

**IMPLEMENTATION LEADERSHIP, DIGITAL CITIZENSHIP AND
E-TEACHING COMPETENCES OF LECTURERS OF MAKERERE
UNIVERSITY IN UGANDA**

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DECLARATION

I, James Bato, hereby declare that this dissertation is entirely my own original work and that it has not been submitted to any other institution for any academic recognition. Any external sources or contributions used in this study have been properly cited and acknowledged.

Signature:.....

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APPROVAL

We, the undersigned, hereby certify that we supervised the dissertation by James Bato and approve it for submission for an academic award.

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DEDICATION

I dedicate this dissertation to my beloved wife and children, whose unwavering support has been a cornerstone of my academic journey. Their encouragement and understanding, especially during difficult times, have been a constant source of motivation. I am deeply grateful for their patience and love, which have provided me with the strength to persevere and reach this far in my academic endeavors.

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3.7.1 Validity	28
3.7.2 Reliability.....	30
3.8 Data collection procedure	31
3.9 Data Management and Analysis	31
3.10 Ethical considerations	32
CHAPTER FOUR.....	33
PRESENTATION, ANALYSIS, AND INTERPRETATION OF THE FINDINGS	33
4.0 Introduction.....	33
4.1 Response Rate.....	33
4.2 Background Characteristics	33
4.3 E- Teaching Competence of Lecturers.....	35
4.3.1 Technical Competence	35
4.3.2 Time Management.	38
4.3.3 Course Communication	41
4.3.4 Course Design.....	43
4.3.5 E-Teaching Competence of Lecturers Index	46
4.3.6 E-teaching Competence Structural Model	47
4.4 Implementation Leadership	48
4.4.1 Proactive Leadership.....	48
4.4.2 Knowledgeable Leadership.....	51
4.4.3 Supportive Leadership.	54
4.4.4 Perseverant leadership	57
4.4.5 Implementation Leadership Structural Model.	60

4.4.6 Implementation Leadership and E-Teaching Competence.	62
4.5 Digital Citizenship	64
4.5.1 Internet Activism.....	64
4.5.2 Technical skills.....	67
4.5.3 Critical perspective.	70
4.5.4 Networking.	73
4.5.5 Digital citizenship Structural Model.....	76
4.5.6 Digital citizenship and E-Teaching Competence.....	77
4.6 Moderation of Implementation Leadership and E-Teaching Competence by Digital Citizenship.....	80
CHAPTER FIVE	83
DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS.....	83
5.05.0 Introduction	83
5.1 Discussion of the Findings.....	83
5.1.1 Implementation Leadership and E-Teaching Competences.....	83
5.1.2 Digital Citizenship and E-Teaching Competences	85
5.1.3 Implementation Leadership and E-Teaching Competence Moderated by Digital Citizenship.....	86
5.2 Conclusions.....	87
5.3 Recommendations.....	88
5.4 Limitations of the Study	89
REFERENCES.....	91
APPENDICES.....	107

Appendix I: Self-Administered Questionnaire	107
Appendix II: Introductory Letter	114
Appendix III: Plagiarism Test Results	115

LIST OF TABLES

Table 3. 1: Study Population, Sample Size, and Sampling Techniques	26
Table 3.2: Variables Characteristics and Source	27
Table 3. 3: AVE and Heterotrait-Monotrait (HTMT) Discriminant Validity Assessment	29
Table 3. 4: Reliabilities and Value Inflation Factor for Study Constructs	30
Table 4. 1: Background Characteristics of the Respondents.....	34
Table 4. 2: E-Teaching Technical Competences of Lecturers.....	35
Table 4.3: E-teaching Time Management Competence of Lecturers.....	38
Table 4. 4: E-teaching Course Communication Competence of Lecturers.....	41
Table 4. 5: E-Teaching Course Design Competence of Lecturers	44
Table 4. 6: Proactive Leadership.....	49
Table 4. 7: Knowledgeable Leadership.....	52
Table 4. 8: Supportive Leadership	55
Table 4. 9: Perseverant leadership	58
Table 4. 10: Implementation Leadership and E-Teaching Competence Path Estimates.....	63
Table 4. 11: Internet Activism.....	65
Table 4. 12: Technical skills.....	68
Table 4. 13: Critical perspective	71
Table 4. 14: Networking	74
Table 4. 15: Digital Citizenship and E-Teaching Competence Path Estimates	79
Table 4. 16: Moderation of Implementation Leadership and E-Teaching Competence by Digital Citizenship Path Estimates	81

LIST OF FIGURES

Figure 1. 1: Conceptual Framework relating Implementation leadership, digital citizenship, and e-teaching competence of lecturers.	11
Figure 4. 1: Histogram for Technical Competences	37
Figure 4. 2:Histogram for Time Management	40
Figure 4. 3: Histogram for Course communication	43
Figure 4. 4: Histogram for Course design.....	45
Figure 4. 5: Histogram for E-Teaching Competences	46
Figure 4. 6: Structural Equation Model for E-teaching Competence Model.....	47
Figure 4. 7: Histogram for Proactive Leadership	51
Figure 4. 8: Histogram for Knowledgeable leadership.....	54
Figure 4. 9: Histogram for Supportive Leadership	57
Figure 4. 10: Histogram for Perseverant leadership	60
Figure 4.11: Structural Equation Model for Implementation Leadership Model	61
Figure 4. 12:Implementation Leadership and E-Teaching Competence.....	62
Figure 4. 13: Histogram for Internet activism	67
Figure 4. 14: Histogram for Technical skills	70
Figure 4. 15: Histogram for Critical perspective	73
Figure 4. 16: Histogram for Networking	76
Figure 4. 17: Structural Equation Model for Digital citizenship Model.....	77
Figure 4. 18: Digital citizenship and E-Teaching Competence	78
Figure 4.19: Moderation of Implementation Leadership and E-Teaching Competence by Digital Citizenship.....	80

ABSTRACT

This study investigated the influence of implementation leadership on the e-teaching competence of lecturers moderated by digital citizenship in selected schools of Makerere University, Kampala, Uganda. Specifically, the study examined whether implementation leadership had a significant influence on e-teaching competences, assessed whether digital citizenship had a significant influence on e-teaching competences of lecturers and determined the moderating effect of digital citizenship on the influence of implementation leadership on e-teaching competences of lecturers at Makerere University. The study adopted a quantitative approach hence, used the correlational design. The data were collected from a sample of 216 lecturers using a self-administered questionnaire. The findings indicated that while implementation leadership did not have a statistically significant direct effect on e-teaching competence, digital citizenship had a strong and statistically significant positive impact on e-teaching competence. For the moderating effect of digital citizenship on the influence of implementation leadership on e-teaching competence, the study revealed that it was insignificant. It was concluded that the relationship between implementation leadership and e-teaching competence of lecturers reveals notable variances according to the level of implementation of the different leadership practices, digital citizenship is vital for e-teaching for competences of lecturers, and digital citizenship whether high or low, does not significantly change the nature or strength of the relationship between implementation leadership and e-teaching competence. Therefore, it was recommended that the university leaders such as vice chancellors and their deputies, deans and heads of departments, should prioritise developing their implementation leadership skills, the development of digital citizenship among academic staff to enhance their e-teaching competences, and should focus on developing strong implementation leadership skills, regardless of the level of digital citizenship among academic staff.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The e-teaching competence has become very important in today's era of technology (Deguchi et al., 2020). E-teaching competences have thus become essential to providing education in the 21st century (Caena, & Christine, 2019). Therefore, it is important to examine factors related to it specifically in universities. In this study, it was conceived that implementation leadership moderated by digital citizenship significantly influences the e-teaching competence of lecturers. This was investigated by the study.

1.1 Background of the Study

1.1.1 Historical background

The concept of e-teaching competence can be traced back to the rise of computers and the development of digital technologies in the latter half of the 20th century (Koni & Lepp, 2023). This was in the 1960s to 1970s when computers began to make their way into educational institutions (Guzdial & Du, 2019). In the 1980s - 1990s, personal computers were introduced and this increased access to technology (An, 2021). Lecturers started to learn basic computer skills like word processing, and the use of spread sheets to create instructional materials (Proskura et al., 2020). In the 1990s to 2000s, the Internet and World Wide Web opened up new possibilities for teaching, and lecturers began to explore online sources, communicating through emails and use of educational websites (Nicolau, 2021). In the 2000s–2010s there was an integration of technology into the curriculum. Schools started investing in computer laboratories. From 2010 to date, mobile devices and the use of the web are increasing the e-teaching competence of lecturers (Monereo et al., 2022).

Following the outbreak of COVID-19, there was a need for lecturers to become more proficient in e-teaching after the pandemic. The results of UNESCO's review indicated that instructors needed to be given more authority to use ICTs, adjust to the reality of the classroom, and provide distant learning (UNESCO, 2021). According to Rosensfeldt and Player-Koro (2020), educators nowadays are required to possess a wider range of e-teaching competences, such as the capacity to assess online content, encourage digital citizenship, and adjust to new technologies. Nonetheless, while e-teaching competence of lecturers has become paramount in the contemporary world, it varies across the world (Modiba et al., 2024). Nordic countries like Finland, Sweden, and Norway embrace interdisciplinary approaches and use ICT as a means to connect different subject areas and promote holistic learning experiences. They integrate technology to facilitate collaborative projects that involve multiple disciplines (Erstad et al., 2021). In Western Europe and Southern Europe, e-teaching competence of lecturers is fairly good (Karademir et al., 2021). However most lecturers shy away from online resources and digital tools as they rely solely on traditional teaching methods and disregard the importance of digital literacy (McHaney, 2023).

In Africa, e-teaching competence of lecturers also varies across countries and regions but it is generally low across the different countries. While e-teaching competence of lecturers in Africa is improving, the progress is slower compared to other countries (Majanja, 2020). In North Africa (Egypt, Tunisia, Morocco) the challenges include access to technology and internet connectivity (Taiebine, 2023). In West Africa (Nigeria, Ghana, Senegal) e-teaching competence of lecturers is improving but progress is slower as some lecturers have limited exposure to digital technologies, resulting in lower levels of digital literacy (Tangmo et al., 2021). In Kenya e-teaching uptake is 30-40% (Sisimwo, 2023). In

Tanzania, there has been reported 20-30% increase in the adoption of e-teaching practices among lecturers (Kabage et al., 2022). Rwanda has experienced a significant increase of around 35-45% in lecturer participation in e-teaching (Zgovu, 2021).

While in Uganda there was uptake of e-teaching since COVID-19, lecturers still lacked ICT skills and had negative attitudes towards online learning, with many of them sticking to traditional teaching (Mugizi et al., 2023). Moreover, Ugandan lecturers lacked digital teaching competences and some of them have never used the internet in instruction. A study that involved academic staff in five public universities in Uganda noted that instructors did not have the necessary knowledge and abilities to create online courses (Kasule et al., 2023). In their study, Mugizi et al. (2023) revealed that public universities in Uganda had been slow at digitising their education compared to private universities.

Previous studies on e-teaching competences suggest that the factors relating to it among others include; implementation leadership, digital citizenship (Choi et al., 2017), and technical proficiency (Adi et al., 2022). Others include ICT skills, attributes, school environment and mastery experiences (Yang et al., 2022) among others. However, with low implementation level of ICT teaching in secondary schools, it was imperative to examine how implementation leadership in schools related to e-teaching competence of lecturers. Still, with lack of studies on lecturers' digital citizenship in the African context, the study tested how digital citizenship of lecturers moderated the relationship between implementation leadership and e-teaching competence of lecturers.

1.1.2 Theoretical Background

This study was informed by the Implementation Leadership (IL) and Digital Citizenship

(DC) Theories. The Implementation Leadership Theory was proposed by Aarons and colleagues in 2006 (Gifford et al., 2017). The Implementation Leadership Theory suggests that leaders who are proactive, adaptive, supportive, and knowledgeable are more likely to create a positive implementation climate, engage stakeholders, and drive successful implementation outcomes (Aarons et al., 2014). The theory provided a framework for analysing the relationship between implementation leadership and e-teaching competence of lecturers looking at how its elements of proactive, adaptive, supportive, and knowledgeable leadership relate to digital citizenship of lecturers.

Nonetheless, ILT does not show the relationship between digital citizenship and e-teaching competence, thus the Citizenship Theory also underpin the study. The Digital Citizenship Theory was advanced by Ribble in 2007 (Infante-Moro et al. 2020). The term "digital citizenship" describes the idea of acting morally and responsibly online (Choi et al., 2017). The theory of digital citizenship encompasses various tenets that guide individuals in understanding and practicing responsible and ethical behaviour in the digital realm (Dunaway & Macharia, 2021). According to Choi et al. (2017), digital citizenship involves internet activism, technical abilities, critical thinking, and networking. This study examined how lecturers digital citizenship in terms internet activism, technical skills, critical perspective and networking influence their e-teaching.

1.1.3 Conceptual Background

The main variables in this study are e-teaching competence of lecturers (ECT), implementation leadership (IL), and digital citizenship (DC). According to Infante-Moro et al., (2020) e-teaching competence of lecturers is the ability of a teacher to effectively apply digital technologies in their teaching practice, including designing and delivering digital

learning activities, assessing digital learning activities, assessing digital learning, and supporting student digital literacy. In this study, e-teaching competence of lecturers referred to technical competence, time management, course communication, and course design (Martin et al., 2019). Technical competence is the ability to employ information technology to accomplish various activities and establish several strategies for accomplishing the activities (Mugizi et al., 2023). Course communication competence pertains to an individual's ability to convey information through effective and appropriate interaction (Kiessling & Fabry, 2021). Course communication, it describes the ability to communicate using different online platforms, including email and sending announcements via the learning management system (Martin et al., 2019). And time management is the ability of an individual to organise, follow, and adjust time to changing circumstances (Aeon et al., 2021).

On the other hand, implementation leadership is the ability of a leader to effectively guide and oversee the execution of a plan or project was (Tapia & Walker, 2020). Implementation leadership according to Aarons et al. (2014) encompasses proactive leadership, knowledgeable leadership, supporting leadership, and perseverant leadership. Proactive leadership describes a future-oriented approach in which leaders anticipate potential challenges and opportunities, initiate change, and take self-directed actions to influence their environment rather than merely responding to external pressures (Wu & Wang, 2011). For knowledgeable leadership, it refers to a leadership by which the leader possess deep expertise, sound judgment, and a well-informed understanding of their field, enabling them to make evidence-based decisions and guide others effectively through informed reasoning (McKenna, 2021). With respect to supportive leadership, it pertains to the leader meeting employees' psychological and professional needs by providing emotional,

instrumental, and developmental support that enhances their motivation, engagement, and performance (Lundqvist et al., 2025; Caëns et al., 2024). On the other hand, perseverant leadership pretians to leaders who persist in pursuing goals despite obstacles by demonstrating endurance, adaptability, and sustained commitment in turbulent or uncertain contexts (Radović-Marković, 2024).

Digital citizenship is the responsible and ethical use of digital technology like the internet, social media, online platforms, and digital devices (Örtengren, 2022). In this study, digital citizenship was defined according to Choi et al. (2017) in terms of internet activism, technical skills, critical perspective, and networking. Internet activism refers to the strategic use of online platforms and digital tools to promote, organize, or resist social and political causes (Ghobadi & Sonenshein, 2024). Technical skills refer specialized competencies and applied knowledge required to execute specific occupational or technological tasks effectively (Ritzhaupt et al., 2018). Critical perspective refers to the ability to analyse, evaluate, and interpret information in a logical, systematic, and reflective way (Mejía et al., 2019). On the other hand, according to Akkas (2023), networking is the deliberate creation and maintenance of professional and social connections that facilitate the exchange of information, mentorship, and opportunities.

1.1.4 Contextual Perspective

The study was carried out on academic staff of Makerere University. Despite the recognized importance of e-teaching competence, it is low among lecturers. Most lecturers are unable to troubleshoot technology-related issues, lack awareness of online safety and privacy (Ejang, 2023). Also, they do not leverage digital tools for online assessment, feedback, or grading, struggle with online communication, exhibit resistance or reluctance to adopt digital

technologies in their teaching practices (Tusiime et al., 2023). More still, some have a limited understanding of educational technology tools, software, or applications relevant to their subject areas among others (Olema et al., 2020). During the Covid-19 epidemic, educators were forced to go digital from traditional teaching face to face approach using online technologies but it was not easy for most of them since many of them even lacked e-teaching competence (Wambi, 2022). For instance while Makerere University had the MUELE system with features supporting the design of authentic contexts like blogs, folders, files, and media collections, lecturers lacked skills for course design. For most courses, especially theoretical courses, lecturers were more inclined towards traditional methods of teaching and learning hence uploaded textbooks for students (Mugizi et al., 2023). The above contextual evidence showed that e-teaching competences of lecturers in Ugandan universities are low. This study thus investigated the effect of implementation leadership on lecturers' e-teaching competence moderated by digital citizenship.

1.2 Statement of the Problem

E-teaching competence of lecturers enhances student learning and prepare students for the future in today's digital age (Garzon et al 2020). Recognising the importance of e-teaching competence, university had made effort to promote it. For example, Makerere University used the Makerere University E-Learning Environment (MUELE) platform (Mugizi et al., 2023), Kyambogo University used Open, Distance and e-Learning (ODEL), and some programs at Makerere University offered distant education (Mugizi et al., 2023). Despite this effort, e-teaching remained low among lecturers in Uganda. In universities in Uganda, most lecturers struggled with online communication, exhibited resistance or reluctance to adopt digital technologies, had a limited understanding of educational technology tools, software,

or applications relevant to their subject areas. For example, when e-learning was implemented at the beginning of the COVID-19, approximately 30-40% of lecturers exhibited resistance or reluctance to fully adopt digital technologies in their teaching practices (Kisenyi, 2019). Also, some of lecturers faced challenges in using e-learning devices (Mugizi & Nagasha, 2022) including inability to use the technologies to evaluate assignments (Tuyizere, 2021) and low typing skills (Kizza et al., 2021). At Makerere University, 83% of academic staff indicated that they struggled with managing discussions on the platform, creating quizzes, uploading reading materials like videos and audios (Nabushawo & Aguti, 2023). The majority of lecturers had limited skills and experience in e-learning pedagogy and they used the teacher-centered teaching other than the student-centered model generally associated with e-learning. Approximately 50% of the lecturers struggled to complete tasks using computers and lack of e-teaching skills (Bada et al., 2020). If the state of low e-teaching competence of lecturers remained, it would hinder student effective learning, and creativity which would negatively affect teaching and learning in the schools. Therefore, to address the problem, it was imperative to examine factors that influence it looking at how implementation leadership and digital citizenship influence e-teaching competence.

1.3 Purpose of the Study

To investigate the influence of implementation leadership on the e-teaching competence of lecturers moderated by digital citizenship in selected schools of Makerere University, Kampala, Uganda.

1.4 Objectives

Specifically, the study sought;

1. To examine whether implementation leadership has a significant influence on e-teaching competences of lecturers at Makerere University
2. To assess whether digital citizenship whether implementation leadership has a significant influence on e-teaching competences of lecturers at Makerer University.
3. To determine the moderating effect of digital citizenship on the influence of implementation leadership on e-teaching competences of lecturers at Makerere University.

