Influence of academic motivation on online learning outcomes among students in public universities in the Western Region of Kenya

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ABSTRACT

Higher education institutions are experiencing significant changes propelled by the urgent need to digitalize educational and training methodologies swiftly. Colleges maintain a focus on online education to address the varied requirements of students, promoting accessibility, adaptability, and continuity in their learning. For students to truly gain from online learning, academic motivation serves a vital role. Even with the increasing focus on online education, numerous students at public universities in the Western region of Kenya encounter difficulties concerning self-discipline, involvement, and motivation, impacting their academic performance. The research aimed to evaluate the effects of self-regulation techniques on students' online learning results. McClelland and Atkinson's Need Achievement Theory guided this research. A mixed-methods research approach was utilized, focusing on 4,551 participants, which included 4,475 undergraduates from the Department of Education, 24 Education Department leaders, 39 teachers, and 4 Open and Distance e-learning (ODEL) administrators. The sample size was calculated using Yamane's (1967) and Cochran's formulas. Information was gathered through questionnaires and interviews with key informants. A pilot study was carried out to verify reliability, applying Cronbach's alpha to evaluate the internal consistency of the research tools. The validity of the instruments regarding face, content, and criterion was determined. Data analysis included correlation to evaluate connections between variables and multiple regression to forecast their interactions. The qualitative findings from the interview revealed that academic motivation influences students' online learning achievements in public universities in this area. The findings revealed a robust positive connection (correlation coefficients of 0.733) between students' performance in online learning and their academic motivation. Linear regression analysis indicated that academic motivation had a positive and significant effect on students' online learning outcomes (regression coefficient of 1.137). The research revealed that academic motivation collectively accounted for approximately 70.3% of the variation in students' online learning outcomes. These results carry profound implications for education stakeholders, particularly in assessing preparedness for the competency-based curriculum (CBC) in Kenya by 2026, which incorporates online learning methods. The Teachers Service Commission (TSC), Kenya Institute of Curriculum Development (KICD), and Ministry of Education (MOE) can apply these results to develop effective teacher training programs for online teaching and to tackle obstacles that impede the implementation of online learning. Boosting students' academic motivation will be crucial for a successful digital learning journey.

Keywords: Self-Regulation Behavior, Student Online Learning Outcomes, Public Universities, Western Region, Kenya

I. INTRODUCTION

Institutions of higher education are experiencing significant changes prompted by the urgent requirement to digitize educational and training methods swiftly, involving educators who inherently possess limited technological skills for online instruction (Aheto et al., 2021). Universities must work to address this challenge to remain competitive and offer quality education amidst rapid digital transformation, disruptive technological advancements, and swift changes particularly during pandemics like Covid-19 (Weyage, 2023). The initiative to control Covid-19 required limited in-person gatherings in educational settings, leading to the implementation of online learning platforms at universities (Bundi, 2024).

Higher education institutions implemented e-learning systems to support the experiences of students and faculty during the COVID-19 pandemic. Within weeks, complete educational systems from primary to tertiary education had fully adapted to remote teaching and learning (Ndwiga et al., 2024). The transition to online education caused numerous universities to struggle with student academic performance (Mishra & Koehler, 2006). Mishra and Koehler (2006) defined academic achievement as online learning results assessed through the frequency of attending virtual classes, participating in exams, providing feedback, and subsequently analyzed the outcomes of online assessments.

United Nations Educational, Scientific and Cultural Organization [UNESCO] reported that in April 2020, Higher Education Institutions (HEIs) were entirely shut down in 185 countries, impacting over 1 billion students

worldwide (Marinoni et al., 2020). The reality of the new normal resulting from COVID impacts has resulted in a significant shift in education and training, including digital changes in global higher education (Dwivedi et al., 2011). E-learning became prevalent when face-to-face teaching was suddenly and forcibly halted. This strain caused an urgent need to rapidly transition to entirely online learning settings (Carolan et al., 2020). Universities needed to think about how to provide high-quality education amid disruptive technological advancements, digital changes, and fast transformations in the educational system. Numerous colleges faced challenges with disruptive educational innovation, which introduced new learning opportunities and replaced traditional teaching techniques and approaches.

