

TECHNOLOGY ANXIETY AND USE OF CLOUD COLLABORATIVE TOOLS BY LECTURERS IN SELECTED UNIVERSITIES IN LAGOS STATE

Amosun Faith I¹., Ogungbo Wakil O² and Adetoro 'Niran³

Fatiu Ademola Akesode Library, Lagos State University, Nigeria^{1&2}

Gerar University of Medical Sciences, Imope, Ogun State, Nigeria³

faithamosun@gmail.com

Abstract

Technology anxiety was investigated as a correlate to the use of 9 cloud collaborative tools by lecturers in selected universities in Lagos state. Survey research design of the correlational type was adopted for the study. Purposive and stratified sampling were used for the selection of 301 lecturers from 4 Universities with similar faculties. A structured questionnaire titled Technology Anxiety and Use of Cloud Collaborative Tools Questionnaire was developed and used as instrument for data collection of which 96.7% were retrieved and used for data analysis.

Findings revealed lecturers do not experience technology anxiety while using cloud collaborative tools. Lecturers indicated they are highly anxious about their personal information being viewed online without permission and are highly concerned about the reliability of persons they meet on the internet. They are however not anxious to follow trends for fear of unknown consequences, neither is there fear of using cloud collaborative tools due to negative experiences of people in the past. There were no concerns on laziness and eyesight stress while using cloud collaborative tools nor discomfort from seeing many adverts while using cloud collaborative tools. These signify lecturers have overcome personal barriers that prevent the use of innovative technologies such as cloud collaborative tools. Technology anxiety had a strong positive correlation on use of cloud collaborative tools by lecturers. It was recommended that university management should leverage on low level of technology anxiety among lecturers by adopting more technologies for teaching and research activities.

Keywords: Cloud collaborative tools, University lecturers, Technology anxiety, Lagos State, Use of cloud collaborative tools.

Introduction

Collaboration is an effective method of increasing productivity, innovation, satisfaction, and development in any organization. Collaboration is needed for the implementation of desired objectives; it is an essential ingredient for the success of any enterprise. The Teaching and Learning International Survey (TALIS) organized by Organization for Economic Cooperation and Development (OECD) (2020) established that teacher collaboration is associated with greater

innovation in the classroom, higher levels of self-efficacy, and job satisfaction among teachers. Cloud collaborative tools are one of the innovations that improve workplace practices. These tools ease the process of partnership and cooperation for knowledge generation, professional development, and economic growth. Cloud collaborative tools are applications and software packages used by individuals and organizations for increased productivity, better networking, and professional development (Carroll, et al., 2010). Cloud collaborative tools include Google Workspace, Microsoft Teams, Zoom, Skype, Yahoo Mail, Microsoft OneDrive, WPS Office, and WhatsApp.

According to Lutkevich and Sargent (2023) as well as Froehlich and Brush (2023) cloud collaborative tools are divided into four groups based on their functions and most tools fall into more than one group. They are Communication tools, Conferencing tools, Coordination tools, and Knowledge sharing tools. Communication tools facilitate instant messaging, status updates, chat rooms, and calls between two or more people. Users can make video or audio calls, send text, audio, or video messages, and share documents for free. These tools include Microsoft Teams, Telegram, WhatsApp, Skype, Yahoo Mail, Google Mail, Google Chat, and Google Hangout.

Conferencing tools allow as many as 100 individuals or more to communicate more interactively with features such as screen sharing, virtual background, live chat, meeting recording, and recording transcripts (Lenz, 2023). Examples of these tools are Zoom, Skype, Microsoft Teams, and Google Meet. Coordination tools include Microsoft Teams, Microsoft OneDrive, WPS Office, Google Mail, Google Drive, Google Docs, Google Calendar, and Yahoo Mail. They enable seamless project management through controlled access to documents and optimization of workplace processes. Employees can do their job according to documented standards which can be accessed anywhere, individuals can create projects with team members, to-do lists, time trackers, assign tasks to team members, set deadlines, receive notifications for upcoming

deadlines, and communicate with team members virtually. Knowledge-sharing tools serve as online repositories of organizational documents such as codes of conduct, rules and regulations, standard operating procedures, policies, and so on. These tools ensure knowledge is made explicit and readily available; users can back up documents, encrypt classified data, share feedback on articles, recover damaged or deleted files, and create invite-only links for distribution and access to information. They include WPS Office, Google Drive, Dropbox, Microsoft OneDrive, and Google Docs.