1.5 Research Hypotheses

The study tested the following hypotheses;

1. Implementation leadership has a significant influence on e-teaching competences of lecturers.
2. Digital citizenship has a significant influence on e-teaching competences of lecturers.
3. Digital citizenship has moderating effect on the influence of implementation leadership and e-teaching competence of lecturers.

1.6 Scope of the Study

1.6.1 Geographical Scope

The study was carried out in selected schools of Makerere University. The colleges that were studied in Makerere University were education and external studies, business management as well as humanities and social science. Makerere university was chosen for study, because it was the pioneer of e-learning and digital transformation initiatives among universities in Uganda with platforms such as the Makerere eLearning Environment (MUELE) and the Centre for Teaching and Learning Support (CTLTS). This provided a robust environment to

examine the interplay between implementation leadership, digital citizenship, and e-teaching competencies among lecturers.

1.6.2 Content Scope

The content scope was on implementation leadership, employee digital citizenship and lecturers digital competency. Implementation leadership was studied in terms of proactive, knowledgeable, supportive leadership, and perseverant leadership. Digital citizenship was looked at in terms of internet activism, technological skills, critical perspective, and networking. For the independent variable of e-teaching competence of lecturers, it will cover technical competence, time management, course communication, and course design.

1.6.3 Periodic Scope

The time scope of this study spanned from October 2024 to March 2025, a period of six months. This specific timeframe was deliberately chosen because the study employed a cross-sectional research design, which aimed to capture a snapshot of the phenomenon being investigated at a particular point in time. In other words, the study sought to collect data about the prevailing state of affairs, specifically the relationships between implementation leadership, digital citizenship, and e-teaching competences of lecturers at Makerere University, as they existed during the specified period. By focusing on this specific timeframe, the study aimed to provide a comprehensive understanding of the prevailing circumstances, without attempting to explore historical trends.

1.7 Significance of the Study

This research made an imperative contribution to policymakers, schools, and the body of knowledge. To the policymakers, it informs policy decisions as the findings can be used to

find areas of improvement and the making of fair policies. Further, also, the findings might inform the operationalization of the teacher policy that is supposed to improve teacher management by showing a need for better implementation leadership in embracing e-teaching competence. To the universities, the study reveals how to create a more digital and productive school environment for lecturers and students alike through informing policy decisions as far as promoting by highlighting the most appropriate implementation leadership styles in selected faculties at Makerere University for better e-teaching competence of lecturers. In addition, the study enhances the body of knowledge on the study variables by providing literature on the same. This might be the basis for further research on the study variables.

1.8 Conceptual Framework

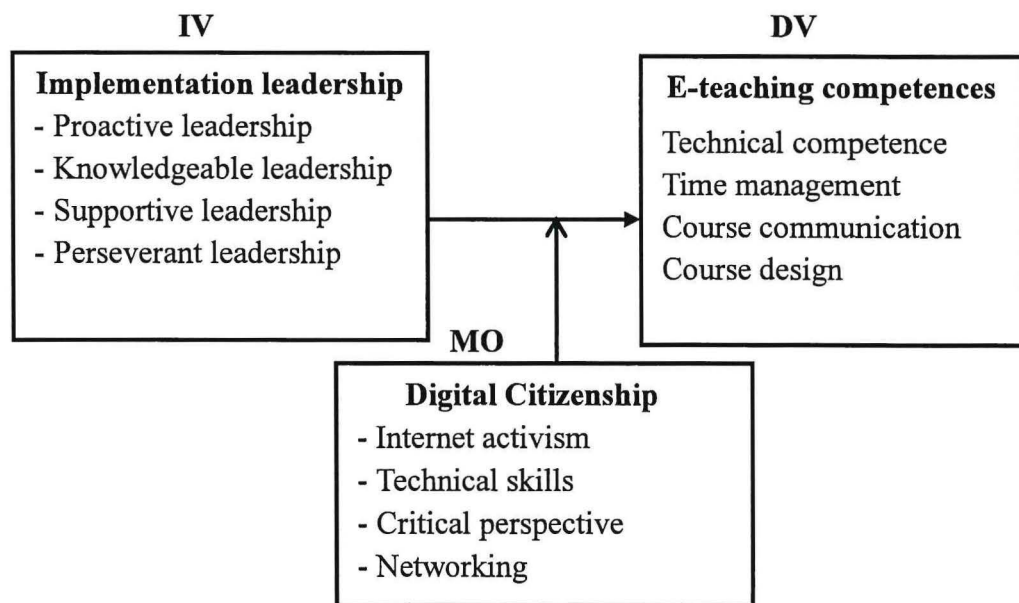


Figure 1.1: Conceptual Framework relating Implementation leadership, digital citizenship, and e-teaching competence of lecturers.

Source: Modified by the researcher and adapted from Infante-Moro et al. (2020), Martin et al. (2019) and Wang (2019).

The conceptual framework (Fig 1.1) shows that implementation leadership affects lecturers digital competency moderated by employee digital citizenship. Implementation leadership includes proactive, knowledgeable, supportive leadership, and perseverant leadership. E-teaching competence of lecturers is covers technical competence, time management, course communication, and course design. Digital citizenship involves internet activism, technological skills, critical perspective, and networking.

1.9 Operational Definitions

Digital citizenship: This denoted internet activism, technical skills, critical perspective, and networking.

E-teaching competence: This referred to technical competence, time management, course communication, and course design.

Implementation leadership: This was defined as referring to proactive leadership, knowledgeable leadership, supporting leadership, and perseverant leadership.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter encompasses a review of related literature and theoretical review. The literature review has been organized and presented according to the themes of the study objectives. The literature review contains previous studies' empirical results and the identified gaps that the study intends to fill.

2.1 Theoretical Review

This study was underpinned by two theories namely; the Implementation Leadership Theory (ILT) proposed by Gregory in 2006 and the Digital Citizenship Theory (DCT) proposed by Mike Ribble in 2007. The Implementation Leadership Theory (ILT) focuses on understanding the leadership behaviors and actions that facilitate the successful implementation of evidence-based practices (EBPs) in various settings, such as healthcare, education, and organizational change (Aarons et al., 2014). It suggests that effective implementation of EBPs requires specific leadership qualities and behaviours from individuals in leadership positions (Gifford et al., 2017). Key components of the Implementation Leadership Theory include: Proactive Leadership, knowledge and beliefs, supportive leadership, adaptive leadership, emotional leadership and implementation climate. Proactive leaders actively engage in the implementation process, promoting a sense of urgency, setting clear goals, and creating a supportive environment for change. Knowledge and beliefs proposes that leaders must possess a solid understanding of the evidence behind the intervention and maintain a belief in its effectiveness (Aarons et al., 2014).

Supportive leaders provide resources, encouragement, and guidance to their teams. They create a positive work climate, foster collaboration, and address barriers to implementation. Adaptive leaders are flexible and responsive to the changing needs and circumstances during the implementation process (Khalid et al., 2012). The ILT suggests that when leaders demonstrate these behaviors and qualities, they enhance the readiness for change, improve the implementation process, and increase the likelihood of sustained use of evidence-based practices (Gifford et al., 2017). The ILT helped to understand how implementation leadership influenced e-teaching competences. However, ILT did not show the linkage between digital citizenship and e-teaching. This thus led to the adoption of Digital Citizenship Theory.

The Digital Citizenship Theory (DCT) proposed by Mike Ribble in 2007 is a framework that aims to guide individuals in effectively and responsibly engaging with digital technologies. It provides a set of principles and skills that promote safe, ethical, and responsible behavior in the digital world (Choi et al., 2017). The theory emphasizes the need for individuals to develop a sense of responsibility, ethics, and digital literacy to navigate the online environment (Oyedemi, 2020). Choi et al. (2017) indicate that digital citizenship involves internet activism, technical abilities, critical thinking, and networking. This study related digital citizenship in terms of internet activism, technical abilities, critical thinking, and networking to teachers' e-teaching competence.

2.2 Review of Related Literature

This section is a review of related literature on implementation leadership, digital citizenship, and e-teaching competence. The related literature shows how the independent variable relates

with the dependent one and how they are moderated by the moderator variable. While reviewing literature, the gaps that called for this study were identified.

2.2.1 Implementation Leadership and E-teaching competence of lecturers

Implementation leadership refers to the leadership practices and behaviours that support and facilitate the successful application of organizational change or initiatives (Machado et al., 2022). In a study involving employees and supervisors from Chinese universities, Ahmed et al. (2022) examined the impact of supportive leadership style on university employees' continued use of massive open online courses. Using structural equation modeling with partial least squares, they established that supportive leadership influenced intention to continue using massive open online courses. However, the study was done in Makerere University in Uganda. This made it necessary to ascertain the influence of supportive leadership on digital learning implementation in Makerere University in Uganda.

Awais (2023) conducted a scoping review to explore how leadership influences online education. The study synthesized existing research on leadership approaches that support digital and online learning environments in higher education. Findings revealed that effective leadership is characterized by vision, adaptability, and digital competence, which collectively enhance institutional readiness for e-learning. The review emphasized that leaders who promote collaboration and technological innovation that is supportive and proactive leaders are instrumental in advancing digital education. However, the study was primarily conceptual and based on literature from developed contexts, making it necessary to examine how such leadership practices apply in universities within developing countries such as Makerere University in Uganda.

Bigirwa et al. (2022) investigated the effect of technology leadership practices on e-learning adoption in midwifery institutions in Uganda. The findings indicated that leadership practices including supportive environment influenced technological use in school activities. Car et al. (2018) carried out a systematic review examining the role of e-learning in building leadership and management capacity within health systems. The findings indicated that e-learning contributes significantly to strengthening leadership competencies, particularly when supported by institutional commitment and technological infrastructure. The study also noted that leadership engagement determines the sustainability and effectiveness of e-learning programs. However, much of the evidence was drawn from health sectors in developed and middle-income countries, suggesting a contextual limitation. This highlighted the importance of assessing how supportive leadership practices influence digital learning adoption and implementation in universities in Uganda.

In a systematic review involving higher education institutions across Europe and Latin America, Basilotta-Gómez-Pablos et al. (2022) examined university teachers' digital competencies, emphasizing the interrelation between technical skills and e-teaching competences. Using a structured analysis of empirical studies published over a decade, the authors established that teachers generally exhibited moderate levels of digital competence, particularly in areas of communication, digital content creation, and problem-solving. The findings further revealed that the lack of continuous institutional support and structured digital training constrained effective technology integration in teaching. This means that supportive leadership enhances teaching competences of lecturers. However, the review largely focused on contexts with strong technological infrastructure, making it necessary to

explore how similar digital skill gaps affect e-teaching competence within universities in developing settings such as Makerere University in Uganda.

Jameson et al. (2022) undertook a systematic review to assess the maturity of digital leadership research in higher education and to propose a comprehensive framework for advancing the field. Drawing on empirical studies conducted between 1999 and 2022, the authors identified that successful digital leadership depends on strategic vision, faculty empowerment, and the integration of technology into institutional culture. Their findings showed that transformational which point to implementation leadership in terms of supportive leadership was effective in facilitating technology adoption in universities. Nevertheless, the review noted that most studies were conducted in technologically advanced nations, leaving a contextual gap regarding how digital leadership manifests in African higher education institutions such as Makerere University.

Khoeroni et al. (2019) conducted a study at the Directorate of Resource Operations of the Directorate General of Resources and Equipment of Post and Informatics of the Ministry of Communication and Information in Indonesia to examine the role of leadership in the development of digital competence in public services. Their study found that implementing leadership that encouraged maximum use of information technology resulted in a meaningful improvement of digital-based public services. However, this study did not directly study implementation leadership in relationship to e-teaching competence of lecturers especially those in universities. Therefore, this study investigated implementation leadership in relation to e-teaching competences of lecturers.

Martin et al. (2020) systematically reviewed empirical studies on online teaching and learning published between 2009 and 2018 to identify effective practices and influencing factors. Their analysis revealed that leadership support, institutional strategy, and professional development were among the most critical determinants of successful online learning implementation. The study highlighted that institutional leaders who provide adequate training, resources, and motivation enhance both teacher and learner engagement in e-learning environments. However, the review largely focused on general teaching and learning factors rather than leadership behavior specifically, thus necessitating further empirical inquiry into the role of supportive leadership in sustaining digital learning initiatives in contexts such as Makerere University.

Using employees of a company in Kulon Progo, Yogyakarta, Indonesia, Prihandaka et al. (2022) studied supportive leadership, leader-member interaction, and employee inventiveness. They established that supportive leadership was positively related to employee creativity such as adoption of e-teaching for lecturers. In essence, the study expounded that supportive and leader-member dialog contributes to the attempt of promoting employee creativity and performance in the workplace. The combination of supportive leadership and leader-member exchange (LMX) may provide insights on organizational behavior knowledge and practices. However, this study explored a population other than lecturers leaving a population gap in the universities in Uganda.

2.2.2 Digital Citizenship and E-teaching competence of lecturers

Digital citizenship is the responsible and ethical use of digital technology like the internet, social media, online platforms, and digital devices (Ortegren, 2022). In this study, digital citizenship is conceptualised as digital access, digital communication, digital literacy and

digital ethics (Ananto & Ningsih, 2023). In the examination of the level of readiness of e-learning implementation in an institution in Indonesia, Adiyarta (2018) found out that technical know-how in terms of technology skill related to e-learning implementation in institutions. Relatedly, Enakrire (2024) assessed the usefulness of computer skills for teaching in an open and distance e-learning (ODEL) environment. The findings revealed that lecturers with strong technical proficiency in computer operations which as part of digital citizenship were significantly more competent in managing virtual classes, providing timely feedback, and promoting interactive learning. Technical skills were found to enhance lecturers' confidence and autonomy in using technology, thereby strengthening their e-teaching competences. In contrast, those with inadequate technical abilities struggled with course management, student support, and instructional design. However, since the study focused on a single ODEL institution, further research is necessary to understand how lecturers' technical skills influence e-teaching competences across diverse universities in Uganda.

In a study on e-learning, Makokha and Mutisya (2016) reported that the ability and confidence of a teacher in using computers and other technologies in imparting knowledge and skills to their students were imperative for e-learning. In a systematic review involving higher education institutions across Europe and Latin America, Basilotta-Gómez-Pablos et al. (2022) examined university teachers' digital competencies, emphasizing the link between technical skills a component of digital citizenship and e-teaching competences. Through analysis of empirical studies, they found that teachers' ability to operate digital tools, manage online platforms, and create multimedia learning materials directly influenced their competence in designing and delivering effective e-learning experiences. Specifically,

teachers with higher levels of technical proficiency demonstrated stronger capacities in online communication, digital assessment, and interactive course facilitation. Conversely, limited technical skills constrained teachers' capacity to implement digital pedagogy effectively. However, the review was largely situated in technologically advanced contexts, making it necessary to examine how such relationships manifest within resource-constrained universities such as Makerere University in Uganda.

Using a correlational approach, Córdoba (2021) investigated the relationship between teachers' digital skills and teaching performance in Latin American schools. Results indicated that teachers with strong technical abilities in operating computers, educational software, and online platforms displayed higher e-teaching competence, manifested through improved lesson planning, content delivery, and digital assessment. The study established that technical skills which as a dimension of digital citizenship enhance teachers' adaptability and creativity, enabling them to integrate ICT tools effectively into their pedagogy. Consequently, digital proficiency was shown to be a predictor of overall teaching performance and e-learning success. Nonetheless, the study focused on basic education rather than higher education institutions, creating a contextual gap concerning how similar dynamics apply to university lecturers in Uganda.

In their study, Mugizi and Rwothumio (2024) examined the influence of selected Ugandan public universities' tangible and intangible resources and capabilities on E-learning implementation. The findings indicated that low e-learning technical know-how an element of digital citizenship impeded e-learning implementation. In their study, Slavković et al. (2024) investigated the impact of digital citizenship and digital transformation enablers on innovation and problem-solving capabilities using staff of private companies from various

industries in Serbia. The findings indicated the digital citizenship was positively associated with digital transformation enablers. However, literature search revealed existence of limited literature relating digital citizenship and e-teaching competences. This attracted this study to further examine the relationship between the two variables to provide further knowledge on the same.

In a global systematic review of emergency remote teaching (ERT) during the COVID-19 pandemic, Sum and Oancea (2022) analyzed how academics' technical readiness influenced their ability to maintain instructional quality online. Findings showed that lecturers who possessed adequate technical skills an element of digital citizenship such as the use of videoconferencing software, online assessment tools, and virtual classrooms demonstrated higher e-teaching competence, particularly in sustaining student interaction and learning continuity. In contrast, educators with poor technical abilities faced challenges in course design, content delivery, and learner engagement. The authors concluded that technical preparedness was a decisive factor in determining whether the transition to online teaching resulted in pedagogical success or mere content transmission. However, their review focused on emergency responses rather than long-term capacity building, suggesting the need to assess how Ugandan universities can strengthen technical competencies for sustained e-teaching proficiency.

Vanegas et al. (2025) conducted a systematic review to assess competencies required for integrating educational technology in teacher training. The study revealed that technical skills such as the ability to use learning management systems, design digital learning materials, and troubleshoot instructional technologies constitute the foundation upon which higher-order e-teaching competences are built. Teachers with limited technical proficiency

often struggled to apply pedagogical models in virtual environments, while those with advanced technical skills effectively combined digital pedagogy, collaboration, and innovation. Hence, technical competence was found to be a critical enabler of e-teaching performance. Nevertheless, the review was based on evidence from technologically mature education systems, underscoring the need to explore how teacher training programs in Uganda cultivate the technical abilities that underpin e-teaching competences.

2.2.3 Implementation Leadership, Digital Citizenship, and E-teaching Competence of Lecturers

Implementation leadership refers to the set of practices exhibited by leaders to guide and facilitate the successful execution of organizational initiatives (Ribble & Parker, 2022). It involves proactive planning, effective communication, creating a supportive environment, and displaying persistence in overcoming challenges associated with the implementation process (Dunaway & Macharia, 2021). Implementation leadership is important because it ensures that organizational changes are not only introduced but also effectively integrated into the existing structure (Ribble & Parker, 2022). Digital citizenship refers to the responsible and ethical use of technology, especially the internet and digital devices. It involves comprehension and adhering to principles such as online safety, respect for others in digital spaces, and awareness of the impact of one's actions in the online environment (Ortegren, 2022).

Digital citizenship promotes a safe and positive online environment. Individuals who practice good digital citizenship contribute to a collective effort to combat online misinformation, cyberbullying, and other negative aspects of the digital realm (Amhag et al., 2019). Digital citizenship plays a crucial role in enhancing e-teaching effectiveness, as it

encompasses responsible use of technology in both educational and societal contexts. In e-teaching, where digital tools are integral to the learning process, teachers who model digital citizenship principles such as responsible online communication, digital literacy, and ethical behavior create a positive and engaging online learning environment (Al-Ali et al., 2024).