In the USA, Aljuaid (2021) agreed that there was a complicated view of student's self-regulation towards completion of university course curriculum. Aljuaid (2021) 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.

Colleges and universities globally have largely adopted virtual instruction and Open and Distance e-learning (ODeL) by offering online classes. Nonetheless, this was not true in numerous public elementary and secondary schools, where interactions in the classroom between teachers and students were the favored teaching approach. Kibuku et al. (2020) identified several challenges including: insufficient e-Learning policies, inadequate Information and Communication Technology (ICT) infrastructure, rapidly changing technologies, absence of technical and pedagogical skills and training for e-tutors and e-learners, lack of a foundational e-Learning theory to support practice, budget limitations and sustainability concerns, negative attitudes towards e-Learning, quality challenges, technology and market forces overshadowing e-Learning goals, and poor collaboration among e-Learning stakeholders. Reviewed studies highlighted difficulties, but it remains uncertain if they originated from students, instructors, or systemic factors (Wakanyi, 2023).

Online learning has to be accompanied by motivation of the learners. Bundi (2024) defined motivation as the fundamental reasons of behavior. The author 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 (Weyage, 2023). 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.

1.1 Statement of the Problem

Kenya's Vision 2030 framework mandated universities to adopt self-directed learning to enhance teacher-student interaction and improve education accessibility (Amukune, 2022). The COVID-19 pandemic, nonetheless, significantly accelerated the shift to online education, which required a sudden move to digital learning systems. Universities needed to quickly implement technological solutions such as Learning Management Systems (LMS), video conferencing platforms, and various e-learning tools to maintain educational consistency (Kariuki et al., 2024). Though this change sought to maintain educational advancement, it presented considerable difficulties, especially for learners and teachers who were not ready for an abrupt technological transition. Local research emphasized various difficulties faced during this shift. For example, there were widespread issues such as infrastructure constraints, insufficient digital literacy among students and faculty, and problems with internet access (Amukune, 2022). Furthermore, factors related to students, like motivation and self-regulation, were essential in their capability to effectively adjust to online learning settings. Even though they are digital natives, numerous students found it challenging to remain focused during online learning because of insufficient self-discipline, minimal intrinsic motivation, and challenges in overseeing their own learning processes (Feigenbaum, 2021). His survey of 2,742 university students revealed that 31.4% (862 students) needed to retake their online exams, while 16% continued to struggle despite several attempts. Additionally, 48% were not ready to engage in online assessments because of difficulties in using digital tools proficiently. Earlier studies have predominantly centered on technological and accessibility concerns, with scant attention given to the psychological factors of academic motivation and self-regulation as key indicators of online learning success. Analyzing the degree to which students at public universities possess the self-discipline and motivation necessary to succeed in online learning environments was crucial given Vision 2030's goal to enhance education and elevate the learning experience. If these psychological factors are not fully acknowledged and addressed, students may still face challenges with engagement and performance, hindering the objectives of Vision 2030 aimed at developing a robust, innovative educational system. Consequently, this research examined the link between student academic motivation and the outcomes of online learning at public universities in Western Kenya.

1.2 Research Objectives

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

1.3 Research Hypothesis

HO_1: Academic motivation has no influence on student online learning outcomes in Public Universities of Western region, Kenya.

II. LITERATURE REVIEW

2.1 Theoretical review

2.1.1 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 (Bundi, 2024). 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.

