Performance and Satisfaction: Do Perceptions and Readiness matter? *Distance Education.*	Structural equation modelling was used to analyze the structural model	The results of the study showed that students' computer/Internet self-efficacy for being prepared for online learning had a mediated influence on course satisfaction, online learning perceptions, and online discussion scores. The results of this study showed that course	This study was conducted in Indonesia on online learning perceptions and learning readiness while this study was be conducted in Kenya

Title and Focus	Methodology	Findings	Research Gap
		satisfaction is influenced by students' self-efficacy.	
Alkhateeb, M., & Abdallah, R., (2021). Factors Influencing Student Satisfaction Towards Using Learning Management System Moodle. Kadoorie:	mixed-methods phenomenological study	The results revealed that total student satisfaction was 41.3%, while teacher satisfaction was 74.3%. Students expressed the most happiness with communication and flexibility, while faculty members expressed pleasure with students' passion for online learning in 92.9% of cases.Student happiness was negatively affected by technical problems, and faculty members were hindered by their increased workload and the time needed to create the teaching and assessment materials.	The study was conducted in one university in Palestine in the middle East while this study involved four universities in Western region of Kenya
Muchanji, P. (2017). Factors Influencing Delivery of Open and Distance Learning Courses in Kenyan Public Universities: The University of Nairobi's	Case Study	Opportunities for education are provided to a wider population with a range of needs and circumstances. The results of this study demonstrated that both employees and students	The study mainly focused on online access to students while this study focused on four university students of public Universities of Western region of Kenya.

Title and Focus	Methodology	Findings	Research Gap
		might gain from the flexibility in terms of time and delivery location. Therefore, ODL has provided chances to people who might not be able to quit their employment to attend full-time, conventional school.	
Makokha, G., &Mutisya, D. (2016). Status of E-Learning in Public Universities in Public Universities in Kenya. International Review of Research in Open and distributed Learning,	phenomenological study	The results showed that e-learning at Kenyan institutions is still in its infancy. Only 10% of courses were provided online, while only 32% of instructors and 35% of students used e-learning. The vast majority of online courses (87%) that were uploaded were only lecture notes with no interactive elements. Once more, Kenyan universities lacked the necessary ICT resources and expertise. According to the study's overall findings, public universities have not yet completely embraced e-learning as a pedagogical approach and have not made notable progress in	This study used phenomenological methods whereas the present study used mixed methods: Qualitative and Quantitative methods for data collection

Title and Focus	Methodology	Findings	Research Gap
		that regard. This was demonstrated by the absence of senate-approved e-learning rules, which prevented most public institutions from implementing e-learning consistently and systematically.	
Kibuku, R., Ochieng, D., &Wausi, A. (2020). E-Learning Challenges Faced by Universities in Kenya: A literature review. The Electronic Journal of E-learning,	Transcendental phenomenological study		This study focused on the challenges faced when eLearning was being implemented and made available, whereas the current study aimed to determine the level of student motivation, whether or not students are capable of self-control when learning online, and whether academic motivation and self-regulation are predictive of academic achievement.
Cheng, E. (2011). The Role of Self-Regulated Learning in Enhancing Learning Performance. International Journal of Research and Review	Qualitative and quantitative mixed methods	The study findings included self-regulated learners optimize their learning strategies through continuous self-assessment of their learning efficacy. It is in the interests of teachers to develop students' self-regulation ability if they really want to enhance students' learning	The study explored the relationship between students' self-regulation ability and their eLearning performance while this study sought to establish how well students are motivated, whether they can self-regulate as they undertake online learning, further it sought to establish the link between self-

Title and Focus	Methodology	Findings	Research Gap
			regulation and academic motivation as predictors of academic achievement.
Lyesenko, L., Wade, A., Abrami, P., Iminza, R., &Kiforo, E. (2021). Self-Regulated Learning in Kenyan Classrooms: A Test of a Process E-Portfolio under review. Canada: Centre for Study of Learning and Performance.	Qualitative survey design	The study's findings, students' self-regulation abilities and test scores increased over time in comparison to their counterparts who utilized the program infrequently. Higher exam scores were correlated with more frequent and thorough usage of the portfolio's features.	This study was focused on secondary school students while this study focused on university students in four universities.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter deals with the research design, the area of study, the target population, the sample size and sampling techniques, research instruments, reliability and validity of the research instruments, data collection procedures and data analysis and ethical considerations.

3.2 Research Philosophy

The research utilized a pragmatic research philosophy, which is best suited for tackling the intricate and varied aspects of online learning results shaped by psychological factors (like academic motivation and self-regulation) and institutional practices. Pragmatism enables the researcher to combine quantitative and qualitative methods, emphasizing practical outcomes and real-world relevance instead of adhering to a singular perspective. This philosophy is consistent with the study's mixed methods approach, which integrates statistical evaluation of student feedback alongside qualitative perspectives from teachers, department heads, and ODeL administrators. Focusing on effective practices in a particular context, the pragmatic approach allows the research to produce actionable insights that can guide educational policy, teaching methods, and institutional efforts in online learning at public universities in Kenya.

3.3 Research Design

The study adopted a mixed research design, incorporating both quantitative and qualitative approaches to provide a comprehensive understanding of how academic motivation and self-regulation predict students' online learning outcomes in public universities of the Western region of Kenya. Given the complex nature of online learning outcomes, coupled with the psychological constructs of motivation and self-regulation, a mixed methods approach is justified. It enables the study to examine predictive relationships quantitatively while also exploring contextual and process-oriented factors qualitatively. This provides a more comprehensive and practical understanding relevant to Kenyan public University. Quantitative data were collected using closed-ended questionnaires to generate measurable and statistically analyzable responses on students' levels of motivation, self-regulatory behavior, and academic performance (Creswell & Clark, 2018). Complementing this, qualitative data were gathered through scheduled interviews, which offered deeper insights into students' personal experiences, contextual challenges, and perceptions related to online learning. This combination of methods allowed for both breadth and depth in data collection, enabling the researcher to validate and enrich the quantitative findings with qualitative perspectives. The mixed design was particularly valuable for this study as it bridged the limitations of single-method approaches, offering a more nuanced and holistic view of the factors influencing online learning outcomes, which would not have been fully captured through either quantitative or qualitative methods alone (Dawadi et al., 2021).

3.4 The Location of the Study

The study was conducted in four public universities in Western region of Kenya. Masinde Muliro University of Science and Technology in Kenya is a public university in Kenya, chartered in 2013 and is located in Kakamega Town in Western region of Kenya. The Masinde Muliro College in Kenya, now known as Masinde Muliro University in Kenya, became the constituent college of Moi university in Kenya in 2002, and changed the name to West University College of Science and Technology (Mwangi & Shigali, 2009). The main campus of Masinde Muliro University of Science and Technology (MMUST) in Kenya is situated on the Kakamega-Webuye Road, 1 kilometer from the Kakamega Central Business District (Kakamega CBD). Masinde Muliro University is located 42 Km from Webuye and 58 Km from Kisumu city in Kenya. The MMUST main campus in Kenya borders Bukhungu stadium in Kenya and it is opposite Kakamega Approved School in Kenya. Begi (2009) noted the importance of citing the study location in research for easy access to the locale.

Kaimosi Friends University (KAFU) which is based in Hamisi Sub County; it is the only university in Vihiga County of Western region. It was gazetted as a constituent college of Masinde Muliro University of science and Technology on May 22, 2015. It is the latest university in the Western region and the only one in Vihiga County. KAFU launched its Science, Technology and Innovation (STI) Strategy in line with the National Commission for Science, Technology and Innovation (NACOSTI) guidelines, buoying its contribution towards the realization of the Country's long-term development goal of Vision 2030 and

the Big 4 agenda. Objectives of KAFU STI Strategy include embracing digital systems and emerging technologies, evidence-based knowledge dissemination, multisector and multidisciplinary collaborations, developing and sharing appropriate scientific knowledge and technological innovations for sustainable development, as well promotion of innovation and research within and outside KAFU (KAFUCO, 2022). Although the university had started online learning before the advent of COVID 19, the university has now adopted it as a learning methodology for 65% of the courses in each of the faculties identified for the focus areas. This has prompted the researcher to carry out research in the study area on academic motivation, self-regulation and online learning strategies. The other universities have stabilized and possibly come up with ways of overcoming any challenges that might arise from online learning, which is not the case for KAFU.

Kibabii University (KIBU) was established by the Kibabii University Charter on 14th of November, 2016. Initially, it started as Kibabii University College which was established asa Constituent of Masinde Muliro University of Science and Technology by Legal Notice No.115, which appeared in Kenya Subsidiary Legislation 2011 of 1 2 t h A u g u s t , 2011. The Kibabii University is located on the Road that leads to Chwele Town from Bungoma Town in Kenya (Bungoma-Chwele Road) and is only 7 Km from the Bungoma Town. The total number of students targeted is 1374 from the 5 departments sampled.

Alupe University, located in Busia County, Kenya, was initially established in 2015 as a constituent college of Moi University and later gazetted as a fully-fledged university in 2022. It received its charter in 2022, officially recognizing it as an independent

institution. The university offers a variety of courses, primarily focusing on health sciences, agricultural sciences, education, and technology, aiming to address regional and national educational needs. With an enrollment of approximately 2,000 students, Alupe University is situated about 10 kilometers from Busia town, providing accessible higher education to the Western region of Kenya.

In the Western region of Kenya, online learning has become increasingly accessible in public universities, particularly in recent years. The growth of internet infrastructure, coupled with the widespread use of smartphones and computers, has enabled students to participate in virtual classrooms, online courses, and digital resources. Despite challenges such as inconsistent internet connectivity and limited access to technological devices, universities have made significant strides in integrating online learning platforms, offering a flexible and accessible alternative to traditional face-to-face education.

The study focused on four public universities in the Western region of Kenya due to the unique challenges these institutions face in implementing effective online learning. These universities have experienced a range of difficulties, including limited digital infrastructure, inconsistent internet connectivity, inadequate access to learning devices among students, and varying levels of digital literacy among both learners and instructors. Additionally, disparities in resource allocation and institutional readiness have further complicated the delivery of quality online education. By selecting these universities, the study aimed to explore how academic motivation and self-regulation interact with these contextual challenges to influence students' online learning outcomes,

thereby generating findings that are both relevant and representative of broader issues affecting higher education in under-resourced regions.

3.5 Target Population

The study focused on the 4542 respondents comprising of undergraduate students from the school of education and social sciences in all the public universities in Western region of Kenya (2317 students from MMUST, 1110 from KIBU, 587 from KAFU and 461 from Alupe totaling 4475 undergraduate students). The target population comprised of 18 heads of education department, 39 instructors of the departments, and 4 ODEL administrators.

Undergraduate students provided firsthand insights into their experiences and challenges with online learning, revealing levels of motivation and self-regulatory behaviors. Heads of education departments offered strategic perspectives on the implementation and effectiveness of online learning policies. The instructors contributed detailed observations on student engagement, instructional challenges, and the efficacy of teaching methodologies. Lastly, ODEL administrators provided critical information on the infrastructure, support systems, and administrative challenges associated with delivering online education, thus ensuring a holistic understanding of the factors influencing students' online learning outcomes.

3.6 Sampling Techniques and Sample Size

3.6.1 Sampling Techniques

Sampling involves making of conclusions about an entire population using a subset of the population (Orodho, 2009). The respondents were undergraduate students, instructors, and ODEL administrators of public Universities in Western region, Kenya.

According to Kothari (2019), purposive sampling is a technique of how the researchers select the person or the group as the sample based on their purposes and opinions. The study used Public Universities in Western region of Kenya as the study unit as justified in the study area. The researcher further purposively sampled out the school of education in each of the universities as the researcher established that this was the only school across the four universities that had similar courses to ensure uniformity of the study. The researcher further purposively sampled only the courses that will have online learning during the study duration. This therefore meant that the students in the sampled courses and the respective instructors formed the respondents' base in the study. This information was sourced from the undergraduate students, departmental heads, instructors and ODEL administrators.

Undergraduate students were selected by purposive sampling based on the nature of their academic programs, specifically targeting those enrolled in courses that had actively incorporated online learning platforms and virtual instruction. This technique was specifically chosen to guarantee that only students who had regular and pertinent

experience with online learning environments were included in the study. This was because they were in the best position to offer knowledgeable insights on how academic motivation and self-regulation affect online learning outcomes. Individual students from each course were chosen using simple random sampling after the pertinent courses within the four chosen universities were determined. By giving every eligible student in the targeted courses an equal chance of being included in the study, this probability sampling strategy was used to minimize sampling bias and improve the findings' generalizability within the sampled population.

Census sampling involves collecting data from every individual within a specified population, making it an ideal method when the population size is small and manageable. In this study, census sampling was the most appropriate method for selecting the 18 heads of education departments, 39 instructors, and 4 ODEL administrators because it ensured that every key stakeholder involved in online education within the public universities in the Western region of Kenya is included. This approach guaranteed comprehensive and accurate data, as it captured all perspectives without the risk of omission that might occur with other sampling methods. By utilizing census sampling, the study gathered detailed insights from every head of department, instructor, and ODEL administrator, ensuring that the findings fully represented the collective experiences, challenges, and strategies within these roles, thereby enhancing the reliability and validity of the study’s conclusions (Verma et al., 2024).

3.6.2 Sample Size

First, the researcher subjected all the undergraduate target populations for the school of education in each university to the Yamane's formula (1967) and Cochran's formula (1977) for sample size calculation. This is a formula for estimating or determining sample size in respect to the population under study, allowing inferences and conclusions to be drawn from the survey to be applied to the complete population from which the sample was drawn.

Yamane's formula was selected for calculating the sample size due to its simplicity and reliability in determining sample size from a known population, especially when working with large populations. It offers a straightforward and statistically valid method to guarantee representativeness while keeping a feasible sample size, particularly in survey studies. This approach was favored in comparison to alternatives because of its effectiveness, simplicity of use, and appropriateness for quantitative research where the target population is both finite and identified, as observed in this analysis. The formular is as shown;

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

Where: n = required sample size

e = level of significance taken to be 0.05

N= the population size

1= constant

N= 4475

e= 0.05

$$n = \frac{4475}{1+4475\ (0.05)^2} = 367 \text{ respondents}$$

Each category's sample population was determined using proportion. This was computed by multiplying the total sample size by the division of the category target respondents by the overall target population. For instance;

MMUST students= $\frac{2317}{4475} X367$=190

KIBU Students=$\frac{1110}{4475} X367$=92

KAFU students=$\frac{587}{4475} X367$=48

ALUPE students=$\frac{461}{4475} X367$=37

Further, the researcher was directed by the records in the administration on the courses that were offered on online learning in the respective departments. The researcher coded the students then sampled the desired numbers as per the sample size calculations. The researcher then contacted the students and their respective instructors. The table below represents the sample size and sampling techniques.

Table 3.1: Sample Size

	Department/Respondents	Target Population (Students In dept. of Education)	Sample Size-From target population (Using Cochran &Yamane Formula)	Sampling Technique
1.	MMUST Students	2317	190	Purposive then Simple Random
2.	KIBU Students	1110	92	Purposive then Simple Random
3.	KAFU Students	587	48	Purposive then Simple Random
4	ALUPE Students	461	37	Purposive then Simple Random
5	Heads of Department			Purposive and census sampling
	MMUST	5	5	
	KIBU	5	5	
	KAFU	4	4	
	ALUPE	4	4	
6	Departmental Instructors			Purposive and census sampling
	MMUST	10	10	
	KIBU	10	10	
	KAFU	10	10	
	ALUPE	9	9	
7	ODeL Administrators			Purposive and census sampling
	MMUST	1		
	KIBU	1		
	KAFU	1		
	ALUPE	1		
	TOTAL	**4536**	**428**	

Source: field data (2024)

3.7 Research Instruments

Interviews and questionnaires were used as the main instruments of study. Data from key university respondents was collected using these methods.

3.7.1 Questionnaire

The researcher issued the students with questionnaires because of ease of administration through course instructors: Time and money was saved as the number of students is quite high. Section A of the questionnaire established students' demographics. Section B sought to find out self-regulation strategies adopted by the student. The student selected the method she or he has adopted to regulate self. Section C established academic motivation on learning, Section D examined the relationship between academic achievement, self-regulation, and online learning outcomes. In order to assess students' learning outcomes, the study suggests modifying Bloom's taxonomy of learning outcomes domains to include both positive and negative items distributed among three domains (cognitive, emotional, and psychomotor). According to Creswell & Creswell (2017), the response responses for these items were on a four-point Likert scale: "Strongly Disagree" (SD = 1), "Disagree" (D = 2), "Agree" (A = 3), and "Strongly Agree."By adapting McClelland's overviews into 15 positive statements that were distributed over three needs—the need for power (n-Pow), the need for affiliation (n-Aff), and the need for achievements (n-Ach)—students' need for learning was examined (Werang, Khumaeroh, & Suryami, 2020).Response option for these items were based on a four item of Likert's scale, such as 'Strongly Disagree' (SD = 1); 'Disagree' (D = 2),

‘Agree’ (A = 3) and ‘Strongly Agree’ (SA = 4). The Self-Regulation Questionnaire was used to assess self-regulation (Miller & Brown, 1991).

3.7.2 Key Informant Interview Guides

An in-person interview was used in this study because they gave in-depth information on the subject being studied (Best & Kahn, 2011). This method contributed to collection of qualitative data. The interviews aimed to obtain a better understanding of institutional practices, teaching methods, and administrative support systems that affect students' academic motivation, self-regulation, and outcomes in online learning. This approach was selected because it provides a deeper insight into participants' viewpoints, experiences, and contextual elements that questionnaires may not fully capture. Interviews offered a chance to elucidate answers, investigate new themes, and confirm results from the quantitative data, ultimately strengthening the study's overall depth and credibility. An interview with a subject matter expert can give one meaningful insight that a generalized public source won’t be able to provide (Best & Kahn, 2011). Interviews were carried out in person or on telephone. They had open-ended questions to get meaningful information about the topic. The interviews were administered to 18 heads of department, 39 departmental Instructors and 4 ODEL administrators because they handled the learners on a day-to-day basis as the online classes went on. The interviews established self-regulation strategies adopted by the students, the influence of academic motivation on learning, and the relationship between self-regulation, academic achievement and online learning outcomes of public Universities in Western region, Kenya.

Table 3. 2: Summary of Data Collection Instruments

Instrument	Objectives	Analysis Technique	Presentation technique
Questionnaires	-The influence of self-regulation strategies on online learning,	Correlation analysis and linear regression	Tables, figures and charts
	-The influence of Academic motivation on online learning outcomes.	Correlation analysis and linear regression	Tables, figures and charts
	-The relationship between Academic motivation and Self-regulation and Learning outcomes	Correlation analysis and Linear Regression	Tables, figures and charts
Interviews	-The influence of self-regulation strategies on online learning	Thematic Analysis	Themes
	-The influence of Academic motivation on online learning outcomes.	Thematic Analysis	
	-The relationship between Academic motivation and Self-regulation and Learning outcomes	Thematic Analysis	

Source: Field data (2024)

3.8 Pilot study

According to the actual study, the study instruments were piloted to ensure they were standardized. Pilot test was conducted at Maseno University conducted to ensure the study's reliability and validity.Maseno University features dynamic online learning initiatives and similar student and faculty profiles, enabling a thorough evaluation of the

instruments' reliability, validity, and clarity prior to their application in the primary research. The research instruments were therefore givento a sample size of 37students, 3 Heads of Department, 4 Departmental Instructors and1ODeL Administrators, constituting 10% of the total sample. This was deemed sufficient for conducting a pilot test (Mota, Martins, & Onofre, 2021). This helped to identify the problems the respondents encountered and if the research instrument's items produced the necessary data for the investigation. So as to ensure that sure the questionnaire addressed the objectives of the study, the researcher revised it with the help of the pilot study's feedback.Drawing from the insights gained during the pilot study, slight adjustments were made to the phrasing and format of certain questionnaire and interview questions to improve clarity, remove ambiguity, and guarantee alignment with the study goals.