Digital citizenship influences how educators integrate digital tools into their teaching practices, ensuring that they do so responsibly ethically, and effectively. Teachers who understand and apply the concepts of digital citizenship are more likely to use ICT in ways that promote a positive learning environment. For instance, they are more inclined to model appropriate digital behavior for students, such as respecting others' privacy, engaging in respectful communication, and using online resources responsibly (Capuno et al., 2022). This modeling not only improves the teachers' own ICT practices but also creates a safe and respectful digital learning environment for students. Teachers who prioritize digital citizenship are also better equipped to guide students in the ethical use of digital tools, encouraging them to be responsible, thoughtful, and critical consumers of information (Gleason & Von Gillern, 2018).

Furthermore, digital citizenship influences teachers' attitudes toward digital tools and their willingness to adopt new technologies. Teachers who understand the importance of digital literacy and responsible technology use are more likely to integrate ICT tools effectively into their classrooms, using them to enhance learning outcomes. For example, teachers might incorporate collaborative platforms, educational apps, or interactive multimedia resources that align with the principles of digital citizenship (Öztürk, 2021). However, while the above theoretical literature shows that implementation leadership and digital citizenship are important for lecturers' e-teaching competences, literature

search revealed no study showing the moderating effect of digital citizenship on the influence of implementation leadership on e-teaching competences of lecturers. This attracted this study in the context of a university in Uganda.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter outlines the research methods employed to conduct the study, detailing the approach used for field entry, data collection, and analysis. The methodology served as the foundation for the entire research process, guiding the steps taken to gather and interpret the data. By explaining the rationale behind the chosen methods, this chapter provides a clear framework for understanding how the study was carried out and how the findings were derived.

3.1 Research design

The study employed a quantitative approach to achieve its objectives, as it allowed for the collection of numerical data that could be analyzed and generalized to a larger population. This approach was particularly effective for obtaining objective, measurable results. The collection and analysis of data was guided by the correlational design, which was suitable for collecting data necessary for exploring associations and patterns between variables. The correlational design enabled the examination of relationships among multiple variables within a single research study, providing a measure of the strength and direction of the relationships between the independent and dependent variables (Seeram, 2019; Wang, 2020). This design was effective for making inferences about the population and understanding how different factors were interconnected.

3.2 Population of the Study

Makerere University employed 1432 academic staff who was the population of this study (Mugizi & Rwothumio, 2024). However, due to time and cost constraints, the study was

carried out on part of the puplation, that are academic staff from three colleges, namely College of Education External Studies, College of Business Management and College of Humanities and Social Science. Hence, these was the sampled population numbering 471 lecturers.. This study was done in Makerere University to provide insights that could enhance educational practices and policies in similar environments. The distribution of the lecturers in the faculties is indicated in Table 3.1.

3.3 Sample Size Determination

The sample size of 218 was determined using Krejcie and Morgan's Table for Sample Determination (1970). This sample was sufficient for producing results necessary for maing statistical inference.

Table 3. 1: Study Population, Sample Size, and Sampling Techniques

Category	Population	Sample Size
College of Education External Studies	115	86
College of Business Management	104	80
College of Humanities and Social Science	252	152
Total	471	218

3.4 Sampling Techniques

The study adopted simple random sampling technique, a probability method for selecting a subset of the population by chance. Simple random sampling effectively ensures equal representation of all individuals in the population, thereby mitigating potential sampling bias (Bryman & Bell, 2019). This method involve randomly selecting participants from a sampling frame containing names of lecturers.

3.5 Measurement of the Variables

The study variables are e-teaching competence of lecturers (DV), implementation leadership (IV), and Digital Citizenship (moderating variables) as indicated in Table 3.2.

Table 3.2: Variables Characteristics and Source

Variable	Nature of variable	Indicators	Sources
Implementation leadership	Independent variable	- Proactive leadership - Knowledgeable leadership - Supportive leadership - Perseverant leadership	Aaron et al. (2014) Choi et al. (2017) Torres et al. (2018)
E-teaching competence of lecturers	Dependent variable	- Technical competence - Time management - Course communication - Course design	Infante-Moro et al. (2022); Martin et al. (2009); LeFebre & LeFebre (2020) Sweller et al. (2019)
Digital citizenship	Moderating Variable	- Digital Access - Digital communication - Digital literacy - Digital ethics	Choi & Park. (2023) Choi et al. (2017) Sciadas (2005) Canina & Orero- Blat (2021)

3.6 Data collection instruments

The questionnaire was used to collect data. The questionnaire was employed as it is deemed suitable for gathering the necessary data to address the research inquiries and accomplish the research objectives. Given the utilization of the cross-sectional design in the study, the questionnaire was particularly advantageous, offering time efficiency, cost-effectiveness, and the provision of valid information (Nayak & Narayan, 2019). Section A of the questionnaire covered questions on the background information of respondents, section B on the dependent variable (e-teaching competences of lecturers), section C questions on the independent variable (implementation leadership) and section D on the moderating variable

(digital citizenship). The questionnaire was organized using a five-point Likert standardized rating scale, ranging from 1 to 5 (5 - Strongly Agree, 4 - Agree, 3 - not Sure, 2 - Disagree, 1 - Strongly Disagree). These ordinal questions helped to collect data necessary for quantitative analysis.

3.7 Data Quality Control

3.7.1 Validity

The researcher established content validity of the instruments using face validity. Validation of the instrument focussed on clarity, completeness and relevance of the questions in relation to the study constructs (Clark & Watson, 2019). After data collection, validity was confirmed using Confirmatory Factor Analysis, convergent validity and discriminant validity. Using Factor Analysis, indicators of the different constructs considered valid were those that loaded highly above 0.50. Items loading low or cross loading was deleted (Shrestha, 2021). For convergent validity, the values were considered at above 0.5 which is the minimum while for discriminant validity, the values below the maximum value of 0.90 to ensure validity of the results. The validity results follow in Table 4.3.

Table 3. 3: AVE and Heterotrait-Monotrait (HTMT) Discriminant Validity Assessment

Measures	AVE	E-TC	CC	CD	TC	TM	
E-TC							
CC	0.531	0.490					
CD	0.760	0.826	0.783				
TC	0.599	0.639	0.258	0.775			
TM	0.571	0.607	0.577	0.884	0.600		
Measures	AVE	IL	KL	PL	PLD	SL	
IL							
KL	0.618	0.399					
PL	0.595	0.492	0.880				
PLD	0.743	0.475	0.830	0.858			
SL	0.617	0.252	0.776	0.702	0.634		
Measures	AVE	DC	CP	IA	NT	PL	TS
DC							
CP	0.866	0.793					
IA	0.560	0.701	0.857				
NT	0.714	0.867	0.899	0.731			
TS	0.810	0.185	0.678	0.271	0.363	0.445	

Key: CC = Course communication, CD = Course design, CP= Critical perspective, DC = Digital citizenship, E-Teach = E teaching, IA = Internet activism, IL = Implementation leadership, KL = Knowledgeable leadership, NT= Networking, PL = Proactive Leadership, PLD = Perseverant leadership, SL = Supportive leadership, TC= Technical competence, TM = Time management and TS = Technical Skills.

The validity results in Table 3.3 revealed that the Average Variance Extracted (AVE) values demonstrate that the constructs measuring the various variables exhibited convergent validity, with AVE values surpassing the minimum acceptable threshold of 0.5 (Shrestha, 2021). This suggested that the indicators effectively represented their respective constructs. Convergent validity evaluates the strength of the relationship between measures of a latent variable, confirming that measures of the same concept are indeed related (Sürücü & Maslakç, 2020). Further, the Heterotrait-Monotrait (HTMT) ratios, which assessed discriminant validity, showed that the constructs were distinct, with each construct's indicators being clearly defined. All HTMT values were below the maximum threshold of 0.90 (Hair Jr. et al., 2022), supporting the evidence of discriminant validity. This indicated

that the measurements effectively differentiated each variable, making the data appropriate for structural modelling.

3.7.2 Reliability

The reliabilities of the indicators of the various constructs were tested using Cronbach's Alpha (α) and composite reliability using SmartPls. Both Cronbach's Alpha and Composite reliability will were attained at 0.70 and above (Yin, 2018). Nevertheless, Composite Reliability was favored because Cronbach's Alpha is insufficient in that it assumes that all indicator traits are the same in the population, which has an impact on the robustness of reliability values (Yin, 2018)). This ensured reliability of the instrument.

Table 3. 4:Reliabilities and Value Inflation Factor for Study Constructs

Measures	α	CR	VIF
CC	0.706	0.816	1.619
CD	0.921	0.941	1.363
TC	0.865	0.899	1.526
TM	0.640	0.799	1.518
KL	0.877	0.906	3.289
PL	0.782	0.854	2.929
PLD	0.656	0.852	1.850
SL	0.855	0.889	2.005
CP	0.846	0.928	1.753
IA	0.802	0.863	2.817
NT	0.863	0.908	1.000
PL	0.812	0.850	1.149
TS	0.941	0.955	1.753

Table 3.4 displays the results of the reliability tests for the various constructs. With the exception of two constructs, namely Time Management (TM) and Perseverant Leadership (PLD), which had Cronbach's alpha values below the 0.70 threshold, all other constructs showed Cronbach's alpha (α) and composite reliability (CR) values exceeding 0.70, confirming the reliability of the measures. Despite the lower Cronbach's alpha for TM and

PLD, these constructs were still deemed reliable due to their high composite reliability values. Composite reliability was used alongside Cronbach's alpha, as the latter can be sensitive and may assume homogeneity across the population, which could lower reliability values. In contrast, composite reliability is more flexible, accounting for diverse traits and ensuring a greater number of reliable indicators. In addition, the results revealed no signs of collinearity among the variables, as the Variance Inflation Factor (VIF) values, which assess multicollinearity, remained below 5 (Hair Jr. et al., 2022). This further indicated that the indicators for the various constructs were reliable.

3.8 Data collection procedure

After successfully defending the research proposal, the researcher received an introductory letter from the Directorate of Research and Postgraduate Training (DRGT) to begin data collection. This letter was presented to the College Principals at Makerere University to seek permission for data collection. The researcher collected the data with help and a lecturer of Makerere University that distributed the questionnaire to fellow lecturers. The data collection process spanned a period of four months.

3.9 Data Management and Analysis

Data management encompassed both processing and analysis. The data processing involved coding and entering the data, then summarizing it into frequency tables to identify errors for correction, such as addressing missing data and removing outliers. Following this, the data were analyzed using both descriptive and inferential statistics. Descriptive statistics included frequencies, percentages, and means, all computed using SPSS. For the inferential analysis, Partial Least Squares Structural Equation Modeling (PLS-SEM) was conducted to assess the impact of the independent variable on the dependent variable, as well as the moderating

effect of the moderator variable through bootstrapping. The analysis was performed using SmartPLS 4.

3.10 Ethical considerations

The study was conducted with a strong commitment to ethical principles, ensuring justice, beneficence, and non-maleficence. Justice was maintained by treating all participants fairly and ensuring an unbiased selection process. Beneficence was prioritized by designing the study to generate valuable insights that could benefit both the academic community and society, while also maximizing the benefits for participants. The researcher communicated the potential benefits of the study to participants, helping them understand how their involvement could contribute to broader goals. Non-maleficence was ensured by minimizing risks and harm to participants. Informed consent was obtained, ensuring participants were fully aware of the study's purpose, procedures, and any potential risks, allowing them to make informed decisions about their participation. Further, confidentiality and privacy were maintained throughout the research, with no personal identifiers collected on the questionnaires, ensuring participants' responses remained anonymous and their identities protected (Resnik, 2020). These ethical considerations helped safeguard the rights, privacy, and well-being of all participants.

CHAPTER FOUR

PRESENTATION, ANALYSIS, AND INTERPRETATION OF THE FINDINGS

4.0 Introduction

This chapter provides a thorough analysis and interpretation of the findings from the study on the linkage between implementation leadership and e-teaching competencies moderated by digital citizenship among the academic staff of Makerere University. The chapter begins with a comprehensive presentation of descriptive statistics to offer a foundational understanding of the data. Thereafter, structural equation modelling results displaying the intricate relationships between the variables in greater depth are presented. Through this rigorous analytical approach, the chapter reveals valuable insights into how these variables interact and their underlying connections.

4.1 Response Rate

The study aimed to survey a sample of 218 full-time academic staff at Makerere University using a questionnaire. Of these, 216 respondents provided responses, resulting in a response rate of 99.1%. This high response rate was considered adequate for analysis, ensuring the reliability and generalizability of the findings. This was because the response rate exceeded the recommended 50% threshold for social science research, as suggested by Pielsticker and Hiebl (2020). Therefore, the findings can be generalised.

4.2 Background Characteristics

This section of the study provides background information about the participants on their gender, age group, highest level of education, and the position they hold at the university. The information offers insights into the demographic characteristics of the lecturers involved in the study as indicated in Table 4.3.

Table 4. 1: Background Characteristics of the Respondents

Variable	Category	Frequency	Percent
Gender	Male	164	75.9
	Female	52	24.1
	Total	216	100.0
Age Groups	Below 40 yrs	40	18.5
	40 yrs and above	176	81.5
	Total	216	100.0
Highest level of education	Bachelor's degree	4	1.9
	Master's degree	52	24.1
	PhD degree	160	74.1
	Total	216	100.0
Position held in the university	Teaching/Asst Lecturer	68	31.5
	Lecturer	100	46.3
	Senior Lecturer	40	18.5
	Assoc. Prof	8	3.7
	Total	216	100.0

The demographic characteristics (Table 4.1) of the study participants highlight several notable trends. A significant gender disparity was observed, with 75.9% of respondents being male and 24.1% female, suggesting that there more male lecturers in the university. In terms of age, the majority of participants (81.5%) were aged 40 years and above, which indicates that the academic staff were largely composed of more experienced members. This was further reflected in the high educational qualifications of the respondents, with 74.1% holding a PhD, followed by 24.1% with a Master's degree, and only 1.9% holding a Bachelor's degree. Regarding academic positions, most respondents were Lecturers (46.3%) and Assistant Lecturers (31.5%), while a smaller proportion were Senior Lecturers (18.5%) and Associate Professors (3.7%). This distribution suggested a predominance of low rank academic staff, with fewer individuals occupying higher academic ranks. However, the high experience and qualifications of the participants ensured the collection of relevant and

reliable data, as their advanced education and academic tenure provided them with a deep understanding of the subject matter

4.3 E- Teaching Competence of Lecturers

The concept of e-teaching was studied in terms of technical competence, time management, course communication and course design. The results on the same including frequencies, percentages and means follow:

4.3.1 Technical Competence

Technical competence was conceived as the first aspect of e-teaching competence. The construct was studied using six indicators. The results on the same follow in Table 4.2.

Table 4. 2: E-Teaching Technical Competences of Lecturers

Technical Competences	SD	D	NS	A	SA	Mean
While lecturing students in class, I use presentations (PowerPoint)	20 (9.3%)	00	4 (1.9%)	92 (42.6%)	100 (46.3%)	4.26
I ably use the technological tools (MS Word and internet) required for online classes	4 (1.9%)	16 (7.4%)	00 00	64 (29.6%)	132 (61.1%)	4.41
I perform basic computer activities such as file and folder management, document generation, and editing	8 (3.7%)	20 (9.3%)	00 00	56 (25.9%)	132 (61.1%)	4.32
I share open educational materials with students such as posting content	4 (1.9%)	8 (3.7%)	8 (3.7%)	80 (37.0%)	116 (53.7%)	4.37
I use online collaborative applications such as Google Drive, Dropbox, Google Classroom, and WhatsApp	12 (5.6%)	0	4 (1.9%)	96 (44.4%)	104 (48.1%)	4.35
I efficiently use the hardware tools needed for online classes like computer, tablet, camera etc.	12 (5.6%)	12 (5.6%)	00 00	92 (42.6%)	100 (46.3%)	4.31

The results in Table 4.2 indicate that the majority of academic staff at Makerere University reported a strong usage of various technological tools for teaching and online engagement. For instance, cumulatively, 88.9% of respondents agreed that they use PowerPoint presentations while lecturing, while 11.1% disagreed and 1.9% were not sure. The mean score for this item was 4.26, reflecting a high usage of PowerPoint in lectures. Regarding the use of technological tools for online classes, 90.7% of respondents agreed that they are proficient in using tools like MS Word and the internet for online teaching. A smaller portion, 9.3%, disagreed, indicating challenges for some in using these tools. The mean score for this item was 4.41, suggesting a high level of proficiency with these essential tools.

When asked about performing basic computer activities, such as file management, document generation, and editing, 87% of respondents agreed that they can perform these tasks, while 13% disagreed. The mean score of 4.32 reflects strong competence in these basic computer functions. On the topic of sharing open educational materials (such as posting content), 90.7% of respondents agreed that they engage in this practice, with 7.4% either disagreeing or being not sure. The mean score for this item was 4.37, indicating that a majority of faculty members actively share educational content online.

Regarding the use of collaborative online tools (like Google Drive, Dropbox, and WhatsApp), 92.5% of respondents agreed that they use these applications for collaboration, while 7.4% disagreed or were not sure. The mean score was 4.35, reflecting the high use of these collaborative platforms for academic work. Finally, regarding the use of hardware tools needed for online teaching, such as computers, tablets, and cameras, 88.9% agreed that they are capable of using these tools effectively, while 11.1% disagreed or were not sure. The

mean score for this item was 4.31, showing that most staff members are well-equipped to use the necessary hardware for online teaching.

Precisely, the mean scores for all items range from 4.26 to 4.41, reflecting a high level of competence and confidence among academic staff in using both hardware and software tools for teaching, particularly in an online environment. The strong agreement from most respondents suggests that the lecturers were highly capable of incorporating technology into their teaching, while the lower percentage of disagreed and not sure responses highlights that there are only a few staff members facing challenges in this regard. To establish whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.1.

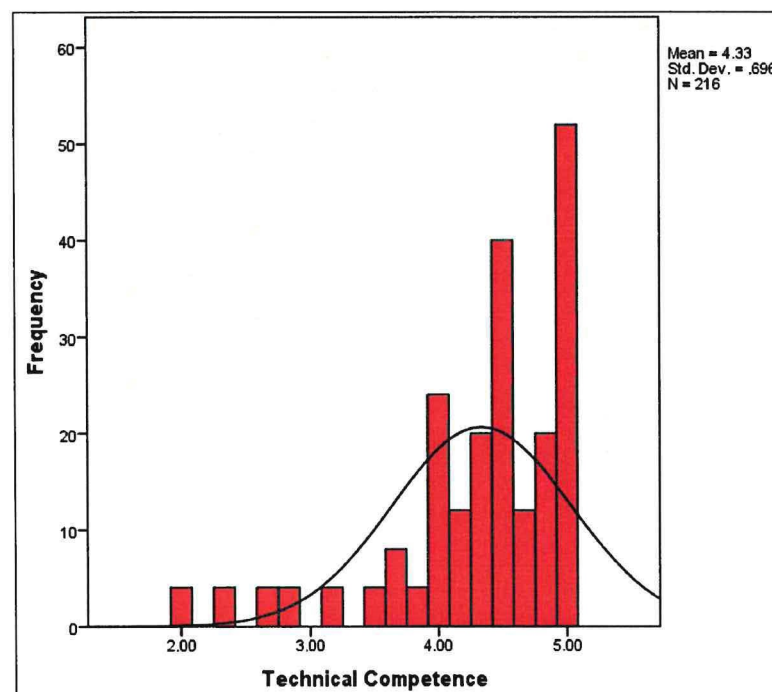


Figure 4. 1: Histogram for Technical Competences

Figure 4.1 reveals a high mean of 4.33 suggesting that the technical competence of the academic staff was high. The low standard deviation = 696 suggested that there were low variances in the technical competences of the academic staff, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.3.2 Time Management

Time management was operationalised as the second element of e-teaching competence. The construct was studied using five indicators. The results on the same follow in Table 4.3.