2.2 Empirical Review

2.2.1 Online Learning during the Pandemic Period

At the beginning of 2020, the COVID-19 pandemic emerged globally, disrupting existing education systems and necessitating a quick transition to online learning. To ensure educational continuity, higher education institutions, such as public universities in western Kenya, implemented several online learning methods and platforms. During the pandemic, universities locally and internationally facilitated online education utilizing various digital communication tools and learning management systems (LMS). Among the most utilized platforms were learning management systems, video conferencing applications, content delivery networks, and institutional e-learning websites. To ensure effective engagement and educational outcomes, each of these platforms required learners to possess specific skills and traits (Hariri et al., 2021). Currently, various online learning approaches demand different qualities from learners for success. Online education offers numerous advantages, yet learners must navigate issues like the digital divide, unreliable internet connectivity, insufficient study environments, and challenges in adapting to self-directed learning. Universities implemented several solutions to tackle these challenges, such as recorded lectures, subsidized data packages, and hybrid learning methods. The shift to online learning due to the pandemic highlighted how crucial academic motivation and self-discipline are for students' success in online educational settings (Aljuaid, 2021).

2.2.2 Influence of Academic Motivation on Student Online Learning Outcomes

Scholars have defined the term motivation in a variety of ways. Motivation is defined by (Bundi, 2024) 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.

Nur'aini 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. This 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, a 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. (2021) 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.

III. METHODOLOGY

3.1 Research Design

The research employed a mixed methodology, combining quantitative and qualitative strategies to gain a thorough understanding of how academic motivation and self-regulation influence students' online learning results in public universities in the Western area of Kenya. Quantitative data were gathered through closed-ended questionnaires to produce measurable and statistically analyzable responses regarding students' motivation levels, self-regulation behaviors, and academic performance (Creswell & Clark, 2018). In addition to this, qualitative data were collected via planned interviews that provided more profound insights into students' individual experiences, contextual difficulties, and views regarding online learning. This blend of techniques facilitated extensive and detailed data gathering, allowing the researcher to corroborate and enhance the quantitative results with qualitative insights (Dawadi et al., 2021).

3.2 Target Population

The research involved 4551 participants, including undergraduate students from the school of education and social sciences across all public universities in Kenya's Western region (2317 students from Masinde Muliro University of Science & Technology (MMUST), 1110 from Kibabii University (KIBU), 587 from Kaimosi Friends University (KAFU), and 461 from Alupe, amounting to 4475 undergraduate students in total). The target population included 24 heads of the education department, 39 instructors from the departments, and 4 ODEL administrators.

3.3 Sampling Techniques and Sample Size

Sampling entails drawing conclusions about a whole population based on a smaller portion of that population (Orodho, 2009). The participants included undergraduate students, teachers, and ODEL administrators from public universities in the Western region of Kenya.

The research utilized public universities in the Western region of Kenya as the unit of analysis, as explained in the study area. The researcher also intentionally selected the school of education from each of the universities, as it was found to be the only school among the four that offered similar courses to maintain consistency in the study. The researcher also intentionally selected only the courses that will offer online learning throughout the study period. Thus, this indicated that the students enrolled in the selected courses along with their respective instructors constituted the respondents' base for the research. This data was gathered from undergraduate students, department heads, faculty members, and ODEL administrators.

A total of 367 undergraduate students were chosen through purposive sampling according to the characteristics of their academic programs, specifically focusing on those participating in courses that had utilized online learning platforms and virtual teaching. This method was selected to ensure that only students with consistent and relevant experience in online learning settings were part of the study. This was due to their advantageous position to provide informed perspectives on the impact of academic motivation and self-regulation on online learning results. Students from each course were selected using simple random sampling once the relevant courses at the four selected universities were identified. This probability sampling method aimed to reduce sampling bias and enhance the generalizability of the findings within the selected population by providing all eligible students in the designated courses an equal opportunity for inclusion in the study.

Census sampling requires gathering information from each person in a designated population, making it a suitable approach when the population size is small and controllable. In this research, census sampling was the best approach for choosing the 24 heads of education departments, 39 instructors, and 13 ODEL administrators, as it guaranteed that all significant stakeholders engaged in online education at public universities in Kenya's Western region were represented. This method ensured thorough and precise data, as it included all viewpoints without the possibility of missing any that could arise from alternative sampling techniques (Verma et al., 2024).