3.8.1 Validity of Research Instruments

The validity of the research instruments in this study, which examined academic motivation and self-regulation as predictors of students' online learning outcomes in public universities of the Western region of Kenya, was assessed through expert analysis to ensure accuracy and relevance (Mugenda & Mugenda, 2003). Subject matter experts in educational psychology, online learning, and research methodology were consulted to evaluate the content validity of the instruments. These experts reviewed each item to ensure it appropriately represented the theoretical constructs of academic motivation, self-regulation, and learning outcomes, and confirmed that the items were clear, culturally appropriate, and aligned with the study's objectives. Their feedback was used

to refine the instruments by eliminating or modifying ambiguous or irrelevant items. This expert validation process enhanced the content and face validity of the instruments, ensuring that that the tools measured what they were supposed to measure within the specific context of Kenyan public universities (Kothari, 2019).

3.8.2 Reliability of Research Instruments

The reliability of the research instruments in this study referred to the consistency and stability of the measurements of academic motivation, self-regulation, and online learning outcomes among students in public universities in the Western region of Kenya (Mugenda & Mugenda, 2003). To ensure reliability, the instruments were pilot-tested on a representative sample to identify any ambiguities or inconsistencies in the items. Internal consistency was measured using Cronbach's alpha coefficient, with acceptable values (typically above 0.7) indicating that the items within each construct reliably measured the same underlying concept. Test-retest reliability may also have been employed to assess the stability of the instruments over time. The findings from these reliability tests ensured that the data collected were dependable and could be replicated in similar educational contexts. The results were shown in Table 3.3:

Table 3. 3: Reliability of Research Instruments

Variable	Cronbach alpha	Number of items	Result
Self-regulation behaviour	0.832	10	Reliable
Academic motivation	0.817	10	Reliable
Relationship between self-regulation behaviour and academic motivation	0.775	10	Reliable
Online learning outcomes	0.845	10	Reliable

Source: Field data, 2024

The results above indicate that the research instruments used in the study were highly reliable, as evidenced by the Cronbach's alpha values for each of the key variables. Specifically, self-regulation behaviour (0.832), academic motivation (0.817), Relationship between self-regulation behaviour and academic motivation (0.775), and online learning outcomes (0.845) all recorded alpha values well above the acceptable threshold of 0.7. These results suggest that the items used to measure each construct were internally consistent and dependable for assessing the study objective.

3.9 Data CollectionProcedures

The researcher physically distributed the questionnaires to selected students in public universities within the Western region of Kenya, ensuring that each participant receivesd clear instructions on how to complete the tool. A period of two weeks was be allowed for participants to fill out the questionnaires at their convenience, providing sufficient time for thoughtful and accurate responses. During this period, the researcher conducted follow-up visits and reminders which encouraged timely completion and maximized the

response rate. In addition to the questionnaires, interviews were conducted with a purposively selected group of participants hence gathered more detailed qualitative data on academic motivation, self-regulation, and online learning outcomes. All data collection activities were carried out in adherence to ethical standards, ensuring voluntary participation, confidentiality, and respect for the respondents' time and autonomy.

3.10 Data Analysis

This study used a mixed methods approach; two different kinds of data were examined. Statistics which were both descriptive and inferential were generated.

3.10.1 Quantitative Data Analysis

Before the quantitative data was loaded into SPSS version 27 for analysis, it was cleaned, sorted, and coded to guarantee correctness and consistency using the 5-point Likert scale questionnaires. To draw attention to and condense the key features of the data, descriptive statistics were used. Frequencies and percentages were calculated to show how responses were distributed and to uncover trends and patterns among students in relation to academic motivation, self-regulation, and online learning outcomes. The mean and standard deviation, which assessed the central tendency and variability of the responses, were computed to provide a more thorough picture of the students' overall experiences.

Inferential statistics were used to look at how the variables related to one another. The degree and direction of the connections among academic motivation, self-regulation, and

online learning outcomes were assessed using Pearson product-moment correlation. This approach shed light on the degree of correlation between these variables as well as whether better learning outcomes were linked to higher levels of motivation and self-regulation. Understanding the cumulative impact of these factors on online learning achievement required knowing how much each of them influenced the others, which was made possible by the correlation analysis.

In addition, ANOVA (Analysis of Variance) was conducted to test whether significant differences existed in online learning outcomes based on varying levels of self-regulation and academic motivation. This analysis allowed for comparisons between different groups of students, showing whether those with higher self-regulation or motivation performed better in online learning environments. To further predict the impact of these independent variables on online learning outcomes, linear regression analysis was applied. This statistical technique helped estimate how much of the variation in learning outcomes could be explained by self-regulation and academic motivation. The Model Summary in SPSS provided a measure of how well the regression model fit the data, indicating the predictive power of these factors on students' online learning performance.

3.10.2 Qualitative Data Analysis

The qualitative data collected through interviews was analyzed using thematic analysis, a method that allows for identifying, analyzing, and reporting patterns or themes within the data. The process began with transcribing the interviews, followed by familiarizing the researcher with the data by reading through the responses several times. Initial codes

were generated based on recurring ideas or concepts mentioned by the participants, such as challenges in online learning, motivational factors, and self-regulation strategies. These codes were then grouped into broader themes that reflected the underlying meanings and experiences of students regarding online learning outcomes. Thematic analysis provided a rich, detailed understanding of how students perceived their academic motivation and self-regulation in the context of online learning.

Triangulation was employed to ensure the credibility and validity of the findings by cross-checking the qualitative data with the quantitative results. The researchers compared the themes identified through the interview analysis with the quantitative data obtained from the questionnaires. For instance, themes related to self-regulation and motivation were compared with the quantitative measures of these variables to identify areas of convergence or divergence. This process helped to confirm the consistency of the findings across different data sources, reinforcing the reliability of the conclusions drawn from both the qualitative and quantitative data. By combining both data types, triangulation ensured a more comprehensive and accurate understanding of how academic motivation and self-regulation influenced students' online learning outcomes.

Table 3.4: Data Analysis and Presentation Plan

Specific Objectives		Null Hypothesis	Measurement Test
i)	To determine the extent to which self regulation behavior influence student online learning outcomes in public universities of Western region Kenya.	Self-regulation behavior has no significant influence on their online learning outcomes in Public Universities of Western region, Kenya.	- Mean - Standard deviation - Simple linear regression
ii)	To establish the influence of Academic motivation on student online learning outcomes in public universities of Western region of Kenya.	Academic motivation has no significant influence on their online learning outcomes in Public Universities of Western region, Kenya.	- Mean - Standard deviation - Simple linear regression
iii)	To examine the relationship between academic motivation, self-regulation and Students online learning outcomes in public universities of Western region of Kenya.	Self-regulation behavior and Academic motivation have no significant influence on students online learning outcomes in Public Universities of Western region, Kenya.	- Mean - Standard deviation - Multiple linear regression

Source: Field data, 2024.

3.11 Ethical considerations

This study adhered to strict ethical standards to ensure the rights, dignity, and welfare of all participants was protected. Participants' autonomy was respected in accordance with the definition by Greaney et al. (2012), who described autonomy as the respondent's right to freely decide whether to participate in a study. In this research, participants were provided with a clear explanation of the study's purpose, procedures, and their rights through an informed consent form. Consent was obtained voluntarily after participants were assured that their involvement was entirely optional and that they could withdraw at any time without any consequences. They were also informed that they could choose not to respond to specific questions if they felt uncomfortable.

Confidentiality and anonymity were upheld as fundamental ethical principles throughout the study. To maintain confidentiality, no personal identifiers such as names, registration numbers, or contact information were collected. All responses were coded and stored securely, with access restricted to the researcher alone. Participants were assured that the data would be used strictly for academic purposes and that individual responses would not be disclosed under any circumstances.

In addition, the study proactively addressed potential bias, which Greaney et al. (2012) identified as systematic errors that can occur at any stage of research, including sampling, data collection, and reporting. The researcher minimized bias by using objective data collection procedures, ensuring a representative sample, and applying standardized analysis techniques. All findings were reported truthfully and transparently, with careful attention to avoid any misrepresentation of participants' views or experiences.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS

4.1 Introduction

This section shows the results from the data that was analyzed. It also shows the presentation, interpretation and discussion of the findings.

4.2 Response Rate

The researcher sampled 367 students, 18 heads of department, 39 departmental instructors and 4 Odel administrators. The research was able to get feedback from 354 respondents comprising of 304 students, 15 heads of department, 32 departmental instructors and 3 Odel administrators. This gave a response rate of 82.8%, 83.3%, 82.1% and 75.0% respectively. The average response rate was 80.8% as shown in Table 4.1.

Table 4.1: Response Rate

Target	Sampled respondents	Received responses	Response percentage (%)
Student	367	304	82.8
Heads of department	18	15	83.3
Departmental instructors	39	32	82.1
Odel administrators	4	3	75.0
TOTAL	**434**	**354**	**80.8**

Sourcse: Field data, 2024

All the response rate from all the respondents were considered adequate based on the argument given by Sileyew(2019) who suggested that a response rate of more than 60% is considered adequate while the response rate of less than 60% is considered inadequate for the study to be conducted.

4.3 Participants Demographic and Background information

The respondents' biodata is presented in this section to show the effect of academic motivation, Self-Regulation as Predictors of Students' Online Learning Outcomes in Public Universities of Western region, Kenya.

4.3.1 Gender of the respondents

Respondents were asked to identify their gender. The results shown in Figure 4.1 indicate that 57.9% of the population was male and 42.1% was female.

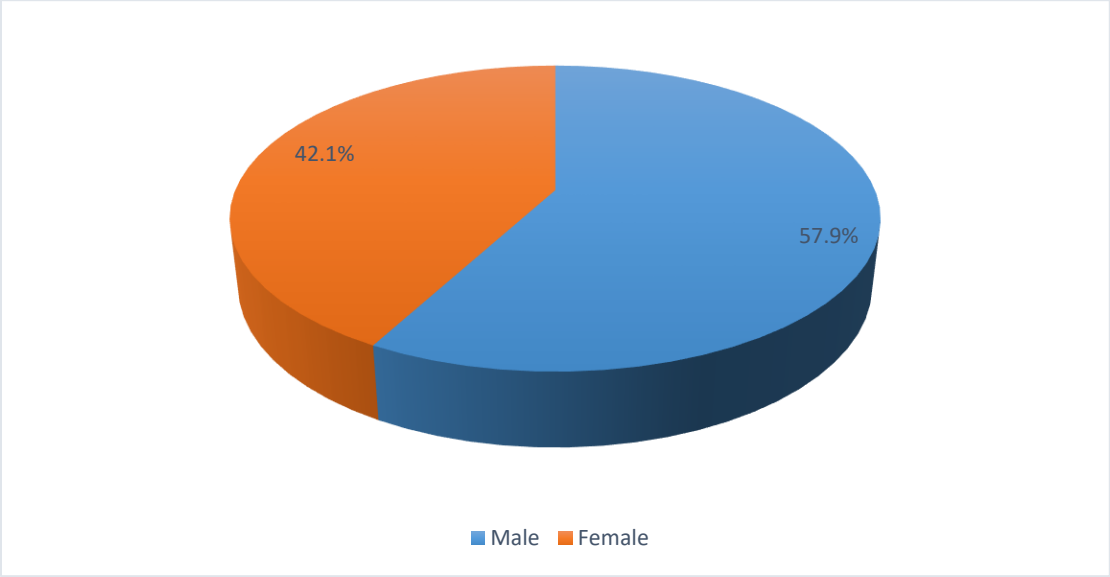

Figure 4. 1: Gender of the respondents

Figure 4.1 illustrates a generally equal gender distribution among respondents, with a majority of males and a notable proportion of females. This equitable representation is crucial as it guarantees that the study encompasses a varied array of opinions, conforming to the third gender rule. Incorporating both genders allows for a more thorough comprehension of the impact of academic motivation and self-regulation, across various gender groupings, on online learning outcomes in public universities of the Western region, Kenya, in accordance with the study's aims.

4.3.2 Age of the Participants

The respondents were asked to identify their age bracket. The findings in Table 4.2 shows that 54.0% were between 15-19 years, 33.2% were between 20-24 years and 12.8% were above 25 years.

Table 4.2: Age of the Participants

		Frequency	Percent	Cumulative Percent
Valid	15-19 years	164	54.0	54.0
	20-24 years	101	33.2	87.2
	Above 25 years	39	12.8	100.0
	Total	304	100.0	

Source: Field data, 2024

The results above indicate that the majority of the respondents, 54.0%, fall within the age bracket of 15-19 years. This age group represents the younger cohort of students, likely in their first and second years of study at the university. These students are generally bright and motivated, having progressed through the education system without major interruptions or repeating academic years. Additionally, this age group tends to come

from families where parents are educated, which often results in children being enrolled in school at an early age. The reality is that a significant portion of the participants belongs to this age range suggests that academic motivation and self-regulation may be strongly influenced by early academic exposure, a factor that could contribute to their online learning outcomes.

The second largest group, comprising 33.2% of the respondents, falls within the age range of 20-24 years. Students in this age category are likely to be in their third or fourth years of study. At this stage, many are more academically mature, with a clearer understanding of their academic goals and career aspirations. However, this group may also include students who have experienced delays in their academic progress, such as those who have repeated a year or deferred their studies for personal or financial reasons. This age group may face additional challenges in balancing their academic and personal responsibilities, which could influence their self-regulation and motivation in online learning environments.

Lastly, 12.8% of the respondents are above 25 years, typically representing students who are self-sponsored or pursuing their studies at their own pace. These students are often more mature, having had the opportunity to gain practical experience before returning to university to advance their education. Many of them may have initially started their education at the certificate or diploma level and then enrolled for a degree program later on. This age group might face different challenges and motivations compared to younger students, as they may need to balance work, family, and other personal responsibilities

alongside their academic goals. Their approach to online learning outcomes could be influenced by their life experiences, making them a unique group in terms of academic motivation and self-regulation.

4.3.3 Year Admitted

Respondents were asked to indicate the year they were admitted in Universities. The results in Table 4.3 shows that 20.1% were admitted in 2024/2025, 21.7% were admitted in 2023/2024, 24.3% were admitted in 2022/2023, 26.6% were admitted in 2021/2022 and 7.2% were admitted in 2020/2021 or earlier.

Table 4.3: Year Admitted

Year	Frequency	Percent	Cumulative Percent
2024/2025	61	20.1	20.1
2023/2024	66	21.7	41.8
2022/2023	74	24.3	66.1
2021/2022	81	26.6	92.8
2020/2021 or earlier	22	7.2	100.0
Total	304	100.0	

Source: Field data, 2024

Table 4.3 presents a varied distribution of admission years, indicating a greater proportion of respondents admitted in recent years, specifically in 2021/2022, 2022/2023, and 2023/2024. This indicates that the majority of students are comparatively inexperienced at university, presumably in their initial years of study. Recently accepted students may still be acclimating to online learning platforms, and their academic motivation and self-regulation abilities may be developing. Individuals admitted in

previous years (2020/2021 or earlier) are likely to possess greater expertise with online learning, perhaps affecting their motivation and self-regulation in distinct ways. The disparity in admission years underscores that students at varying academic levels may exhibit distinct online learning outcomes, hence influencing the study's investigation of academic motivation and self-regulation as predictors.

4.3.4 Current Year of Study

The respondents were asked which year they were enrolled in school. According to Table 4.4, a total of 21.4% were first-year students, 23.7% were second-year students, 26.6% were third-year students, and 28.3% were fourth-year students.

Table 4.4: Current Year of Study

Year		Frequency	Percent	Cumulative Percent
	First year	65	21.4	21.4
	Second year	72	23.7	45.1
	Third year	81	26.6	71.7
	Fourth year	86	28.3	100.0
	Total	304	100.0	

Source: Field data, 2024

Table 4.4 presents a generally uniform distribution of students throughout various academic years, with a marginally greater percentage of fourth-year students. First-year students, transitioning to university life, may have difficulties with academic motivation and self-regulation, especially in an online learning context. Second and third-year students, having acquired further experience, are likely to have cultivated superior self-regulation and motivation skills, potentially improving their online learning outcomes.

Fourth-year students approaching graduation tend to be more focused and goal-oriented, potentially enhancing their engagement with online learning. This distribution illustrates the variability of academic motivation and self-regulation at various stages of a student's academic progression, directly affecting their online learning results.

4.3.5 Type of Sponsorship In Education

The purpose of the study was to determine the participants' educational sponsorship type. 69.7% were government funded, 22.7% were private sponsored, and 7.6% were scholarship financed, according to the statistics in Figure 4.2.

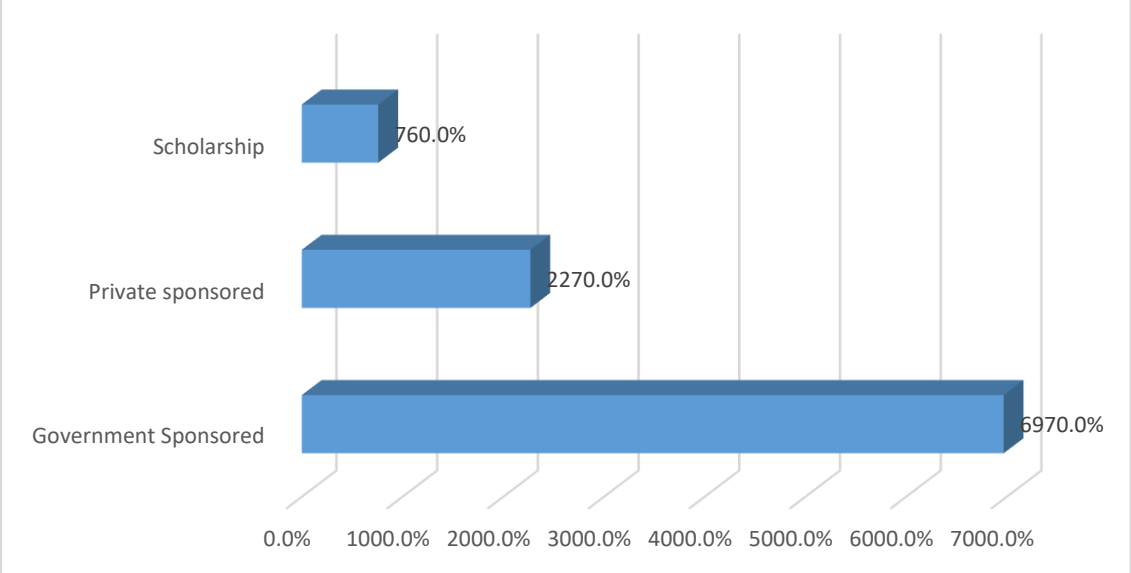

Figure 4. 2: Type of Sponsorship In Education

According to the findings in Table 4.6, the vast majority of respondentss are government-sponsored, with lesser proportions of private and scholarship-sponsored students. This distribution may affect academic motivation and self-regulation, as government-sponsored students frequently encounter distinct academic expectations and financial

pressures, which could either enhance or diminish their motivation for success in online learning. Private-sponsored students might exhibit heightened intrinsic motivation due to their personal investment in education, potentially resulting in improved self-regulation. Conversely, scholarship students may experience an increased sense of responsibility to excel, thereby augmenting their motivation and self-regulation behaviors. These elements can significantly influence students' online learning outcomes, with the type of sponsorship affecting the level of commitment and effort dedicated to academic pursuits.