Table 4.3: E-teaching Time Management Competence of Lecturers

Time Management	D	NS	A	SA	Mean
I allocate time to design the course for online classes prior to delivery	12 (5.6%)	24 (11.1%)	112 (51.9%)	68 (31.5%)	4.10
I present the essential knowledge for the session to students within the allotted time	12 (5.6%)	16 (7.4%)	96 (44.4%)	92 (42.6%)	4.22
I provide prompt feedback upon submission of assignments by learners	20 (9.3%)	20 (9.3%)	132 (61.1%)	44 (20.4%)	3.91
I set aside time for training to acquire new tactics for online lessons	32 (14.8%)	32 (14.8%)	96 (44.4%)	56 (25.9%)	3.78
I manage time when conducting/making online lessons (e.g., starting and ending lessons on time, uploading on time)	20 (9.3%)	12 (5.6%)	120 (55.6%)	64 (29.6%)	4.06

The results on time management in online classes (Table 4.3) reveals that a significant proportion of the respondents, 83.4%, agreed that they allocated time to design their courses before delivery. Only 12 respondents (5.6%) disagreed with this statement, and 24 (11.1%) were not sure. This suggests that most academic staff recognize the importance of preparing their courses ahead of time to ensure effective online teaching. The mean score of 4.10

indicates that this practice is generally considered important and is widely implemented. In terms of presenting essential knowledge during lessons, 87% of respondents reported they agreed with the statement that they present the necessary content within the allotted time. The percentage of those who disagreed was low, at just 5.6%, and 7.4% were not sure. This indicates that most academic staff manage their course content delivery efficiently within the given time limits. The mean score of 4.22 suggests that this practice is a strong point for the majority of academic staff, highlighting their effectiveness in course delivery.

About providing prompt feedback to students, 81.5% of respondents agreed that they provided timely feedback upon submission of assignments. However, 9.3% disagreed, and 9.3% were not sure about their ability to offer prompt feedback. This suggests that while most academic staff strive to provide quick feedback, some may face challenges in this area, which may be related to workload or other factors. The mean score of 3.91 indicates a generally positive response but also reflects areas where there could be improvement in the speed of feedback delivery. Regarding the allocation of time for professional development and training to acquire new tactics for online teaching, 70.3% of respondents agreed that they set aside time for such training. However, 14.8% disagreed, and 14.8% were not sure whether they engage in regular professional development for new teaching techniques. This suggests that while a significant portion of academic staff prioritize continuous improvement, a fair number may not consistently allocate time for training. The mean score of 3.78 indicates that this practice is somewhat common but could be further enhanced.

Lastly, 85.2% of respondents agreed that they manage time effectively when conducting online lessons, such as starting and ending lessons on time and uploading materials promptly. The percentage of those who disagreed was relatively low at 9.3%, and

only 5.6% were not sure. This reflects a strong commitment to time management, a key factor in delivering successful online courses. The mean score of 4.06 supports this, indicating that time management is generally a well-maintained practice among academic staff. In brief, the analysis above suggests that academic staff were generally effective in their preparation and delivery of online courses, with strong time management. However, there is room for improvement in areas such as providing prompt feedback and ensuring regular engagement in professional development. The overall mean scores indicate a generally positive attitude toward these practices, but also suggest areas where further attention could enhance the quality of online teaching and learning. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.2.

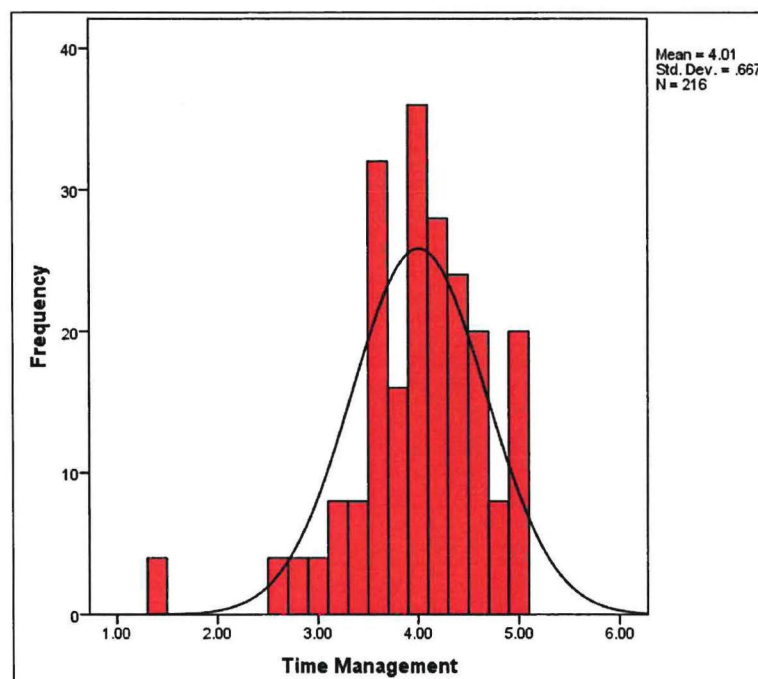


Figure 4. 2:Histogram for Time Management

Figure 4.2 reveals a high mean of 4.01 suggesting that the time management competence of the academic staff was high. The low standard deviation = 0.667 suggested that there were

low variances in the time management of the academic staff, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.3.3 Course Communication

Course communication was operationalised as the third element of e-teaching competence.

The construct was studied using six indicators. The results on the same follow in Table 4.4.

Table 4. 4:E-teaching Course Communication Competence of Lecturers

Course Communication	SD	D	NS	A	SA	Mean
I make communication, announcements, and send reminders to students	4 (1.9%)	8 (3.7%)	4 (1.9%)	120 (55.6%)	80 (37.0%)	4.22
I monitor and participate in internet discussion forums	4 (1.9%)	32 (14.8%)	12 (5.6%)	100 (46.3%)	68 (31.5%)	3.91
I respond promptly to learners' questions	8 (3.7%)	8 (3.7%)	8 (3.7%)	120 (55.6%)	80 (37.0%)	4.26
I share open educational resources (e.g., via WhatsApp, emails, Google Classrooms, and university portals)	16 (7.4%)	8 (3.7%)	8 (3.7%)	100 (46.3%)	92 (42.6%)	4.24
I explain expectations concerning student behaviour when in online classes	4 (1.9%)	24 (11.1%)	8 (3.7%)	104 (48.1%)	76 (35.2%)	4.03
I convey conformity requirements with academic integrity policies	4 (1.9%)	12 (5.6%)	16 (7.4%)	108 (50.0%)	76 (35.2%)	4.11

The findings in Table 4.4 show a strong agreement among the academic staff regarding their e-teaching course communication as a high with a majority of respondents, 92.6%, agreeing that they communicated effectively with students by making announcements and sending reminders, which showed that communication was a priority for most academic staff. The

mean score of 4.22 suggests that this practice is strongly implemented. Similarly, 77.8% of respondents agreed that they monitored and participated in internet discussion forums, although 16.7% disagreed. The mean score of 3.91 reflected that while most staff participate in forums, there is room for further engagement in this area.

Furthermore, 92.6% of respondents agreed that they responded promptly to learners' questions, indicating that timely interaction with students is a common practice, as reflected by the mean score of 4.26. In addition, 89.0% of respondents agreed that they shared open educational resources such as course materials via digital platforms, indicating widespread use of digital tools for resource sharing. This practice was further supported by the mean score of 4.11, suggesting that it was a prevalent activity. On the matter of explaining student behaviour expectations in online classes, 83.3% of respondents agreed that they provided clear behaviour guidelines for students, with the mean score of 4.11 indicating that most academic staff prioritize setting these expectations.

Finally, 85.2% of respondents agreed that they communicated the importance of academic integrity policies to their students. This strong commitment to maintaining academic standards was evident in the mean score of 4.11. Overall, the results suggest that academic staff are highly engaged in course communication, managing their online presence, and upholding academic integrity, with the highest engagement observed in communication and timely responses. These practices were essential to enhancing the effectiveness of online teaching and learning. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.3.

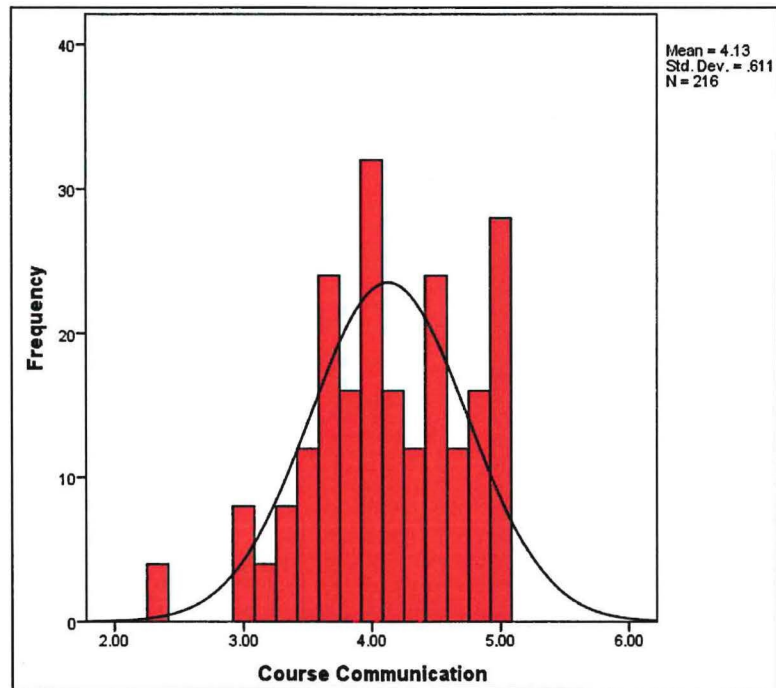


Figure 4. 3: Histogram for Course communication

Figure 4.3 reveals a high mean of 4.13 suggesting that the course communication competence of the academic staff was high. The low standard deviation = 0.611 suggested that there were low variances in the course communication of the academic staff, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.3.4 Course Design

Course design was operationalised as the fourth element of e-teaching competence. The construct was studied using five indicators. The results on the same follow in Table 4.5.

Table 4.5: E-Teaching Course Design Competence of Lecturers

Course Design	SD	D	NS	A	SA	Mean
I design online course orientation for each new group of students	8 (3.7%)	44 (20.4%)	16 (7.4%)	100 (46.3%)	48 (22.2%)	3.63
I come up with realistic learning objectives for each online course	4 (1.9%)	28 (13.0%)	12 (5.6%)	112 (51.9%)	60 (27.8%)	3.91
I create online assignments and tests	40 (18.5%)	20 (9.3%)	20	88	68 (31.5%)	3.85
I organise instructional materials into modules or units that can be delivered online	4 (1.9%)	40 (18.5%)	12 (5.6%)	104 (48.1%)	56 (25.9%)	3.78
I develop learning activities that allow students to communicate online	4 (1.9%)	28 (13.0%)	4 (1.9%)	96	84	4.06

The results in Table 4.5 reveal that the majority of academic staff are engaged in designing and organizing online courses, with the highest levels of agreement observed in practices such as developing realistic learning objectives and allowing for student communication. For example, cumulatively 79.7% of respondents agreed that they came up with realistic learning objectives for each online course, as reflected in the mean score of 3.63. This suggested a strong adherence to designing clear, achievable goals for students. In contrast, the creation of online assignments and tests appeared to be less consistently implemented, as only 72.2% agreed with the statement, reflected in a mean score of 3.85. This points to a potential gap in the engagement with assessments, which could affect the quality and depth of online learning experiences.

Regarding course orientation, 68.5% of respondents indicated they designed an orientation for new students, with a mean score of 3.78, suggesting that while this practice

was fairly common, there was still room for improvement. The organisation of instructional materials into online units was also a common practice, with 74.1% agreeing, shown by a mean score of 4.06. This indicated a strong effort to structure online courses effectively. Last but not least, a significant portion (83.3%) of academic staff agreed that they developed learning activities allowing students to communicate online, reflected in the high mean score of 4.03. This highlighted that fostering communication and interaction in online courses was a key priority among the faculty. Overall, while the academic staff exhibited good practices in course design, there was a noticeable area for improvement in the creation of assignments and tests for online courses. Strengthening engagement with these aspects could further enhance the quality of the online learning environment. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.4.

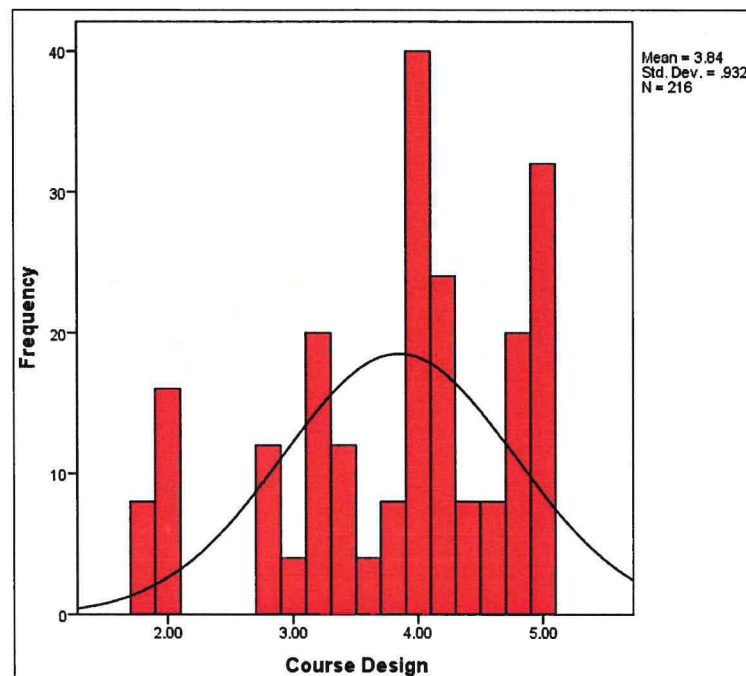


Figure 4. 4: Histogram for Course design

Figure 4.4 reveals a high mean of 3.84 suggesting that the course design competence of the academic staff was high. The low standard deviation = 0.932 suggested that there were low variances in the course design of the academic staff, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.3.5 E-Teaching Competence of Lecturers Index

To determine how the teachers rated e-teaching competences, an average e-teach was created for four components measuring the concept that are technical competence (TC1-TC6), time management (TM1-TM5), course communication (CC1-CC6), and course design (CD1-CD5). The Figure 4.5 indicates the mean and standard deviation of the average index.

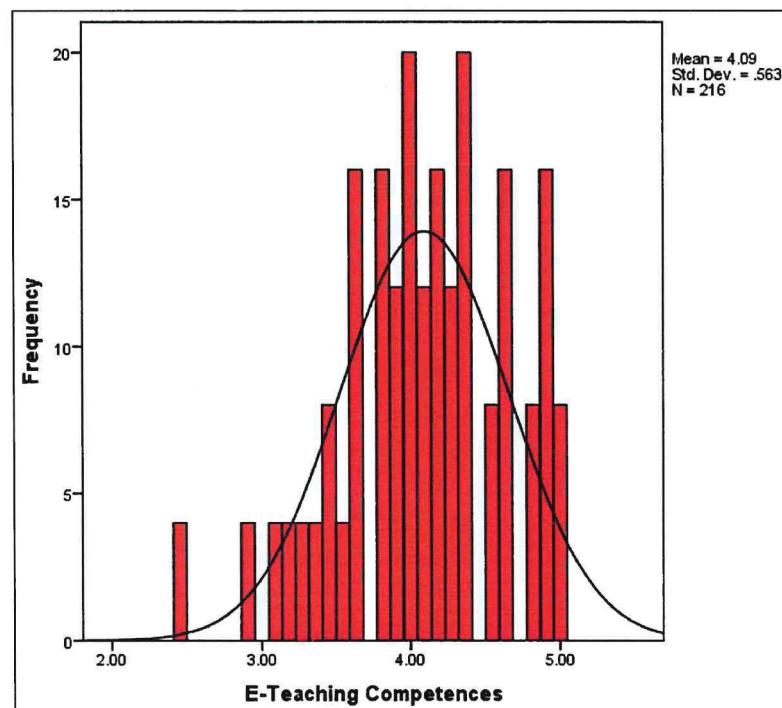


Figure 4. 5: Histogram for E-Teaching Competences

Figure 4.5 reveals a high mean of 3.84 suggesting that the e-teaching competences of the academic staff was high. The low standard deviation = 0.932 suggested that there were low variances in the e-teaching competences of the academic staff, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.3.6 E-teaching Competence Structural Model

The structural model (Figure 4.6) presents the measures of e-teaching competence and their indicators. The measures are technical competence, time management, course communication, and course design.

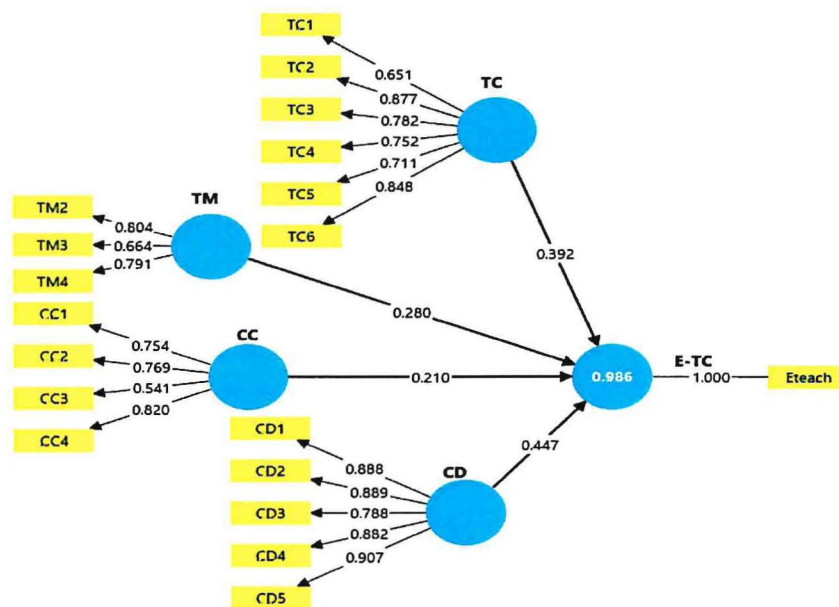


Figure 4. 6: Structural Equation Model for E-teaching Competence Model

The structural model presented in Figure 4.6 describes the variable of e-teaching competence, which is a multi-dimensional construct encompassing technical competence, time management, course communication, and course design. The factor loadings indicate that for the technical competence construct, all six indicators exceeded the minimum

threshold of 0.50, demonstrating strong validity. In contrast, for time management, only three indicators (TM2 and TM3) met the minimum validity of 0.50, while two indicators (TM1 and TM5) had low loadings and were therefore deleted. Regarding course communication, four indicators (CC1 to CC4) had satisfactory loadings above 0.50, while two indicators (CC5 and CC6) had low loadings and were removed. Finally, for the course design construct, all five indicators exhibited high loadings and were retained.