3.4 Research Instruments

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

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 and Clark (2018), 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.

Key Informant Interview Guide: This study utilized an in-person interview as it provided comprehensive insights into the topic being examined (Best & Kahn, 2011). This approach aided in the gathering of qualitative data. A conversation with a subject matter expert can yield valuable insights that a general public source may not offer (Best & Kahn, 2011). Interviews were conducted either face-to-face or via telephone. They posed open-ended questions to obtain significant insights regarding the subject. The interviews were conducted with 24 department heads, 39 instructors, and 4 ODEL administrators since they interacted with the learners daily throughout the online classes. The interviews identified self-regulation strategies utilized by students, the impact of academic motivation on learning, and the connection between self-regulation, academic success, and online learning results at public universities in Kenya's Western region.

3.5 Validity of Research Instruments

The research instruments in this study, which investigated academic motivation and self-regulation as predictors of students' online learning results in public universities of the Western region of Kenya, were evaluated via expert analysis to guarantee accuracy and relevance (Mugenda & Mugenda, 2003). Experts in educational psychology, online learning, and research methods were consulted to assess the content validity of the tools. These specialists evaluated every element to verify that it accurately reflected the theoretical concepts of academic motivation, self-regulation, and learning results, confirming that the elements were clear, culturally suitable, and aligned with the aims of the study. Their input was utilized to enhance the tools by removing or altering unclear or unrelated items. This validation process by experts improved the content and face validity of the tools, confirming that they assessed what they were intended to assess within the specific context of public universities in Kenya (Kothari, 2019).

3.6 Reliability of Research Instruments

The dependability of the research tools in this study pertained to the consistency and stability of the assessments of academic motivation, self-regulation, and online learning outcomes for students in public universities located in the Western area of Kenya (Mugenda & Mugenda, 2003). To guarantee reliability, the instruments were tested with a pilot group representative of the sample to uncover any ambiguities or inconsistencies in the items. Internal consistency was assessed using Cronbach's alpha coefficient, with acceptable values (generally over 0.7) suggesting that the items in each construct consistently measured the same fundamental concept. Test-retest reliability might have been used to evaluate the consistency of the instruments across time. The results from these reliability assessments confirmed that the gathered data were trustworthy and could be duplicated in comparable educational settings.

3.7 Data Collection Procedure

The researcher will hand out the questionnaires to chosen students at public universities in the Western region of Kenya, making sure that each participant gets explicit instructions on how to fill out the tool. Participants will have a two-week period to complete the questionnaires at their convenience, allowing enough time for careful and precise answers. Throughout this time, the researcher will carry out follow-up visits and send reminders to promote punctual completion and enhance the response rate. Alongside the questionnaires, interviews will be held with a specifically chosen group of participants to collect more in-depth qualitative data regarding academic motivation, self-regulation, and outcomes of online learning. All data gathering efforts will adhere to ethical principles, ensuring voluntary involvement, privacy, and consideration for the participants' time and independence.

3.8 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.

Prior to loading the qualitative data into SPSS version 27 for analysis, it underwent cleaning, sorting, and coding to ensure accuracy and consistency utilizing the 5-point Likert scale questionnaires. Descriptive statistics were utilized to emphasize and summarize the main characteristics of the data. Frequencies and percentages were computed to illustrate the distribution of responses and to reveal trends and patterns among students concerning academic motivation, self-regulation, and online learning results. The mean and standard deviation, which evaluated the central tendency and variability of the responses, were calculated to offer a more comprehensive view of the students' overall experiences.

Inferential statistics were employed to examine the relationships between the variables. The extent and orientation of the relationships between academic motivation, self-regulation, and online learning outcomes were evaluated through Pearson product-moment correlation. This method highlighted the extent of correlation among these variables and examined if improved learning results were associated with increased motivation and self-regulation levels. Grasping the combined effect of these elements on online learning success necessitated understanding the extent to which each affected the others, achievable through correlation analysis.

