

# TECHNOLOGICAL MOTIVATION AND ACADEMIC PERFORMANCE OF ECONOMICS STUDENTS DURING COVID-19 PANDEMIC: EVIDENCE FROM OSUN STATE UNIVERSITY

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## ABSTRACT

*This study investigates the influence of technological motivation on the academic performance of students in Economics during the COVID-19 pandemic at Osun State University. A sample of two hundred (n=200) undergraduate students from the Ipetu-Ijesha (n=100) and Okuku (n=100) campuses participated in the study. Self-developed questionnaires, validated by the project supervisor, were utilized for data collection, and analysis was conducted using mean score ratings. The findings indicate a positive impact of technological motivation on students' academic performance in Economics during the pandemic. Future research should focus on longitudinally assessing the sustained effects of ICT integration on student engagement, academic performance, and overall learning outcomes across various academic disciplines. Additionally, exploring the efficacy of specific ICT tools, such as touch screens, digitizers, cell phones, video projectors, and digital cameras, will aid educators in selecting appropriate technologies for effective educational delivery.*

**Keywords:** ICT, Academic performance, Economics, Covid-19 Pandemic

## INTRODUCTION

The COVID-19 pandemic has triggered unprecedented disruptions in educational systems worldwide, compelling institutions to adopt digital technologies to ensure continuity in teaching and learning (UNESCO, 2023). Osun State University, like many others, faced challenges in

maintaining traditional educational practices during the pandemic and transitioned to remote teaching methodologies (Oladipo et al., 2022). This shift prompted a reevaluation of the factors influencing students' academic performance, particularly in disciplines like Economics. Economics education traditionally emphasizes critical thinking, analytical skills, and the application of economic theories to real-world scenarios (Allgood et al., 2023). The pandemic forced educational institutions to explore innovative approaches to delivering Economics courses, leveraging technology to bridge gaps in learning caused by physical distancing measures (Mishra et al., 2022). Technological motivation, the drive to engage with and utilize digital tools and platforms for educational purposes, became pivotal in this new educational landscape (Cheng & Zhu, 2022).

Recent studies have shown that students' motivation to use technology effectively influenced their ability to adapt to remote learning and potentially impacted their academic performance in Economics courses (Li et al., 2023). The emergence of the COVID-19 virus has necessitated a shift from traditional communication methods to digital communications, which have become unavoidable in educational settings (Dhawan, 2023). Despite the importance of technology motivation for students' performance, it is concerning that both parents and teachers need help to motivate their children or students in online learning environments. Many students show little to no interest in technology-based learning, which can negatively impact their academic outcomes (García-Alberti et al., 2021). This lack of motivation is particularly problematic in disciplines like Economics, where engagement with digital tools and resources is crucial for understanding complex concepts and theories.

The rapid digitization of education has reshaped the competitive landscape of higher learning institutions, putting those slow to adapt at significant risk of falling behind (Williamson et al., 2023). As a result, the pandemic has ushered in fresh trends in digital communication and learning methodologies within educational organizations, particularly affecting how Economics is taught and learned. In light of these challenges and the evolving educational landscape, this study aims to investigate the Influence of technological motivation on the academic performance of Economics students during the COVID-19 pandemic at Osun State University. By examining this relationship, the research seeks to contribute to the growing

knowledge of effective online learning strategies and provide insights into improving student engagement and performance in digital learning environments.

The main objective of this study was to examine the influence of technological motivation on the academic performance of students in economics during the Covid-19 pandemic at Osun State University. The specific objectives were to;

- i. assess the factors influencing students' technological motivation in remote learning environments.
- ii. evaluate the effectiveness of digital technologies adopted by Osun State University in delivering Economics courses during the pandemic.
- iii. identify challenges faced by students in adapting to technology-based learning in Economics education, such as [specific challenges faced by students].

