

The Nexus between the Level of ICT Adoption in Administrative Operations and the Speed in Administrative Service Delivery in Public Universities in Uganda: A Case Study of Kabale University

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Abstract:

The purpose of this study was to establish the relationship between the Level of ICT adoption in administrative operations and the speed in administrative service delivery in Public Universities in Uganda: a case study of Kabale University. The study was guided by the pragmatic research philosophy in which a descriptive cross sectional survey research design was adopted. A mixed research approach was pivotal in guiding this study and this too embedded the deductive and inductive research strategies.

The study was hinged upon a sample of 173 respondents which was drawn from a population of 189 by scientifically using Krejcie and Morgan table for sample size determination (1970). As such, stratified and purposive sampling techniques were used. The findings from correlation analysis revealed that the Pearson correlation value was 0.809**. The P-value that was associated with this correlation was 0.000. The P-value of 0.000, was less than 0.01 which depicted that the observed correlation was statistically significant at 0.01 level. This correlation analysis depicted that there was a strong, positive statistically significant relationship between Level of ICT Adoption in Administrative operations and the speed in Administrative service delivery. The study thus concluded that there was, a strong positive statistically significant relationship between Level of ICT adoption in administrative operations and the speed in administrative service delivery and thus recommended the need for continuous investment in ICT hardware and software together with continuous training and retraining of staff.

Keywords: Level of ICT Adoption in Administrative operations, Speed in Administrative Service Delivery.

1. Introduction

For long, Administrative service delivery has been a major concern across the globe with continents like Europe taking a lead in trying to ensure continuous improvement in the way administrative service delivery is done especially in public institutions with ICTs being their main game changer (Zotto, Colombero, Pigni, & Haggege, 2018). The European continent has been leading in terms of levels of adoption of the use of ICTs in all operations of governments including administrative service delivery (WorldBank,2022).

The aspects of administrative service delivery within higher education institutions include among others; student admissions, registration, financial administration, procurement, records management, human resource management and institutional communication. Good administrative service delivery is characterized by efficiency, timeliness, accuracy, accessibility, transparency and customer satisfaction, making it possible for the

institution to operate effectively while satisfying the needs of students, employees and other stakeholders (Chepkemai et al., 2017; Wang & Meister, 2018).

The adoption of Information and Communication Technologies (ICTs) has brought a lot of changes in terms of administrative service delivery by minimizing paperwork, improving information access and communication and decision-making. According to various studies, institutions that improve their levels adoption of ICT in their operations, effectively benefit from improved coordination of administrative activities, good records management, increased efficiency and responsiveness to stakeholder needs (Ahmed *et al.*, 2018; Gupta *et al.*, 2008; Enwieme, 2026). Besides, the effective use of ICT has been found to result in improved transparency and accountability in public institutions and higher education institutions (Chepkemai *et al.*, 2017; Wang & Meister, 2018). However, ICT adoption can be ineffective due to such barriers as lack of ICT infrastructure, inadequate finances, poor internet connectivity, lack of ICT skills and inadequate technical support (Matovu *et al.*, 2019; Etabo *et al.*, 2025).

The adoption of Information and Communication Technologies (ICT) in administrative service delivery has greatly changed during the last decades with organizations having high level of investment in adoption of ICTs being ones with great competitive advantage over those with low adoption rates in terms of ICTs (Ahmed, et al., 2018). Prior to ICT adoption, all administrative processes in both public and private organizations were carried out manually through the use of paper work and oral communication. (Moon, 2002; Gupta et al., 2008). This type of service delivery involved considerable time consumption, high expenses, lack of easy access to information and inefficiency in information management. However, rapid development of technology gave birth to new technologies such as computers, internet and digital communication which made it possible for organizations to automate their processes and to communicate efficiently. This development marked the beginning of the digital revolution in public administration and management of organizations. (Moon, 2002; Linders, 2012).

It should be remembered that, when technology in ICT was developing, it became a very common practice that governments and institutions of higher education across the world started to use ICT with the aim to increase efficiency and transparency in administration. Activities such as registration, records keeping, finance, Human resource management (HR), communications, and administration were transferred from the manual process to the electronic process. As a result of ICT advancements in the forms of Management information systems(MIS), Electronic data management systems (EDMS), communication and electronic databases, processes of administration became more efficient and effective (Gupta *et al.*, 2008; Wang & Meister, 2018).

In Africa, institutions of higher learning as well as public sector organizations have highly adopted Information communication technologies (ICTs) in order to increase effectiveness in the delivery of administrative services. Governments and their Universities have adopted ICTs such as e-documentation, e-enterprise resource planning, electronic student registration, human resource information system, and financial management systems in order to increase efficiency and transparency. Adoption of ICTs has contributed to reduction of bureaucracy, increased communication and accessibility to administrative services. However, there is a difference in the rate of adoption and implementation of ICTs in different African countries due to the difference in technology infrastructure, financing, skills and institutional support (Ndou, 2018; Oyewole & Olowu, 2019; Mulatu & Zewde, 2016).

