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Perceptions of Online Learning and Their Effect on Postgraduate Students' Academic Motivation in Tanzanian Higher Education Institutions

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Abstract
This study explored postgraduate students' perceptions of online learning and their impact on academic motivation within the Tanzanian higher education context. This study was guided by the Technology Acceptance Model (TAM) to examine the effect of perceived usefulness and perceived ease of use on academic motivation. The research adopted a cross-sectional survey approach involving 176 postgraduate students drawn from 12 institutions of higher education. An online structured questionnaire (Google Forms) was used to collect data, which was analysed with descriptive and inferential statistics in SPSS v26. The findings revealed that postgraduate students had a high perception of usefulness, a moderately high perception of ease of use, and high academic motivation. Correlation results showed that perceived usefulness and perceived ease of use were positive and significant predictors of academic motivation. Moreover, multiple regression analysis revealed that perceived usefulness and perceived ease of use significantly predicted academic motivation. The study's findings provide insights into the need to invest in online learning. The study recommends strengthening the digital learning infrastructure, improving the usability of online systems, and providing adequate training and technical support to enhance students' learning experiences and motivation.

Key terms: Academic motivation, online learning, postgraduate students, perceived usefulness, Tanzania, Technology Acceptance Model.

INTRODUCTION

The presence of digital technologies has transformed higher education worldwide. Universities are now integrating online platforms to enhance accessibility, flexibility, and pedagogical innovation (Nikou & Aavakare, 2021). In developing countries like Tanzania, the adoption of online learning has been accelerating significantly due to global disruptions and the increasing need for a flexible learning environment for postgraduate students (Kisanjara & Maguya, 2024).

Online learning provides students with opportunities to balance academic obligations with professional and personal responsibilities (Berry & Hughes, 2020). Different universities are now holding online class sessions and assessments. However, the effectiveness of online learning largely depends on students' perceptions of its quality, usability and instructional value. The literature informs that students' positive perceptions tend to enhance academic motivation. On the other hand, negative experiences may reduce engagement and persistence.

Academic motivation is a critical determinant of students' success in higher education (Amrai et al., 2011). It can influence persistence, self-regulation, research productivity, and academic performance (Gupta & Mili, 2017). While universities continue to invest in digital learning systems, there is limited empirical evidence on how postgraduate students perceive online learning and how these perceptions affect their academic motivation. Against this backdrop, this study investigates postgraduates' perceptions of online learning and how they affect academic motivation across different higher education institutions in Tanzania.

This study, therefore, investigates postgraduate students' perceptions of online learning and examines their effects on academic motivation across selected Tanzanian higher education institutions.

LITERATURE REVIEW

This section contains theoretical and empirical aspects of the study. It reviews the theory that laid the foundation for the study, as well as empirical studies done by other researchers in the area of study.

Theoretical Framework

This study is grounded exclusively in the Technology Acceptance Model (TAM), originally proposed by Davis (1986, 1989) to explain and forecast users' acceptance of information systems. TAM was derived as a modification of the Theory of Reasoned Action (TRA) formulated by Fishbein and Ajzen (1975). TRA posits that a human being's behaviour results from behavioural intention, which is shaped by attitudes and subjective norms. TRA was a general theory that explained human behaviour solely in terms of attitudes and subjective norms. It ignored an important aspect of technology's characteristics. User behaviour is influenced not only by social and psychological factors, but also by system characteristics, such as usability, complexity, and perceived usefulness. This made TRA insufficient to explain technology adoption; as a result, TAM was introduced (Venkatesh & Davis, 2000).

Davis made modifications to TRA to better suit technological contexts after identifying two main beliefs that determine users' acceptance of technology. These beliefs are perceived usefulness (PU) and Perceived Ease of Use (PEOU). According to the model, users' attitudes are influenced by their beliefs about using it. This means that if users believe that a particular technology is useful, they can be convinced to use it. The usefulness of the technology is not enough; how easy it is to use may shape users' behavioural intention and actual use. TAM has become one of the most used theoretical models in information systems, electronic learning, digital platforms and educational technology research.

Online Learning and Academic Motivation

Alnaeem et al. (2024) studied 298 undergraduate nursing students in rural Jordan using a descriptive cross-sectional design. Findings indicated a positive link between students' perceived value of distance learning and both their attitude and academic motivation, though there were negative attitudes regarding interaction, feedback, and collaboration. While this research connects students' perceptions with motivation, it was conducted outside Tanzania, focused on undergraduates, and involved nursing, not non-medical postgraduate students.