4.4 Implementation Leadership

Implementation leadership is the independent variable in this study. The concept was conceived in terms of proactive leadership, knowledgeable leadership, supportive leadership and perseverant leadership. The results on the same follow construct by construct.

4.4.1 Proactive Leadership

Proactive leadership was conceived as the first aspect of implementation leadership. The leadership approach was studied using six indicators. The results on the same follow in Table 4.6.

Table 4. 6: Proactive Leadership

Proactive Leadership	SD	D	NS	A	SA	Mean
My superiors embrace innovative teaching like using internet quickly	4 (1.9%)	12 (5.6%)	20 (9.3%)	108 (50.0%)	72 (33.3%)	4.07
My superiors tackle challenges affecting teaching and learning proactively	16 (7.4%)	44 (20.4%)	40 (18.5%)	92 (42.6%)	24 (11.1%)	3.30
My superiors stay ahead by seeking teaching improvements fast	4 (1.9%)	60 (27.8%)	52 (24.1%)	80 (37.0%)	20 (9.3%)	3.24
The university has developed policies and set standards for improving teaching and learning such as using e-technologies	8 (3.7%)	12 (5.6%)	8 (3.7%)	100 (46.3%)	88 (40.7%)	4.12
The university leadership has put in place a plan to assist lecturers carry out their work effectively	8 (3.7%)	32 (14.8%)	44 (20.4%)	96 (44.4%)	36 (16.7%)	3.56
The university leadership is great at turning problems affecting teaching and learning such as COVID-19 into opportunities	12 (5.6%)	24 (11.1%)	52 (24.1%)	104 (48.1%)	24 (11.1%)	3.48

The results in Table 4.6 cumulatively revealed that the majority of respondents (83.3%) agreed that their superiors embraced innovative teaching, including the use of the internet, with a mean score of 4.07. This suggested strong support for the adoption of new teaching methods. However, when it came to tackling challenges proactively, only 53.7% agreed, with a mean score of 3.30, reflecting a somewhat lower level of confidence in how effectively university leadership addressed challenges in teaching and learning. There was a relatively lower level of agreement regarding the university leadership's ability to seek out

improvements quickly, with 46.3% agreeing and a mean score of 3.24. This indicated some reservations about the speed at which leadership sought improve

The majority (87%) agreed that the university had developed policies and standards for improving teaching, particularly through the use of e-technologies, with a strong mean score of 4.12, suggesting that policies were in place to support technological integration in teaching. The responses were more mixed regarding the university leadership's planning to assist lecturers in carrying out their work effectively, with 61.1% agreeing, and a mean score of 3.56, indicating that while a substantial portion of faculty members felt supported, there was still a notable percentage who were unsure or dissatisfied. Lastly, regarding the university leadership's ability to turn problems, such as the COVID-19 pandemic, into opportunities, the responses were divided, with 59.2% agreeing and a mean score of 3.48, reflecting a moderate level of confidence in leadership's adaptability to challenges like the pandemic.

In summary, while university leadership was seen as proactive in embracing innovative teaching and developing policies to improve teaching standards, there was some room for improvement in the speed of implementing teaching improvements and addressing challenges. The policies around e-technologies were viewed positively, but there was less confidence in how leadership handled difficulties such as those posed by the COVID-19 pandemic. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.7.

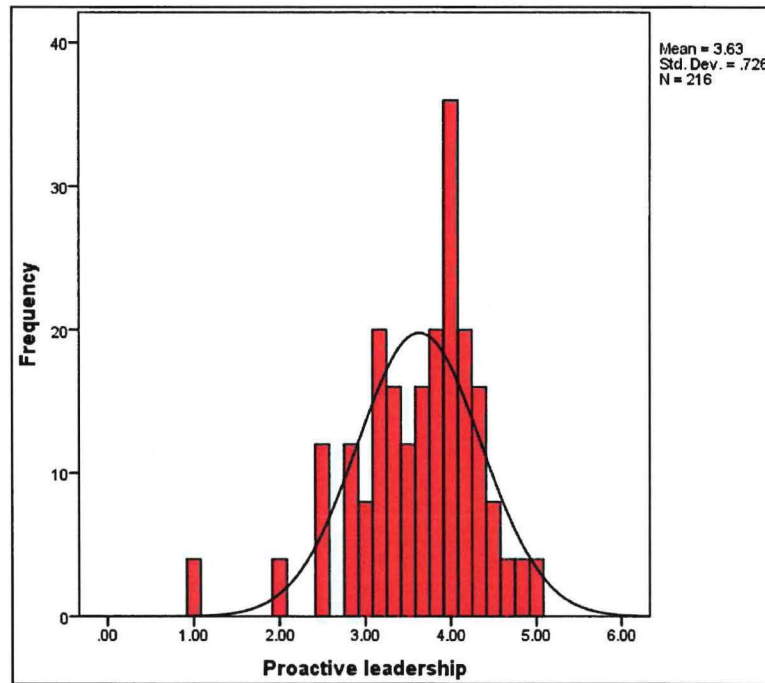


Figure 4. 7: Histogram for Proactive Leadership

Figure 4.7 reveals a high mean of 3.63 suggesting that the proactive leadership of the academic staff was high. The low standard deviation = 0.726 suggested that there were low variances in the proactive leadership of university leaders, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.4.2 Knowledgeable Leadership

Knowledgeable leadership was conceived as the second aspect of implementation leadership.

The concept was studied using six indicators. The results on the same follow in Table 4.7.

Table 4.7: Knowledgeable Leadership

Knowledgeable Leadership	SD	D	NS	A	SA	Mean
I believe that the leaders in this university understand teaching requirements for the 21st century	4 (1.9%)	16 (7.4%)	44 (20.4%)	92 (42.6%)	60 (27.8%)	3.87
Leaders in this university guide staff on how to effectively adopt 21st century teaching practices	12 (5.6%)	32 (14.8%)	36 (16.7%)	100 (46.3%)	36 (16.7%)	3.54
My superiors in this university know what is taking place globally when it comes to teaching issues	4 (1.9%)	12 (5.6%)	36 (16.7%)	108 (50.0%)	56 (25.9%)	3.93
My superiors in this university have knowledge of what is required to effectively improve teaching and learning	4 (1.9%)	8 (3.7%)	48 (22.2%)	120 (55.6%)	36 (16.7%)	3.81
My superiors in this university ably respond to staff questions about improvement of teaching and learning	20 (9.3%)	52 (24.1%)	60 (27.8%)	72 (33.3%)	12 (5.6%)	3.02
My superiors in this university are well grounded in handling teaching and learning issues	12 (5.6%)	28 (13.0%)	60	88	28	3.43

The results in Table 4.7 showed a mixed level of agreement regarding the leadership's understanding and effectiveness in addressing 21st-century teaching requirements. Cumulatively, a majority of respondents (70.4%) believed that the leaders at the university understood the teaching requirements for the 21st century, with a mean score of 3.87, indicating a positive view of their leaders' awareness of modern educational needs. However, when asked about whether university leaders guided staff on how to effectively adopt 21st-century teaching practices, the responses were more divided, with only 63% agreeing or

strongly agreeing, and a mean score of 3.54, suggesting that while some staff received adequate guidance, many still felt that more support was needed.

In terms of awareness of global teaching issues, 75.9% agreed that their superiors were knowledgeable about global trends in education, resulting in a high mean score of 3.93, indicating strong confidence in leadership's global awareness. Regarding the question of whether university leaders knew what was required to improve teaching and learning, 72.2% of respondents agreed, leading to a mean score of 3.81, which reflected strong confidence in the leadership's understanding of teaching improvements. On the issue of responsiveness to staff inquiries about improving teaching and learning, the responses were more mixed. While 61.1% felt that their superiors responded appropriately to their questions, the mean score of 3.02 suggested that a significant portion of respondents were unsure or dissatisfied with the level of responsiveness from leadership.

Last but not least, regarding whether university leaders were well-grounded in handling teaching and learning issues, only 53.7% agreed, with a mean score of 3.43, indicating that while many faculty members believed their superiors had the necessary knowledge, there was a notable portion who remained uncertain or disagreed with this statement. Generally, the findings showed that university leaders were generally viewed positively in terms of understanding 21st-century teaching requirements, global education trends, and the knowledge needed to improve teaching. However, the responses indicated room for improvement in terms of providing clear guidance on adopting modern teaching practices, responding to staff questions, and handling teaching and learning issues effectively. To find out whether the descriptive results above were normally distributed, a

normality test was done. The normality of the results is displayed in the normality curve in Figure 4.8.

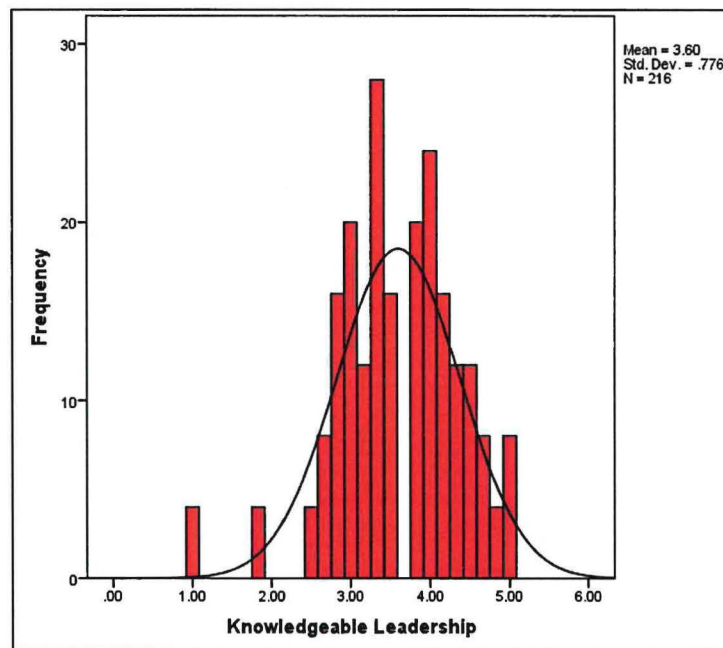


Figure 4. 8: Histogram for Knowledgeable leadership

Figure 4.8 reveals a high mean of 3.60 suggesting that the knowledgeable leadership of the academic staff was high. The low standard deviation = 0.776 suggested that there were low variances in the knowledgeable leadership of university leaders, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.4.3 Supportive Leadership

Supportive leadership was conceived as the third aspect of implementation leadership. The leadership practice was studied using six indicators. The results on the same follow in Table 4.8.

Table 4.8: Supportive Leadership

Supportive Leadership	SD	D	NS	A	SA	Mean
The university leadership actively supports staff to carry out their responsibilities	12 (5.6%)	44 (20.4%)	52 (24.1%)	88 (40.7%)	20 (9.3%)	3.27
The university leadership supports staff to teach innovatively	8 (3.7%)	56 (25.9%)	32 (14.8%)	96 (44.4%)	24 (11.1%)	3.33
The university leadership supports staff to improve their teaching skills	4 (1.9%)	44 (20.4%)	40 (18.5%)	96 (44.4%)	32 (14.8%)	3.50
The university leadership gives enough guidance on teaching	8 (3.7%)	44 (20.4%)	72 (33.3%)	88 (40.7%)	4 (1.9%)	3.17
The university leadership recognises and appreciates staff work effort	20 (9.3%)	60 (27.8%)	44 (20.4%)	76 (35.2%)	16 (7.4%)	3.04

The results in Table 4.8 on whether the university leadership actively supported staff to carry out their responsibilities showed that 49.9% of respondents agreed, while 26% disagreed and 24.1% were unsure. The mean score for this item was 3.27, indicating a moderately favourable perception, suggested that while most staff feel supported, a significant portion still remained uncertain or dissatisfied with the support they receive in fulfilling their responsibilities. With respect to the university leadership supporting staff to teach innovatively, 55.5% agreed, while 29.6% disagreed, and 14.8% were unsure. The mean score for this item was 3.33, reflecting a positive but not overwhelming endorsement of leadership's support for innovative teaching. The relatively high percentage of agreement showed that leadership was seen to encourage innovative teaching practices, but the

significant number of staff who were either uncertain or dissatisfied suggested room for improvement in this area.

Regarding the university leadership supporting staff to improve their teaching skills, 59.2% agreed, while 22.2% disagreed, and 18.5% were unsure. The mean score for this item was 3.50, suggesting that a majority of staff felt supported in improving their teaching skills. However, the presence of 18.5% unsure responses implied that some staff may not be fully aware of or engaged with available opportunities for skill development. With respect to the university leadership giving enough guidance on teaching, 42.6% agreed, while 24.1% disagreed, and 33.3% were unsure. The mean score for this item was 3.17, indicated a more neutral or less favourable perception. The high percentage of “not sure” responses and the moderate disagreement suggested that many staff felt that there is insufficient guidance on teaching provided by the leadership, which could be an area for development.

On whether the university leadership recognised and appreciated staff work effort, 42.6% agreed while 37% disagreed and 20.4% were unsure. The mean score for this item was 3.04, indicating that the recognition and appreciation of staff efforts was seen as moderately positive, but the significant percentage of staff disagreeing or feeling unrecognized suggested that leadership needed to improve efforts in recognizing staff contributions. On the whole, while staff generally perceived leadership support for their responsibilities, teaching innovation, and skill improvement in a positive light, there is a noticeable gap, particularly in the areas of guidance on teaching and staff recognition. The moderate mean scores in some areas highlighted opportunities for the university leadership to enhance engagement with and support for staff. To find out whether the descriptive results

above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.9.

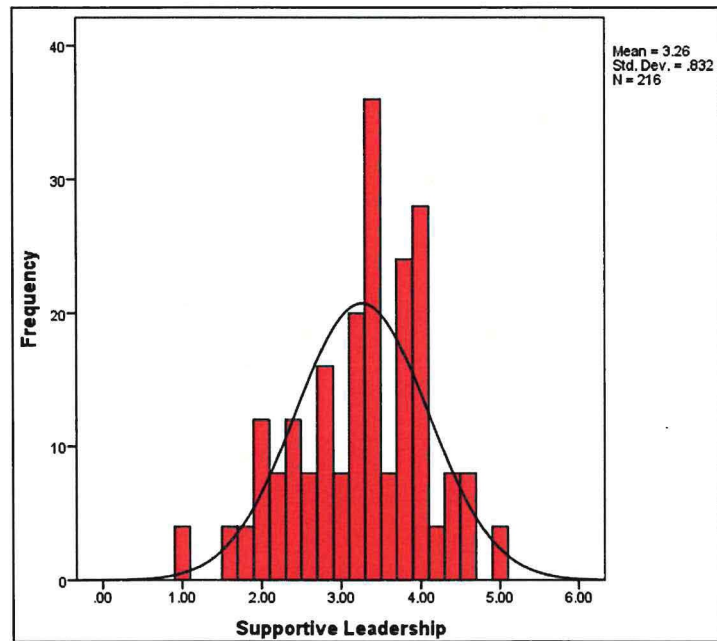


Figure 4. 9: Histogram for Supportive Leadership

Figure 4.9 reveals an average mean of 3.26 suggesting that the supportive leadership of the academic staff was moderate. The low standard deviation = 0.832 suggested that there were low variances in the supportive leadership, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.4.4 Perseverant leadership

Perseverant leadership was conceived as the fourth aspect of implementation leadership. The leadership practice was studied using six indicators. The results on the same follow in Table 4.9.

Table 4. 9: Perseverant leadership

Perseverant leadership	SD	D	NS	A	SA	Mean
University administration persistently encourages staff to ensure quality teaching and learning	8 (3.7%)	8 (3.7%)	24 (11.1%)	124 (57.4%)	52 (24.1%)	3.94
University administration ensures quality teaching despite the ups and downs encountered by the university	8 (3.7%)	32 (14.8%)	44 (20.4%)	100 (46.3%)	32 (14.8%)	3.54
University leadership continuously addresses the problems that affect teaching and learning	20 (9.3%)	72 (33.3%)	36 (16.7%)	84 (38.9%)	4 (1.9%)	2.91
University leadership stays committed to e-teaching improvements	8 (3.7%)	36 (16.7%)	48 (22.2%)	100 (46.3%)	24 (11.1%)	3.44
University leadership quickly responds to issues affecting implementation of teaching	28 (13.0%)	52 (24.1%)	56	76	4 (1.9%)	2.89

The results in Table 4.9 on whether university leadership persistently encouraged staff to ensure quality teaching and learning showed that 81.5% of respondents agreed, while 9.3% disagreed and 24.1% were unsure. The mean score for this item was 3.94, reflecting a generally strong perception of leadership's encouragement in fostering quality education. As to whether the university administration ensured quality teaching despite the ups and downs encountered by the university, 61.1% of respondents agreed, while 18.5% disagreed and 20.4% were unsure. The mean score was 3.54, indicating a moderately positive but somewhat cautious view of leadership's ability to maintain quality amidst challenges.

Regarding whether university leadership continuously addressed the problems that affected teaching and learning, 40.7% agreed, while 42.6% disagreed and 16.7% were

unsure. The mean score was 2.91, suggesting that a low staff perception of leadership's consistency and effectiveness in addressing teaching-related issues. When respondents were asked if the university leadership stays committed to e-teaching improvements, 57.4% agreed, while 20.4% disagreed and 22.2% were unsure. The mean score for this item was 3.44, indicating a generally positive view of leadership's commitment to improving e-teaching, though some respondents remain uncertain or feel less supported. Further, regarding whether the university leadership quickly responded to issues affecting teaching implementation, 35.2% agreed, while 37.0% disagreed and 25.9% were unsure. The mean score was 2.89, reflecting mixed perceptions of leadership's responsiveness to teaching-related challenges. On the whole, while university leadership was viewed positively in terms of encouraging quality teaching and staying committed to improvements, there were significant concerns about their consistency in addressing problems, responsiveness, and maintaining teaching quality during difficult times. These findings highlighted areas where leadership needed to strengthen their communication and support systems to better meet the needs of academic staff. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.10.