4.3.6 Previous Academic Performance

The aim of the study was to find out the respondents' previous levels of education. According to the findings in Figure 4.3, 16.8% of respondents performed below average, 36.2% performed average, 30.3% performed above average, and 16.8% performed very well.

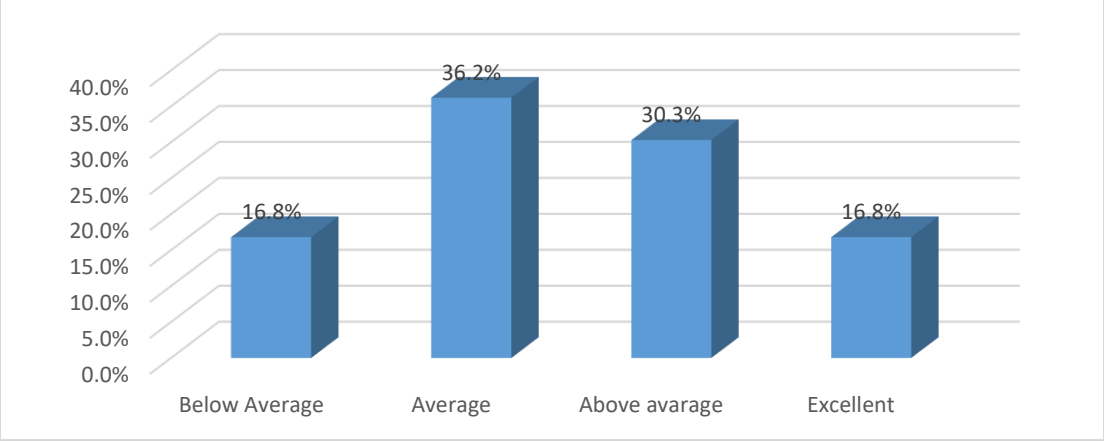

Figure 4. 3: Previous Academic Performance

Table 4.7 indicates a varied range of academic performance levels among the respondents, potentially affecting their academic motivation and self-regulation practices.

Students with excellent or above average academic performance are likely to demonstrate elevated levels of academic motivation, which can positively influence their online learning outcomes. In contrast, those with below-average or average performance may encounter difficulties in sustaining self-regulation, perhaps impeding their capacity to engage effectively in online learning. The heterogeneity in academic performance underscores the necessity of cultivating motivation and self-regulation measures to enhance overall online learning results in public universities in the West area of Kenya.

4.3.7 Access to Technology

Participants were asked on whether they have access to technology such as computer and smartphone. The results in Figure 4.4 shows that 56.9% had no access to technology while 43.1% had access to technology.

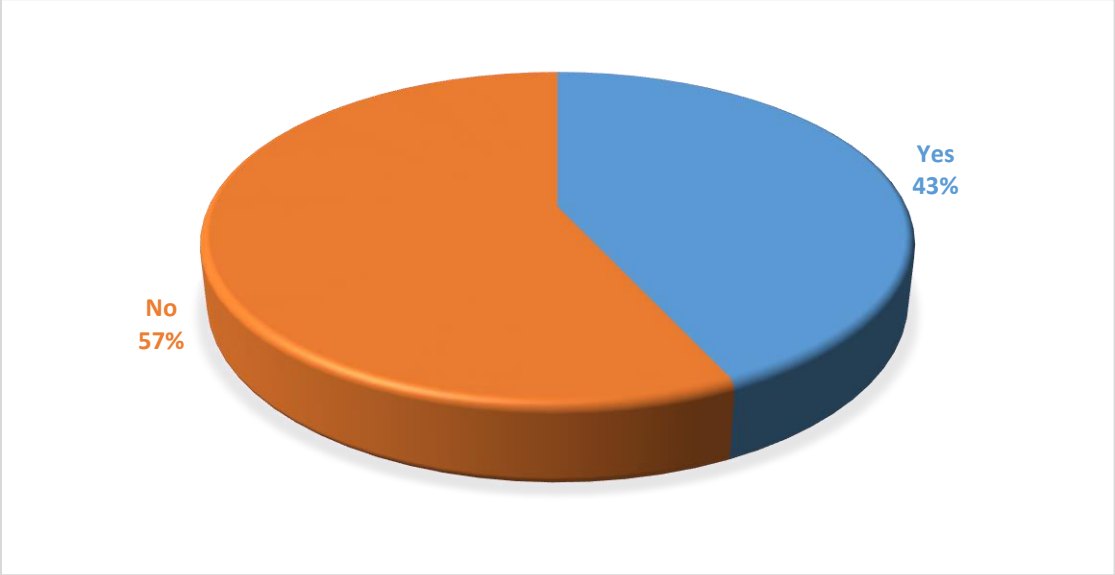

Figure 4. 4: Access to Technology

Figure 4.4 indicates that a substantial percentage of students lack technological access, potentially hindering their capacity to participate in online learning. Students with restricted access to computers or cell phones may experience detrimental effects on academic motivation and self-regulation, since they could encounter challenges in fulfilling assignments, participating in online lectures, or obtaining learning resources. Conversely, students having access to technology are more equipped to maintain motivation and manage their learning efficiently, since they possess the essential tools for full participation in online courses. Consequently, restricted access to technology may impede students' overall online learning results, highlighting the necessity for enhanced technical infrastructure to foster academic motivation and self-regulation.

4.3.7.1 Correlation Between Access to Technology and Online Learning Outcomes

To determine the nature and direction of the relationship between students' online learning outcomes and the availability of technology at public universities in Western Kenya, a Pearson product-moment correlation analysis was employed. Table 4.5 showed the results of the study.

Table 4.5: Correlation Between Access to Technology and Online Learning Outcomes

	Online learning outcomes
Access to technology	0.623 (0.001)

Source: Field data, 2024

The results showed a significant beneficial relationship between the two variables, with a correlation value of 0.623. This indicates that students' online learning outcomes are

positively correlated with better access to technologies. A p-value of 0.001 indicates that the association is statistically significant. Access to technology improves online learning outcomes by equipping students with vital resources, including internet connectivity, dependable devices, and instructional platforms. These resources provide access to digital learning materials, ensure timely assignment completion, promote interactive learning experiences, and support self-regulated learning behaviors, including goal setting, progress tracking, and strategy adaptation to achieve learning objectives. Consequently, technology accessibility is crucial for academic motivation and efficient self-regulation, thereby impacting students' overall success in online education.

4.3.8 Access to Internet

Respondents were also asked on whether they have access to internet. The results in Figure 4.6 shows that 20.4% had limited access to internet, 37.2% had limited access to internet, 29.6% had moderated access to internet and 12.8% had extensive access to internet.

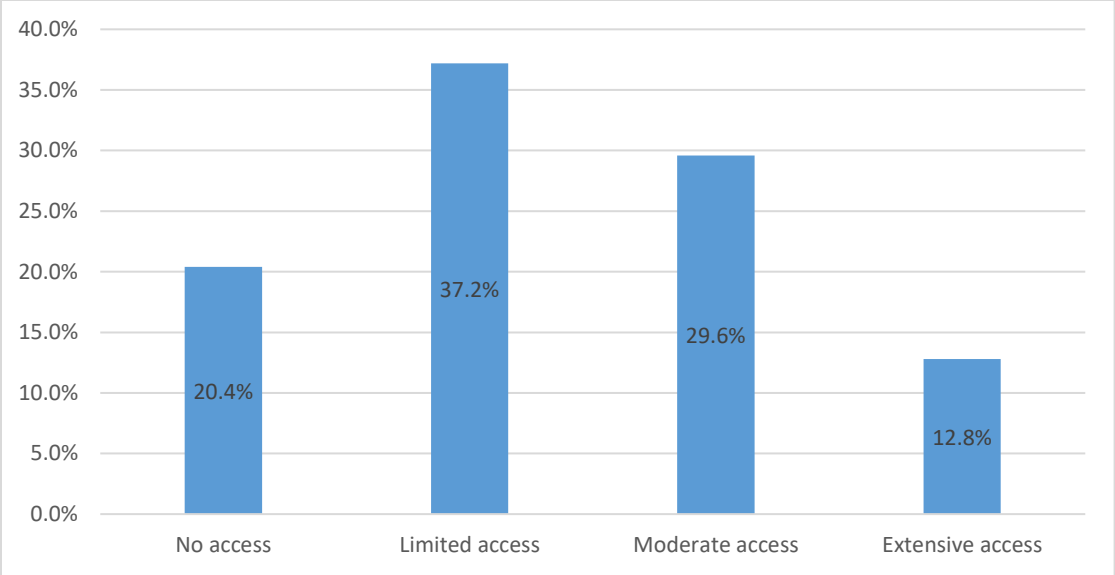

Figure 4. 5: Access to Internet

The research indicates that varying levels of internet access among students significantly influence their online learning outcomes. Students lacking internet access encounter substantial obstacles in engaging with online courses, obtaining study materials, and participating in virtual discussions, which severely impedes their educational advancement. Likewise, those with restricted access may find it challenging to fully engage with the content and complete assignments, further detrimentally impacting their academic performance. Conversely, students with moderate or extensive internet access are more capable of interacting with the learning environment, leading to more favorable educational results. These disparities in internet access highlight the necessity of addressing connectivity issues to ensure that all students, irrespective of their access levels, can equally benefit from online learning opportunities.

4.3.8.1 Correlation Between Access to Internet and Online Learning Outcomes

To determine the type and level of the relationship between students' online learning outcomes and internet access at public universities in Western Kenya, the study employed Pearson product-moment correlation analysis.

Table 4.6: Correlation Between Access to Internet and Online Learning Outcomes

	Online learning outcomes
Access to internet	0.679
	(0.003)

Source: Field data, 2024

The results above showed a correlation coefficient of 0.679, signifying a strong positive association between accesses to the internet and online learning outcomes. This indicates that better internet connectivity is strongly correlated with superior learning results in an online setting. The p-value of 0.003, being below the conventional threshold of 0.05, substantiates the statistical significance of this association. The findings indicate that internet access is essential for facilitating students' online learning by enabling connectivity to digital educational materials, participation in interactive learning activities, submission of assignments, and collaboration with peers and instructors. Enhanced internet access directly boosts academic motivation and self-regulation, allowing students to get superior outcomes in online learning, as specified in the study's objectives.

4.3.9 Place where Respondents Stay

The purpose of the study was to determine where the respondents dwell. According to the findings in Figure 4.7, 61.5% of people live in rented homes, 31.6% live in the university hostel, and 6.9% live with their families.

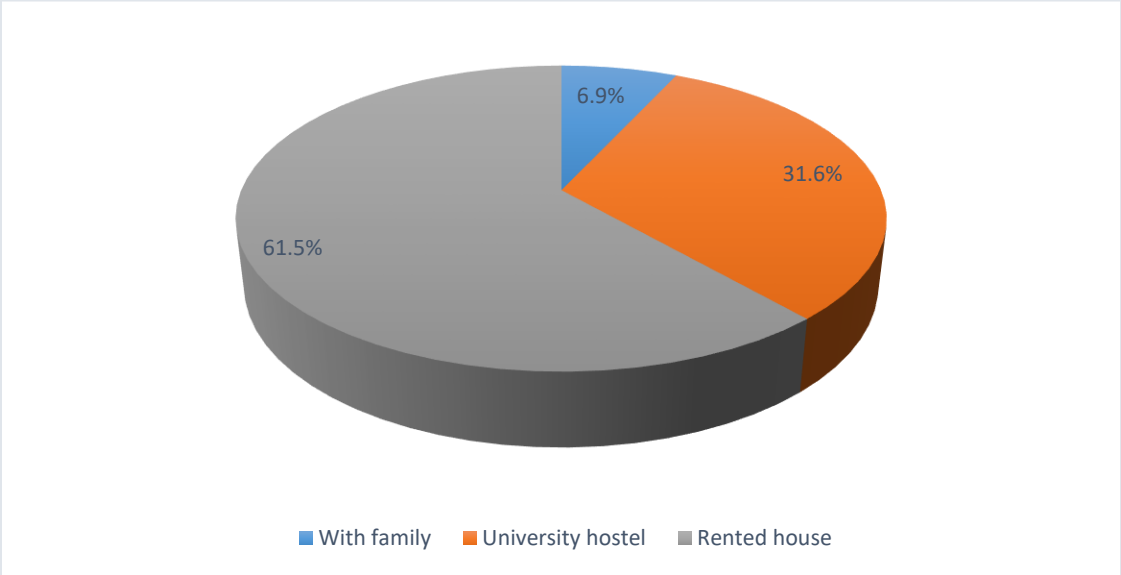

Figure 4. 6: Place Where Respondents Stay

The results depicted in Figure 4.7 indicate that students' living arrangements can affect their online learning outcomes. Students residing in university hostels may benefit from more structured environments with fewer distractions, potentially enhancing their focus and engagement with online learning. Conversely, students living in rented accommodations or with family may encounter more distractions or insufficient study spaces, adversely impacting their participation in online classes. These variations in living conditions underscore the significance of a conducive learning environment for improving academic performance in online education.

4.3.10 Earn A Living

The objective of the study was to determine if the participants earn living. The results in Figure 4.7 shows that only 13.5% earn a living while the remaining 86.5% do not earn a living.

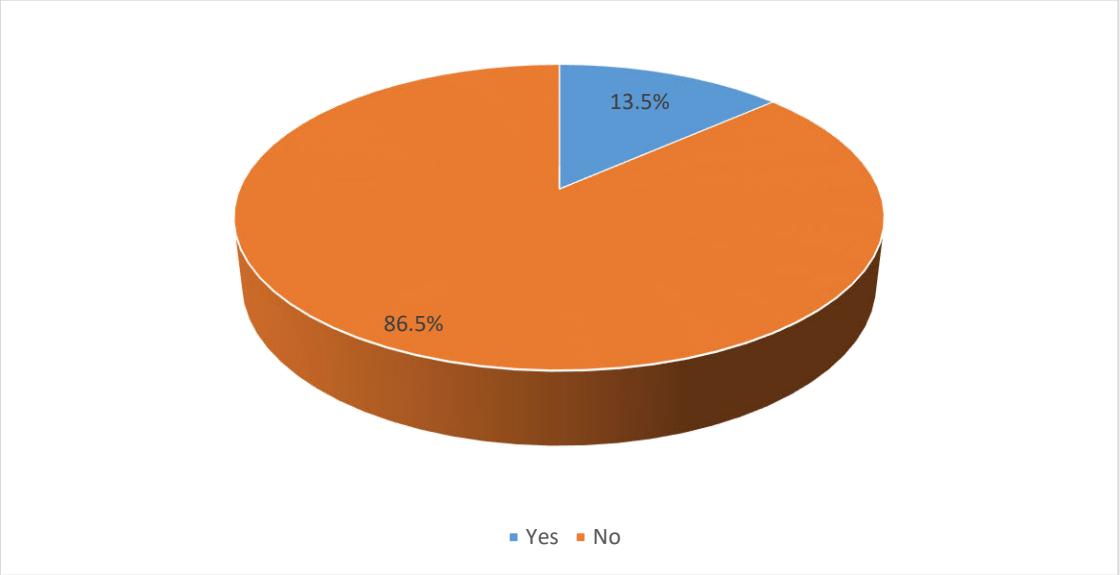

Figure 4. 7: Earn A Living

According to Figure 4.7, the majority of participants are unemployed, which may affect their online learning performance. The absence of financial autonomy may result in heightened dependency on familial or alternative support systems, potentially impacting students' access to resources like dependable internet, computers, or a conducive study environment. Moreover, students who do not engage in employment may encounter reduced time management pressures relative to their working counterparts, so affording them greater opportunity to concentrate on their academic pursuits. Nonetheless, this may also affect their sense of autonomy or motivation, as the financial burden of lacking an

income could diminish their drive to participate in their studies or self-regulate their learning activities efficiently.

4.3.10.1 Correlation Between Earning A Living and Online Learning Outcomes

The Pearson product-moment correlation was employed to analyze the association between earning a living and students' online learning results in public universities in the Western region of Kenya. The results were shown in Table 4.6.

Table 4.7:Correlation Between Earning A Living and Online Learning Outcomes

	Online learning outcomes
Earning a living	0.638
	(0.007)

Source: Field data, 2024

The findings showed a correlation coefficient of 0.638, signifying a strong positive association between earning a living and online learning outcomes. The p-value of 0.007, being below the significance threshold of 0.05, indicates that this relationship is statistically significant. The data indicate that employed students are more likely to achieve superior online learning outcomes. This may be ascribed to their capacity to procure critical resources, such internet connectivity, digital devices, and educational materials, which are vital for online education. Moreover, earning a livelihood may cultivate a feeling of accountability and self-discipline, encouraging students to prioritize their academic pursuits and attain their educational objectives. This finding corresponds

with the study's aim of identifying predictors of online learning outcomes, highlighting the significance of financial independence in academic achievement.

4.3.11 Motivation for Studying

Participants were asked to state why they wanted to study. According to the findings in Figure 4.8, personal interests formed 22.7% of respondents' motivation, career progress for 31.9%, parental and familial pressure for 20.1%, and financial necessity for 25.3%.

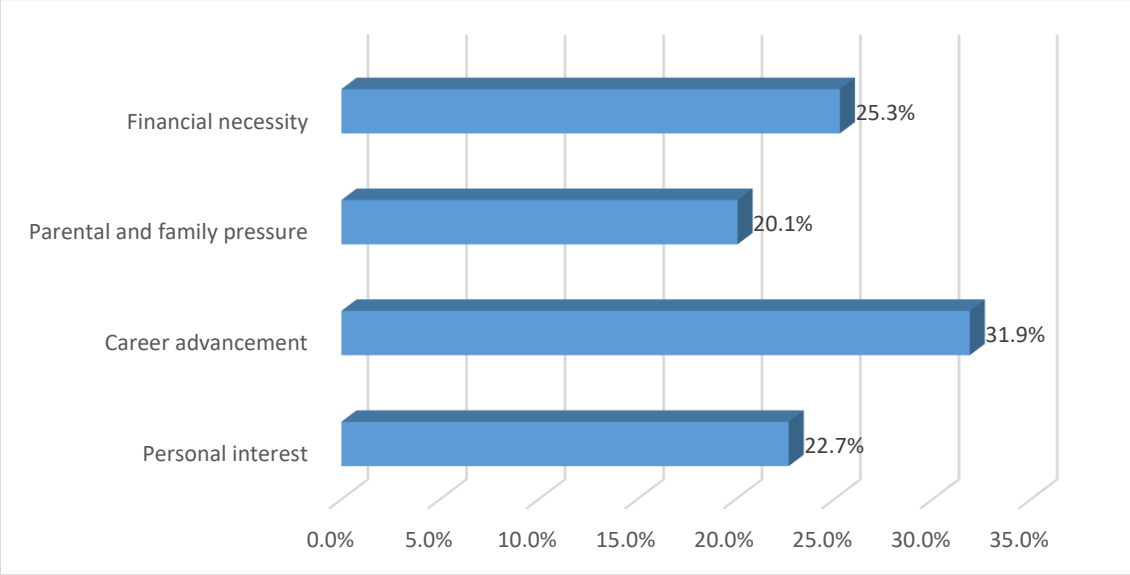

Figure 4. 8: Motivation for Studying

Figure 4.8 illustrates that individuals possess diverse motivational sources for studying, which can substantially affect their online learning results. Individuals driven by personal passion are likely to exhibit heightened engagement and proactivity in their learning, showcasing enhanced self-regulation and a profound dedication to academic achievement. Conversely, students motivated by professional progression may

concentrate on the practical implementation of their studies, perhaps resulting in increased perseverance and goal-oriented behavior in online learning. Individuals influenced by parental or familial pressure may engage based on the degree to which they internalize this drive, which could impact their intrinsic interest and overall learning efficacy. Students driven by financial necessity may encounter heightened stress or distraction, potentially impairing their concentration on studies and self-regulation of learning behavior, so affecting their academic performance.