Likewise, Alassafi (2022) used TAM to examine e-learning intention in 291 students. The findings showed that behavioural intention determines academic motivation and is linked to perceived usefulness and ease of use. Additionally, knowledge quality and technology git influenced these perceptions. This evidence is highly relevant as it reinforces the TAM proposition that students' beliefs about usefulness and ease of use translate into behavioural and motivational outcomes. However, the study covered only behavioural intention and was conducted in Saudi Arabia. While supporting TAM propositions, it was not carried out in the Tanzanian context, which this study aims to address.

A study conducted in Tanzania by Almasi et al. (2025) examined students' experiences and the determinants of e-learning system use in higher education. The study used data from 730 undergraduate students across three campuses. The study found that students were generally motivated by a supportive e-learning environment, the influence of lecturers, and students' personal interests. The study revealed that the more commonly used basic functions in e-learning systems were uploading and downloading documents. On the other hand, online learning activities were less utilised. Another study, conducted in Tanzania by Kisanjara and Maguya (2024), investigated the reasons for the low uptake of e-learning at Mzumbe University. The study used 241 undergraduate students to collect data, which were analysed using quantitative analysis. The findings showed that students held negative perceptions of e-learning due to inadequate internet connectivity, poorly designed learning content, insufficient user training and slow system accessibility.

The study further reported that students' perceptions had a significant influence on the level of learning uptake, while other variables, such as ease of use, technical support, self-efficacy, and perceived benefits, also significantly influenced uptake. This study is relevant to the current study as it confirms that perceptions of online learning are not merely descriptive attitudes but rather influence actual engagement with the technology. However, the study did not directly focus on academic motivation, especially among postgraduate students, while multiple academic and professional responsibilities can be effectively executed when e-learning is integrated into education systems.

A similar study was conducted by Mohsini et al. (2024) to examine students' readiness and acceptance of the e-classroom system at the University of Dodoma using TAM. Data were collected from a sample of 101 diploma and bachelor's students. The study involved 101 diploma and undergraduate students. The analysis revealed that perceived usefulness, perceived ease of use, facilitating conditions, and student attitude all played significant roles in determining platform acceptance. The findings are consistent with the fundamental assumptions of the Technology Acceptance Model (TAM) and reinforce the view that students are more inclined to adopt and use an online learning system when they perceive it as both useful and easy to operate. In the current study, its relevance lies in demonstrating the importance of core TAM constructs in the Tanzanian context. However, the aspect of academic motivation was missing, leaving an empirical gap that this study fills.

In East Africa, Maijo and Meena (2021) conducted a study that assessed learners' perceptions and preferences regarding the adoption of open and distance learning at the Institute of Adult Education. With a sample of 50 respondents, the study revealed that the majority of students had a positive perception of open and distance learning. The determining factors were the quality of modules, examination procedures and features of the programmes offered. The study found that learners preferred distance learning because it allows them to handle other non-academic responsibilities, such as work and family matters, while studying.

This finding is useful for the current study because it highlights the value of flexibility, which is relevant for postgraduate students who often combine study, work, and family obligations. However, the study focused more on preference and satisfaction with online platforms than on how such perceptions affect academic motivation. Moreover, the study used a relatively small sample size for the quantitative analysis. The current study used 176 respondents as a sample size.

The reviewed studies were generally done outside of Tanzania. Moreover, the focus was not on postgraduate students. The current study has been conducted in the Tanzanian context with students from multiple higher learning institutions.

METHODOLOGY

A quantitative cross-sectional survey was conducted with 176 postgraduate students from 11 higher learning institutions in Tanzania, selected using simple random sampling. A study with at least 100 respondents is considered to have sufficient statistical power to establish the relationship between variables (Saunders et al., 2019). The use of a quantitative approach was appropriate, as the study focused on examining the relationship between the clearly defined variables in the TAM. The respondents were from the Open University of Tanzania, the Institute of Accountancy Arusha, the University of Dar es Salaam, Mzumbe University, the Tanzania Institute of Accountancy, the University of Dodoma, St. Augustine University, Sokoine University of Agriculture, Dar es Salaam Tumaini University, Moshi Co-operative University, and Mwenge University. The study selected higher education institutions based on whether they had online learning systems in place, and data were gathered using a structured questionnaire distributed via Google Forms. The questionnaire contained five-point Likert scales across four sections: demographic data, perceived usefulness (6 items), perceived ease of use (5 items), and academic motivation (6 items). Instrument reliability was assessed using Cronbach's Alpha, which yielded a value of 0.86, indicating strong internal consistency. Data were analysed using SPSS version 26. Descriptive and inferential statistics were performed. The study adhered to research ethical principles by ensuring that a research permit was obtained, that respondents participated voluntarily, and that the information collected was handled confidentially.

FINDINGS AND DISCUSSION

Descriptive Results

Demographic Results

The study involved a total of 176 postgraduate students from the higher learning institutions shown in Table 1. The Open University of Tanzania had the most students involved in the study, with 57 respondents. This is because it is the leading higher education institution in providing distance learning courses.