## **LITERATURE REVIEW**

Technology integration in education has been recognized as a transformative force with the potential to enhance learning outcomes and revolutionize traditional pedagogical methods significantly. Early research by Bell and Garofalo (2005) and Johnson (2000) established that web-based multimedia and communication tools could substantially augment conventional teaching approaches. This foundational work was instrumental in demonstrating the promise of technology to enrich the educational experience. Recent research following Cheng and Zhu (2021) has expanded on these early findings, highlighting how digital technologies can foster more engaging and interactive learning environments. Their study emphasizes that technology can support personalized learning and adaptive instructional methods, thus catering to diverse student needs and learning styles.

Furthermore, the constructivist approach, which focuses on active learning through collaboration and problem-solving, finds a powerful ally in educational technology. Nanjappa and Grant (2003) were among the first to argue that technology could effectively support constructivist learning

environments. Subsequent research, such as Eickelmann and Gerick (2020), has reinforced this view, showing that technology-enhanced constructivist approaches significantly boost students' critical thinking skills and digital literacy. These findings underscore technology's role in promoting deeper understanding and engagement in learning.

\_\_\_\_\_ Despite these advancements, the integration of technology in education is not without its challenges. Selwyn (2020) cautions that an uncritical embrace of educational technology could exacerbate existing inequalities and diminish the value of face-to-face interactions in learning. This concern is echoed in the work of Williamson et al. (2020), who warn against the "platformization" of education, where commercial interests may overshadow educational goals and pedagogical considerations. They argue that an over-reliance on technology could marginalize important aspects of traditional education, such as personal interaction and mentorship. Nguyen and McIntyre (2024) also challenges the notion that technology always leads to improved educational outcomes. Their research suggests that, in some cases, technology can lead to distractions and disengagement if not properly integrated into the curriculum. This underscores the need for a balanced approach that considers both the potential benefits and limitations of technology in education. Moreover, the effectiveness of technology in education depends heavily on its implementation.

Tamim et al. (2023) conducted a meta-analysis revealing a moderate positive effect of technology integration on student achievement across various subjects and grade levels. Their findings suggest that while technology has significant potential, its benefits are contingent upon thoughtful and strategic implementation. More recent studies provide further insights into the complexities of technology integration. For instance, Beauchamp and Kennewell (2022) argue that the successful integration of technology requires not only adequate resources but also ongoing professional development for educators. Their research highlights that without continuous training and support, the potential benefits of educational technology can be undermined. This underscores the crucial role of educators in successfully integrating technology in education.

\_\_\_\_\_ The COVID-19 pandemic precipitated a global disruption in education systems, compelling an abrupt shift to remote learning. UNESCO

(2020) reported that approximately 1.2 billion students worldwide were affected by school closures, highlighting the pandemic's profound impact on educational systems globally. The transition to remote learning unveiled a host of challenges. Boggiano et al. (2020) observed that many students reported decreased satisfaction with online education compared to traditional classroom settings. They attributed this dissatisfaction to perceived declines in educational quality and reduced opportunities for peer interaction. This aligns with findings by Adams and Marcus (2023), who noted that the lack of face-to-face interaction and hands-on experiences significantly impacted students' learning experiences and engagement levels.

Furthermore, the pandemic exacerbated existing educational inequalities. A research demonstrated that learning losses during school closures were more pronounced among students from disadvantaged backgrounds, potentially widening the achievement gap (Engzell et al., 2021). This highlights the urgent need for equitable access to educational resources and technology. Thoms and Crawford (2023) further supports this view, noting that students from lower socioeconomic backgrounds faced greater barriers to accessing online learning resources, which intensified educational disparities.

\_\_\_\_\_ Despite the challenges, some studies reported unexpected positive outcomes. Parker et al. (2020) observed an improvement in academic performance among university students during the initial phase of remote learning despite decreased satisfaction. This paradox suggests that the relationship between learning modalities and academic outcomes is intricate and requires further exploration. Additionally, Smith and Wilson (2024) found that some students developed enhanced self-regulation and time-management skills due to the remote learning experience, which could have long-term benefits. Educational institutions that prioritized resource allocation and allowed adequate time for adaptation reported smoother transitions to online learning. Dhawan (2021) found that institutions investing in faculty training and robust digital infrastructure were better equipped to maintain educational quality during the pandemic. This is supported by recent research by Roberts and Lee (2024), which highlights

the importance of institutional support in facilitating effective remote learning environments.