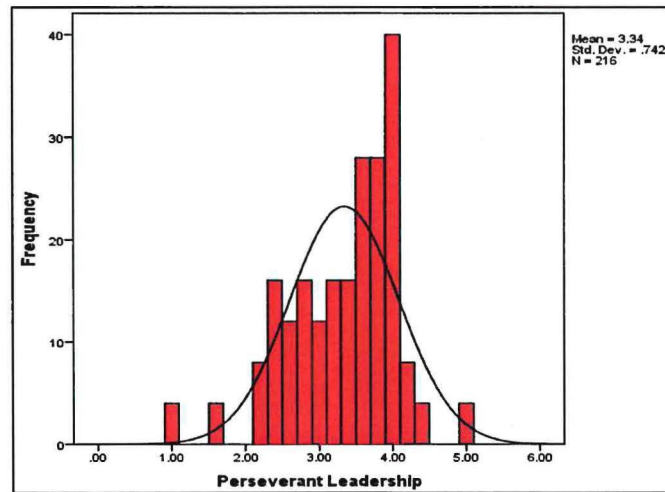


Figure 4. 10: Histogram for Perseverant leadership

Figure 4.10 reveals an average mean of 3.34 suggesting that the perseverant leadership of the academic staff was moderate. The low standard deviation = 0.742 suggested that there were low variances in the perseverant leadership, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.4.5 Implementation Leadership Structural Model

The structural model (Figure 4.12) presents the measures of implementation leadership and their indicators. The measures are proactive leadership, knowledgeable leadership, supportive leadership and perseverant leadership.

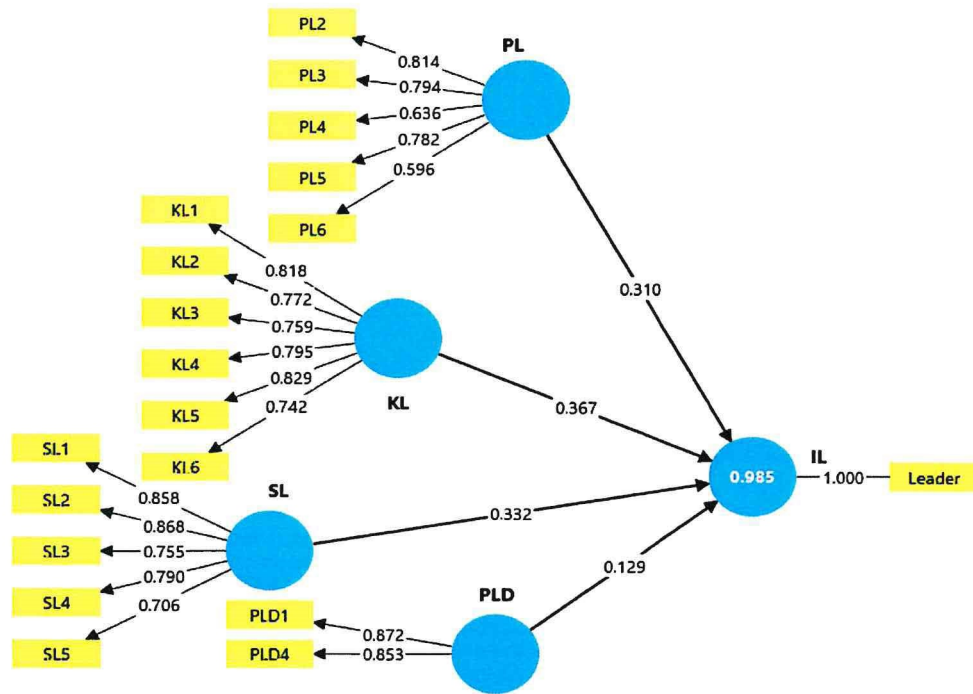


Figure 4.11: Structural Equation Model for Implementation Leadership Model

The structural model presented in Figure 4.11 describes implementation leadership, which was perceived as multi-dimensional style encompassing proactive leadership, knowledgeable leadership, supportive leadership and perseverant leadership. The factor loadings indicate that for the proactive leadership approach, five indicators (PL2-PL6) exceeded the minimum threshold of 0.50 with only one indicator (PL1) loading low hence deleted, demonstrating strong validity. For knowledgeable and supportive leadership approaches, all the indicators (KL1-KL6 & SL1-SL5) met the minimum validity of 0.50, also demonstrating high level validity. Nevertheless, for perseverant leadership only two indicators (PLD1 & PLD4) had satisfactory loadings above 0.50, while three indicators (PLD2, PLD3 & PLD5) had low loadings and were removed.

4.4.6 Implementation Leadership and E-Teaching Competence

To examine the influence implementation leadership on e-teaching competence of lecturers, a structural model showing linkages between the two was developed. The model tested whether implementation leadership in terms of proactive leadership, knowledgeable leadership, supportive leadership and perseverant leadership influenced e-teaching competence. Figure 4.13 describes the causal linkages.

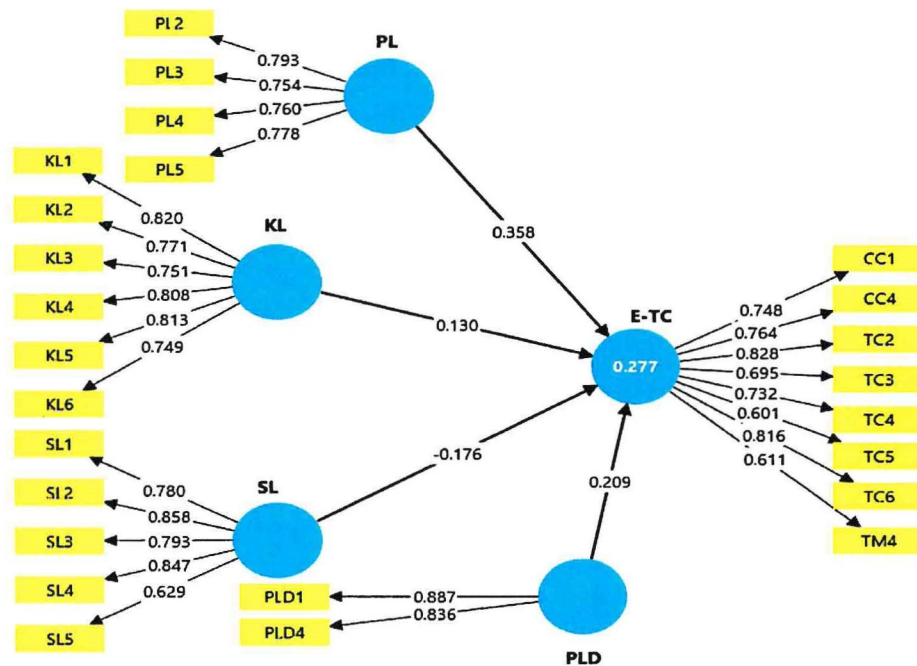


Figure 4.12: Implementation Leadership and E-Teaching Competence

Figure 4.12 presents a structural model illustrating the relationship between implementation leadership and e-teaching competence. The model reveals that implementation leadership consists of four components, namely proactive leadership, knowledgeable leadership, supportive leadership and perseverant leadership. The model tested the hypotheses to the effect that proactive leadership, knowledgeable leadership, supportive leadership and

perseverant leadership influences e-teaching competence. The detailed results are presented in Table 4.10.

Table 4. 10: Implementation Leadership and E-Teaching Competence Path Estimates

	B	t	p
Knowledgeable Leadership -> E-Teaching competence	0.130	1.008	0.314
Pro-active leadership -> E-Teaching competence	0.358	3.334	0.001
Perseverant Leadership -> E-Teaching competence	0.209	1.912	0.056
Supportive Leadership -> E-Teaching competence	-0.176	1.957	0.050
R ² = 0.277			
R ² Adjusted = 0.263			

The results in Table 4.10 indicate pro-active leadership ($\beta = 0.358$, $p = 0.001$) had a positive and statistically significant impact on e-teaching competence. Perseverant leadership ($\beta = 0.209$, $p = 0.056$) also showed a positive effect, though it was marginally significant. Supportive leadership ($\beta = -0.176$, $p = 0.050$) had a weak but statistically significant negative impact on e-teaching competence, while knowledgeable leadership ($\beta = 0.130$, $p = 0.314$) did not have a significant effect. The R^2 value indicated that these leadership styles collectively explained 27.7% of the variance in e-teaching competence. The adjusted R^2 value of 0.263 suggested that the significant factors accounted for 26.3% of the variance in e-teaching competence. The beta coefficients showed that pro-active leadership had the most significant influence on e-teaching competence, followed by perseverant leadership. Therefore, promoting pro-active leadership is crucial for enhancing e-teaching competence, with perseverant leadership also playing a role, while supportive leadership has a weak negative influence. The negative coefficient for supportive leadership suggests that as the level of supportive leadership increases, e-teaching competence slightly decreases. This

could imply that overly supportive leadership might not be conducive to fostering e-teaching competence, possibly because it could lead to dependency or reduce the perceived need for self-initiative among lecturers. The results generally highlight the importance of leadership styles in fostering e-teaching competence, with pro-active leadership being the most impactful.

4.5 Digital Citizenship

Digital citizenship is the moderating variable in this study. The concept was conceived in terms of internet activism, technical skills, critical perspective, and networking. The results on the same follow construct by construct.

4.5.1 Internet Activism

Internet activism was conceived as the first aspect of digital citizenship. The practice was studied using five indicators. The results on the same follow in Table 4.11.

Table 4. 11: Internet Activism

Internet Activism	SD	D	NS	A	SA	Mean
I articulate ideas on online platforms about issues not going well in my university and society at large	28 (13.0%)	76 (35.2%)	24 (11.1%)	72 (33.3%)	16 (7.4%)	2.87
I regularly post my thoughts on online platforms such as WhatsApp and webmail related to my university, politics, or social issues	36 (16.7%)	80 (37.0%)	24 (11.1%)	56 (25.9%)	20 (9.3%)	2.74
I belong to online activists' group	32 (14.8%)	56 (25.9%)	20 (9.3%)	60 (27.8%)	48 (22.2%)	3.17
I sometimes raise issues on online platforms about the university or country that I consider essential	24 (11.1%)	60 (27.8%)	16 (7.4%)	84 (38.9%)	32 (14.8%)	3.19
I attend public forums on the university or country affairs organised online	12 (5.6%)	56 (25.9%)	32 (14.8%)	80 (37.0)	36 (16.7%)	3.33

The results in Table 4.11 indicated a varying level of engagement in internet activism among respondents. With respect to articulating ideas on online platforms about issues not going well in the university and society, 40.7% of respondents agreed, while 48.1% disagreed, and 11.1% were not sure. This reflected a relatively balanced attitude, with a higher proportion of respondents not engaging in this type of activism. The mean score of 2.87, which was close to neutral, suggested that respondents neither strongly agreed nor disagreed with articulating ideas online. Regarding the regular posting of thoughts on platforms such as WhatsApp and webmail related to university, politics, or social issues, 35.2% of respondents agreed, while 53.7% disagreed, and 11.1% were not sure. This indicated that the majority did not regularly engage in posting thoughts on these topics, with the mean score of 2.74, which was near neutral, suggesting a low level of regular posting among respondents.

In relation to belonging to an online activist group, 50.0% of respondents agreed, while 40.7% disagreed, and 9.3% were not sure. This showed that a fair proportion of respondents were involved in online activism, with a moderate mean score of 3.17, indicating a stronger tendency towards agreement with this behavior. Regarding the raising of issues on online platforms about the university or country, 53.7% of respondents agreed, 38.9% disagreed, and 7.4% were not sure. This reflected a fair level of engagement in raising important issues online, with the mean score of 3.19 suggesting a fair inclination toward online activism related to university or national issues.

Finally, with respect to attending public forums on university or country affairs organized online, 53.7% of respondents agreed, 31.5% disagreed, and 14.8% were not sure. This indicated a strong interest in participating in online forums about university or national affairs, with a mean score of 3.33, which, while positive, was slightly lower than the previous behaviors. Generally, the data suggested that while a significant portion of respondents engaged in certain forms of internet activism, such as raising issues or participating in online forums, there was a lower level of engagement when it came to regularly posting thoughts or articulating ideas on online platforms. The highest levels of agreement were observed in belonging to activist groups and raising important issues, suggesting a more active involvement in online activism among some respondents. The proportion of respondents who were not sure across all behaviors, ranging from 7.4% to 14.8%, reflected some uncertainty or lack of engagement in specific online activism activities. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.14.

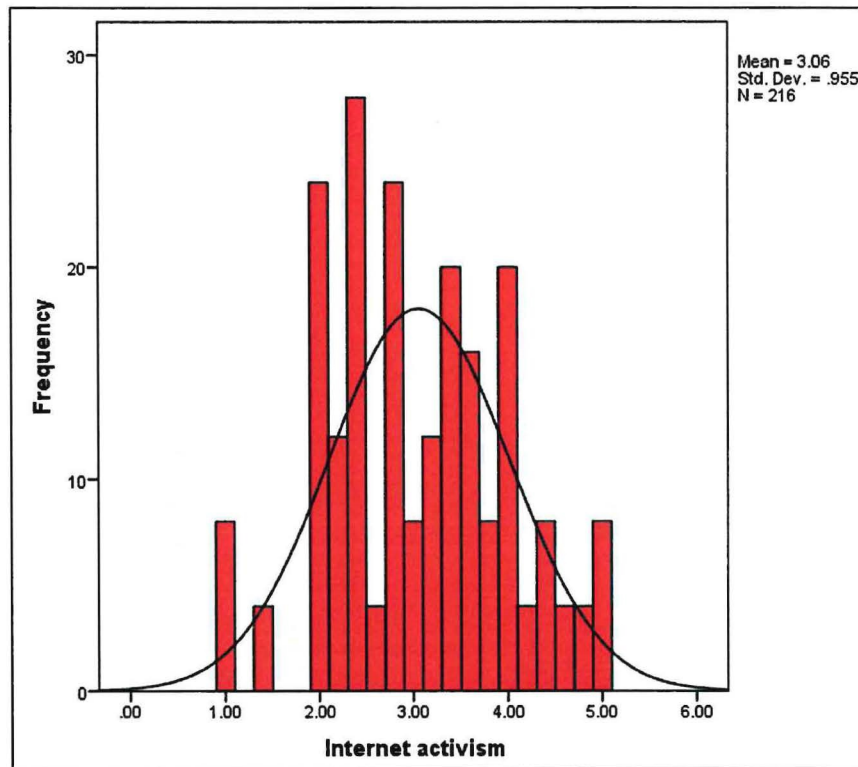


Figure 4. 13: Histogram for Internet activism

Figure 4.13 reveals an average mean of 3.06 suggesting that the internet activism of the academic staff was moderate. The low standard deviation = 0.955 suggested that there were low variances in the internet activism of lecturers, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.5.2 Technical skills

Technical skills were conceived as the second aspect of digital citizenship. The skills were studied using five indicators. The results on the same follow in Table 4.12.

Table 4. 12: Technical skills

Technical skills	SD	D	NS	A	SA	Mean
I can very easily locate the information I need on the internet	4 (1.9%)	8 (3.7%)	4 (1.9%)	68 (31.5%)	132 (61.1%)	4.46
I can use the internet to search and download useful information	4 (1.9%)	8 (3.7%)	4 (1.9%)	40 (18.5%)	160 (74.1%)	4.59
I can access the internet using digital technologies (e.g., smartphones, tablets, laptops, PCs) whenever I want	4 (1.9%)	8 (3.7%)	4 (1.9%)	56 (25.9%)	144 (66.7%)	4.43
I send notes to students on social media like WhatsApp or emails	4 (1.9%)	8 (3.7%)	4 (1.9%)	76 (35.2%)	124 (57.4%)	4.33
I can connect to the university Wi-Fi to find information without help	8 (3.7%)	16 (7.4%)	00 (0.0%)	64 (26.9%)	128 (59.3%)	4.55

The results in Table 4.12 indicated a high level of technical skills among respondents. With respect to locating information on the internet, 31.5% of respondents agreed, and 61.1% strongly agreed, while only 1.9% disagreed and another 1.9% were not sure. The mean score of 4.46 suggested a strong confidence in this skill, with most respondents being highly capable in locating information online. Regarding the ability to search and download useful information from the internet, 18.5% of respondents agreed, and 74.1% strongly agreed, with 1.9% disagreeing and 1.9% being unsure. This resulted in an even higher mean score of 4.59, reflecting an even greater proficiency in using the internet for searching and downloading useful information.

In terms of accessing the internet using various digital technologies like smartphones, tablets, laptops, or PCs, 25.9% of respondents agreed, and 66.7% strongly agreed, with 1.9% disagreeing and 1.9% being unsure. The mean score of 4.43 indicated a strong level of

confidence in the ability to access the internet using digital devices whenever needed. When it came to sending notes to students via social media platforms like WhatsApp or email, 35.2% agreed, and 57.4% strongly agreed, with 1.9% disagreeing and 1.9% being unsure. The mean score of 4.33 suggested that respondents were very comfortable with using social media and email for communication.

Lastly, with respect to connecting to the university Wi-Fi to find information without assistance, the majority percentage 86.2% agreed while 11% disagreed, and none were unsure. The remaining reported a high level of confidence in using the university Wi-Fi, with a mean score of 4.55. Overall, the data suggested that respondents were highly proficient in a range of technical skills, particularly in locating information on the internet, using digital technologies to access the internet, and communicating through social media platforms. The consistently high mean scores across all statements indicated a strong level of confidence and competence in these technical areas. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.15.

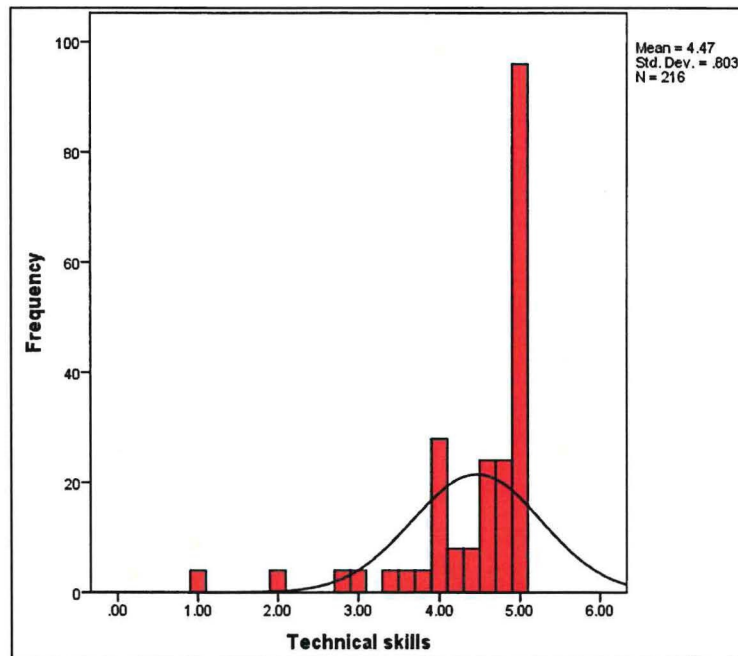


Figure 4. 14: Histogram for Technical skills

Figure 4.14 reveals a high mean of 4.47, suggesting that the technical skills of the academic staff were high. The low standard deviation = 0.803 suggested that there were low variances in the technical skills of lecturers, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.5.3 Critical perspective

Critical perspective was conceived as the third aspect of digital citizenship. The perspective was studied using five indicators. The results on the same follow in Table 4.13.