Table 1: Study's Sample

University	Frequency
Open University of Tanzania	57
IAA	27
University of Dar es Salaam	19
Mzumbe University	9
Tanzania Institute of Accountancy	15
UDOM	13
St. Augustine University	15
Sokoine University	6
Dar es Salaam Tumaini University	6
Moshi Cooperative University	5
Mwenge University	4
Total	**176**

Descriptive Results for the Study's Variables

The results show that postgraduate students involved in the study generally perceive online learning as useful (M = 3.85, SD = 0.72). This implies that students believe the online system is capable of enhancing achievement of their learning objectives or outcomes. On the other hand, the perceived ease of use was found to be moderately high (M = 3.68, SD = 0.79). This shows that while some students find online systems relatively manageable, there are others who consider their usability somewhat challenging. Academic motivation was found to be high (M = 3.81,

SD = 0.74). This suggests a strong motivation orientation among postgraduate students.

Table 2: Descriptive Results for The Study's Variables

Variable	Mean	Std. Deviation	Interpretation
Perceived Usefulness	3.85	0.72	High perception of usefulness
Perceived Ease of Use	3.68	0.79	Moderately high ease of use
Academic Motivation	3.81	0.74	High academic motivation

Correlation

The study found that perceived usefulness has a strong positive correlation with academic motivation ($r = .68$, $p < .01$). This shows that students who believe that online learning helps them in achieving their learning objectives tend to report a higher level of academic motivation. Further, perceived ease of use was also found to have a positive and significant correlation with academic motivation ($r = .61$, $p < .01$), which suggests that when students perceive that online platforms are easy to use, they are more motivated to engage academically. Further, the moderate correlation between usefulness and ease of use ($r=.59$) confirms that TAM assumes the constructs are related but are different.

Table 3: Correlation Results

Variables	Perceived Usefulness	Perceived Ease of Use	Academic Motivation
Perceived Usefulness	1		
Perceived Ease of Use	.59**	1	
Academic Motivation	.68**	.61**	1

Note: $p < .01$

Regression Analysis

Multiple regression analysis was conducted in order to determine the predictive power of perceived usefulness and perceived ease of use on academic motivation.

Model Summary

The model shows that 52 per cent of the variance in academic motivation ($R^2 = .52$), which indicates the presence of strong explanatory power. This suggests that perceptions of usefulness and ease of use collectively significantly influence students' academic motivation.

Table 4: Model Summary

R	R^2	Adjusted R^2	Std. Error
.72	.52	.51	0.52

ANOVA

The ANOVA findings show that the model is highly significant ($p < .001$), implying that the combined predictors meaningfully explain variations in students' academic motivation.

Table 5: ANOVA Table

Source	df	F	Sig.
Regression	1	93.47	.000
Residual	174		
Total	175		

The study found that perceived usefulness has a strong and statistically significant effect on academic motivation ($\beta = .49$, $p < .001$). This gives an implication that students who believe that online learning

improves their chances of achieving their learning outcomes are significantly more motivated. Moreover, a one-unit increase in perceived usefulness results in a 0.48-unit increase in academic motivation. This entails that usefulness is the stronger predictor when compared to ease of use.

On the other hand, perceived ease of use was found to be a significant predictor of academic motivation (β = .32, p < .001). This indicates that students who find online learning platforms user-friendly demonstrate a higher motivational level. Moreover, the results show that a one-unit increase in perceived use can lead to a 0.29-unit increase in academic motivation. Although significant, its influence is weaker when compared to that of perceived usefulness.

Table 6: Regression Coefficients

Variable	B	Std. Error	Beta	t	Sig.
Constant	0.98	0.24	—	4.08	.000
Perceived Usefulness	0.48	0.07	.49	6.86	.000
Perceived Ease of Use	0.29	0.06	.32	4.74	.000

Discussion

This study focused on examining perceptions of postgraduate students on online learning, determining how they influence academic motivation in Tanzanian higher education institutions. The study's findings highlight the role that perceived usefulness and perceived ease of use shape students' motivation within a learning environment that is mediated by digital technology.

The descriptive findings show that postgraduate students hold positive perceptions toward online learning. The mean score for perceived usefulness suggests that students have a belief that online platforms have a meaningful contribution to achieving their academic goals. This finding aligns with the increasing reliance on digital technologies in higher education, which provides flexibility and accessibility. In many instances, postgraduate students manage to balance their academic obligations alongside professional and personal commitments. Online learning provides an opportunity to access learning materials without being limited by other responsibilities. Moreover, the relatively high mean for academic motivation entails that the students remain committed to their academic goals despite the shift towards a digital learning environment.