The impact of the pandemic extends beyond immediate academic concerns. Fana et al. (2023) highlighted disruptions to students' career trajectories, with many facing uncertainties regarding internships and job opportunities. These disruptions could have long-term consequences for students' professional development and economic prospects. Kim and Park (2024) support this, indicating that the pandemic has adversely affected students' career readiness and job market entry, potentially delaying their professional growth.

The integration of technology in education and the impact of COVID-19 present challenges and opportunities. While technology holds promise for improving educational outcomes, its implementation must be thoughtful, equitable, and contextually relevant. Conducting this study is completion, the questionnaires were collected for analysis. This hands-on approach to data collection often results in more accurate and complete responses compared to other methods, such as online surveys. Data analysis was conducted using a mean score rating method, with a 2.5 acceptance threshold, to interpret the findings. The mean score rating method effectively summarises Likert scale data, providing a clear and straightforward interpretation of the central tendency of the respondents' attitudes (Boone & Boone, 2012). A threshold of 2.5 was set to distinguish between agreement and disagreement among respondents, aligning with standard practices in educational research for interpreting Likert scale data (DeVellis, 2016).

## RESULTS AND DISCUSSION

Research question 1: What are the motivational features of the ICTs?

**Table 1: Analysis to know the motivational features of the ICTs (N = 200)**

educational practices and policies. The findings will benefit Osun State University and provide broader implications for institutions navigating similar challenges in the evolving landscape of education. essential for comprehensively understanding the influence of technological motivation on the academic performance of Economics students at Osun

State University during the COVID-19 pandemic. By addressing the gaps in existing research and focusing on the specific needs of this institution and discipline, the study aims to contribute valuable insights to enhance

ITEM	SD	A	D	SD
1. ICT makes Economic course	110(55.0%)	68(34.0)	15(7.5%)	7(3.5%)
2. ICT help me to complete a piece of work that sometimes would				
have been difficult to complete without it.	57(28.5%)	101(50.5%)	28(14.0%)	14(7.0%)
3 I pay more attention when lessons involve the use of ICT.	90(45.0%)	68(34.0%)	32(16.0%)	10(5.0%)
4 By using ICTs I can work longer without losing concentration.	59(29.5%)	83(41.5%)	35(17.5%)	23(11.5%)
5 The use of ICT improves my academic performance	90(45.0%)	73(36.5%)	25(12.5%)	12(6.0%)
6 The use of ICT enhances quality of education.	64(32.0%)	98(49.0%)	31(15.5%)	7(3.5%)
7 ICT provide quick and easy access to materials needed by students.	74(37.0%)	83(41.5%)	29(14.5%)	14(7.0%)
8 Working with ICT is fun for the students.	68(34.0%)	91(45.5%)	27(13.5%)	14(7.0%)
9 ICT motivation provides freedom of expression in my academic studies.	72(36.0%)	82(41.0%)	27(13.5%)	19(9.5%)

## METHODOLOGY

A simple random sampling method was used to choose 200 students from Osun State University's Ipetu-Ijesa and Okuku Campuses, with 100 students selected from each campus. This approach guarantees that every person in the population has an equal opportunity to be included, minimizing selection bias and improving the applicability of the results (Taherdoost, 2016). This method is particularly effective for educational research where a diverse range of student opinions is required. Primary data collection involved a structured questionnaire measured on a four-point Likert scale from "strongly agree" to "strongly disagree." Likert scales are widely used for their reliability in measuring attitudes and opinions (Joshi et al., 2015). The questionnaire was designed to address the research questions and capture students' perceptions of ICT integration in their Economics courses. After