The rapid expansion of cloud computing has led to the widespread adoption of collaborative tools in higher education (Mtebe & Raphael, 2022). However, psychological barriers such as technology anxiety remain prevalent, especially among older and less technologically adept staff (Zulu et al., 2021). Although universities often train their staff and create awareness programs on the use of trending technologies, Oyefara, et al., (2021) stated that technology anxiety still exists as a constraint among lecturers and this limits the effective use of technology such as cloud collaborative tools. Several researchers namely Ahmad, Kamba and Usman (2012); Tagurum, et al., (2017); Awofala, et al., (2019); Samuel (2020); Oyefara et al. (2021) have made conclusions on technology anxiety being a major hindrance to the adequate use of information communication technologies by academic staff of Nigerian universities.

Technology Anxiety refers to a negative emotional state and negative emotional responses such as uneasiness or fear experienced when using or thinking of using cloud collaborative tools. As defined by Meuter et al. (2003) as well as Hong, et al., (2012) technology anxiety is a negative emotional state and response such as fear, frustration, embarrassment, discomfort, and irritability experienced while using or thinking about using technology. It is a complex set of emotions such as nervousness, uncertainty, fear of failure, and low self-esteem displayed when using or learning to use technology. Technology anxiety describes a temporary state as a result of environmental

turbulences (such as the COVID-19 pandemic) and analyses individual psychological reactions to technology rather than general behaviours towards technology making it a general concept that can be used in any context.

Troisi et al., (2022) noted that technology anxiety can be related to the user's state of mind about technology in general or disguised social and psychological conditions such as the cost of technological tools, effects of depending on technological tools, lack of trust in technology providers, loss of privacy of information while using technology and lack of trust in organizations that adopt technology. Studies conducted by Hong et al. (2012); Johnson, et al., (2012) as well as Zulu et al. (2021) have shown that technology anxiety becomes visible when lecturers are required to use new technologies, and the older, more experienced staff have higher levels of technology anxiety. When using cloud collaborative tools such as Zoom, lecturers with technology anxiety have frequent technical issues such as faulty audio, lopsided video, and inability to share screen during virtual meetings. Anxiety symptoms such as sweating, slow speech, and shortness of breath are sometimes displayed by lecturers while using cloud collaborative tools.

Prevalence of technology anxiety among lecturers of universities negatively impact students' learning process; the flexibility of teaching as well as professional development of staff in the University can be limited. When instructors do not fully utilize technology, such as cloud collaborative tools in their curricular and non-curricular activities, students are disadvantaged as they are not exposed to the modern education environment and skills needed for successful competition in the job market (Oyefara et al., 2021).

Technology anxiety has been shown to negatively correlate with digital literacy and the frequency of technology use. For instance, a study by El-Masri & Tarhini (2021) highlighted that perceived ease of use and self-efficacy reduce anxiety levels, thereby improving the adoption of cloud technologies in academic institutions. Similarly, Adov & Mäeots (2022) found that

professional development programs significantly influence lecturers' confidence and willingness to utilize collaborative tools. Oyefara et al. (2021) identified socio-cultural and infrastructural factors such as inadequate training, poor internet access, and lack of institutional support as contributors to technology anxiety. Similarly, Awofala et al. (2019) emphasized that gender and age differences influence lecturers' attitudes and anxiety levels toward technology adoption.