Table 4.13: Critical perspective

Critical perspective	SD	D	NS	A	SA	Mean
The internet gives me the opportunity to remain updated on what is going on in my university or country	4 (1.9%)	4 (1.9%)	8 (3.7%)	52 (24.1%)	148 (68.5%)	4.55
I believe that online interaction is a fantastic way to connect with colleagues or people of like mind	00 00	12 (5.6%)	12 (5.6%)	52 (24.1%)	140 (64.8%)	4.48
I believe that internet participation fosters offline engagement on important issues affecting my university	8 (3.7%)	4 (1.9%)	32 (14.8%)	80 (37.0%)	92 (42.6%)	4.13
I am more engaged in activist issues when I am online than offline	28 (13.0%)	64 (29.6%)	36 (16.7%)	48 (22.2%)	40 (18.5%)	3.04
I utilize online platforms to participate in debating about issues affecting my university and country	20 (9.3%)	76 (35.2%)	24 (11.1%)	64 (29.6%)	32 (14.8%)	3.06

The results in Table 4.13 indicated a strong critical perspective towards the use of the internet, with respondents demonstrating a high level of engagement in online activities related to university and country affairs. Regarding the opportunity the internet provides to remain updated on developments in the university or country, 24.1% of respondents agreed, and 68.5% strongly agreed, while only 1.9% disagreed and 3.7% were unsure. The mean score of 4.55 indicated a strong belief that the internet is an effective tool for staying informed on relevant issues. In terms of the belief that online interaction is a fantastic way to connect with colleagues or like-minded individuals, 24.1% of respondents agreed, and 64.8% strongly agreed. The remaining respondents were divided between 5.6% who

disagreed and 5.6% who were unsure. With a mean score of 4.48, the results suggested a strong endorsement of online platforms for fostering connections with others.

When it came to the belief that internet participation fosters offline engagement on important issues affecting the university, 37.0% agreed, and 42.6% strongly agreed, while 3.7% disagreed, and 14.8% were unsure. The mean score of 4.13 suggested that respondents generally viewed online participation as a valuable tool for stimulating offline engagement on key issues. Regarding the level of engagement in activist issues while online compared to offline, 29.6% of respondents disagreed, and 13.0% strongly disagreed, while 22.2% agreed, and 18.5% were unsure. The mean score of 3.04 indicated a more neutral response, suggesting that while some respondents may feel more engaged online, others do not share the same sentiment.

Last but not least, concerning the use of online platforms to participate in debates about issues affecting the university and country, 29.6% agreed, and 14.8% strongly agreed, while 9.3% disagreed, and 11.1% were unsure. The mean score of 3.06 indicated a moderate level of participation in online debates about important societal issues. On the whole, the data suggested that respondents held a generally positive critical perspective towards the internet as a tool for staying informed, connecting with others, and engaging in discussions on important issues. The highest levels of agreement were observed regarding the internet's role in providing information and fostering connections, while more neutral responses were seen in terms of online engagement compared to offline involvement in activist issues. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.15.

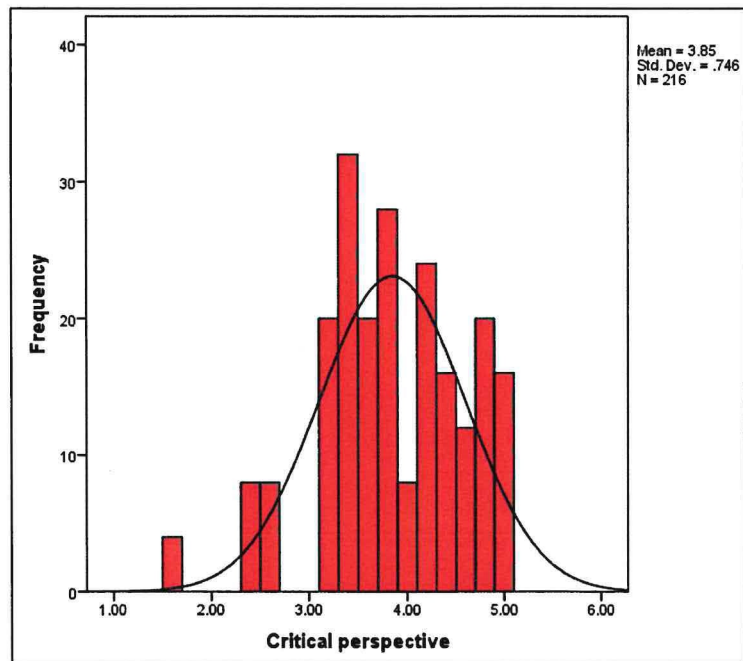


Figure 4. 15: Histogram for Critical perspective

Figure 4.15 reveals a high mean of 3.85 suggesting that the critical perspective of the academic staff was high. The low standard deviation = 0.746 suggested that there were low variances in the critical perspective of lecturers, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.5.4 Networking.

Networking was conceived as the fourth aspect of digital citizenship. The aspect was studied using five indicators. The results on the same follow in Table 4.14.

Table 4.14: Networking

Networking	SD	D	NS	A	SA	Mean
I enjoy communicating with others online	4 (1.9%)	4 (1.9%)	8 (3.7%)	88 (40.7%)	112 (51.9%)	4.39
I like working with others online more than I do offline	16 (7.4%)	32 (14.8%)	48 (22.2%)	52 (24.1%)	68 (31.5%)	3.57
Wherever feasible, I give a comment on other people's opinions and views posted online	12 (5.6%)	8 (3.7%)	16 (7.4%)	96 (44.4%)	84 (38.9%)	4.07
I comment on important educational posts on social media platforms from different educational groups	16 (7.4%)	44 (20.4%)	12 (5.6%)	84 (38.9%)	60 (27.8%)	3.59
I participate in online debates with colleagues and different academic groups	20 (9.3%)	24 (11.1%)	16 (7.4%)	100 (46.3%)	56 (25.9%)	3.69

The results in Table 4.14 indicated varying levels of networking engagement among respondents, with some stronger preferences for online communication and collaboration. Regarding enjoyment in communicating with others online, 92.6% of respondents agreed, while only 3.7% disagreed, and 3.7% were unsure. The mean score of 4.39 reflected a strong inclination toward online communication, with most respondents expressing enjoyment in engaging with others via digital platforms. When it came to liking online collaboration more than offline, 55.6% of respondents agreed, while 22.2% disagreed, and 22.2% were unsure. The mean score of 3.57 suggested a more moderate preference, indicating that while some respondents favored online collaboration, others did not share this preference as strongly.

With respect to providing comments on others' opinions and views posted online whenever feasible, 83.3% of respondents agreed, while 5.6% disagreed, and 7.4% were unsure. The mean score of 4.07 indicated that many respondents actively engaged with

others' online content by leaving comments, suggesting a high level of interaction and networking. Regarding commenting on important educational posts on social media platforms from various educational groups, 66.7% of respondents agreed, while 7.4% disagreed, and 5.6% were unsure. The mean score of 3.59 reflected a moderate level of participation in commenting on educational posts, indicating that a fair proportion of respondents engaged with relevant educational content on social media platforms.

Lastly, in terms of participating in online debates with colleagues and different academic groups, 72.2% of respondents agreed, while 20.4% disagreed, and 7.4% were unsure. The mean score of 3.69 suggested a strong level of participation in online debates, with respondents actively engaging in discussions with their academic peers. Overall, the data indicated a strong interest in and preference for online communication and networking among respondents. The highest levels of agreement were seen in enjoying online communication and engaging in online debates, while more moderate responses were found regarding online collaboration and commenting on educational posts. These findings suggest that respondents are generally active in networking and collaboration online, particularly when it comes to communicating with others and participating in academic discussions. To find out whether the descriptive results above were normally distributed, a normality test was done. The normality of the results is displayed in the normality curve in Figure 4.15.

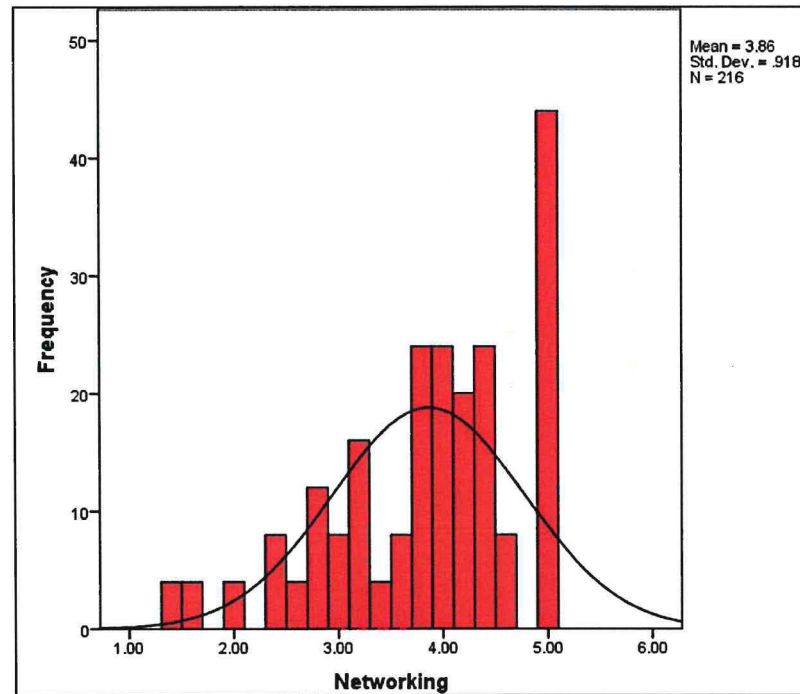


Figure 4. 16: Histogram for Networking

Figure 4.16 reveals a high mean of 3.86 suggesting that the networking of the academic staff was high. The low standard deviation = 0.918 suggested that there were low variances in the networking of lecturers, hence the results were normally distributed. This means that the data was appropriate for linear analysis using structural equation modelling.

4.5.5 Digital citizenship Structural Model

The structural model (Figure 4.19) presents the measures of digital citizenship and their indicators. The measures are internet activism, technical skills, critical perspective and networking.

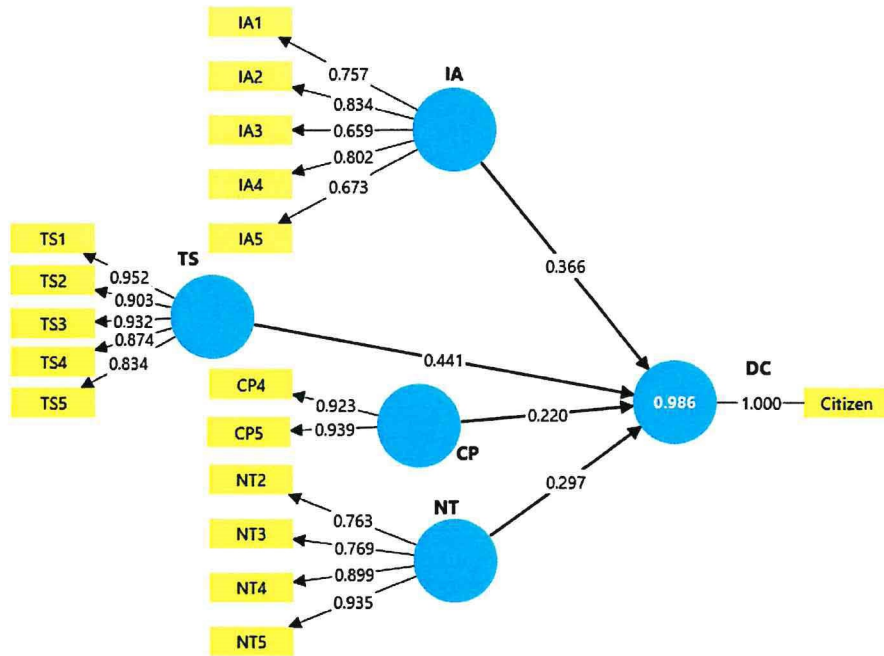


Figure 4. 17: Structural Equation Model for Digital citizenship Model

The structural model presented in Figure 4.17 describes digital citizenship, which was perceived as multi-dimensional variable encompassing internet activism, technical skills, critical perspective and networking. The factor loadings indicate that for the internet activism and technical skills, for each element all the five indicators (AI1-AI5 & TS1-TS) exceeded the minimum threshold of 0.50, indicating strong validity. For critical perspective, only two indicators (CP4 & CP5) met the minimum validity of 0.50 with three indicators (CP1, CP2 & CP5) dropped. For networking, four indicators (NT2-NT5) had satisfactory loadings above 0.50, while one indicator (NT1) loaded low and was dropped.

4.5.6 Digital citizenship and E-Teaching Competence

To examine the influence digital citizenship on e-teaching competence of lecturers, a structural model showing linkages between the two was developed. The model tested

whether digital citizenship in terms of internet activism, technical skills, critical perspective and networking influenced e-teaching competence. Figure 4.20 describes the causal linkages.

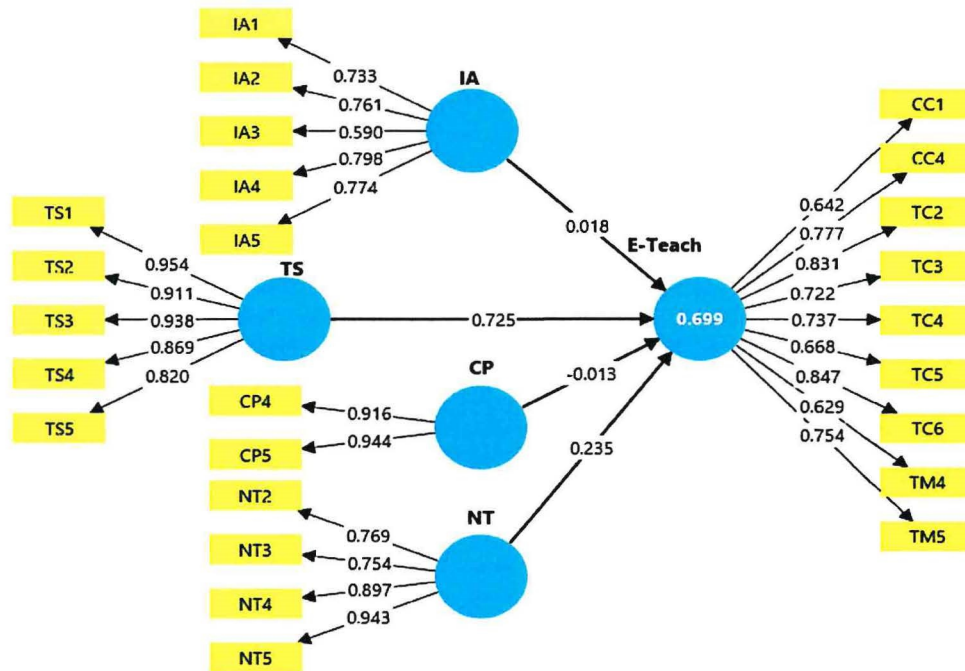


Figure 4. 18: Digital citizenship and E-Teaching Competence

Figure 4.18 presents a structural model illustrating the relationship between Digital citizenship and e-teaching competence. The model reveals that digital citizenship consists of four components, namely internet activism, technical skills, critical perspective and networking. The model tested the hypotheses to the effect that internet activism, technical skills, critical perspective and networking influence e-teaching competence. The detailed results are presented in Table 4.15.

Table 4. 15: Digital Citizenship and E-Teaching Competence Path Estimates

	β	t	p
Critical perspective -> E-Teaching competence	-0.013	0.252	0.801
Internet activism -> Teaching competence	0.018	0.416	0.677
Networking -> E- Teaching competence	0.235	4.630	0.000
Technical skills -> E- Teaching competence	0.725	21.487	0.000
R ² = 0.699			
R ² Adjusted = 0.693			

The results in Table 4.15 indicate that technical skills ($\beta = 0.725$, $p = 0.000$) and networking ($\beta = 0.235$, $p = 0.000$) had a significant positive impact on e-teaching competence. However, critical perspective ($\beta = -0.013$, $p = 0.801$) and internet activism ($\beta = 0.018$, $p = 0.677$) did not have significant effects on e-teaching competence, as their p-values were much greater than the 0.05 threshold. The R² value of 0.699 indicated that these digital citizenship aspects collectively explained 69.9% of the variance in e-teaching competence, while the adjusted R² value of 0.693 accounted for the number of significant predictors in the model, indicating that 69.3% was explained by the significant factors. The beta coefficients showed that technical skills had the most substantial influence on e-teaching competence, followed by networking. This finding emphasizes the importance of technical skills in improving e-teaching competence, while critical perspective seemed to have minimal, internet activism has a negative one possibly because of over engagement in it and giving minimal attention to e-teaching.

4.6 Moderation of Implementation Leadership and E-Teaching Competence by Digital Citizenship

The third objective of the study sought to test the moderating effect of digital citizenship on the influence of implementation leadership on e-teaching competence of lecturers. Figure 4.12 presents the moderating linkages between the variables.

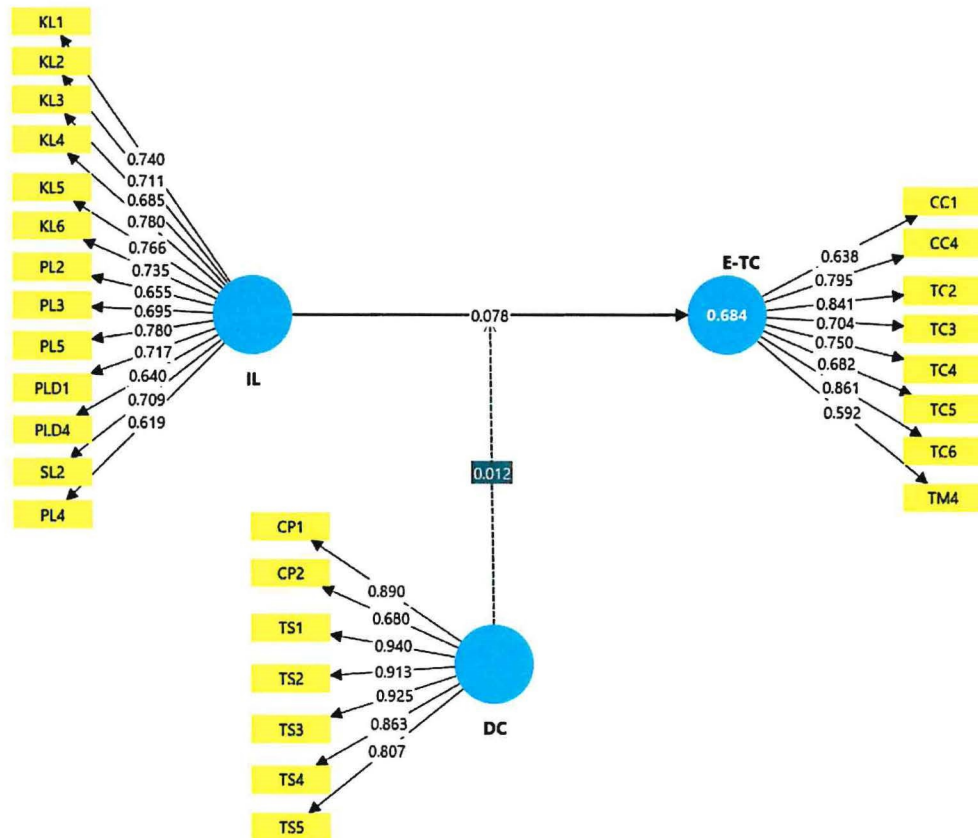


Figure 4.19: Moderation of Implementation Leadership and E-Teaching Competence by Digital Citizenship

The structural equation model (Figure 4.19) describes the moderating effect of digital citizenship on the effect of implementation leadership on e-teaching competence. Table 4.16 presents structural equation path estimates for the moderating effect of on the effect of implementation leadership on e-teaching competence.