The study also found that the perceived ease of use of online learning was moderately high. This result shows that, while many postgraduate students enjoy using online platforms for learning, there are others who encounter some challenges. The literature suggests that students tend to face challenges such as internet connectivity and insufficient digital skills. In Tanzania, where there are disparities in digital infrastructure and technology proficiency, this finding highlights the need for universities to strengthen digital infrastructures and provide training to students to enhance their ability to engage with digital learning platforms.

The analysis demonstrated that students who held positive perceptions of online learning also tended to exhibit higher levels of academic motivation. Perceived usefulness was found to have a strong positive correlation with academic motivation. This finding implies that students who believe online learning enhances their academic performance are more likely to be motivated to learn. The finding confirms TAM's postulation that users are more likely to adopt a particular technology when they perceive it is beneficial to them.

Similarly, the perceived ease of use was positively and significantly correlated with motivation. This finding suggests that when students perceive that online learning systems are user-friendly and easy to manage, they are more likely to remain engaged and motivated in their academic-related activities. This outcome

aligns with recent empirical evidence indicating that when online learning systems are perceived as easy to use, students' motivation to learn is heightened (Bashir et al., 2025) and their willingness to engage with such platforms is reinforced (Adefuye et al., 2025). However, if students find online learning platforms complex and difficult to use, they may experience frustration and consequently lower their motivation to use them actively.

This implies that system usability and accessibility play a significant role in sustaining students' motivation in digital learning environments. Regression analysis further confirms the above findings by demonstrating that perceived usefulness and perceived ease of use significantly influence academic motivation among postgraduate students. Among the predictors of motivation to learn, perceived usefulness was the strongest predictor. This suggests that postgraduate students are motivated when they have faith in the online learning that it will give them positive outcomes. In practical ways, this means that when students perceive online platforms help them to access learning materials efficiently, interact with instructors and engage with learning dynamics, their motivation to engage in learning activities increases significantly.

Although its influence on academic motivation was weaker compared to perceived usefulness, perceived ease of use also demonstrated a significant effect on academic performance. This implies that, while system usability is important to students, the extent to which it is valuable in relation to academic activities is the primary driver of motivation. In other words, primarily, postgraduate students are motivated by the extent to which online learning enhances their academic outcomes rather than just how easy the systems or platforms are to use. These findings are consistent with empirical evidence in the literature on technology adoption within educational contexts, which suggests that perceived usefulness is always stronger on behavioural outcomes than perceived ease of use (Davis, 1989; Venkatesh & Davis, 2000; King & He, 2006).

Generally, the findings of this study confirm the relevance of the Technology Acceptance Model in providing an explanation of how students interact with digital learning systems in higher education. From a practical perspective, higher education institutions have to invest in ensuring digital learning infrastructure is present, improve their usability and provide training to enhance students' digital competencies. Additionally, instructors have to design online learning environments that are capable of promoting interaction, collaboration and access to academic resources. These efforts may contribute towards improving students' perceptions of online learning systems, which in turn can strengthen their academic motivation and their overall learning experiences.

CONCLUSION AND RECOMMENDATIONS

Conclusion: This research explored how postgraduate students' views of online learning influence their academic motivation in Tanzanian higher education institutions. This research drew on the Technology Acceptance Model (TAM) to examine the influence of perceived usefulness and perceived ease of use on students' motivation in online learning. Descriptive analysis shows that postgraduate students hold positive perceptions towards online learning. Further, the study found that academic motivation among postgraduate students was relatively high, suggesting that a digital learning environment does not negatively affect students' commitment to their studies when appropriately implemented.

The correlation and regression results showed strong empirical evidence that how students perceive online learning has an impact on their academic motivation. Both perceived usefulness and perceived ease of use were found to positively and significantly affect academic motivation. However, perceived usefulness emerged as the stronger predictor of academic motivation. This entails that the academic motivation of postgraduate students is affected more when they consider that it enhances their learning effectiveness and academic productivity. These findings reinforce TAM postulations that user perceptions of technology systems are determinants of technology acceptance.

Recommendations: The study recommends that universities prioritise the development and continuous improvement of digital learning infrastructures to enhance the usefulness of online learning platforms. Learning management systems should be designed so

that course materials and research resources can be easily accessed. Further, academic communication and collaborative learning are enhanced. When students perceive platforms that directly support their academic success, their motivation to engage with online learning increases significantly.

Higher learning Institutions should invest in enhancing the usability of online systems. Although perceived usefulness was the strongest predictor, ease of use remains an important factor influencing students' engagement in online learning. This calls for technical support services, training sessions and digital literacy programmes in higher learning institutions. This will help students and instructors to effectively navigate online learning systems.

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