In East Africa, Public Universities as well as other public institutions have shown great progress in improving their levels of adopting ICT in the provision of administrative services. ICT has been used in Kenya, Rwanda and Ethiopia in administrative processes such as; student admissions, financial management, records management, and communications within these institutions. (Chepkemai *et al.*, 2017; Munyanshongore *et al.*, 2016; Mulatu & Zewde, 2016). Adoption of ICT has increased efficiency, information exchange and better decision making in administrative services. Nevertheless, there are still issues such as the absence of ICT infrastructure, poor internet connection, lack of money, and insufficient ICT skills among employees that limit effective adoption of ICT in the provision of administrative services.

In Uganda, the Level of adoption of ICT has developed significantly thanks to various initiatives of the government aimed at increasing the digital transformation of public institutions. The Government of Uganda has implemented various policies and strategies in order to encourage the adoption of ICT into public services delivery, resulting in the adoption of financial management systems, human resource management systems, procurement platforms and institutional management information systems. (Matovu et al., 2019). Public universities have similarly adopted ICT in order to increase efficiency of administrative services through online admissions, student information systems, e-learning platforms, institutional emails and electronic records management. Despite these advances, the extent of adoption of ICT and its effectiveness in increasing efficiency of service delivery varies among the institutions due to the difference in infrastructure, financial means, technical skills and institutional commitment (Matovu et al., 2019; Gupta et al., 2008).

Research Objective. To establish the relationship between the Level of ICT adoption in Administrative operations and the speed in administrative service delivery in Public Universities in Uganda: a case study of Kabale University.

2. Theoretical Perspective

ICT implementation and use in organizations have been explained using different models of technology adoption. One of the most popularly used models is the Technology Acceptance Model (TAM), proposed by Davis (1989). As per TAM, perceived usefulness increases the users' perception that technology will make their work more productive while perceived ease of use increases the willingness of the users to adopt the technological systems in their activities. The two determinants determine the attitude, intention and adoption of ICT in organizations (Davis, 1989).

TAM was extensively applied in explaining the adoption of ICT-based administrative systems in higher education institutions like student information systems, financial management systems, electronic communication platforms and learning management systems. When the staff members consider the ICT systems to be useful and easily operated, they adopt them into their routine administrative tasks, hence making the services efficient, accurate and accessible. Contrary, negative perceptions, low ICT skills and organizational barriers may prevent the adoption of these systems even if they are available (Granić & Marangunić, 2019; Granić, 2022).

The current research project was guided by the Technology Acceptance Model (TAM) because it offers a suitable theoretical model to help explain how the perceptions of usefulness and ease of use of ICT by the users affect ICT adoption and use. The theoretical model was extensively applied in studies on technology adoption in education institutions and public organizations (Davis, 1989; Granić & Marangunić, 2019; Granić, 2022).

Even though the Technology Acceptance Model (TAM) has proved popular and has been applied to provide explanations of user acceptance of information technology (IT), it suffers from some weaknesses. The model largely focuses on individual users' perceptions of perceived usefulness and ease of use as major determinants of technology adoption. It does not give much thought to organizational and contextual factors affecting technology acceptance and adoption. Public institutions like universities take into account many organizational and environmental factors such as management support, organizational culture, finance, government policies, ICT infrastructure and staff training in making decisions about the adoption and utilization of ICT systems (Davis, 1989; Granić & Marangunić, 2019).

In spite of these drawbacks, TAM still remains among the most commonly applied models for the explanation of technology adoption in higher education institutions and organizations. Recent empirical evidence has demonstrated its utility for the explanation of users' behavioral intentions and actual use of ICT systems when combined with organizational and contextual factors (Granić & Marangunić, 2019; Granić, 2022). For this reason, the current study uses Technology Acceptance Model because it offers the right theoretical background that helps understand the effect of users' perceptions on ICT adoption while keeping in mind the possible effect of organizational and institutional factors that can affect administrative service delivery as shown in the conceptual framework of this research (Davis, 1989; Granić, 2022).

3. Literature review

In her study on Information and Communication Technology (ICT) and service delivery at Akwa Ibom State Polytechnic in Nigeria, Enwieme (2026) adopted the descriptive research design and content analysis approach. In her findings, Enwieme established that the use of ICT had become a core activity in administrative operations especially in terms of communication, records management, information sharing and institutional administration. The findings further reveal that the institutions with good ICT facilities and competencies of staff have achieved efficient administrative processes. However, the study was carried out at a Nigerian polytechnic which is a different institutional setting compared to Ugandan public universities, hence limiting the generalizability of findings to Kabale University.