While cloud collaborative tools offer numerous benefits, including flexibility, real-time communication, and increased accessibility (Almarzooq et al., 2020), their effective use depends on users' psychological readiness. Understanding the nature of technology anxiety and addressing it through strategic interventions is therefore essential for maximizing the benefits of digital collaboration in universities.

This study examined technology anxiety as correlates to the use of cloud collaborative tools by lecturers in selected universities in Lagos State. The cloud collaborative tools considered are Google Workspace (Google Mail, Drive, Docs, Hangout, Calendar, Forms) Microsoft Teams, Zoom, Skype, Telegram, Yahoo Mail, Microsoft OneDrive, WPS Office, and WhatsApp. Technology anxiety was investigated based on emotions experienced while using cloud collaborative tools, the anxiety of being addicted to cloud collaborative tools, security anxiety, and anxiety of using the internet.

Trait-State anxiety theory developed by Spielberger (1971) which emphasizes the distinction between anxiety as a trait and anxiety as a state was used in this study. To Raypole (2021) trait anxiety is defined as the natural tendency of an individual to experience and react to negative emotions such as fears, worries, and anxiety in different situations; it refers to anxiety that manifests as a result of personality. Rheault (2016) defined state anxiety as a temporary emotional state consisting of feelings of fear, nervousness, and apprehension with physical symptoms such as increased heart rate, sweating, irregular breathing, and lack of concentration. State anxiety

caused by temporary conditions can be easily overcome by gradual and continuous exposure to cloud collaborative tools while trait anxiety requires more deliberate efforts and sometimes cannot be broken

Research Questions

1. Do lecturers in selected universities in Lagos State experience technology anxiety while using cloud collaborative tools?
2. What is the level of technology anxiety experienced by lecturers in selected universities in Lagos State while using cloud collaborative tools?
3. What is the correlation between technology anxiety and use of cloud collaborative tools by lecturers in selected universities in Lagos state?

Methodology

Survey research design of the correlational type was adopted for the study. The population for the study included all lecturers in the Faculties of Art/Humanities, Social and Management Sciences in addition to the Faculty of Science from all universities in Lagos State.

Two-stage sampling technique namely purposive sampling and stratified sampling was used for sample selection. Purposive sampling was used for the choice of universities in Lagos State. This selection was carried out based on the year of establishment and similarity of available faculties. Therefore, four (4) universities were selected for this study. The faculties mutual to these Universities are Science, Arts/ Humanities, and Social and Management Sciences.

The four selected Universities formed the stratification and out of a population of 1,372 lecturers from the selected Universities, Krejcie and Morgan sample size table (1970) was used to determine a sample size of 301 which was proportionately distributed to the stratum based on a 0.22 sample ratio.

Technology Anxiety and Use of Cloud Collaborative Tools Questionnaire was developed as an instrument to gather data from the lecturers and 301 copies were administered. The questionnaire had a reliability index of 0.72. Data obtained from the research instrument was analysed using SPSS version 22 as well as descriptive statistics. 96.7% of questionnaires were retrieved and these were used for data analysis of this study.

The researcher acknowledged all authors whose findings were cited throughout this study. The purpose of the study was explained to all respondents and involvement was voluntary with adequate consent. All data obtained from the respondents was used only for research purposes and the identity of respondents was anonymous.

Results

Do lecturers in selected universities in Lagos State experience technology anxiety while using cloud collaborative tools?

Table 1: Experience of technology anxiety while using cloud collaborative tools

Experience of technology anxiety	Strongly agree	Agree	Disagree	Strongly Disagree	Mean \bar{x}	Std. Dev.
I hesitate to use cloud collaborative tools for fear of mistakes that cannot be changed	32 11%	38 13.1%	160 55%	61 21%	2.15	.91
I hesitate to use cloud collaborative tools for fear of my account being hacked.	29 10%	33 11.3%	164 56.4%	65 22.3%	2.09	.63
I am concerned that I will be drowned in an ocean of information if I use cloud collaborative tools	15 5.1%	12 4.1%	181 62.2%	83 28.5%	1.86	.66
Using cloud collaborative tools makes me feel that I will be antisocial.	4 1.4%	5 1.7%	170 58.4%	112 38.5%	1.66	.56