Moreover, an ANOVA (Analysis of Variance) was performed to determine if substantial differences were present in online learning results due to differing levels of self-regulation and academic motivation. This study facilitated comparisons among various student groups, indicating whether individuals with greater self-regulation or motivation excelled in online learning settings. Linear regression analysis was utilized to additionally forecast the influence of these independent variables on online learning results. This statistical method aided in estimating the extent to which self-regulation and academic motivation could account for the variation in learning outcomes. The Model Summary in SPSS offered an assessment of the regression model's fit with the data, showing the predictive influence of these elements on students' performance in online learning.

The qualitative data gathered from interviews underwent thematic analysis, a technique that facilitates the identification, examination, and reporting of patterns or themes in the data. The process started with transcribing the interviews, after which the researcher became acquainted with the data by thoroughly reading the responses multiple times. Preliminary codes were created from common themes or notions raised by the participants, including difficulties in online education, motivational elements, and strategies for self-regulation. The codes were subsequently categorized into larger themes that represented the fundamental meanings and experiences of students concerning online learning results. Thematic analysis offered a comprehensive insight into how students viewed their academic motivation and self-regulation within the framework of online learning.

Triangulation was utilized to verify the credibility and validity of the results by comparing the qualitative data with the quantitative outcomes. The researchers contrasted the themes discovered in the interview analysis with the quantitative data gathered from the questionnaires. For example, themes associated with self-regulation and motivation were examined alongside the quantitative metrics of these variables to pinpoint areas of similarity or difference. This procedure aided in validating the consistency of the results across various data sources, strengthening the trustworthiness of the conclusions derived from both qualitative and quantitative data. Triangulation of the two data types provided a more thorough and precise insight into the effects of academic motivation and self-regulation on students' online learning results.

IV. FINDINGS & DISCUSSION

4.1 Demographic Information

4.1.1 Gender of the Respondents

Respondents were asked to identify their gender. The results shown in Figure 1 indicate that 57.9% of the population was male and 42.1% was female.

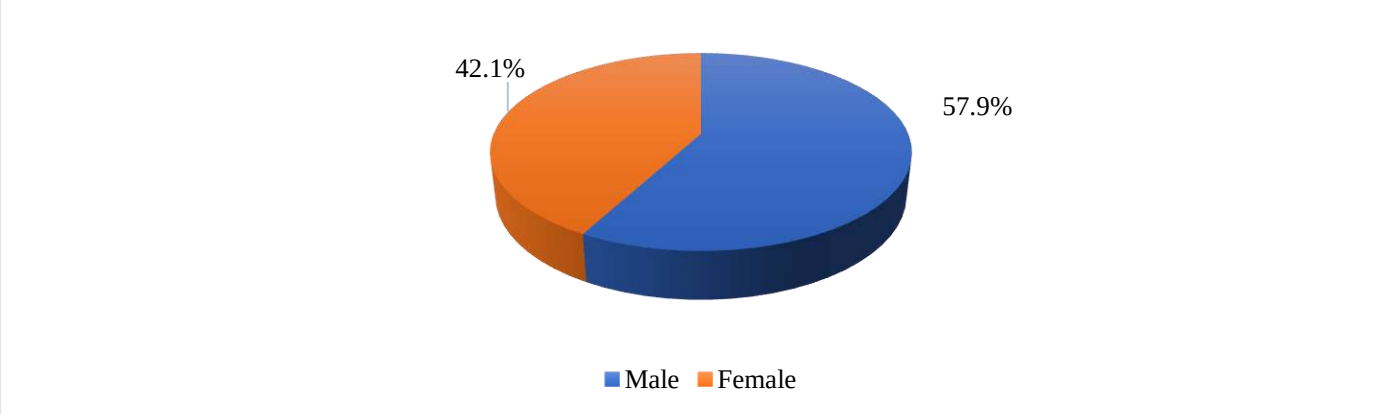

Figure 1
Gender of the Respondents

4.1.2 Age of the Participants

The respondents were asked to identify their age bracket. The findings in Table 1 shows that 54.0% were between 15-19 years, 33.2% were between 20-24 years and 12.8% were above 25 years.