4.3.12 Self-regulation Strategy

Participants were asked on whether they have self-regulation strategy. From the findings in Figure 4.9, 12.2% had no self-regulation strategy, 30.6% occasionally had self regulationstrategy,34.5% often had self-regulation strategy while 22.7% always had self-regulation strategy.

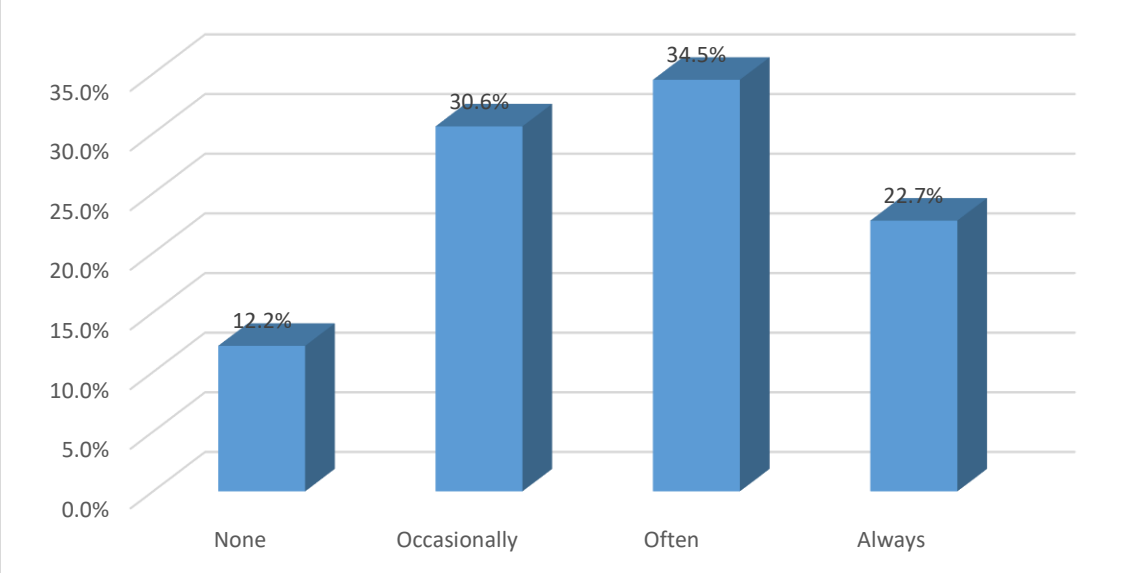

Figure 4. 9: Self-regulation Strategy

Figure 4.9 reveals that a significant number of individuals fail to continuously implement self-regulation tactics, whereas a minority actively practices self-regulation regularly. The variation in self-regulation can significantly influence online learning outcomes. Students who consistently employ self-regulation skills are likely to demonstrate enhanced discipline, time management, and goal-setting, which are crucial for success in online learning contexts. Conversely, those who rarely or occasionally utilize these tactics may encounter difficulties in sustaining focus, efficiently managing their time, and achieving regular advancement in their studies. The absence of self-regulation may impede their capacity to surmount problems and sustain motivation, consequently impacting their academic success in online learning.

4.3.12.1 Correlation between Self-regulation Strategy and Online Learning Outcomes

The Pearson product-moment correlation was employed to evaluate the correlation between self-regulation strategies and students' online learning outcomes in public universities in the Western region of Kenya. The results were shown in Table 4.8.

Table 4.8: Correlation between Self-regulation Strategy and Online Learning Outcomes

	Online learning outcomes
Self-regulation strategy	0.791 (0.001)

Source: field data, 2024

The analysis showed a correlation coefficient of 0.791, signifying a strong positive association between the utilization of self-regulation mechanisms and online learning outcomes. The p-value of 0.001, much below the 0.05 criterion, verifies that this association is statistically significant. The results indicate that students utilizing self-regulation skills, including goal planning, time management, and self-monitoring, are more likely to attain superior outcomes in online learning. Self-regulation augments academic motivation, enabling students to maintain attention, adjust to problems, and monitor their progress, hence resulting in enhanced performance. This finding corroborates the study's aim of identifying determinants of online learning outcomes, emphasizing the vital role of self-regulation in improving academic success in online learning contexts.

4.3.13 Perceived Self-efficacy in Learning

Respondents were requested to rate a level of perceived learning self-efficacy. 22.7% of respondents had low self-efficacy, 51.6% had moderate self-efficacy, and 25.7% had strong self-efficacy, according to the data.

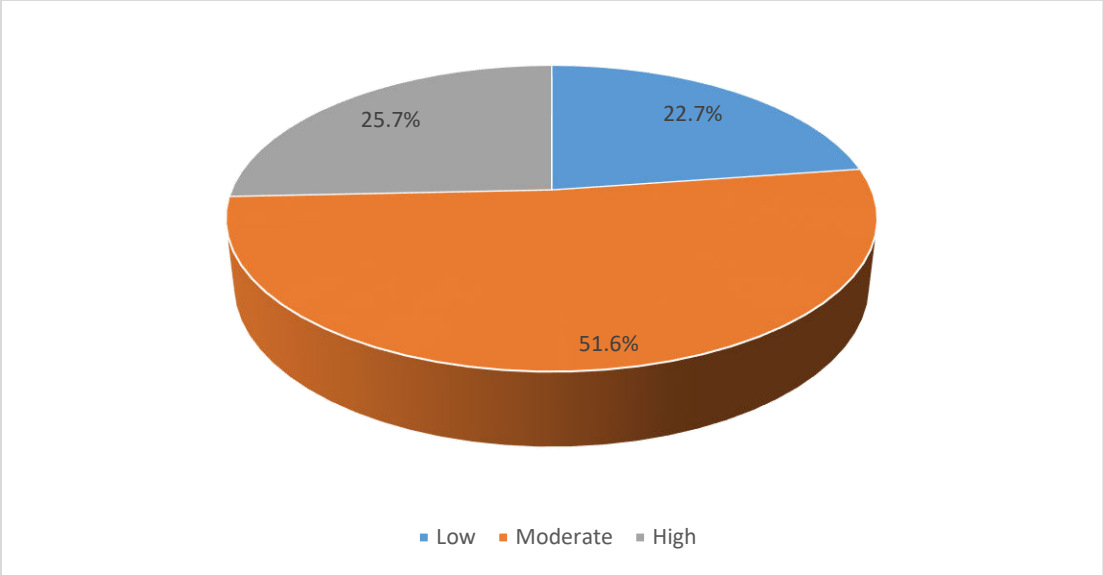

Figure 4. 10: Perceived self-efficacy in learning

Figure 4.10 illustrates that the majority of students displayed moderate self-efficacy, with a smaller number exhibiting either low or high levels. This indicates that whilst numerous students exhibit a reasonable degree of trust in their capacity to learn and thrive in an online setting, a substantial segment may grapple with self-belief or want further assistance to bolster their self-efficacy. These findings are crucial to the research, as self-efficacy is an essential element of both self-regulation and academic motivation, which are fundamental in forecasting online learning outcomes. The results suggest that strategies to enhance self-efficacy may beneficially affect students' capacity to establish personal objectives, manage tasks, and sustain intrinsic motivation, hence enhancing their academic performance in online learning environments.

4.3.14 Frequency of Online Learning Engagement

The researcher sought to find from the participants their frequency of online learning engagement. The findings shows that 22.0% rarely engage in online learning, 35.9%

occasionally engage in online learning, 29.3% frequently engage in online learning and 12.8% engage very frequently in online learning.

Table 4.9: Frequency of Online Learning Engagement

		Frequency	Percent	Cumulative Percent
Valid	Rarely	67	22.0	22.0
	Occasionally	109	35.9	57.9
	Frequently	89	29.3	87.2
	Very frequently	39	12.8	100.0
	Total	304	100.0	

Source:Field data, 2024

Table 4.9 reveals that majority of participants participate occasionally or frequently, although a smaller number indicated very frequent or infrequent engagement. The trends indicate that the majority of students exhibit moderate engagement in online learning, which may be attributed to accessibility issues, individual preferences, or varying degrees of academic drive and self-regulation. The results are intricately linked to the study's emphasis, as engagement levels can directly affect learning outcomes. Low or inconsistent engagement may indicate obstacles that impede effective online learning, whereas elevated engagement levels likely signify enhanced motivation and improved self-regulation, which are essential for attaining good academic achievements in online learning contexts.

4.3.14.1 Correlation between Frequency of Online Learning Engagement and Online Learning Outcomes

The relationship between the frequency of online learning engagement and online learning results in public universities in Western Kenya was examined using the Pearson product-moment correlation. The findings were displayed in Table 4.10.

Table 4.10: Correlation between Frequency of Online Learning Engagement and online Learning Outcomes

	Online learning outcomes
Frequency of online learning engagement	0.819 (0.007)

Source: Field data, 2024

The analysis revealed a correlation coefficient of 0.819, signifying a strong positive relationship between frequent online learning participation and enhanced learning outcomes. The p-value of 0.007, which is below the conventional significance threshold of 0.05, indicates that the relationship is statistically significant. The results indicate that students who more frequently participate in online learning activities, including watching lectures, engaging in discussions, and completing assignments, are likely to attain superior academic performance. This conclusion highlights the significance of active engagement in online learning as a crucial element in augmenting academic motivation and self-regulation, which subsequently lead to enhanced learning outcomes. The association reinforces the study's aim of identifying predictors of online learning

outcomes, specifically emphasizing the essential role of consistent and active involvement in achieving academic success in online education.

4.3.15 Level of Satisfaction with Online Learning

Participants were asked to state their level of satisfaction with online learning. The findings in Table 4.13 shows that 30.6% were very dissatisfied, 31.9% were dissatisfied, 21.1% were satisfied and 16.4% were very satisfied.

Table 4.11: Level of Satisfaction with Online Learning

		Frequency	Percent	Cumulative Percent
Valid	Very dissatisfied	93	30.6	30.6
	Dissatisfied	97	31.9	62.5
	Satisfied	64	21.1	83.6
	Very satisfied	50	16.4	100.0
	Total	304	100.0	

Source: Field data, 2024

The results in Table 4.11 reveal that the majority of participants indicated unhappiness with online learning, but a minority reported satisfaction or high satisfaction. This indicates that numerous students may encounter obstacles such as insufficient infrastructure, restricted contact, or issues in adjusting to online learning formats, potentially affecting their entire educational experience. In contrast, the satisfaction reported by a minority indicates that certain individuals perceived online learning as fulfilling their expectations, potentially owing to enhanced access, self-regulation, or intrinsic motivation.

4.3.16 Parental Level of Education

The study sought to find from the respondents the parental level of education. The findings in Table 4.12 shows that 14.1% had no formal education, 27.6% had primary education, 36.2% had secondary education and 22.0% had tertiary education.

Table 4.12: Parental Level of Education

		Frequency	Percent	Cumulative Percent
Valid	No formal education	43	14.1	14.1
	Primary education	84	27.6	41.8
	Secondary education	110	36.2	78.0
	Tertiary education	67	22.0	100.0
	Total	304	100.0	

Source: Field data, 2024

According to the findings above, 14.1% of the respondents' parents had no formal education. Parents with no formal education may face significant challenges in supporting their children's academic journey, especially in the context of online learning. These parents may lack the knowledge and skills to assist with academic tasks, particularly those requiring technological proficiency or advanced academic understanding. As a result, students whose parents have no formal education might face difficulties in maintaining high levels of motivation and self-regulation, as they may not receive the same level of encouragement, academic support, or guidance that students with more educated parents might. This lack of educational background in the family could also impact the students' perceptions of the value of education, potentially affecting their online learning outcomes.

The results further show that 27.6% of the respondents' parents had completed only primary education. While these parents have had some formal schooling, their ability to provide academic support might still be limited compared to parents with higher educational qualifications. Parents with primary education might encourage their children to pursue their studies but may not have the expertise to support complex academic tasks or offer detailed guidance on academic or career-related matters. These parents may be more focused on ensuring that their children continue their studies without necessarily providing significant intellectual support. Therefore, students in this group may rely more on external resources like teachers, peers, or online materials to achieve academic success. Their academic motivation and self-regulation could be influenced by the level of engagement and encouragement they receive from parents, as well as the external support systems available to them.

The data also shows that 36.2% of respondents' parents had secondary education. Parents with secondary education are more likely to be able to guide their children through academic challenges and provide the necessary encouragement for success in school. While their support might still be limited in comparison to parents with tertiary education, they can still assist with basic academic tasks, encourage good study habits, and create a conducive learning environment. This parental involvement is likely to positively influence students' motivation and self-regulation, as these parents understand the importance of education and can support their children’s academic goals. The higher percentage of parents with secondary education in this study suggests that a significant

portion of students may have at least some level of familial support when it comes to their academic development and online learning outcomes.

Lastly, 22.0% of respondents' parents had attained tertiary education. Parents with tertiary education typically have a better understanding of the demands of higher education and are better equipped to provide academic and emotional support to their children. These parents are more likely to assist with complex academic tasks, offer guidance on career planning, and motivate their children to excel in their studies. They are also more likely to have the financial resources to support their children's education, including providing access to necessary technology for online learning. The higher the level of parental education, the greater the likelihood that students will exhibit higher levels of academic motivation and self-regulation, which could positively impact their online learning outcomes. The presence of such educated parents can enhance a student's overall academic experience and contribute to their success in online learning environments.

4.3.16.1 Correlation between Parental Level of Education and Online Learning Outcomes

The Pearson product-moment correlation was employed to evaluate the link between parental educational attainment and students' online learning results in public universities in the Western region of Kenya. The results were shown in Table 4.14.

Table 4.13:Correlation between Parental Level of Education and Online Learning Outcomes.

	Online learning outcomes
parental level of education	0.693 (0.004)

Source: Field data, 2024

The results above showed a correlation coefficient of 0.693, signifying a strong positive association between elevated parental education levels and enhanced online learning results. The p-value of 0.004, which is below the standard significance threshold of 0.05, indicates that this link is statistically significant. The results indicate that adolescents with parents possessing higher education levels are more inclined to attain superior online learning outcomes. This may result from the beneficial impact of educated parents in offering academic assistance, cultivating a supportive learning atmosphere, and encouraging their children to excel in their studies. This finding corresponds with the study's emphasis on predictors of online learning outcomes, underscoring the impact of family history, particularly parental education, on kids' academic achievement in online learning environments.

4.4 Influence of Self- regulation Behavior on Students' Online Learning Outcomes

The first objective of the study was to establish the extent to which self regulation behavior influences student online learning outcomes. Descriptive statistics were used to analyze data in relation to the first objective.

4.4.1 Descriptive Statistics

Percentages, means and standard deviations were employed to find out the extent to which self-regulation influences online learning outcomes. The results were presented in Table 4.14.

Table 4.14: Extent to which self-regulation behavior influences student online learning outcomes

No.	Statement	Percentages and frequencies					Mean	Std dev
		1 SD	2 D	3 N	4 A	5 SA		
1.	I am able to fulfill my personal tasks and deadlines for online assignments	81 (26.6%)	89 (29.3%)	28 (9.2%)	61 (20.1%)	45 (14.8%)	2.67	1.432
2.	I effectively manage my time for attending online classes and studying	77 (25.3%)	88 (28.9%)	23 (7.6%)	61 (20.1%)	55 (18.1%)	2.77	1.476
3.	I persist in completing online coursework even when faced with challenges	63 (20.7%)	69 (22.7%)	16 (5.3%)	79 (26.0%)	77 (25.3%)	3.12	1.523
4.	I set personal deadlines that help me stay on track with my online coursework	65 (21.4%)	61 (20.1%)	18 (5.9%)	82 (27.0%)	78 (25.7%)	3.15	1.528
5.	I review and adjust my learning strategies if I find I am not making sufficient progress	56 (18.4%)	63 (20.7%)	21 (6.9%)	89 (29.3%)	75 (24.7%)	3.21	1.479
6.	Do you set specific goals for your online courses	1 Yes 149 (49.1%)			2 No 155 (50.9)		1.64	0.707
7.	How often do you create a study schedule for your online learning	Never 43 (14.1%)	Occasionally 97 (31.9%)		Sometimes 91 (29.9%)	Frequently 73 (24.0%)	2.64	0.999
8.	How satisfied are you with your ability to monitor your progress	Very dissatisfied 98 (32.2%)		Dissatisfied 93 (30.6%)	Satisfied 74 (24.3%)	Very satisfied 39 (12.8%)	2.32	1.059

Source: Field data, 2024

The purpose of the study was to determine if students were able to complete their personal assignments and fulfill deadlines for their online assignments. The results showed that 26.6% strongly disagreed, 29.3% disagreed, 9.2% remained neutral, 20.1% agreed and 14.8% strongly agreed that they were able to fulfill their personal tasks and deadlines for online assignments. The results indicate that most students contended they were unable to meet their personal tasks and deadlines for online assignments, suggesting difficulties in self-regulation that may impede good online learning outcomes. Individuals who consented exhibited a degree of self-discipline and time management, essential for achieving academic objectives in a virtual environment. Neutral reactions indicate ambiguity or variability in self-regulatory behaviours. The average score of 2.67 and a standard deviation of 1.432 suggest a generally inadequate capacity to meet deadlines, accompanied by significant heterogeneity in students' self-regulation behaviours.

Respondents were asked about how well they manage their time so they can study and attend online programs. According to the results, 38.2% agreed and strongly agreed that they efficiently manage my time so that I may attend online classes and study, whereas 54.2% disagreed and strongly disagreed and 7.6% stayed neutral. The findings suggest significant difficulties with self-regulation that may have a negative impact on the outcomes of their online learning, as the majority of students did not think they were able to efficiently manage their time for attending online classes and studying. Those who gave their consent had effective time management skills, suggesting a higher likelihood of achieving positive academic outcomes. Indecisiveness or inconsistent time management techniques are suggested by neutral answers. The average score of 2.77 and

a standard deviation of 1.476 suggest a typically low level of time management efficacy among students, accompanied by significant variability in their self-regulatory skills.

The results above were in line with interview responses obtained from heads of department where they were asked to state how students' self-regulation skills (such as time management and goal setting) affect their engagement and performance in online courses. HOD1 stated that;

> *"Effective time management and goal-setting skills significantly enhance students' engagement and performance by ensuring they meet deadlines and stay focused. Those lacking these skills often struggle with participation and fall behind in their coursework."*

The assertion highlights that learners who possess effective time management and goal-setting skills are more likely to stay organized, adhere to deadlines, and maintain focus, thereby improving their engagement and performance in online classes. Conversely, students who do not possess these self-regulation skills frequently struggle to keep pace with their coursework and sustain regular involvement. This viewpoint aligns with the study's overall results, which showed that a significant number of students find it difficult to manage their learning schedules efficiently. The HOD's perspectives emphasize the significance of cultivating self-regulation abilities as a base for effective online education, indicating that enhancing students' time management and goal-setting techniques may result in improved engagement and academic success.