I get nervous and uncomfortable using cloud collaborative tools.	1 0.3%	4 1.4%	158 54.3%	128 44%	1.58	.57
I feel aggressive and hostile towards cloud collaborative tools.	1 0.3%	1 0.3%	135 46.4%	154 52.9%	1.48	.54
Average mean					1.80	0.64

Results in Table 1 reveal lecturers do not hesitate to use cloud collaborative tools for fear of making mistakes that cannot be changed, nor do they hesitate to use cloud collaborative tools for fear of account hacking. Lecturers are not concerned about drowning in an ocean of information on cloud collaborative tools; there is no fear of being antisocial from using cloud collaborative tools, they are not nervous or uncomfortable while using these tools, neither do they feel aggressive or hostile towards cloud collaborative tools. This consequently indicates that lecturers do not experience technology anxiety while using cloud collaborative tools as indicated by the average mean of ($\bar{x} = 1.80$) which is less than the criterion mean score ($\bar{x} = 2.50$).

2. What is the level of technology anxiety experienced by lecturers in selected universities while using cloud collaborative tools?

Table 2: Level of technology anxiety experienced while using cloud collaborative tools

Level of technology anxiety	Very High	High	Moderate	Low	Mean \bar{x}	Std. Dev.
I get uncomfortable seeing many advertisements while using cloud collaborative tools	26 8.9%	30 10.3%	168 57.7%	67 23.0%	2.05	1.06
I worry about my personal information viewed online without my permission.	89 30.6%	131 45.0%	47 16.2%	24 8.3%	2.98	.72
I am concerned about the reliability of individuals I meet through the Internet	83 28.5%	118 40.6%	59 20.3%	31 10.7%	2.87	.76
I am nervous to follow trends on cloud collaborative tools because of unknown consequences.	44 15.1%	63 21.7%	126 43.3%	58 19.9%	2.32	.81

I hesitate to use cloud collaborative tools because of the negative experiences of people in the past.	44 15.1%	62 21.3%	114 39.2%	71 24.4%	2.27	.83
Using cloud collaborative tools gives me concern about laziness and eyesight	40 13.8%	55 18.9%	116 39.9%	80 27.5%	2.19	.78
Average mean					2.45	0.83

Findings in Table 2 reveal lecturers are highly anxious about their personal information being viewed online without permission and are highly concerned about the reliability of persons they meet on the internet. Lecturers in the selected universities expressed low anxiety towards other indicators of technology anxiety such as anxiousness to follow trends for fear of unknown consequences, fear of using cloud collaborative tools due to negative experiences of people in the past, concerns on laziness and eyesight stress while using cloud collaborative tools, discomfort from seeing many adverts while using cloud collaborative tools. The average mean ($\bar{x} = 2.45$) which is less than the criterion mean score ($\bar{x} = 2.50$) indicates that the level of technology anxiety experienced by lecturers in selected universities in Lagos State while using cloud collaborative tools is low.

3. What is the correlation between technology anxiety and use of cloud collaborative tools by lecturers in selected universities in Lagos state?

Table 3: Pearson Correlation analysis of technology anxiety and use of cloud collaborative tools

Correlations		Technology anxiety	Use of cloud collaborative tools
Technology anxiety	Pearson Correlation	1	0.692**
	Sig. (2-tailed)		.000
	N	291	291
	Pearson Correlation	0.692**	1

Use of cloud collaborative tools	Sig. (2-tailed) N	.000 291	291
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**. Correlation is significant at the 0.01 level (2-tailed).

Results on Table 3 reveal a strong positive correlation coefficient between technology anxiety and use of cloud collaborative tools by lecturers in selected universities in Lagos state ($r = .692^{**}$; $df = 291$, $p < .05$).