Table 1
Age of the Participants

Age	Frequency	Percent
15-19 years	164	54.0
20-24 years	101	33.2
Above 25 years	39	12.8
Total	**304**	**100.0**

4.1.3 Year Admitted

Respondents were asked to indicate the year they were admitted in Universities. The results in Table 2 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 2

Year Admitted

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

4.1.4 Access to Internet

Respondents were also asked on whether they have access to internet. The results in Figure 2 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.

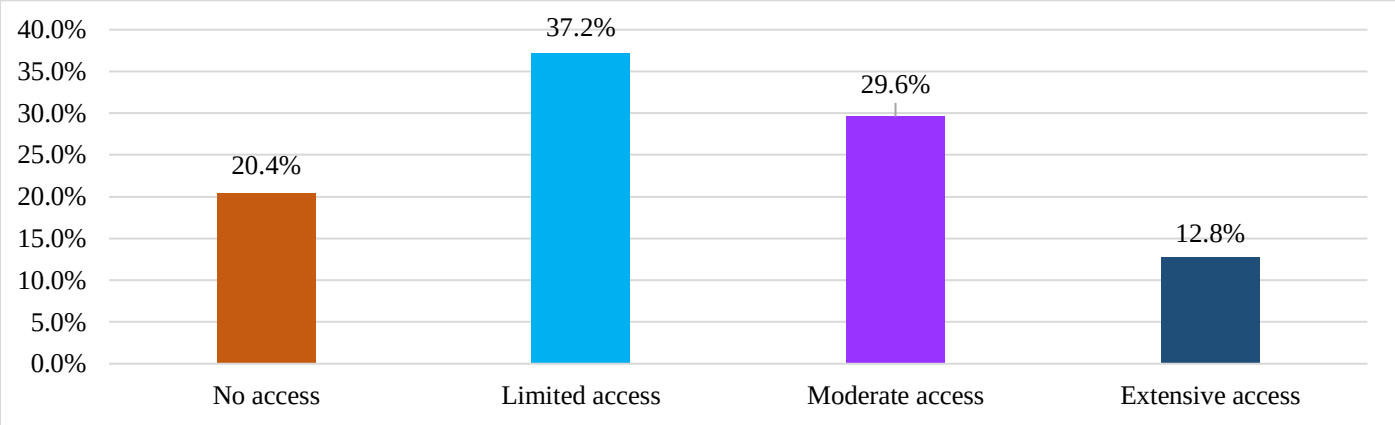

Figure 2

Access to Internet

4.1.5 Motivation for Studying

Participants were asked to state why they wanted to study. According to the findings in Figure 3, 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%.