The results were also supported by the responses obtained from ODeL1 who stated;

> *"Students often use planners, digital calendars, and reminders to manage their time. However, some struggle with procrastination due to competing priorities or lack of discipline. Those who successfully allocate time for learning activities tend to perform better in their coursework."*

The statement emphasizes that although numerous students strive to organize their study schedules with planners, digital calendars, and reminders; their effectiveness heavily relies on their self-discipline and capacity to resist procrastination. The remark indicates that despite having strategies and technological tools at their disposal, certain students find it challenging to prioritize their learning because of conflicting obligations or ineffective time management skills. This supports the study's overall conclusions that successful self-regulation is a crucial factor in achieving success in online learning. Students who regularly organize and dedicate time for their learning are more likely to stay involved and succeed academically, while those who do not manage their time well are at risk of lagging behind and underperforming.

The study intendent to find on whether respondents persist in completing online coursework even when faced with challenges. The findings shows that 43.4% disagreed, 5.3% were neutral and 51.3% agreed that they persist in completing online coursework even when faced with challenges. The results indicate that most students concurred that continue to complete online assignments despite encountering difficulties, demonstrating significant self-regulation and resilience, essential for achieving excellent online learning outcomes. Those who dissent exhibit a deficiency in perseverance, which may obstruct their capacity to attain academic objectives. Neutral answers indicate ambiguity or intermittent endurance amid adverse circumstances. The mean score of 3.12 and a standard deviation of 1.523 indicate a moderate degree of perseverance among students, accompanied by considerable diversity in their self-regulatory behavior.

The aforementioned results were corroborated by McClelland and Atkinson's Need Achievement Theory, which highlights the importance of intrinsic motivation and perseverance in reaching objectives. According to this theory, people who have a high need for achievement are motivated to overcome obstacles, exhibiting resilience and self-control to achieve success; students who persevered in finishing online coursework in spite of difficulties exemplify this high achievement drive, demonstrating their dedication to academic goals; on the other hand, those who lack perseverance are associated with a lower need for achievement, which may impede their learning outcomes.

Respondents were asked on whether they set personal deadlines that help them stay on track with their online coursework. The outcomes show that 41.5% disagreed, 5.9% remained neutral, 52.7% agreed that they set personal deadlines that help me stay on track with my online coursework. The results indicate that most students concurred that they establish personal deadlines to maintain progress in their online coursework, reflecting proactive self-regulation behaviors that improve task management and lead to superior online learning outcomes. Individuals who dissent may encounter difficulties with time management and self-discipline, perhaps impeding their academic advancement. Neutral responses indicate inconsistency or ambiguity in employing deadlines as a self-regulation tactic. The mean score of 3.15 and a standard deviation of 1.528 suggest a moderate inclination to establish personal deadlines, accompanied by significant heterogeneity across students.

The findings are in accordance with those of Matuga (2009), who discovered that self-regulation, including setting personal deadlines, significantly enhances academic success. According to Matuga, goal-oriented behaviors improve time management and job completion, which is crucial for online learning because independence is essential. 52.7% of students agreed, according to your research, that using deadlines to stay on course shows proactive self-regulation. However, the answer variability shows that students' levels of self-discipline vary, with a mean of 3.15 and a standard deviation of 1.528.

The research sought to find on whether participants review and adjust their learning strategies if they find they are not making sufficient progress. The results show that 18.4% strongly disagreed, 20.7% disagreed, 6.9% remained neutral, 29.3% agreed and 24.7% strongly agreed that they review and adjust their learning strategies if they find they are not making sufficient progress. The results indicate that most students concurred that modify their learning tactics when progress is inadequate, demonstrating robust self-regulation skills that facilitate adaptive learning and enhance online learning outcomes. Individuals who disagreed may exhibit inflexibility in their learning methodologies, which could hinder their capacity to surmount obstacles. Neutral replies indicate ambiguity or variable approaches in strategic modification. The mean score of 3.21 and a standard deviation of 1.479 indicate a modest degree of flexibility, accompanied by considerable heterogeneity in students' self-regulatory behaviors.

Respondents were asked on whether they set specific goals for their online courses. The findings showed that 49.1% set specific goals for online courses while 50.1% of the respondents do not set specific goals for online courses. The findings indicate that

although some students establish specific goals for their online courses, demonstrating a proactive self-regulation approach that can enhance their learning outcomes, a marginally larger segment fails to set such goals, suggesting a possible deficiency in their self-regulation practices. The mean of 1.64 indicates a tendency towards not establishing precise goals, while the standard deviation of 0.707 reflects significant diversity in the replies. This suggests that self-regulation behaviors vary among students, potentially hindering their capacity to attain optimal learning results.

The above findings were supported by the findings from interview where lecturers were asked to state specific self-regulation behaviors they have observed in students that seem to impact their online learning outcomes. Lecturer1 stated that

> *"Many students exhibit behaviors such as setting specific goals, creating schedules, and prioritizing tasks, which positively impact their online learning outcomes. Conversely, a lack of discipline and procrastination often result in poor performance and incomplete tasks."*

The statement highlights that students who participate in self-regulatory habits—like establishing clear objectives, planning study times, and ranking tasks—generally achieve better outcomes in online learning, as these actions assist them in maintaining focus, adhering to deadlines, and successfully finishing their assignments. Conversely, students who are undisciplined or often delay tasks find it challenging to sustain regular study routines, resulting in diminished performance and incomplete assignments. This observation aligns with the quantitative results, which showed that although some students exhibit proactive goal-setting behaviors, many lack them, suggesting a lack of consistency in self-regulation among learners. The lecturer's observations emphasize that

self-discipline, goal orientation, and efficient planning are crucial for attaining favorable learning results in online education.

Respondents were asked on how often they create a study schedule for their online learning. The results showed that 14.1% never create a study schedule for your online learning, 31.9% occasionally create, 29.9% sometimes create and 24.0% frequently create a study schedule for their online learning. The results indicate that students exhibit differing degrees of self-regulation in designing study regimens for their online education. Individuals who do not establish plans may lack the requisite planning abilities for successful time management, whereas those who sporadically generate schedules exhibit inconsistent self-regulation that may impede prolonged academic achievement. Students who regularly formulate schedules demonstrate robust self-regulation, which likely results in improved learning outcomes. The mean of 2.64 indicates that the majority of students engage in schedule creation between occasionally and sometimes, while the standard deviation of 0.999 reflects considerable variety in self-regulation activities among the respondents.

Respondents were asked to state how satisfied they are with their ability of monitoring their progress. The outcomes shows that 32.2% are very dissatisfied, 24.3% are dissatisfied, 24.3% are satisfied, 12.8% were very satisfied. The results indicate that a considerable number of students express dissatisfaction with their capacity to track their progress, suggesting inadequate self-regulation skills that could adversely affect their online learning results. In contrast, individuals who are satisfied or highly satisfied exhibit enhanced self-monitoring abilities, which are crucial for monitoring and attaining

learning objectives. The mean of 2.32 suggests that the majority of students exhibit dissatisfaction, while the standard deviation of 1.059 indicates significant variability in satisfaction levels, underscoring the differing self-regulation abilities among the respondents.

The aforementioned results were corroborated by the Self-Regulation Theory, which emphasizes the significance of people's capacity to track and assess their progress towards objectives. This idea holds that self-monitoring is an essential part of good self-regulation, allowing students to spot weaknesses and modify their approach to perform better. While satisfied students exhibit higher self-regulatory skills—which are crucial for tracking progress and reaching targeted learning outcomes dissatisfied students may find it difficult to match their actions with academic objectives.

Respondents were asked to state on whether they seek help from peers or instructors when faced with challenges on their online studies. The findings indicate that certain students proactively seek assistance from peers or instructors when encountering challenges, thereby employing a self-regulation strategy that can improve their online learning outcomes. Conversely, others refrain from seeking help, which may hinder their capacity to surmount difficulties and achieve academic success. This indicates that self-regulation behaviours, such as soliciting help, are not consistently employed, potentially leading to disparate academic achievement levels among students in online learning contexts.

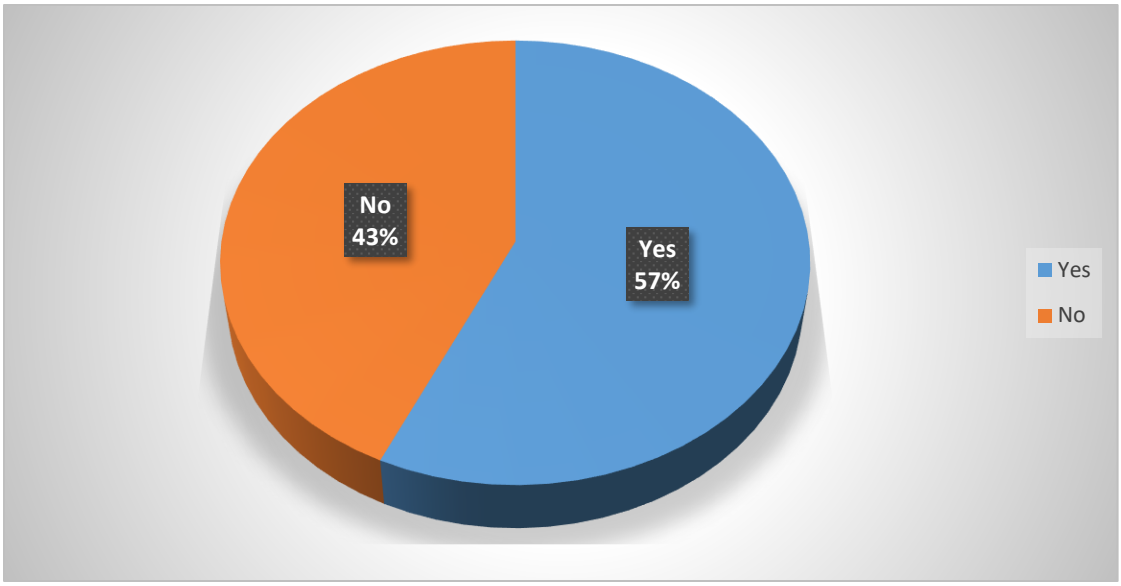

Figure 4. 11: Seek help from peers or instructors

The aforementioned results concurred with those of Mutwelele (2014), who carried out research to ascertain the function of self-regulated learning and academic motivation as predictors of academic success. According to the study, adolescents who actively used self-regulation techniques like asking for assistance from teachers or peers performed better academically. On the other hand, pupils who did not employ these tactics frequently found it difficult to overcome obstacles, which led to poorer academic achievement. This emphasizes how important self-regulation is to improving learning results.

Respondents were asked on whether they eliminate distractions when studying online. The results shows that 57.9% eliminate distractions while 42.1% do not eliminate distractions when studying online.The outcomes indicate that most students effectively

remove distractions while studying online, demonstrating robust self-regulation that can enhance their learning outcomes. Conversely, students who fail to minimize distractions may encounter difficulties in sustaining focus, thus impairing their online learning effectiveness. This indicates that proficient self-regulation, including the reduction of distractions, is essential for enhancing students' concentration and success in online learning settings.

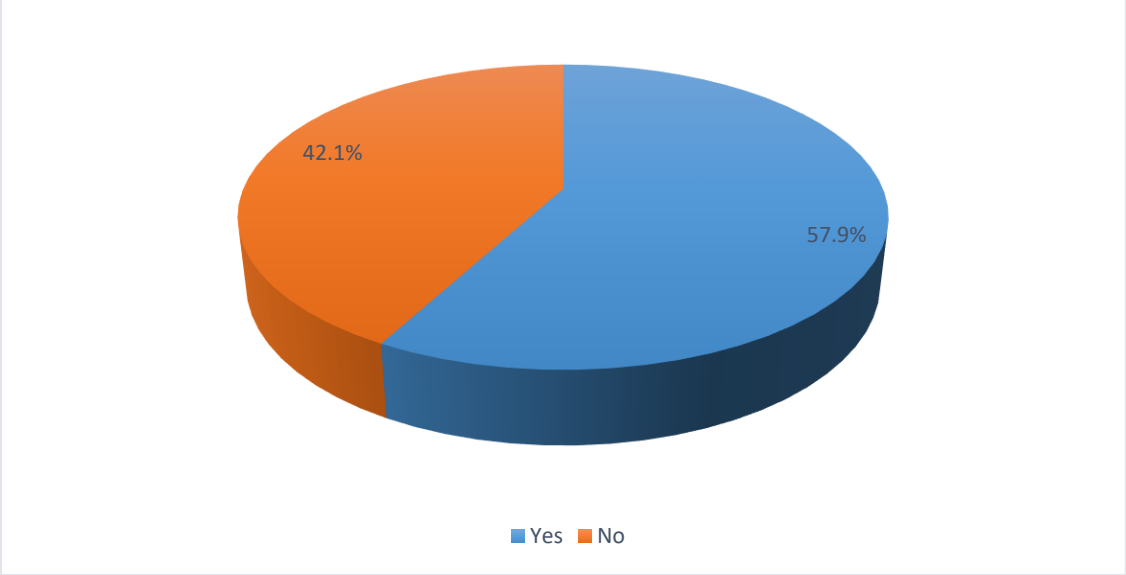

Figure 4. 12: Eliminate distractions

The above findings were supported by the interview response obtained from Odel facilitators when they were asked about the challenges that students face in staying focused on their online learning tasks. One of the ODEL2 stated that;

> *"Distractions from social media, household responsibilities, and poor internet connectivity are common challenges. Additionally, the lack of physical interaction with peers and instructors reduces engagement, making it harder for students to stay focused during online sessions."*

The statement emphasizes that multiple external and environmental elementslike social media, domestic duties, and unstable internet accessgreatly impede students' capacity to stay concentrated during online education. The facilitator highlights that the lack of in-person interaction with peers and teachers diminishes students' feelings of involvement and responsibility, which further leads to distractions and decreased focus. This observation reinforces the quantitative results by showing that although some students effectively reduce distractions and exhibit solid self-regulation, others face difficulties stemming from personal and situational obstacles. The remark emphasizes that maintaining concentration in online education demands both personal commitment and self-control, along with conducive learning settings that reduce interruptions and promote engagement.

4.4.2 Hypothesis Testing

The first null hypothesis of the study stated, Self-regulation behavior has no significant influence on students' online learning outcomes. To test this hypothesis, simple linear regression was used.

4.4.2.1 Influence of Self-regulation Behavior and Online Learning Outcomes

To determine the influence of Self-regulation behavior on students' online learning outcomes in public universities, the results were presented in tables 4.15, 4.16 and 4.17.

4.4.2.2 Model Summary for self-regulation behavior

The model summary highlights the connection between students' online learning outcomes and their self-regulation behavior, giving a broad overview of the regression model's fit. The results were shown in Table 4.15.

Table 4.15: Model Summary for Self-regulation Behavior and Online Learning Outcomes

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.743[a]	.552	.531	.237

Source: Field data, 2024

The two variables have a substantial positive association, as indicated by the R-value of 0.743, which suggests that self-regulation behavior is a significant predictor of online learning results. With R Square value of 0.552, the model's explanatory power is moderate to strong, as self-regulation behavior accounts for 55.2% of the variation in students' online learning results. The average gap between the observed values and the regression line is represented by the standard error of 0.237, which indicates a respectable degree of accuracy in forecasting online learning outcomes based on self-regulation behavior. These findings suggest that students' academic performance in online learning settings may be enhanced by interventions targeted at enhancing their self-regulation abilities. Self-regulation behavior also appears to have a significant impact on online learning outcomes.

4.4.2.3 ANOVA Test for Self-regulation Behavior

The ANOVA test is used to assess if self-regulation behavior and students' online learning outcomes are statistically related. The results were shown in Table 4.16

Table 4.16: ANOVA Test for Self-regulation Behavior

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17.872	1	17.872	25.47	.003[b]
	Residual	211.859	302	0.702		
	Total	229.731	303			

Source: Field data, 2024

The p-value of 0.003, which is below the significance level of 0.05, and the F value of 25.47, which is higher than the necessary F value of 3.86, both show that the model is statistically significant. This suggests that students' online learning outcomes can be significantly predicted by their self-regulation behavior, which supports the particular goal that self-regulation, affects academic achievement in online learning settings.

4.4.2.4 Regression Analysis for Self-regulation Behavior

In this study, the regression analysis is used to assess how academic motivation affects students' online learning results in public universities located in Kenya's West area. The results were as shown in Table 4.17.

Table 4.17: Regression Analysis for Self-regulation Behavior

Model		Unstandardized Coefficients		T	Sig.
		B	Std. Error		
	(Constant)	2.791	0.752	3.711	.001
	SRB	1.137	0.251	4.528	.007

Source: Field data, 2024

The linear regression model is as shown;

Y=2.791+1.137 SRB……Equation 4.1

When self-regulation is zero, the expected value of students' online learning results is represented by the beta constant of 2.791. This figure represents the basic level of online learning results when self-regulation is absent. Given that the T value of 3.711 is higher than 1.649, the beta constant is considered statistically significant. Additional evidence for the constant's relevance comes from the p-value of 0.001, which is below the 0.05 significance level. Therefore, even when self-regulation is not present, the constant has a significant impact on the dependent variable (online learning results).

For every unit increase in self-regulation, the online learning results changes, as indicated by the regression coefficient of 1.137. The statistical significance of the regression coefficient is demonstrated by the T value of 4.528, which is significantly higher than the critical value of 1.649. Additionally, the p-value of 0.007 is below 0.05, indicating a substantial correlation between online learning outcomes and self-regulation. This implies that students' online learning outcomes improve in tandem with their level of self-regulation behavior.

The null hypothesis that self-regulation has no significant impact on students' online learning outcomes was rejected. These results imply that self-regulation strategies are a significant and positive predictor of online learning outcomes, emphasizing the importance of enhancing self-regulation skills to improve students’ academic performance in online learning environments.

The results above aligned with Mutwelele (2014) that looked at the relationship between academic accomplishment and self-regulated learning and academic motivation. Mutwelele came to the conclusion that improving academic results required the use of self-regulation techniques, such as goal-setting, self-monitoring, and modifying teaching methods. The study also highlighted that motivated students were more likely to use effective self-regulation strategies, which improved their performance on academic assignments, especially in self-directed learning settings like online courses.

4.5 Influence of Academic motivation on student online learning outcomes

The second objective of the study was to establish the extent to which Academic motivation influences student online learning outcomes. Descriptive statistics were used to analyze data in relation to the first objective.

4.5.1 Descriptive statistics

Percentages, means and standard deviations were employed to find out the extent to which Academic motivation influences online learning outcomes. The results were presented in Table 4.18.