Discussions

The study revealed that lecturers in selected universities in Lagos State do not experience technology anxiety while using cloud collaborative tools. This result is expected due to the abundance of information technologies that have been introduced into the University system since the COVID-19 pandemic which has exposed lecturers to the use of the internet and information technologies. According to Guner and Acarturk (2020) as well as Bhatt and Shiva (2020) lecturers are more likely to experience technology anxiety and often need assistance, encouragement, and friendlier interface designs while using cloud collaborative tools. This study however shows that lecturers do not experience technology anxiety as they are not reluctant to use cloud collaborative tools for fear of making permanent mistakes or fear of account hacking. This is due to the ability of lecturers to manoeuvre cloud collaborative tools as a result of frequent use of the tools and the ability of lecturers to adequately secure their data on cloud collaborative tools.

Lecturers are not concerned about drowning in an ocean of information on cloud collaborative tools nor are they afraid of being antisocial from using cloud collaborative tools which is in tandem with the moderate social connectedness of faculties to cloud collaborative tools. Lecturers in selected universities in Lagos State are not nervous or uncomfortable while using cloud collaborative tools nor do they feel aggressive or hostile towards these tools. This finding is in line with that of Soetan and Coker (2018) who opined lecturers in Nigerian

universities exhibit low technology anxiety to electronic information resources and are enthusiastic to use beneficial technologies.

It was discovered during the course of the study that the level of technology anxiety experienced by lecturers in selected universities in Lagos State while using cloud collaborative tools is low. This discovery is in line with the assertion of Mutula and Nwone (2019) who revealed Professors in Nigerian universities display low technology anxiety while using electronic information resources. Ahmad, Kamba and Usman (2012) on the contrary, found that lecturers of Northern Nigerian universities displayed a high level of anxiety towards the use of technology such as cloud collaborative tools. In this study, however, lecturers in selected universities in Lagos State are not afraid to follow trends due to unknown consequences neither are they afraid to use cloud collaborative tools due to negative experiences of people in the past. They are not concerned about laziness and eyesight stress while using cloud collaborative tools nor are they uncomfortable by viewing many adverts while using cloud collaborative tools.

Findings however reveal lecturers are highly anxious about their personal information being viewed online without permission and are highly concerned about the reliability of persons they meet on the internet. The overall mean score of $\bar{x} = 2.45$ shows majority of lecturers have a positive mindset towards technology and have overcome technology anxiety associated with the use of cloud collaborative tools as indicated by a high level of use of these tools for social and professional purposes. The low level of technology anxiety seems to be a result of the frequent use of cloud collaborative tools.

The findings of the study also reveal a strong positive correlation between technology anxiety and use of cloud collaborative tools by lecturers in selected universities in Lagos state. This implies technology anxiety is a correlate of use of cloud collaborative tools by lecturers in selected universities in Lagos state. Corroborating with other studies, technology anxiety has been

established to limit the use of technology (Tsai et al., 2020; Hong et al., 2012; Meuter et al., 2003) and as shown in this study, cloud collaborative tools are no exception. Etodike et al., (2022) along with Amuda and Ajani, (2021) revealed technology anxiety contributed to the unwillingness of lecturers to use cloud collaborative tools and it was a significant feature determining the use of these tools.

Conclusion

The study revealed a positive correlation between technology anxiety and the use of cloud collaborative tools by lecturers at selected universities in Lagos State. The low level of technology anxiety experienced by lecturers while using cloud collaborative tools indicates a positive relationship, meaning that the lower the technology anxiety, the more effective the use of cloud collaborative tools. Lecturers who experience technology anxiety at significant levels will be unable to utilize cloud collaborative tools efficiently. The low level of technology anxiety among lecturers suggests that they are overcoming personal barriers to the use of technologies such as cloud collaborative tools.

Recommendations

University management should put measures in place to ensure constant stable internet connection within the campus. This will encourage lecturers to utilize cloud collaborative tools for curricular activities and meet given deadlines.

University management should leverage on low prevalence of technology anxiety among lecturers by adopting more technologies for teaching and research activities.

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