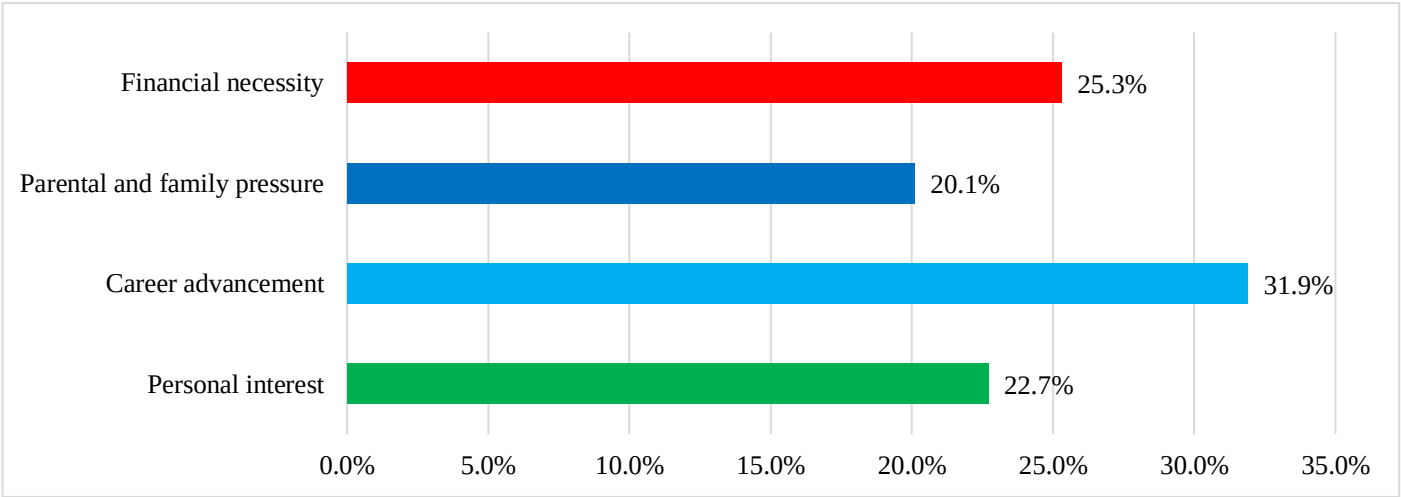

Figure 3

Motivation for Studying

4.2 Descriptive Statistics

Respondents were asked to rate various statements with the aim of establish the influence of academic motivation on student online learning outcomes in public universities of Western region, Kenya the findings were shown in the Table 3.

Table 3

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		2 No			1.44	0.498
		169 (55.6%)		135 (44.4%)				
7.	How often do you remind yourself of your long-term goals related to online learning	1 Never	2 Occasionally	3 Sometimes	4 Frequently		2.62	1.027
		51 (16.8%)	87 (28.6%)	93 (30.6%)	73 (24.0%)			
8.	How motivated do you feel when starting a new online course	1 Not motivated	2 Slightly motivated	3 Moderately motivated	4 Very motivated		2.52	1.084
		67 (22.0%)	86 (28.3%)	78 (25.7%)	73 (24.0%)			
9.	How frequently do you explore new learning methods or resources to stay engaged	1 Never	2 Rarely	3 Sometimes	4 Always		2.50	1.044
		61 (20.1%)	97 (31.9%)	80 (26.3%)	66 (21.7%)			
10	Do you feel that your academic achievements motivate you to keep learning	1 Yes		2 No			1.35	0.478
		197 (64.8%)		107 (35.2%)				

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 while 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 behaviour or uncertainty. The data shows some heterogeneity in students' goal-setting behaviours 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. ODEL 3 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,"*

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."*

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 have 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 behaviours 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 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."*

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 favourably 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.

4.3 Inferential Statistics

4.3.1 Correlation between academic motivation and online learning outcomes

The strength and direction of the association between students' online learning outcomes and academic motivation in public universities in Kenya's Western region were determined using Pearson product moment correlation. The results were shown in Table 4.

Table 4

Correlation between Academic Motivation and Online Learning Outcomes

	Online Learning Outcomes
Academic motivation	0.821 (0.003)

A significant association between academic motivation and online learning results was found by the analysis, with a strong positive correlation coefficient of 0.821 and a p-value of 0.003. This suggests that motivated students 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. Fostering academic motivation is crucial for improving online learning achievement, since the significant p-value further demonstrates that the association is unlikely to have happened by accident.

4.3.1 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 5.

Table 5

Model Summary for Academic Motivation

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

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.

4.3 ANOVA for Academic Motivation

The ANOVA test's objective is to ascertain whether academic motivation and students' online learning outcomes are statistically differently associated. 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. The results were shown in Table 6.

Table 6

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**			

4.4 Regression Analysis for Academic Motivation

Regression analysis was conducted to assess the influence of students' self-regulation strategies on their online learning outcomes in public universities in the Western region of Kenya. The results were shown in Table 7

Table 7
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

The linear regression model is as shown;

Y=2.137 + 1.271 AM……Equation 1

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 have 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 behaviours, 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.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

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.

5.2 Recommendation

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.

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