Table 1 presents an analysis of the motivational features of Information and Communication Technologies (ICTs) in the context of Economics education. The data reveals a strong consensus among respondents regarding the positive impact of ICTs on various aspects of their learning experience. A significant majority (89.0%) of participants agreed that ICTs enhance the interest and vitality of Economics courses. Additionally, 79.0% of respondents reported that ICTs facilitate completing tasks that would otherwise be challenging, and an equal percentage indicated increased attentiveness during ICT-integrated lessons. The study also found that 71.0% of participants experienced improved concentration when using ICTs, allowing extended periods of focused work. A substantial proportion of respondents (81.5%) perceived a positive correlation between ICT usage and academic performance, while 81.0% acknowledged the role of ICTs in enhancing overall educational quality.

Furthermore, 78.5% of the participants appreciated the quick and easy access to educational materials facilitated by ICTs. The data also highlights the enjoyment factor associated with ICT use, with 79.5% of respondents finding ICT-based work enjoyable. Moreover, 77.0% of participants reported that ICTs provide greater freedom of expression in their academic pursuits. Lastly, 72.0% of respondents agreed that ICTs aid in exploring learning resources.

**Research question 2:** Are there roles of ICT motivation in teaching and learning of Economics?

Table 2: Responses on **the roles of ICT motivation in teaching and learning of Economics (N = 200)**

N	Item	SD	A	D	SD
1	ICT motivation facilitate teaching and learning in economics	113(56.5%)	67(33.5%)	14(7.0%)	6(3.0%)
2	ICT motivation enhances academic performance of student in economics	49(24.5%)	104(52.0%)	33(16.5%)	14(7.0%)
3	Motivation of ICT arose student curiosity in learning Economics.	87(43.5%)	85(42.5%)	18(9.0%)	10(5.0%)
4	Student that are motivated with ICT are likely to perform more better in economic	80(40.0%)	90(45.0%)	23(11.5%)	7(3.5%)
5	Performance of unmotivated student with ICT are likely in economics is always bad	68 (34.0%)	80(40.0%)	34(17.0%)	18 (9.0%)
6	Student who are motivated with ICT find economics subject interesting.	81(40.5%)	81(40.5%)	23(11.5%)	15(7.5%)
7	ICT gives economics student a range of tools to support and enhance learning.	74(37.0%)	82(41.0%)	31(15.5%)	13(6.5%)
8	ICT helps in strengthening and enhancing relationship	73 (36.5%)	88(44.0%)	26 (13.0%)	13 (6.5%)

Table 4 presents an analysis of the perceived roles of ICT motivation in the teaching and learning of Economics. The data reveals a strong consensus among respondents regarding the positive impact of ICT motivation across various dimensions of Economics education.

An overwhelming majority (90.0%) of participants agreed that ICT motivation facilitates the teaching and learning process in Economics. Furthermore, a substantial proportion (76.5%) of respondents acknowledged the positive correlation between ICT motivation and students' academic performance in Economics. The study also highlights the impact of ICT motivation on student engagement. A significant majority (86.0%) of participants reported that ICT motivation stimulates student curiosity in learning Economics. This finding is further corroborated by 81.0% of respondents who agreed that students motivated by ICT find the subject of Economics more interesting. Regarding performance outcomes, 85.0% of respondents concurred that students motivated by ICT are likely to demonstrate improved performance in Economics. Conversely, 74.0% of participants perceived that unmotivated students, even with ICT access, are prone to poor performance in Economics. This juxtaposition emphasizes the critical role of motivation in leveraging ICT for academic success.

The data also illuminates the supportive role of ICT in Economics education. A significant proportion (78.0%) of respondents agreed that ICT provides Economics students with diverse tools to support and enhance their learning experience. Moreover, 80.5% of participants recognized ICT's contribution to strengthening and enhancing relationships within the teaching and learning community.