Table 4.18: Influence of Academic motivation on student online learning outcomes

No.	Statement	Percentages and frequencies					Mean	Std dev
		1 SD	2 D	3 N	4 A	5 SA		
1.	I find online learning relevant to my future career aspirations	62 (20.4%)	67 (22.0%)	61 (20.1%)	43 (14.1%)	71 (23.4%)	2.98	1.455
2.	The cleanliness of my study environment affects my concentration during online learning	59 (19.4)	56 (18.4%)	20 (6.6%)	82 (27.0%)	87 (28.6%)	3.14	1.494
3.	I perceive the content of my online courses as useful for my personal development	55 (18.1%)	63 (20.7%)	23 (7.6%)	82 (27.0%)	81 (26.6%)	3.10	1.459
4.	I regularly review and adjust my goals to improve my online learning outcomes	78 (25.7%)	63 (20.7%)	17 (5.6%)	79 (26.0%)	67 (22.0%)	2.87	1.504
5.	I believe that online learning is essential for my academic and professional growth	58 (19.1%)	64 (21.1%)	26 (8.6%)	86 (28.3%)	70 (23.0%)	3.04	1.453
6.	Do you feel passionate about the subjects you study online	1 Yes 169 (55.6%)			2 No 135 (44.4%)		1.44	0.498
7.	How often do you remind yourself of your long-term goals related to online learning	1 Never 51 (16.8%)	2 Occasionally 87 (28.6%)		3 Sometimes 93 (30.6%)	4 Frequently 73 (24.0%)	2.62	1.027
8.	How motivated do you feel when starting a new online course	1 Not motivated 67 (22.0%)	2 Slightly motivated 86 (28.3%)	3 Moderately motivated 78 (25.7%)		4 Very motivated 73 (24.0%)	2.52	1.084

9.	How frequently do you explore new learning methods or resources to stay engaged	1 Never 61 (20.1%)	2 Rarely 97 (31.9%)	3 Sometimes 80 (26.3%)		4 Always 66 (21.7%)	2.50	1.044
10	Do you feel that your academic achievements motivate you to keep learning	1 Yes 197 (64.8%)			2 No 107 (35.2%)		1.35	0.478

Source: Field data, 2024

A question about the relevance of online learning to future career objectives was asked to the respondents. 20.4% severely opposed, 22.0% disagreed, 20.1% remained neutral, 14.1% agreed, and 23.4% highly agreed that they believe online learning is relevant to their future professional goals, according to the data. According to the results, a sizable percentage of respondents felt that online learning was relevant to their future professional goals, while a large majority disagreed. Furthermore, a sizable portion of respondents had no opinion on the matter. This implies that although some students may view online education as beneficial, many are not persuaded of its immediate application to their future employment. With some diversity in the replies, the mean of 2.98 and standard deviation of 1.455 show a moderate agreement with the relevance of online learning, which is consistent with the specific goal of analyzing the impact of academic motivation on online learning outcomes.

These findings were consistent with Irfan's (2019) investigation of the relationship between university students' self-regulated learning and motivation. Irfan discovered that students' opinions of how relevant learning activities were to their future professional aspirations were strongly impacted by their level of academic desire. In a similar vein, the study found that students' engagement and performance in online learning environments were significantly influenced by their ability to regulate themselves. These findings highlight how crucial it is to promote self-control and motivation in order to improve kids' academic experiences and goals for the future.

The purpose of the study was to determine whether respondents' ability to focus while online learning was impacted by how tidy their study space was. According to the results, 19.4% strongly disagreed, 18.4% disagreed, 6.6% were neutral, 27.0% agreed, and 28.6% highly agreed that a clean study space had an impact on focus when learning online. The findings show that those who agreed believe that maintaining a clean study area is essential to maintaining focus, suggesting that cleanliness can positively impact academic motivation. Those who disagreed imply that cleanliness might not have a significant effect on their ability to focus and that other factors might have a bigger effect. It's possible that neutral responders are unsure of their position on this issue. With varying perspectives among respondents, the mean of 3.14 and standard deviation of 1.494 suggest a moderate sense of the importance of cleanliness.

Respondents were asked on whether they perceive the content of their online courses as useful for their personal development. The outcomes showed that 38.8% disagreed, 6.9% were neutral, 53.6% agreed that they perceive the content of their online courses as useful for their personal development. Based on the findings, a sizable percentage of participants concurred that the content in their online courses was helpful for their own personal development, suggesting that academic motivation affects students' online learning results. Conflicting individuals could become less motivated if they are unable to relate the material to their own personal growth. The neutral responses could be interpreted as uncertainty or a lack of interest in the usefulness of the information. The data, which has a mean of 3.10 and a standard deviation of 1.459, shows differing

opinions regarding the value of online course material in connection to academic motivation and online learning outcomes. There is a moderate degree of agreement.

The purpose of the study was to ascertain whether participants routinely evaluate and modify their objectives in order to enhance their online learning results. The results indicated that they routinely examine and modify their goals to enhance their online learning outcomes, with 25.7% strongly disagreeing, 20.7% disagreeing, 5.6% remaining neutral, 26.0% agreeing, and 22.0% highly agreeing. According to the research, academic motivation is positively connected with proactive goal creation and success in online learning. A considerable number of participants admitted to regularly reviewing and adjusting their goals in order to improve their online learning results. The academic motivation and online learning outcomes of those who disagreed might be hampered by their lack of regular goal evaluation and adjustment. The inconclusive answers suggest a lack of consistency in goal-setting behavior or uncertainty. The data shows some heterogeneity in students' goal-setting behaviors and their impact on academic motivation, with a mean of 2.87 and a standard deviation of 1.504.

The findings indicated above were consistent with the study of Petrus et al. (2016), which looked into the relationship between achievement motivation and learning outcomes in Indonesia. According to their research, students who were more motivated were more likely to develop proactive goals and make frequent revisions to them, which enhanced their academic performance. The results also showed that academic motivation and

learning performance may be hampered by inconsistent goal evaluation and modification, highlighting the significance of developing adaptive goal-setting practices.

Respondents were asked on whether they believe that online learning is essential for their academic and professional growth. The findings showed that 40.2% strongly disagreed and disagreed, 8.6% remained neutral and 51.3% agreed and strongly agreed that they believe that online learning is essential for their academic and professional growth. The results show that many respondents felt that online learning was crucial to their academic and professional development, indicating that the perceived value of online learning has a beneficial impact on academic motivation.

The above discussion was supported by the interview response obtained from the ODeL facilitators when they were asked to stated what motivates students to participate in online learning programs. ODeL3 stated that;

> *"Students are motivated by the flexibility of online learning, the opportunity to balance studies with work, and the desire to achieve their academic goals. Recognition from instructors and the relevance of the courses to their career aspirations also enhance their motivation,"*

The statement highlights that students' willingness to participate in online learning is influenced by various factors, including the flexibility it provides, enabling them to juggle academic commitments alongside work and personal duties. The facilitator also emphasizes that students are motivated by the chance to realize their academic and professional aspirations, along with the support and acknowledgment they gain from their teachers. Moreover, the perceived significance of course material to their career goals enhances their dedication and perseverance in online education. This viewpoint backs the

quantitative results by demonstrating that students who perceive online learning as beneficial for their academic and career development generally exhibit greater motivation, which positively affects their engagement and overall educational results.

Those who didn't agree might not recognize how online education relates to their personal growth, which could lower their engagement and drive. These responses were supported by the interview response obtained from ODeL administrators who were asked to state how lack of motivation affect student engagement in online learning. ODeL4 stated that;

> *"When students lack motivation, they often skip classes, submit assignments late, or fail to participate actively in discussions. This disengagement results in lower comprehension of the material and poor overall performance."*

The assertion demonstrates that insufficient motivation in students directly hampers their involvement and academic success in online learning settings. When students lack motivation, they often withdraw by skipping classes, postponing assignments, and shunning discussions—actions that impede active learning and engagement with course content. This disconnection ultimately results in superficial comprehension, diminished knowledge retention, and inadequate overall performance. The facilitator's observation supports the research results indicating that a lack of academic motivation may hinder students' capacity to engage with and gain from online education, emphasizing the importance of fostering motivation through encouraging teaching methods and pertinent, stimulating course materials.

Uncertainty or ambivalence regarding the significance of online learning is indicated by the neutral responses. The results indicate a modest level of agreement, with a mean of 3.04 and a standard deviation of 1.453, suggesting differing opinions about the critical role that online learning plays in academic and professional development.

Respondents were asked on whether they feel passionate about the subjects they study online. The results show that 55.6% were passionate while 44.4% were not passionate about the subjects they study online. According to the results, the majority of students have a strong enthusiasm for the subjects they study online, a sign of strong academic motivation that will probably improve their learning outcomes. In online learning, enthusiasm for a subject can improve performance, perseverance, and engagement. The standard deviation of 0.498 indicates a relatively low variation in the replies, indicating that most students have a similar level of academic interest towards their online courses, while the mean of 1.44 reveals a high inclination towards passion for the subjects.

The study intends to find how often participants remind themselves of their long-term goals related to online learning. The outcomes showed that 16.8% never remind, 28.6% occasionally remind, 30.6% sometimes remind and 24.0% frequently remind themselves of their long-term goals related to online learning. According to the results, the majority of students had a moderate level of academic motivation and occasionally or occasionally remind themselves of their long-term objectives related to online learning. Nonetheless, a sizable percentage of students either never remind themselves or just seldom do so, which may indicate a lack of constant drive to maintain focus on their academic objectives. The standard deviation of 1.027 shows significant variation in the frequency of goal reminder

behavior across students, which may have an impact on their learning results. The mean of 2.62 indicates that students are relatively engaged in these motivational practices.

These findings have been confirmed by the Need Achievement Theory of McClelland and Atkinson, which emphasizes the importance of academic motivation in propelling people to accomplish their objectives. Students that are highly motivated, either internally or externally are more likely to create and work towards difficult academic goals, exhibiting perseverance and effort in virtual learning settings, according to this notion. Higher levels of achievement motivation are associated with higher online learning outcomes because motivated students are more likely to participate fully, overcome challenges, and pursue academic success.

Respondents were asked on how motivated they feel when starting a new online course. The results show that 22.0% were not motivated, 28.3% were slightly motivated, 25.7% were moderately motivated and 24.0% were very motivated. According to the results, the majority of students have varied degrees of motivation when they begin a new online course, with a sizable fraction reporting just mild to moderate drive. This implies that although some students are motivated and eager to participate, others can find it difficult to stay motivated, which could affect their academic achievement and perseverance in online learning. While the standard deviation of 1.084 shows a wide range of motivational levels, indicating various motivating experiences across the respondents, the mean of 2.52 shows that students are generally somewhat inspired but not very so.

The above findings were similar with the responses obtained from the course lecturers when they were asked to state how they perceive the role of academic motivation in influencing student participation and success in online learning environments. Lecturer2 stated that;

> *"Academic motivation drives students to actively engage in online learning by fostering persistence and enthusiasm. Highly motivated students tend to complete assignments on time, participate in discussions, and show greater comprehension of the material."*

The statement emphasizes that academic motivation is essential in influencing the extent of students' engagement and achievement in online education. Driven students are more prone to show determination and excitement, which assists them in maintaining consistency with their academic work, finishing tasks on time, and participating actively in discussions. This active participation improves their grasp of the course content and general academic success. On the other hand, students who are less motivated might find it difficult to sustain that level of engagement, resulting in poorer learning results. The lecturer's insights correspond with the quantitative results, which showed differing levels of motivation among students, indicating that enhancing academic motivation is crucial for increasing participation, understanding, and achievement in online learning settings

The above findings were also supported by the responses obtained from the head of departments when they were asked to share any examples where motivated students have demonstrated significantly better outcomes in their online courses compared to less motivated peers. HOD2 stated that;

> *"Motivated students often outperform their peers by regularly attending online sessions, submitting quality assignments, and seeking clarification when needed.*

For instance, a student who consistently participated in forums and completed tasks scored top grades compared to less engaged classmates."

The statement indicates that motivation greatly impacts students' performance and involvement in online learning. The department head notes that engaged students are generally more reliable in attending virtual classes, delivering quality assignments, and actively pursuing clarifications, which improves their comprehension and mastery of the material. The given example illustrates that involvement in activities like engaging in discussion forums and timely task completion is closely linked to attaining high academic outcomes. This observation strengthens the study's conclusions that academic motivation promotes behaviors beneficial for success in online learning, emphasizing that intrinsically motivated students are more likely to thrive compared to their peers with less motivation, who show limited involvement and reduced achievement.

Participants were asked on how frequently they explore new learning methods or resources to stay engaged. The outcomes showed that 20.1% never explore, 31.9% rarely explore, 26.3% sometimes explore and 21.7% always explore new learning methods or resources to stay engaged. The results indicate a lack of constant academic desire to investigate and try a variety of tactics to improve their learning experience, as the majority of students only sometimes use new learning strategies or resources to stay interested. Even though fewer students constantly or occasionally experiment with new approaches, this practice may have a beneficial effect on their online learning results by encouraging higher levels of engagement. While the standard deviation of 1.044 shows significant diversity in the frequency of students' engagement with this behaviour, the

mean of 2.50 shows that, on average, students explore novel learning techniques slightly but not frequently.

Respondents were asked on whether they feel that their academic achievements motivate them to keep learning. The findings showed that 64.8% of feel and 35.2% do not feel that their academic achievements motivate them to keep learning. The results indicate a strong feeling of intrinsic motivation that can favorably impact their online learning outcomes, with the majority of students believing that their academic accomplishments inspire them to continue learning. People who lack motivation may find it difficult to maintain interest and effort in their academic pursuits. The standard deviation of 0.478 indicates minimal response variability, indicating that most students have similar positive sentiments about how their academic results encourage them, while the mean of 1.35 indicates a high level of motivation resulting from academic achievements.

The above results have been reinforced by McClelland and Atkinson's Need Achievement Theory, which highlights the impact of prior achievements on future motivation and learning. According to this theory, people who are driven by a need for achievement are inspired to pursue more goals by their successes, and most students who feel motivated by their academic accomplishments reflect this intrinsic drive, which increases their persistence and engagement in learning. Those who lack this motivation may find it difficult to maintain the effort required for academic success.

4.5.2 Hypothesis Testing

The second null hypothesis of the study stated, Academic Motivation has no significant influence on students' online learning outcomes. To test this hypothesis, simple linear regression was used.

4.5.2.1 Influence of Academic Motivation and Online Learning Outcomes

To determine the influence of Academic motivation on students' online learning outcomes, the results were presented in tables 4.19, 4.20 and 4.21.

4.5.2.2 Model Summary for Academic Motivation

The model summary offers important information about the degree and explanatory capacity of the association between students' online learning outcomes and Academic Motivation. The findings were shown in Table 4.19.

Table 4.19: Model Summary for Academic Motivation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.839[a]	.703	.673	.373

Source: Field data, 2024

Academic motivation is a major predictor of online learning results, as seen by the strong positive association indicated by the R value of 0.839. A robust model is indicated by the R Square value of 0.703, which indicates that academic motivation accounts for about 70.3% of the variation in students' online learning outcomes. A respectable degree of accuracy in forecasting online learning outcomes is suggested by the standard error of 0.373, which is the average separation between the observed values and the regression

line. According to these findings, a significant amount of the variation in performance may be attributed to students' motivation levels, suggesting that academic motivation plays a significant role in improving online learning outcomes.

4.5.2.3 ANOVA for Academic Motivation

The ANOVA test's objective is to ascertain whether academic motivation and students' online learning outcomes are statistically differently associated. The results were shown in Table 4.20.

Table 4.20: ANOVA for Academic Motivation

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.721	1	14.721	20.68	.001[b]
	Residual	215.010	302	0.7112		
	Total	229.731	303			

Source: Field data, 2024

Based on the results, academic motivation has a considerable impact on online learning outcomes, as evidenced by the F value of 20.68 and p-value of 0.001, which are significantly less than the essential F value of 3.86. Thus, academic motivation appears to be a significant predictor of improving students' success in virtual learning settings.

4.5.2.4 Regression Analysis for Academic Motivation

Regression analysis was conducted to assess the influence of Academic Motivation on students' online learning outcomes in Public universities in the Western region of Kenya. The results were shown in Table 4.21

Table 4.21: Regression Analysis for academic motivation

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
(Constant)	2.137	0.641	3.336	.000
AM	1.271	0.304	4.181	.003

Source: Field data, 2024

The linear regression model is as shown;

Y=2.137 + 1.271 AM…….Equation 4.2

The beta constant of 2.137, with a T value of 3.336 (greater than the critical T value of 1.649) and a p-value of 0.000, is statistically significant. This indicates that even in the absence of academic motivation, there is a baseline level of online learning outcomes among students, reflecting other underlying factors contributing to their performance.

The regression coefficient of 1.271, with a T value of 4.181 (also greater than the critical T value of 1.649) and a p-value of 0.003, is statistically significant as well. This demonstrates that academic motivation positively influences online learning outcomes, with each unit increase in academic motivation leading to a 1.271-unit improvement in students' online learning outcomes. Since both T values exceed the critical T value and the p-values are below the 0.05 significance threshold, the null hypothesis that students' academic motivation has no influence on their online learning outcomes is rejected. These results suggest that academic motivation has a positive and impact on students' online learning outcomes in Kenya's Western region's public universities. Improved academic achievement in online learning contexts can result from improving academic

motivation. In order to improve students' online learning results, interventions that target academic motivation may be a useful tactic.

The above findings were in agreement with the study conducted by Irfan (2019), which explored the interconnection between motivation and self-regulated learning among university students. Irfan found that academic motivation significantly influenced students' ability to regulate their learning behaviors, leading to improved academic performance. The study emphasized that motivated students exhibited greater persistence, goal orientation, and self-efficacy, which are essential for success in online learning environments. These results affirm that enhancing academic motivation can positively impact students' online learning outcomes.

4.6 Influence of Self-regulation Behavior and Academic Motivation on Students' Online Learning Outcomes

The third objective of the study was to establish the extent to which Self-regulation behavior and Academic motivation influences students' online learning outcomes. Descriptive statistics were used to analyze data in relation to the third objective.

4.6.1 Descriptive Statistics

Percentages, means and standard deviations were employed to find out the extent to which Self-regulation behavior and Academic motivation influences online learning outcomes. The results were presented in Table 4.22.

4.22: Relationship Between Academic Motivation, Self-regulation and Students Online Learning Outcomes

No.	Statement	Percentages and frequencies					Mean	Std dev
		1 SD	2 D	3 N	4 A	5 SA		
1.	Intrinsic motivation, such as personal interest in the subject, drives engagement in online learning activities	56 (18.4%)	61 (20.1%)	19 (6.3%)	85 (28.0%)	83 (27.3%)	3.26	1.500
2.	Regular reflection on academic performance leads to adjustments in study strategies	(16.1%)	(16.8%)	(6.9%)	(30.3%)	(29.9%)	3.41	1.466
3.	Engagement with online learning resources is maintained even when the material is challenging	89 (29.3%)	81 (26.6%)	20 (6.6%)	63 (20.7%)	51 (16.8%)	2.69	1.492
4.	Learning strategies are adjusted when facing difficulties in understanding online content	56 (18.4%)	61 (20.1%)	16 (5.3%)	87 (28.6%)	84 (27.6%)	3.27	1.505
5.	Study routines are adhered to, even when online coursework is demanding	55 (19.1%)	58 (18.1%)	24 (7.9%)	86 (28.3%)	81 (26.6%)	3.25	1.495
6.	How often do you believe that your motivation affects your ability to self-regulate your studies	1 Never 44 (14.5%)	2 Rarely 70 (23.0%)	3 Sometimes 87 (28.6%)		4 Always 103 (33.9%)	2.82	1.058
7.	How strongly do you feel that self-regulation contributes to your	1 Not Strongly	2 Slightly	3 Moderately	4 Very strongly		2.93	1.024

	academic motivation	36 (11.8%)	62 (20.4%)	93 (30.6%)	113 (37.2%)			
8.	How often do you notice a change in your academic performance based on your motivation levels	1 Never 41 (13.5%)	2 Rarely 59 (19.4%)	3 Sometimes 93 (30.6%)		4 Always 111 (36.5%)	2.90	1.045
9.	Rate the connection between your self-regulation abilities and your online learning achievements	1 No Connection 30 (9.9%)	2 slight connection 61 (20.1%)	3 moderate connection 72 (23.7%)	4 Strong connection 78 (25.7%)	5 Very strong connection 63 (20.7%)	3.27	1.270
10.	Rate how effective your self-regulation techniques are in maintaining your academic motivation	1 Not Effective 41 (13.5%)	2 Slightly effective 65 (21.4%)	Moderately Effective 69 (22.7%)	Very effective 74 (24.3%)	Extremely effective 55 (18.1)	3.12	1.308

Source: Field data, 2024

Respondents were asked about whether or not engagement in online learning activities is driven by intrinsic motivation, such as a personal interest in the subject. According to the findings in Table 4.25, 18.4% strongly disagreed, 20.1% disagreed, 6.3% were neutral, 28.0% agreed, and 27.3% highly agreed that involvement in online learning activities is driven by intrinsic motivation, such as a personal interest in the work. As per the findings, the majority of participants agreed that intrinsic motivation, like a sincere interest in the subject, is what motivates them to participate in online learning activities. According to those who concurred, intrinsic motivation greatly boosts students' participation in online learning. Those who disagreed, on the other hand, contend that intrinsic motivation might not be a crucial component in getting students interested in online education. It appears from the neutral responses that some students are still unconcerned about the importance of intrinsic motivation. Students have a balanced perspective on the significance of intrinsic motivation for online learning outcomes, as indicated by the mean of 3.26 and standard deviation of 1.5, which indicate a reasonable level of agreement with differing perspectives.