Table 4.16: Moderation of Implementation Leadership and E-Teaching Competence by Digital Citizenship Path Estimates

	β	T	P
Implementation Leadership -> E- Teaching Competence	0.078	1.538	0.124
Digital Citizenship -> E-Teaching Competence	0.803	15.416	0.000
Digital Citizenship x Implementation Leadership -> E- Teaching Competence	0.012	0.394	0.694
R ² = 0.684			
R ² Adjusted = 0.680			

The results in Table 4.16 indicate that digital citizenship ($\beta = 0.803$, $p = 0.000$) had a strong and statistically significant positive impact on e-teaching competence, indicating that higher levels of digital citizenship are associated with increased e-teaching competence. However, implementation leadership ($\beta = 0.078$, $p = 0.124$) did not have a statistically significant direct effect on e-teaching competence, as the p-value is greater than the 0.05 threshold. The interaction term between digital citizenship and implementation leadership ($\beta = 0.012$, $p = 0.694$) also did not have a statistically significant effect on e-teaching competence, suggesting that digital citizenship does not significantly moderate the relationship between implementation leadership and e-teaching competence. The R² value of 0.684 indicates that these variables collectively explain 68.4% of the variance in e-teaching competence, and the adjusted R² value of 0.680 suggests suggested that the significant factor contributed 68.0%. These findings suggest that while digital citizenship significantly enhances e-teaching competence, it does not moderate the relationship between implementation leadership and e-teaching competence in a substantial way. Therefore, whether digital citizenship is high or low, it does not significantly change the nature or strength of the relationship between implementation leadership and e-teaching competence. Therefore, the effects of

implementation leadership on e-teaching competence are independent of the presence or level of digital citizenship.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the findings on implementation leadership and e-teaching competences, examining how they are influenced by lecturers' digital citizenship. It involves comparing the study's results with existing literature, emphasizing the importance and implications of these findings. The chapter also outlines the conclusions, offers recommendations, and discusses the limitations of the study.

5.1 Discussion of the Findings

The findings on the influence of implementation leadership on e-teaching competences of lecturers are discussed first, followed by those on digital citizenship on e-teaching competence. Then the results of the moderating effect of digital citizenship follow.

5.1.1 Implementation Leadership and E-Teaching Competences

The first objective of the study examined the influence of implementation leadership on e-teaching competences of lecturers in selected schools of Makerere University. The hypothesis derived objective was to the effect that implementation leadership has a significant influence on e-teaching competences of lecturers. Hypothesis test results revealed that implementation leadership had a positive insignificant influence on e-teaching competence. This finding is inconsistent with the findings of previous scholars. For example, Ahmed et al. (2022) established that supportive leadership influenced intention to continue using massive open online courses. Relatedly, Awais (2023) revealed that effective leadership is characterized by vision, adaptability, and digital competence enhance institutional readiness for e-learning.

Further, the finding of the study was inconsistent with Basilotta-Gómez-Pablos et al. (2022) who reported that the lack of continuous institutional support and structured digital training constrained effective technology integration in teaching. In the same vein, the finding is inconsistent with Bigirwa et al. (2022) who indicated that leadership practices including supportive environment influenced technological use in school activities. Also, the finding is inconsistent with Car et al. (2018) who expounded that leadership engagement determines the sustainability and effectiveness of e-learning programs. Also, Jameson et al. (2022) showed that transformational which point to implementation leadership in terms of supportive leadership was effective in facilitating technology adoption in universities.

Further, the finding was inconsistent with Khoeroni et al. (2019) who reported that implementing leadership that encouraged maximum use of information technology resulted in a meaningful improvement of digital-based public services. In the same vein, Martin et al. (2020) inconsistent with the study revealed that leadership support, institutional strategy, and professional development were among the most critical determinants of successful online learning implementation. Also, inconsistent with the finding of the study, Prihandaka et al. (2022) established that supportive leadership was positively related to employee creativity such as adoption of e-teaching for lecturers.

In the same vein, Zhu et al. (2025) reported that digital leadership lead to adopting of technology. However, with the finding of the study diverging from the findings of pervious scholars it can be inferred that in the context of university studied, implementation leadership had an insignificant influence on e-teaching competence. However, it should be noted that the results indicated that the implementation leadership aspect of pro-active leadership had a significant influence on e-teaching competence while perseverant leadership marginally

had significant influence. This means that while overall implementation leadership had an insignificant influence on e-teaching competences, some of its aspects were important e-teaching competence of lecturers.

5.1.2 Digital Citizenship and E-Teaching Competences

The second objective of the study assessed the influence of digital citizenship on e-teaching competences of lecturers in selected schools of Makerere University. The hypothesis derived objective was to the effect that digital citizenship has a significant influence on e-teaching competences of lecturers. Hypothesis test results revealed that digital citizenship had a positive significant influence on e-teaching competence. This finding was consistent with the findings of previous scholars. For example, Adiyarta (2018) found out that technical know-how (technical skills) in terms of technology skill related to e-learning implementation in institutions. Relatedly, Gondwe et al. (2023) revealed that digital citizenship is a technology competence tool that facilitate the development of ethical use of technology in education. Similarly, Enakrire (2024) revealed that lecturers with strong technical proficiency in computer operations which as part of digital citizenship were significantly more competent in managing virtual classes, providing timely feedback, and promoting interactive learning.

Also, in agreement with the finding of the study, Kimwise et al. (2016) reported that technical skills of academic staff in terms of perceived ease of use or technical how affected adoption of e-learning technologies. Further, consistent with the finding of the study, Makokha and Mutisya (2016) reported that the ability and confidence of a teacher in using computers and other technologies in imparting knowledge and skills to their students were imperative for e-learning. Also, Prasetyo et al. (2023) reported that digital citizenship

increased desire for schools to build character education programs that address the problem of student technology use. Relatedly, Mugizi and Rwothumio (2024) revealed that e-learning technical know-how influenced e-learning implementation. In the same vein, Slavković et al. (2024) established that the digital citizenship was positively associated with digital transformation enablers. Therefore, digital citizenship influences e-teaching competences.

Also, Sum and Oancea (2022) reported that lecturers who possessed adequate technical skills an element of digital citizenship such as the use of videoconferencing software, online assessment tools, and virtual classrooms demonstrated higher e-teaching competence, particularly in sustaining student interaction and learning continuity. Vanegas et al. (2025) revealed that technical skills such as the ability to use learning management systems, design digital learning materials, and troubleshoot instructional technologies constitute the foundation upon which higher-order e-teaching competences are built. With the findings of the study being consistent with the findings of previous scholars, it can be deduced that digital citizenship influences e-teaching competences.

5.1.3 Implementation Leadership and E-Teaching Competence Moderated by Digital Citizenship

The third objective of the study tested the moderating effect of digital citizenship on the influence of implementation leadership on e-teaching competence of lecturers. Therefore, the hypothesis was to the effect that digital citizenship has a significant moderate effect on the influence of implementation leadership on e-teaching competence of lecturers. Hypothesis tests revealed that digital citizenship had a statistically positive insignificant moderating effect on the influence of implementation leadership on e-teaching competence. This means that digital citizenship has a less important role in influencing the strength of the

influence of implementation leadership on e-teaching competence. This inconsistent with the view because of digital citizenship's role in promoting a safe and positive online environment (Amhag et al., 2019) it strengthens the influence of implementation leadership on e-teaching competence. In interaction with implementation leadership, digital citizenship does not play a crucial role in enhancing e- e-teaching and modelling digital citizenship principles such as responsible online communication, digital literacy, and ethical behaviour create a positive and engaging online learning environment (Al-Ali et al., 2024) does not strengthen the influence of implementation leadership on e-teaching. Therefore, the strength of the relationship between leadership implementation and e-teaching is not influenced by digital citizenship.

5.2 Conclusions

The discussion above led to the following conclusions on implementation leadership, digital citizenship and e-teaching competences of lecturers;

1. The relationship between implementation leadership and e-teaching competence of lecturers reveals notable variances according to the level of implementation of the different leadership practices. When implementation leadership is robust like was with the aspect of proactive leadership, the influence on e-teaching competence is significant. However, when implementation leadership is either fairly high or low, as observed in aspects like knowledgeable, supportive, and perseverant leadership, its impact on e-teaching competence is only marginally significant or even insignificant. This suggests that the effectiveness of implementation leadership in fostering e-teaching competence may be contingent upon the specific leadership dimensions employed.

2. Digital citizenship is vital for e-teaching for competences of lecturers. The technical competences of academic staff in engaging in online activities, and networking with others on line enhance their e-teaching competences. Technical skills enable them to easily locate the information, search and download useful information, access the internet using digital technologies, send notes to students on social media, and connect to internet find information. Networking promotes enjoying communicating with others online, working with others online more than they do offline, comment online, post information and debate online.
3. Digital citizenship whether high or low does not significantly change the nature or strength of the relationship between implementation leadership and e-teaching competence. Therefore, effects of implementation leadership on e-teaching competence are independent of the presence or level of digital citizenship.

5.3 Recommendations

The conclusion above led to the following recommendations on implementation leadership, digital citizenship and e-teaching competences of lecturers;

1. University leaders such as vice chancellors and their deputies, deans and head of departments should prioritise adopting implementation leadership. This should involve adopting a proactive approach to addressing challenges and seeking opportunities, staying knowledgeable about trends and best practices, providing supportive leadership by offering necessary resources and training, and demonstrating persevering leadership by driving initiatives forward with persistence and commitment.

2. University leaders including Vice Chancellors, their Deputies, Deans, and Heads of Departments should prioritize the development of digital citizenship among academic staff to enhance their e-teaching competences and academic staff should improve their own digital citizenship skills. The leaders can provide training and support to improve their technical skills in online activities, such as locating and downloading information, accessing the internet, and improving their networking using social media to communicate, collaborate, and share knowledge. For academic staff, they should improve their own digital citizen skills especially the networking and technical ones. This should be involve acquiring digital skills and being active in professional social media use.
3. University leaders including Vice Chancellors, their Deputies, Deans, and Heads of Departments should focus on developing strong implementation leadership skills, regardless of the level of digital citizenship among academic staff. This is because the positive effects of implementation leadership on e-teaching competence are not dependent on the presence or level of digital citizenship.

5.4 Limitations of the Study

This study makes a significant contribution to understanding the influence of implementation leadership, digital citizenship, and e-teaching competencies of lecturers. However, several limitations were identified. First, the findings contradicted the initial hypothesis that implementation leadership significantly impacts e-teaching competencies, with digital citizenship moderating this relationship. To validate these results, future research should test these hypotheses in different contexts, including more universities, both public and private, as this study was limited to just one university. In addition, the study's reliance on quantitative

data presents a methodological limitation, as it may not have fully captured the complexities of the relationships between implementation leadership, digital citizenship, and e-teaching competencies. Future studies should consider qualitative or mixed methods approaches for a more comprehensive examination.

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APPENDICES

Appendix I: Self-Administered Questionnaire

Dear respondent,

I am James Bato, a student of Kyambog

o University pursuing a Master of Education In Policy, Planning, and Management. I am conducting a study titled " *implementation leadership, digital citizenship and e-teaching competences of lecturers in secondary school in Kampala Division, Kampala, City.*" I request you to take part in this study because of your expertise and experience in this field. Your participation in this study is voluntary and all responses will be kept confidential. The information collected from this study will be used solely for research purposes and will not be shared with any third parties. If you have any questions about the study or the questionnaire, please feel free to contact me.

.....

James Bato

Researcher

Mobile: 0772387006

SECTION A: Background Of Respondent

Instructions: On the alternatives provided, tick on the choice you consider appropriate for you.

A1. Gender

- a) Male b) Female

A2. Age group

- a) Up to 30 years b) Below 40 years c) 40 years and above

A4. Highest level of education attained

- a) Bachelors b) Post graduate diploma c) Master's degree d) PhD degree

A5. Position held in the university

1. Assistant lecturer 2. Lecturer 3. Senior lecturer 4. Associate professor
5. Professor

Section B: E-Teaching Competences

This section presents questions on E-Teaching Competences (IV). You are kindly requested to indicate how you feel about your implementation leadership in terms of technical competence, time management, course communication, and course design using the scale where, 1= strongly disagree (SD), 2 = Disagree (D), 3 = Nost sure (S), 4= Agree (A), and 5 = Strongly agree (SA).

No.	E-Teaching Competences	1	2	3	4	5
TC	Technical Competence					
TC1	While lecturing students in class, I use presentations (PowerPoints)					
TC2	I efficiently use the technological tools (Microsoft Word and Internet) required for online classes.					
TC3	I perform basic computer activities (such as file and folder management, document generation and editing).					
TC4	Share open educational materials with students, such as posting content.					
TC5	I use online collaborative applications, such as Google Drive, Dropbox, Google Classrooms, and WhatsApp.					
TC6	I efficiently use the hardware tools needed for online classes (like computer, tablet, camera etc.).					
TM	Time Management					
TM1	I allocate time to design the course for online classes prior to delivery.					
TM2	I present the essential knowledge for the session to students within the allotted time.					
TM3	I provide prompt feedback upon the submission of the assignment by learners.					
TM4	I set aside time for training to acquire new tactics for online lessons.					

TM5	I manage time when conducting/making online lessons (e.g., starting and ending lessons on time, uploading on time).					
CC	Course Communication					
CC1	I make communication, announcements, and send reminders to students.					
CC2	I build and monitor discussion internet forums.					
CC3	Respond promptly to learners' questions.					
CC4	I share open educational resources (e.g., via WhatsApp, emails, Google Classrooms, and university portals).					
CC5	I explain expectations concerning student behaviour.					
CC6	I convey conformity with academic integrity policies.					
CD	Course Design					
CD1	I design an online course orientation for each new group of students.					
CD2	I come up with realistic learning objectives for each online course.					
CD3	I create online assignments and tests					
CD4	I organize instructional materials into modules or units that can be delivered online.					
CD5	I construct learning activities that allow students to communicate online					

Section C: Implementation Leadership

This section presents questions on implementation leadership (IV). You are kindly requested to indicate how you feel about your implementation leadership in terms of proactive leadership, knowledgeable leadership, supportive leadership and perseverant leadership using the scale where, 1= strongly disagree (SD), 2 = Disagree (D), 3 = Not sure (S), 4= Agree (A), and 5 = Strongly agree (SA).

No.	Implementation Leadership	SD	D	NS	A	SA
		1	2	3	4	5
PL	Proactive leadership					
PL1	My superiors embraced innovative teaching using internet quickly					
PL2	My superiors tackle e-teaching challenges proactively					
PL3	My superiors stay a head by seeking teaching improvements fast					
PL4	My leaders have developed policies and set standards for the implementation of e-teaching.					
PL5	The university leadership have put in place a plan to assist in the implentation of e-teaching.					
PL6	The university leadership is great at turning problems affecting teaching and learning such COVID-19 into opportunities.					
KL	Knowledgeable Leadership					
KL1	I trust that the leaders' in this university understand of e-teaching technology					
KL2	Leaders in this university guide guide staff on how to effectivelly use digital resource					
KL3	My superiors know what is taking place globally when it comes to e-teaching					
KL4	My superiors have knowledge of what is required to effectvelly implement e-teaching					
KL5	My superiors ably respond to staff questions about e-teaching implemenation					
KL6	My superiors are well grounded about e-teaching					
SL	Supportive Leadership					

SL1	The university leadership actively supports staff to implement e-teaching by addressing the challenges involved					
SL2	The university leadership encourages staff to teach innovately using modern technologies					
SL3	The university leadership supports staff to improve their e-lecturing skills					
SL4	The university Leadership gives enough guidance on e-lecturing					
SL5	Our university leaders support efforts to learn more about e-lecturing					
SL6	The university leadership recognizes and appreciate staff work effort					
PLD	Perseverant Leadership					
PLD1	University administration persistently encourages staff to ensure quality lecture delivery and learning					
PLD2	The university administration ensures quality e-lecturing despite the ups and downs encountered by the university					
PLD3	The university leadership continuously addresses the problems that affect e-lecturing					
PLD4	The university leadership stays committed to e-teaching improvements					
PLD5	The university leadership quickly responds to issues affecting implementation e-lecturing.					

Section D: Digital Citizenship

This section presents questions on digital citizenship (MO). You are kindly requested to indicate how you feel about your implementation leadership in terms of internet activism, technical skills, critical perspective, and networking using the scale where, 1= strongly disagree (SD), 2 = Disagree (D), 3 = Not sure (S), 4= Agree (A), and 5 = Strongly agree (SA).

No.	DIGITAL CITIZENSHIP	1	2	3	4	5
IA	Internet activism					
IA1	I articulate ideas on online platforms about issues not going well in my university and society at large					
IA2	I regularly post my thoughts on online platforms (e.g. whatsapp and Webmail) related to my university, politics or social issues					
IA3	I belong to an online activist group					
IA4	I sometimes raise issues on online platforms about the university or country that I consider essential					
IA5	I attend public forums on the university or country affairs organised online					
TS	Technical skills					
TS1	I can locate the information I need on the Internet.					
TS2	I can use the Internet to search and download useful information					
TS3	I can access the Internet using digital technologies (e.g. using smart phones, Tablet PCs, Laptops, PCs) whenever I want					
TS4	I send notes to students social media like Whatsapp or emails					
TS5	I can connect to the university wifi find information without help					
CP	Critical perspective					
CP1	The Internet give me the opportunity to remain update on what is going on in my university and country					
CP2	I believe that online interaction is a fantastic way to connect with colleagues or people of like mind about university, political and social issues					
CP3	I believe that internet participation fosters offline engagement on important issues affecting my university and the country					
CP4	I am more engaged in activist iusses when I am online than offline					
CP5	I utilize online platforms to participate in debating about issues affecting my university an country					

NT	Networking					
NT1	I enjoy communicating with others online					
NT2	I like working with others online more than I do offline.					
NT3	Wherever feasible, I give a comment on other people's opinions and views posted online					
NT4	I comment on important educational posts on social media platforms from different educational groups					
NT5	I participate on online debates with colleagues and different academic groups					

Thank you for your time!