**Research question 3:** Could there be ICT materials needed for effective teaching and learning of economics in Osun State University  
**Table 3: Responses on the ICT materials needed for effective teaching and learning of economics in Osun State University (N = 200)**

N	Item	SD	A	D	SD
1	Touch screen	115(57.5%)	55(27.5%)	20(10.0%)	10(5.0%)
2	Digitizer	63(31.5%)	88(44.0%)	35(17.5%)	14(7.0%)
3	Cell phone	84(42.0%)	71(35.5%)	31(15.5%)	14(7.0%)
4	Video projector	66(33.0%)	84(42.0%)	24(12.0%)	26(13.0%)
5	Web cameras	67(33.5%)	82(41.0%)	42(21.0%)	9(4.5%)
6	Digital cameras	56(28.0%)	88(44.0%)	43(21.5%)	13(6.95%)
7	Video recorders, DVDs and CD	56(28.0%)	98(49.0%)	31(15.5%)	15(7.5%)

Table 5 analyses the perceived necessity of various Information and Communication Technology (ICT) materials for effective teaching and learning of Economics at Osun State University. The data reveals a strong consensus among respondents regarding the importance of several ICT tools. Touchscreen technology emerged as the most highly valued ICT material, with 85.0% of participants agreeing on its importance. This was followed by cell phones (77.5%) and video recorders, DVDs, and CD recorders (77.0%), indicating a preference for mobile and multimedia technologies. Digitizers and video projectors were also highly regarded, with agreement rates of 75.5% and 75.0%, respectively. Web cameras (74.5%) and digital cameras (72.0%) were also recognized as valuable ICT materials, albeit slightly less. These findings suggest a preference for visual and interactive technologies in the Economics education context at Osun State University.

The present study examined the Influence of technological motivation on the academic performance of students in economics during the covid-19 pandemic in Osun State University. Most participants in this study agreed that ICT makes Economics courses more interesting and lively, suggesting that digital tools can transform the learning experience by making it more engaging. This aligns with recent research (Zhu et al., 2023), which found that integrating ICT in Economics education significantly enhanced student engagement and motivation. The participants also acknowledged that ICT helps them complete work that would otherwise be difficult, indicating that digital tools facilitate complex tasks and projects in Economics education. The role of ICT in fostering a knowledge-based society is evident in our findings. Participants reported that ICT motivation facilitates teaching and learning in Economics, enhances academic performance, and arouses student curiosity. This supports the argument of Li et al. (2022), who posit that technology-enhanced learning environments in Economics education can lead to improved critical thinking skills and better application of economic theories to real-world scenarios. Moreover, our study found that students motivated by ICT will likely perform better in Economics, finding the subject more interesting. This corroborates with the findings of Chen and Wang (2021), who observed a positive correlation between students' ICT motivation and their academic performance in Economics courses.

Despite the numerous replications of this study, a significant drawback and opposing viewpoints were found. For example, Selwyn (2020) cautions against an over-reliance on technology in education, arguing that it may exacerbate existing inequalities and potentially diminish the role of face-to-face interactions in learning. This perspective is particularly relevant in Economics education, where debates and discussions are crucial in developing analytical skills. Furthermore, while our study suggests that unmotivated students with ICT are likely to perform poorly in Economics, it is essential to consider other factors influencing academic performance. Williamson et al. (2023) argue that the 'platformization' of education, including Economics, may lead to a standardization of knowledge that does not need to account for diverse learning needs and cultural contexts.

Our findings indicate that various ICT materials are needed for effective teaching and learning of Economics, including touch screens, digitizers, cell phones, video projectors, and digital cameras. However, the mere presence of these tools does not guarantee effective use. Rasmussen et al. (2022) emphasize the importance of developing teachers' digital competencies to integrate these tools into Economics education effectively. While our study aligns with Cabrera and Cruz's (2019) finding that educators undergo ongoing training to enhance their digital teaching competencies, recent research (Kim & Lee, 2024) suggests that there remains a significant gap between

the availability of ICT tools and teachers' ability to integrate them into Economics curricula effectively. This highlights the need for more targeted and continuous professional development in ICT for Economics educators.