The above results were further supported by the Need Achievement Theory developed by McClelland and Atkinson. This theory emphasizes the importance of intrinsic motivation, such personal interest, in promoting engagement and success. As to this notion, people who have a strong drive for success are inherently motivated by their curiosity and enthusiasm for the subject matter, which strengthens their dedication to educational pursuits. Agreeing students have this inner drive, which increases their online learning

engagement, whereas disagreeing or neutral students do not have the internal drive necessary for long-term academic engagement.

The above discussion was in line with the responses obtained from the course lecturer when they were asked to strategies they think could enhance both self-regulation and academic motivation among students to improve their online learning outcomes. Lecturer3 stated that;

> *"Strategies like offering regular feedback, incorporating engaging content, and setting clear milestones can boost self-regulation and motivation. Additionally, mentorship programs and peer support groups can encourage students to stay committed and disciplined"*

The statement highlights that cultivating self-regulation and academic motivation in students' demands deliberate teaching and support approaches. The instructor indicates that offering consistent feedback aids students in tracking their development and maintaining accountability, while captivating material keeps them interested and motivated from within. Establishing distinct milestones provides students with guidance and a feeling of accomplishment, which enhances perseverance and goal-driven actions. Additionally, mentorship initiatives and peer support networks foster a sense of belonging and motivation, assisting students in staying focused and dedicated to their academic pursuits. This viewpoint corresponds with the findings of the study, which indicate that intrinsic motivation is crucial in fostering engagement and favorable learning results in online settings, suggesting that organized support and interactive learning methods can greatly improve students' motivation and self-regulatory behaviors.

The researcher sought to determine on whether regular reflection on academic performance leads to adjustments in study strategies. The findings show that 32.9% agreed, 6.9% were neutral, and 60.2% agreed that regular reflection on academic performance leads to adjustments in study strategies. The results show a high correlation between self-regulation and the capacity to improve learning outcomes, with most respondents agreeing that regular reflection on academic achievement results in changes to study techniques. Those who disagreed could not see reflection as a crucial component of enhancing their academic techniques, which could indicate a lack of self-control or a different method of learning. Uncertainty or ambivalence regarding the function of reflection in strategy modifications is reflected in the neutral responses. With a considerable degree of difference in their opinions, respondents generally agreed with the statement, as indicated by the mean of 3.41 and standard deviation of 1.466.

Respondents' opinion was sought on whether engagement with online learning resources is maintained even when the material is challenging. The findings shows that 55.9% strongly disagreed and disagreed, 6.6% were neutral, 37.5% agreed and strongly agreed that engagement with online learning resources is maintained even when the material is challenging. The results show that students in the Western region may lack academic motivation and self-regulation, as most respondents disputed that engagement with online learning tools is maintained even when the topic is difficult. Those who agreed suggest that they have a higher degree of motivation and self-control, as seen by their ability to remain interested in difficult things. The indecision or differing viewpoints on the matter

are reflected in the indifferent comments. The average respondents tended to disagree, with a wide range of viewpoints regarding continuing to use difficult online resources, according to the mean of 2.69 and standard deviation of 1.492.

Respondents were asked about whether they modify their learning practices when they have challenges comprehending online content. 18.4% strongly disagreed, 20.1% disagreed, 5.3% were neutral, 28.6% agreed, and 27.6% strongly agreed that learning tactics are modified while struggling to understand online content, according to the results. The majority of respondents, according to the results, agreed that when faced with difficulties comprehending online content, learning tactics are adjusted. This shows that kids in the Western region are academically motivated and self-reliant enough to overcome challenges. Those who disagreed might not actively change their tactics, which could be a sign of poor coping skills or a lack of self-control. The neutral answers imply a lack of clarity or irregularity in the implementation of strategy modifications. With a substantial degree of diversity in their answers about strategy adjustment, the respondents' mean score of 3.27 and standard deviation of 1.505 suggest that they agreed with the statement to some extent.

The results mentioned above were in line with the Self-Regulation Theory, which highlights that effective self-regulation requires the capacity to modify one's learning methods. As per this theory, learners who proactively adjust their strategies in response to obstacles exhibit crucial self-regulation abilities, like tracking their comprehension and

utilizing flexible strategies to meet their learning objectives. The majority of respondents' agreement shows their ability to control themselves and persevere in conquering challenges, but disagreement or neutrality may point to weaknesses in self-awareness or strategic adaptability.

The study aimed to determine participants' perspectives regarding the adherence to study regimens, especially in the face of demanding online coursework. The findings indicate that 54.9% of respondents believed that study habits are followed, even in the face of challenging online coursework, while 37.2% disagreed and 7.9% were neutral. Even though online coursework can be difficult, the majority of respondents said that they follow study habits, according to the results. This implies that despite challenges, Western students possess a high level of self-control and academic motivation to maintain their routines. Those who disagreed would struggle to maintain consistent study plans, which could indicate issues with self-control or academic commitment. Some uncertainty or conflicted feelings regarding the regularity of study habits are indicated by the unclear responses. The respondents' views on adhering to study methods varied somewhat; their mean score of 3.25 and standard deviation of 1.495 indicated that they somewhat agreed with the statement.

Respondents were asked to give how often they believe that their motivation affects their ability to self-regulate their studies. The results show that 14.5% never believe, 23.0% rarely believe, 28.6% sometimes believe, 33.9 always believe that their motivation affects

their ability to self-regulate their studies. Academic motivation is a key factor in improving students' self-regulation, as evidenced by the results, which show that most respondents felt that their motivation influences their capacity to self-regulate their studies. Those who disagreed might not understand or feel how motivation affects their ability to control themselves, which could indicate a lack of awareness or insufficient drive. The indecision or differing opinions regarding the connection between self-regulation and motivation are shown in the indifferent responses. With a mean of 2.82 and a standard deviation of 1.058, the respondents' opinions on the impact of motivation on self-regulation were, on average, moderately varied and slightly in agreement.

Both McClelland and Atkinson's Need Achievement Theory and Self-Regulation Theory backed up the aforementioned conclusions. According to self-regulation theory, motivation is essential for improving students' capacity to observe and manage their learning behaviors, including modifying their approach as necessary. According to the desire Achievement Theory, motivated people who are driven by a desire for achievement are more likely to use self-control techniques to get over obstacles. The findings indicate that while students who are unclear may not have the intrinsic drive required for self-regulation, those who understand the connection between motivation and self-regulation are more likely to exhibit successful learning practices.

Participants were asked to show how strongly do they feel that self-regulation contributes to their academic motivation. The outcomes show that 11.8% do not strongly feel, 20.4%

slightly feel, 30.6% moderately feel, 37.2% very strongly feel that self-regulation contributes to their academic motivation. According to the results, the majority of students firmly believe that self-regulation enhances their academic motivation. This suggests that self-regulation practices, such goal-setting, time management, and self-monitoring, are essential for encouraging students to participate in their online coursework. Less strongly feeling people might not fully understand or apply self-regulation techniques, which could affect their motivation for learning and academic performance. Students generally believe that self-regulation has a moderate role in their motivation, as indicated by their mean score of 2.93. However, the standard deviation of 1.024 shows that student' perceptions of this relationship vary significantly.

The above findings were supported with the interview responses where Odel facilitators were asked to state how self-regulation impact students' ability to meet their learning goals. ODEL3 stated that.

> *"Self-regulation enables students to plan, monitor, and evaluate their learning progress. Those with strong self-regulation skills are more likely to set achievable goals and follow through with consistent effort, leading to better outcomes in online learning."*

The assertion emphasizes that self-regulation is crucial for assisting students in effectively overseeing their learning processes and reaching their educational objectives. Through planning, observing, and assessing their advancement, students with effective self-regulation skills can remain organized, sustain concentration, and execute needed modifications to enhance their performance. The facilitator also observes that these

students typically establish achievable and realistic objectives and consistently strive to meet them, improving their persistence and academic results in online settings. This corresponds with the study's results that many students acknowledge the significance of self-regulation in enhancing academic motivation, indicating that the capability to manage one's learning process directly impacts engagement, persistence, and overall academic achievement in online education.

Respondents were asked to rate the frequency with which their motivation levels cause a change in their academic performance. The findings show that 13.5% never notice, 19.4% rarely notice, 30.6% sometimes notice, and 36.5% always notice how often they notice a change in their academic performance based on their motivation levels. The results demonstrate that students are aware of the relationship between their motivation and academic results, as the majority of them observe a change in their academic performance dependent on their motivation levels. This implies that a major factor affecting the success of online learning is motivation. A lower percentage of students either infrequently or never notice this change, which could indicate a lack of self-awareness or trouble identifying how motivation affects their performance. While the standard deviation of 1.045 indicates significant diversity in how students perceive the relationship between motivation and performance, the mean of 2.90 indicates that, on average, students occasionally observe this difference.

The above discussion was established to concur with the findings from the interview questions that the ODeL administrators were asked on how academic motivation contributes to students' success in online learning. ODeL5 stated that;

> *"Academic motivation drives students to participate and put effort into their studies actively. Intrinsically motivated students enjoy learning for its own sake, while extrinsically motivated ones focus on rewards such as good grades or career advancement, both of which enhance performance."*

The statement highlights that scholarly motivation is a crucial factor in students' achievement in online education, as it affects the extent of effort and involvement they put into their learning. The administrator clarifies that motivation can be intrinsic or extrinsic, where students who are intrinsically motivated find drive in personal interest and joy in learning, whereas extrinsically motivated students are inspired by outside rewards like grades, recognition, or career progress. Both types of motivation, nonetheless, are vital in improving students' perseverance, involvement, and general academic achievement. This observation is consistent with the study's results indicating that a majority of students recognize a connection between their motivation and academic results, highlighting the necessity of fostering both intrinsic and extrinsic motivational elements to enhance learning involvement and achievement in online education.

Participants were asked to rate the connection between their self-regulation abilities and their online learning achievements. The findings show that 9.9% showed no connection, 20.1% showed slight connection, 23.7% showed moderate connection, 25.7% showed strong connection, and 20.7% showed a very strong connection between your self-

regulation abilities and your online learning achievements. The results indicate that self-regulation practices like goal-setting, time management and self-monitoring are important for enhancing academic performance because the majority of students believe there is a strong to very strong relationship between their self-regulation skills and their success in online learning. A smaller percentage of students, on the other hand, believe there is little to no link, which could be a sign of insufficient awareness or ineffective self-regulation techniques. While the standard deviation of 1.270 shows significant heterogeneity in students' perceptions of the relationship between self-regulation and learning performance, the mean of 3.27 indicates that, on average, students moderately to perceive this association strongly.

Respondents were also asked to rate how effective their self-regulation techniques are in maintaining their academic motivation. The outcomes show that 13.5% rated that they are not effective, 21.4% rated slightly effective, 22.7% rated moderately effective, 24.3% rated very effective, and 18.1% rated extremely effective that heir self-regulation techniques are in maintaining their academic motivation. The results indicate that students who actively participate in self-regulation practices, like time management and goal setting, feel more motivated in their online learning. The majority of students believe that their self-regulation techniques are moderate to extremely effective in maintaining their academic motivation. A lesser percentage of students, however, believe their methods are unsuccessful, which could indicate challenges in putting into practice or maintaining successful self-regulation practices. Students generally assess their self-

regulation strategies as fairly effective, according to the mean of 3.12. However, there is a large difference in efficacy across students, as indicated by the standard deviation of 1.308.

The results mentioned above are consistent with the department heads' answers when asked to share their observations about the ways in which academic motivation and self-regulation interact to affect students' overall online learning experiences. According to HOD4,

> *"Academic motivation fuels self-regulation by encouraging students to manage their time and set realistic goals. Together, they create a structured learning environment where students can stay on track, leading to better learning outcomes and a positive experience."*

The statement highlights the interdependent relationship between academic motivation and self-regulation in shaping students' online learning experiences. The head of department explains that motivation acts as the driving force that inspires students to apply self-regulatory behaviors such as effective time management and realistic goal setting. These self-regulatory practices, in turn, provide structure and consistency in learning, helping students remain focused and organized throughout their studies. By combining motivation and self-regulation, students are better able to sustain effort, overcome challenges, and achieve higher learning outcomes. This perspective aligns with the study's findings that most students perceive their self-regulation techniques as effective in maintaining motivation, reinforcing that both elements work hand in hand to enhance engagement, persistence, and overall success in online learning environments.

4.6.2 Hypothesis Testing

The third null hypothesis of the study stated, Self-regulation behavior and Academic motivation have no significant influence on students' online learning outcomes. To test this hypothesis, Multiple linear regression was used.

4.6.2.1 Influence of Self-regulation behavior and Academic motivation on online learning outcomes

To determine the extent to which students' online learning outcomes are influenced by self-regulation behavior and Academic motivation the results were presented in tables 4.23, 4.24, and 4.25.

4.6.2.2 Model Summary

The model summary gives information about the regression model's goodness of fit and the percentage of variance that can be accounted for by the predictors. The findings were shown in Table 4.23.

Table 4.23: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.871[a]	.752	.731	.436

Source: Field data, 2024

In the above results, students' online learning outcomes and the predictors (academic motivation and self-regulation) have a strong positive connection, as indicated by the R-value of 0.871, which suggests that the model accounts for a sizable amount of the

variation in learning outcomes. With R Square value of 0.752, academic motivation and self-regulation account for roughly 75.2% of the variation in students' online learning results. The average separation between the observed values and the regression line is indicated by the standard error of 0.436, which points to a comparatively low degree of prediction error. These findings suggest that the model well predicts students' online learning outcomes, which is consistent with the goal of the study, which was to determine the connection between online learning outcomes, academic motivation, and self-regulation.

4.6.2.3 ANOVATest for the Influence of Self-regulation Behavior and Academic Motivation on Students' Online Learning Outcomes

The ANOVA analysis is used to determine whether academic motivation and self-regulation, as predictors, have a substantial impact on students' online learning outcomes and to assess the regression model's overall significance. The results were presented in Table 4.24.

Table 4.24: **ANOVATest for the Influence of Self-regulation Behavior and Academic Motivation on Students' Online Learning Outcomes**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19.213	2	19.213	27.49	.006[b]
	Residual	210.518	301	0.699		
	Total	229.731	303			

Source: Field data, 2024

The model is statistically significant overall because the F value of 27.49, with a p-value of 0.006, is much higher than the essential F value of 3.86. This supports the study's goal of analysing their influence on learning outcomes by suggesting that academic motivation and self-regulation play a key role in predicting students' online learning outcomes.

4.6.2.4 Regression Analysis

Multiple regression analysis was conducted to assess the individual contributions of self-regulation and academic motivation to predicting students' online learning outcomes and to test the null hypothesis that academic motivation, self-regulation, and online learning outcomes have no relationship. The results are shown in Table 4.25.

Table: 4.25: Multiple Regression Analysis

Model	**Unstandardized Coefficients**		**T**	**Sig.**
	B	Std. Error		
(Constant)	2.028	0.651	3.167	.000
SRB	1.233	0.261	4.719	.001
AM	1.341	0.345	3.891	.000

Source: Field data, 2024

The linear regression model is as shown;

Y=2.028+1.233 SRB + 1.341 AM…….Equation 4.3

The beta constant of 2.028, with a T value of 3.167 (greater than the critical T value of 1.649) and a p-value of 0.000, indicates that the constant is statistically significant. This

suggests that when the predictors are held at zero, the baseline level of students' online learning outcomes is significant.

Self-regulation has a statistically significant impact on online learning outcomes, as evidenced by the regression coefficient of 1.233, T value of 4.719 (higher than the T critical value of 1.649), and p-value of 0.001. According to this, students' online learning outcomes are positively and significantly impacted by an increase in self-regulation behavior. Similar to this, academic motivation has a highly significant and favorable impact on students' online learning outcomes, as evidenced by its regression coefficient of 1.341, T value of 43.891 (far higher than the T critical value of 1.649), and p-value of 0.000. Due to these findings, the null hypothesis is rejected, demonstrating the strong and positive relationship between students' online learning outcomes and both academic motivation and self-regulation.

These results aligned with those of Klimova et al. (2022), who investigated college students' ability to engage in self-regulated online learning during the COVID-19 pandemic. Their study showed that academic motivation and self-control were important indicators of students' success in online learning settings. In keeping with the favorable and statistically significant impact seen in the current study, Klimova et al. discovered that students who demonstrated good self-regulation abilities and high academic drive demonstrated notable increases in their online learning results.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains the major research summary, conclusions, recommendations and further areas of this study.

5.2 Summary of Research Findings

This section provides a summary of each research objective.

5.2.1 Extent to Which Self-regulation Behavior Influences Student Online Learning Outcomes

The study's main objective was to ascertain how much self-regulation behavior affects students' online learning outcomes at public universities in Kenya's western region. According to the objective's null hypothesis, students' self-regulation techniques at Kenya's public universities in Western Kenya have no impact on their online learning outcomes.

Both descriptive and inferential statistics were used in the investigation. The results of the descriptive statistics indicate that while few students exhibited self-regulation behavior that positively impacts online learning outcomes, the majority of students lack sufficient self-regulation behavior that affects their online learning outcomes. The majority of students were unable to manage their time for attending online classes and studying, and many of them were unable to complete their personal duties and online assignment

deadlines. Additionally, a few of the students were not establishing objectives for their online education. Additionally, it was shown that the majority of students do not block out distractions when they are studying online.

According to correlation analysis results, self-regulation behavior and online learning outcomes were positively and significantly correlated. A correlation value of 0.733 demonstrated this. According to the model summary, 55.2% of the diversity in students' online learning outcomes may be attributed to self-regulation behavior. The ANOVA test demonstrates that students' self-regulation behavior can strongly predict their online learning outcomes. According to the regression analysis model, students' online learning results were positively impacted by self-regulation. This is supported by a regression coefficient of 1.137, which indicates that for every unit increase in self-regulation, the results of online learning vary by 1.137 units.

5.2.2 Influence of Academic Motivation on Student Online Learning Outcomes

Establishing the impact of academic motivation on students' online learning results in Kenya's public universities in the Western region was the study's second objective. This objective was built on the null hypothesis that academic motivation has no influence on student online learning outcomes in Public Universities of Western region, Kenya.