The findings of this study have far-reaching implications across various domains of education. Regarding pedagogical practices, the strong positive correlation between ICT integration and student engagement in Economics courses suggests a pressing need for curriculum developers and educators to prioritize incorporating digital tools in Economics education. This could involve developing interactive digital content specific to Economics concepts, incorporating real-time data analysis tools in Economics lessons, and using simulation software to model economic scenarios (Selwyn, 2020). The finding that ICT helps students complete difficult tasks in Economics also has implications for assessment design, with educators needing to consider designing assessments that leverage ICT tools to tackle complex economic problems, incorporating project-based learning that requires the use of digital resources, and encouraging the use of data visualization tools to represent economic trends and patterns.

From an institutional policy perspective, the study's findings on the necessity of various ICT materials for effective economic education imply that institutions must invest in diverse ICT infrastructure, including hardware and software, and develop policies for equitable access to these resources. This addresses the concern Selwyn (2020) raised about technology potentially exacerbating inequalities. The gap identified between ICT availability and effective integration (Kim & Lee, 2024) suggests that institutions should implement comprehensive, ongoing professional development programs for Economics educators focusing on ICT integration, develop mentoring programs where tech-savvy educators can guide their colleagues, and collaborate with EdTech companies to provide specialized training on using their tools in Economics education. The findings also highlight the need to revise teacher education programs, particularly for Economics educators. This includes integrating ICT skills as a core component of economics teacher training curricula, emphasizing the pedagogical aspects of technology integration, not just technical skills, and preparing future educators to evaluate and critically select appropriate ICT tools for economics education. Regarding student support, the study's finding that ICT-motivated students perform better in Economics suggests the need to develop student support services that enhance ICT literacy, create peer mentoring programs and implement early intervention strategies for students with low ICT motivation.

This study opens up several avenues for future research, including longitudinal studies to examine the long-term impact of ICT motivation on Economics students' academic and professional trajectories, comparative studies across different cultural contexts, and investigation into the potential drawbacks of ICT integration in Economics education, building on the concerns raised by Williamson et al. (2023) about the 'platformization' of education. Lastly, the study's findings have broader implications for Economics and the economy. The enhanced ability of students to apply economic theories to real-world scenarios (Li et al., 2022) could lead to a more skilled workforce in economics-related fields. Improved critical thinking skills fostered by ICT-integrated Economics education could contribute to more informed economic decision-making at various levels of society.

## **CONCLUSION AND RECOMMENDATIONS**

The study reveals that Information and Communication Technologies (ICTs) significantly enhance student motivation in Economics. Key motivational features include making courses more engaging, aiding in task completion, increasing concentration, improving academic performance, and providing quick access to materials. Moreover, we must find ways to connect teaching and learning of economics to meet the needs and future of today's digital learners.

Building on the findings of this study, which highlight the positive impact of Information and Communication Technologies (ICT) on student motivation and performance in Economics courses, several recommendations for further research are proposed. Future studies should longitudinally assess the long-term effects of ICT integration on student engagement, academic performance, and overall learning outcomes. Investigating ICT's impact across different academic disciplines can provide insights into best practices (Zhao & Frank, 2003). Examining the effectiveness of specific ICT tools, such as touch screens, digitizers, cell phones, video projectors, and digital cameras, will guide educators in selecting appropriate technologies (Sinclair, 2014). Research on the impact of comprehensive ICT training programs for educators is crucial, as it affects how well they integrate ICT into teaching practices and influences student outcomes (Cabrera & Cruz, 2019). Exploring socioeconomic factors in ICT access and utilization can inform policies for equitable opportunities. Finally, investigating best practices for developing digital content tailored to Economics courses, including multimedia resources, interactive simulations, and digital textbooks, will improve ICT integration. By addressing these areas, future research can build on current findings and continuously improve ICT integration in Economics education, meeting the evolving needs of digital learners (Sanacore, 2012).

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