The study conducted both descriptive statistics and inferential statistics. The descriptive statistics shows that most of the students lacks adequate academic motivation on their

online learning thus affecting their performance. This was evidenced by most of the students who don't perceive content of online learning as useful for their personal development. Some of the students didn't feel passionate about the subject they study online. Most of the students did not explore new learning methods or resources to stay engaged.

According to the data, there was a positive and significant relationship between student online learning outcomes and academic motivation (p-value = 0.003). The model summary's findings indicate that students' academic motivation accounted for 70.3% of the variance in their online learning outcomes. Regression analysis indicates that online learning outcomes are highly impacted by academic desire. Academic ambition was found to have a positive and substantial influence on students' online learning outcomes, as indicated by the regression analysis's 1.271 regression coefficient and 0.003 p-value. In online learning contexts, the more highly academically motivated a learner is, the more likely they are able to achieve better.

5.2.3Academic Motivation, Self-regulation and Students Online Learning Outcomes

The third objective of the study was to establish the relationship between academic motivation, self-regulation and students online learning outcomes in Public Universities of Western region, Kenya. This objective was built on the null hypothesis that academic Motivation, self-regulation and Student online learning outcomes have no relationship in Public Universities of Western region, Kenya.

The study employed both descriptive and inferential statistics. The findings of the descriptive statistics demonstrate how students' online learning outcomes are influenced by the link between academic motivation and self-regulation practice. This was evidenced by majority of the respondents agreeing that the intrinsic motivation such as personal interest in the subject drives engagement in online learning activities. Most of the respondents agreed that motivation affects their ability to self-regulate their studies.

The correlation results indicate that students' online learning was positively and significantly correlated with both academic motivation ($p = 0.000$) and self-regulation behavior ($p = 0.003$). According to the model summary, self-regulation and academic motivation explain around 75.2% of the variation in students' online learning outcomes. The results of the ANOVA test indicate that students' online learning outcomes are significantly influenced by academic motivation and self-regulation as predictors. The regression analysis's findings demonstrate that students' online learning outcomes were positively and significantly impacted by the link between academic motivation and self-regulation. Regression coefficients for academic motivation and self-regulation were 1.341 and 0.000, respectively, whereas those for self-regulation were 1.233 and 0.001, respectively.

5.3 Conclusion of the Study

The conclusion of the study was based on both descriptive and inferential statistics carried out.

5.3.1 Extent to Which Self-regulation Behavior Influences Student Online Learning Outcomes

Descriptive data showed that most participants agreed that students' self-regulation habits have an impact on their online learning results. It was evidenced by the fact that most of them said they still complete their online courses despite challenges. Self-regulation was positively and significantly correlated with students' online learning results, according to the correlation study. According to regression analysis, self-regulation had a favorable and substantial influence on students' online learning outcomes. Consequently, the study disproved the null hypothesis that self-regulation had no discernible effect on students' online learning by showing that the level of self-regulation behavior had a positive and significant impact on students' online learning outcomes.

5.3.2 Influence of Academic Motivation on Students' Online Learning Outcomes

According to the results of descriptive statistics, the majority of participants concurred that students' online learning outcomes are influenced by their academic motivation. The majority of respondents said that they believe their academic accomplishments inspire them to continue studying, which supports this. Others said that their future professional goals were related to online education. According to correlation research, students' online learning results and academic motivation were positively and significantly correlated. Regression analysis results indicate that students' online learning outcomes were positively and significantly impacted by academic motivation. The null hypothesis that

academic motivation had no significant influence on the students' online learning outcomes was rejected. Therefore, the study concluded that academic motivation had positive and significant influence on students' online learning outcomes.

5.3.3 Academic Motivation, Self-regulation and Students Online Learning Outcomes

According to the findings of descriptive statistics, students' online learning outcomes are enhanced by the connection between academic motivation and self-regulation. Respondents affirmed this, saying that consistent evaluation of academic achievement results in modifications to study techniques. The majority of those surveyed also said that their motivation influences their capacity to control their academic behavior. The results of the correlation study demonstrate a strong and favorable association between student online learning outcomes, self-regulation, and academic motivation. Students' online learning outcomes were significantly impacted by the relationship between academic motivation and self-regulation, according to the regression analysis's findings. These results show that students' online learning outcomes are strongly and favorably correlated with both academic motivation and self-regulation, hence rejecting the null hypothesis. Thus, the study found a favorable and substantial association between students' online learning results and their academic motivation and self-regulation.

5.4 Recommendation of the study

This section gives recommendations that are based on the findings of the study.

5.4.1 Extent to Which Self-regulation Behavior Influences Students' Online Learning Outcomes

According to the study's findings, the majority of participants were unable to complete their personal responsibilities and meet the due dates for their online assignments. It is consequently advised that university administration carry out focused interventions to improve students' self-regulation abilities, like time management classes and online task tracking platforms, to help students meet deadlines and complete their own projects for online courses. The overall results of online learning would be enhanced by this.

The study findings showed that most of the respondents do not set personal deadlines that help them stay on track with their online coursework. It is therefore recommended that management of public universities implement training programs that focus on developing self-regulation skills among students, specifically emphasizing the importance of setting personal deadlines to enhance time management and ensure better online learning outcomes

The findings indicated that when studying online, the majority of respondents do not block out distractions. Therefore, it is advised that public university administrations have policies and programs in place to educate students useful self-regulation skills, including how to control distractions when learning online. In order to enhance overall learning

results, this could involve developing time management skills, setting up comfortable study spaces, and encouraging accountability.

5.4.2 Influence of Academic Motivation on Students' online Learning Outcomes

The findings from the descriptive statistics showed that most of the respondents stated that cleanliness of their study environment affects their concentration during online learning. Therefore, it is advised that university administration improve the online learning results of their students by establishing a tidy and comfortable study space. This can be accomplished by making sure that learning areas are kept up properly, which will enhance focus and general academic motivation and, in turn, enhance online learning outcomes and experiences.

The results from the study showed that majority of the respondents do not perceive the content of online courses as useful for their personal development. Therefore, it is recommended that management of universities enhance the relevance and applicability of online course content by aligning it with students' personal and career development goals. This can be achieved through curriculum adjustments, integrating real-world applications, and providing clear connections between course materials and students' long-term aspirations to increase academic motivation and improve online learning outcomes

The majority of respondents, according to the data, do not think that online education is necessary for their academic and professional development. Consequently, it is advised

that university administrations carry out focused interventions to raise students' knowledge of the advantages of online learning, emphasizing its role in both academic and professional development. In order to improve students' academic motivation and online learning outcomes, this may entail offering more captivating information, mentoring, and examples of real-world applications.

5.4.3 Academic Motivation, Self-regulation and Students' Online Learning Outcomes

The descriptive statistics findings depict that most of the respondents stated that learning strategies are not adjusted when facing difficulties in understanding online content. Therefore, it is recommended that management of universities implement targeted interventions to enhance students' academic motivation and self-regulation strategies. This could involve offering training programs or workshops to help students develop effective learning strategies, particularly in overcoming challenges when engaging with online content.

Thus, it is advised that university administration provide resources to assist students in creating and sticking to regular study schedules, especially for online courses. This could involve time management classes or individualized academic tutoring to enhance students' self-control and general online learning results.

5.5 Suggestions for Further Research

i. Future researchers can replicate this study in other public universities across Kenya to compare findings and enhance the generalizability of results.

ii. Researchers can extend the study to universities in different countries to investigate cultural and educational differences in self-regulation, academic motivation, and online learning outcome.

iii. Researchers could examine how institutional policies, resources, and support systems impact self-regulation, academic motivation, and online learning outcomes in various educational settings.

iv. Future studies could investigate how different online learning platforms and technologies influence self-regulation and academic motivation, focusing on their role in improving learning outcomes.

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APPENDICES

Appendix I: Participant's Consent Request

I ---------- have explained to the participant the nature of the study and hereby do seek his / her informed consent.

I hereby do accept to participate in this study by filling the questionnaire. The purpose of the study has been explained to me and I have been assured that there are no foreseeable risks and that I reserve the right to participate in the study or withdraw from the study without penalty.

Participant's signature----------

Date----------

Appendix II: Questionnaire for Students

I am a Masters student at Masinde Muliro University of Science and Technology conducting research on "**Academic motivation, Self-regulation as predictors of students' Online learning outcomes of public universities in Western region of Kenya**"

"Careful, complete and honest responses will assist in collecting valid data. This questionnaire has two sections, A and B. Kindly answer the questions as honestly as possible. All information shall be kept confidential.

Thank you for your co-operation.

CarolyneMukenyeAgosa

SECTION A: BIO DATA (PERSONAL INFORMATION)

1. What is your gender?

Gender	Male	Female
Tick where appropriate		

2. What is your age bracket?

Age	Below 15 years	15-19 years	20-24 years	25 years and above
Tick where appropriate				

3. Which year were you admitted

Year	2024/2025	2024/2023	2022/2023	2021/2022	2020/2021 or earlier
Tick where appropriate					

What is your current year of study

Years	First year	Second year	Third year	Fourth year
Tick where appropriate				

4. Which school were your enrolled?

……
……

5. Which programme are your taking**?**

……
……

6. Indicate your type of sponsorship in education

	Government sponsored	Private sponsored	Scholarship
Tick			

7. Indicate your previous academic performance

	Below average	Average	Above average	Excellent
Tick				

8. Do you have access to Technology (e.g., computer, smartphone)

	Yes	No
Tick		

9. Do you have access to internet

	No access	Limited access	Moderate access	Extensive access
Tick				

10. Where do you stay

	With family	University hostel	Rented house
Tick			

11. Do you earn a living

	Yes	No

Tick		

12. What is your motivation for studying

	Personal interest	Career advancement	Parental/family pressure	Financial necessity
Tick				

13. How do you often use self regulation strategies (eg. Setting goals, tracking progress,…) to manage your study habits?

	Never	Occasionally	Often	Always
Tick				

14. Indicate your Perceived Self-Efficacy in Learning

	Low	Moderate	High
Tick			

15. Indicate your frequency of Online Learning Engagement

	Rarely	Occasionally	Frequently	Very frequently
Tick				

16. Indicate your Level of Satisfaction with Online Learning

	Very dissatisfied	Dissatisfied	Satisfied	Very satisfied
Tick				

17. Indicate your parental level of education

	No formal education	Primary education	Secondary education	Tertiary education
Tick				

SECTION B: Extent to which self-regulation behavior influences student online learning outcomes of public universities in Western region of Kenya

On a scale of 1-5, where 5-Strongly agree, 4- Agree, 3-Slightly agree, 2- Disagree, 1- Strongly disagree, what are your views on the following?

No.	**Items**	**5 SA**	**4 A**	**3 N**	**2 D**	**1 SD**

1.	I am able to fulfill my personal tasks and deadlines for online assignments.					
2.	I effectively manage my time for attending online classes and studying.					
3.	I persist in completing online coursework even when faced with challenges.					
4.	I set personal deadlines that help me stay on track with my online coursework.					
5.	I review and adjust my learning strategies if I find I am not making sufficient progress.					

6. Do you set specific goals for your online courses?
Yes () No ()
How often do you create a study schedule for your online learning?

	Never	Occasionally	Sometimes	Frequently
Tick				

7. How satisfied are you with your ability to monitor your progress?

	Very dissatisfied	Dissatisfied	Satisfied	Very satisfied
Tick				

8. When faced with challenges in your online studies, do you seek help from peers or instructors?
Yes () No ()

9. When studying online, do you eliminate distractions (e.g., phone, TV)?
Yes () No ()

SECTION C. Influence of Academic motivation on student online learning outcomes of Public Universities in Western region of Kenya

No.		**5 SA**	**4 A**	**3 N**	**2 D**	**1 SD**
1.	I find online learning relevant to my future career aspirations.					
2.	The cleanliness of my study environment affects my concentration during online learning.					

3.	I perceive the content of my online courses as useful for my personal development.					
4.	I regularly review and adjust my goals to improve my online learning outcomes.					
5.	I believe that online learning is essential for my academic and professional growth.					

6. Do you feel passionate about the subjects you study online?
Yes () No ()
7. How often do you remind yourself of your long-term goals related to online learning?

	Never	Occasionally	Sometimes	Frequently
Tick				

8. How motivated do you feel when starting a new online course?

	Not motivated	Slightly motivated	Moderately motivated	Very motivated
Tick				

9. How frequently do you explore new learning methods or resources to stay engaged?

	Never	Rarely	Sometimes	Always
Tick				

10. Do you feel that your academic achievements motivate you to keep learning?
Yes () No ()

SECTION D: Relationship between academic motivation, self-regulation and students online learning outcomes of Public Universities in Western region of Kenya

No.		**5 SA**	**4 A**	**3 N**	**2 D**	**1 SD**
1.	Intrinsic motivation, such as personal interest in the subject, drives engagement in online learning activities.					
2.	Regular reflection on academic performance leads to adjustments in study strategies.					
3.	Engagement with online learning resources is maintained even when the material is challenging.					
4.	Learning strategies are adjusted when facing					

	difficulties in understanding online content.					
5.	Study routines are adhered to, even when online coursework is demanding.					

6. How often do you believe that your motivation affects your ability to self-regulate your studies?

	Never	Rarely	Sometimes	Always
Tick				

7. How strongly do you feel that self-regulation contributes to your academic motivation?

	Not Strongly	Slightly	Moderately	Very strongly
Tick				

8. How often do you notice a change in your academic performance based on your motivation levels?

	Never	Rarely	Sometimes	always
Tick				

9. Rate the connection between your self-regulation abilities and your online learning achievements.

	No Connection	Slight Connection	Moderate Connection	Strong Connection	Very Strong Connection
Tick					

10. Rate how effective your self-regulation techniques are in maintaining your academic motivation

	Not Effective	Slightly Effective	Moderately Effective	Very Effective	Extremely Effective
Tick					

SECTION E: Online learning outcomes

On a scale of 1-5, where 5-Frequently, 4-Rarely, 3-Occasionally agree, 2-Never, 1-Strongly disagree. What are your views on the following?

No.		**5 SA**	**4 A**	**3 N**	**2 D**	**1 SD**
1.	I regularly attempt the quizzes provided in my online courses.					

2.	I provide constructive feedback on the challenges I face during online learning.					
3.	I feel that my frequent engagement with online learning resources positively impacts my academic performance.					
4.	I am able to troubleshoot basic technical issues that arise during online learning sessions.					
5.	I actively seek feedback from instructors to improve my performance in online learning.					
6.	I regularly review the feedback provided on my online assignments and exams to improve my future performance.					

7. How would you rate your overall academic performance in your online courses?

	Very poor	Poor	Average	Good	excellent
Tick					

8. Rate your level of engagement in online discussions and forums.

	Very low	Low	Moderate	High	Very high
Tick					

9. Rate the effectiveness of online assessments in measuring your learning outcomes.

	Not Effective	Slightly Effective	Moderately Effective	Very Effective	Extremely Effective
Tick					

10. How well do you feel you are developing problem-solving skills through online learning?

	Not Well	Slightly well	Moderately well	Very well	Extremely Well
Tick					

Appendix III: Interview Guide

I am a Masters student at Masinde Muliro University of Science and Technology conducting research on "**Academic motivation, Self-regulation as predictors of students' Online learning outcomes of public universities in Western region of Kenya**"

"Careful, complete and honest responses will assist in collecting valid data. This interview guidehas two sections, A and B. Kindly answer the questions as honestly as possible. All information shall be kept confidential.

Thank you for your co-operation.

SECTION A: Interview Guide for head of department and lecturers teaching common course

Objective i: Self-Regulation Behavior

1. What specific self-regulation behaviors have you observed in students that seem to impact their online learning outcomes?
2. In your experience, how do students' self-regulation skills (such as time management and goal setting) affect their engagement and performance in online courses?

Objective is: Academic Motivation

3. How do you perceive the role of academic motivation in influencing student participation and success in online learning environments?
4. Can you share any examples where motivated students have demonstrated significantly better outcomes in their online courses compared to less motivated peers?

Objective iii: Relationship between Motivation and Self-Regulation

5. In your observations, how do self-regulation and academic motivation interact to influence students' overall online learning experience?

6. What strategies do you think could enhance both self-regulation and academic motivation among students to improve their online learning outcomes?

Dependent Variable: Online Learning Outcomes

7. How do you evaluate the overall learning outcomes of students in online courses, and what criteria do you use for this assessment?

SECTION B: Interview Guide for Odel Facilitators

Objective 1: To determine the extent to which self-regulation behaviour influences student online learning outcomes.

1. How do students manage their time in online learning programs?
2. What challenges do students face in staying focused on their online learning tasks?

Objective 2: To establish the influence of academic motivation on student online learning outcomes.

3. What motivates students to participate in online learning programs?
4. How does a lack of motivation affect student engagement in online learning?

Objective 3: To establish the relationship between academic motivation, self-regulation, and students' online learning outcomes.

5. How does self-regulation impact students' ability to meet their learning goals?
6. How does academic motivation contribute to students' success in online learning?

Dependent Variable: Students' online learning outcomes.

7. How would you describe the academic performance of students in online learning programs?
8. What factors contribute to the success of students in online learning?

Thank you for participating

APPENDIX iV: LIST OF PUBLIC UNIVERSITIES IN WESTERN REGION OF KENYA

No.	Name
1	Masinde Muliro University of Science and Technology
2	Kibabii University
3	Kaimosi Friends University
4	Alupe University

Appendix V: Map of the Western Region of Kenya

Appendix VI: University Research Approval Letter

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870
Fax: 056-30153
E-mail: directordps@mmust.ac.ke
Website: www.mmust.ac.ke

P.O Box 190
Kakamega – 50100
Kenya

Directorate of Postgraduate Studies

Ref: MMU/COR: 509099

19th August 2024

Carolyne Mukenye Agosa
EDO/G/01-54954/2020
P.O. Box 190-50100,
KAKAMEGA.

Dear Ms. Agosa

RE: APPROVAL OF PROPOSAL

I am pleased to inform you that the Directorate of Postgraduate Studies has considered and approved your Masters proposal entitled: ***"Academic Motivation, Self-Regulation as Predictors of Students' Online Learning Outcomes in Public Universities of Western Region , Kenya"*** and appointed the following as supervisors:

1. **Dr. Atieno Opiyo - MMUST**
2. **Dr. Manson Sichari - MMUST**

You are required to submit through your supervisor(s) progress reports every three months to the Director Postgraduate Studies. Such reports should be copied to the following: Chairman, School of Education Graduate Studies Committee and Chairman, Department of Educational Psychology, Kindly adhere to research ethics consideration in conducting research.

It is the policy and regulations of the University that you observe a deadline of three years from the date of registration to complete your Master's thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,

Prof. Stephen O. Odebero, PhD, FIEEP
DIRECTOR, DIRECTORATE OF POSTGRADUATE STUDIES

Appendix VII: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 551151

Date of Issue: 30/August/2024

RESEARCH LICENSE

This is to Certify that Ms.. Carolyne Mukenye Agosa of Masinde Muliro University of Science and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Bungoma, Busia, Kakamega, Vihiga on the topic: ACADEMIC MOTIVATION, SELF-REGULATION AS PREDICTORS OF STUDENTS' ONLINE LEARNING OUTCOMES IN PUBLIC UNIVERSITIES OF WESTERN REGION, KENYA for the period ending : 30/August/2025.

License No: **NACOSTI/P/24/39469**

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Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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