Matovu, Mwase, Engotoit, Mukuuma and Ocen (2019) carried out a study on ICT adoption and service delivery in the Ugandan Ministry of Local Government. The study revealed that although many public institutions had ICT infrastructure, the level of ICT adoption varied depending on ICT competencies, internet access, institutional support and available resources. The authors concluded that the presence of ICT facilities alone does not guarantee effective ICT adoption unless ICT users have the required competencies and institutions provide adequate support. However, the study focused broadly on public sector institutions rather than specifically on public universities. Therefore, there is a need for further research such as the present study at Kabale University.

The above reviewed studies reveal that the factors that influence ICT adoption include technological infrastructure, institutional support, management commitment and ICT competencies of staff members.

In another study conducted on ICT adoption in public organizations, it was found that organizations which successfully adopted ICT in their administrative operations benefitted from enhanced service delivery, increased transparency and better coordination of institutional operations. The study revealed that digital technologies help to improve organizational performance by easing administrative processes, improving information sharing and promoting evidence-based decision-making.

4. Methodology

The pragmatic research philosophy was fundamental in guiding the research methodology in line with data collection methods and tools. The practical data collection methods included the questionnaire survey method, which involved use of questionnaire as a tool for quantitative data collection, in-depth interviews were conducted on the qualitative side of the study and these were made possible with assistance from the interview guide which was the main tool that was used to generate qualitative data. It should be remembered that Biesta (2010) underscored the relevancy of the pragmatic research philosophy in propelling the practical attainment of knowledge by the researchers through an experiential process which exactly transpired in this study.

For the purpose of this study, a descriptive cross-sectional survey research design was adopted. A descriptive research design was used because it enabled the researcher to explain the current situation of Information and Communication Technology (ICT) adoption and its effect on administrative service delivery without manipulation of the research variables (Creswell & Creswell, 2018). Descriptive research is more appropriate for studies that are intended to gain information regarding existing situations.

A cross-sectional survey research design was adopted because data was collected from the selected respondents at one point in time. Cross-sectional surveys helped the researcher to efficiently and economically collect data from participants during a relatively short time while examining the relationship between variables (Saunders, Lewis, & Thornhill, 2019). The design was more appropriate because it gave the researcher an opportunity to get opinions of administrative staff about ICT adoption and administrative service delivery at one point in time.

A mixed research approach was used in this study. Creswell and Plano (2018), the mixed research approach has deep connections and works better in studies that are purely guided by the pragmatic research philosophy which accordingly justified the researcher's choice for this form of research approach. This accordingly justified

the use of both quantitative and qualitative methods with deductive and inductive research strategies embedded.

The study was hinged upon a population of 189 from which a sample size of 173 respondents was scientifically obtained using Krejcie and Morgan Table for sample size determination (1970).

Stratified random sampling was used to recruit administrative staff from the various administrative units of Kabale University. The target population was first segmented into homogeneous segments (strata) based on their administrative units. Respondents were then randomly selected from each stratum. Stratified sampling was appropriate for the current research since it provided fair representation of all the administrative units in the study and eliminated any form of sampling bias (Shukla *et al.*, 2023; Saunders *et al.*, 2019).

Purposive sampling was used to identify respondents who were key informants and had extensive information and experience regarding the use of ICT and administrative service delivery. Some of the key informants in this case included; the University Secretary, Academic Registrar, Director of ICT, Director of Human Resource Management, Director of Graduate Training, University Librarian among others. Purposive sampling was appropriate because the key informants were expected to provide rich and reliable data on the subject of study, which may not be obtained from questionnaires (Campbell *et al.*, 2024; Saunders *et al.*, 2019).

The study registered a response rate of 74.5% whereby out of the 173 questionnaires that were distributed, a total number of 129 were returned, fully filled with the required data. Saunders, Lewis and Thornhills (2009) contended that a response rate between 30-40 % was justifiable for a study which meant that the study exceeded the minimum threshold.

5. Results

Table:1:Correlation results depicting the nexus between Level of ICT adoption and Administrative service delivery

		Administrative service delivery	Level of ICT Adoption Administrative service operations
Administrative service delivery	Pearson Correlation	1	.809**
	Sig. (2-tailed)		.000
	N	129	129
Level of ICT Adoption Administrative operations	Pearson Correlation	.809**	1
	Sig. (2-tailed)	.000	
	N	129	129

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data, July, (2026).

The Pearson correlation results depicted in the table 1 above was 0.809**. The P-value that was associated with this correlation was 0.000. The P-value of 0.000, was less than 0.01 which depicted that the observed correlation was statistically significant at 0.01 level. This correlation analysis depicted that there was a strong positive statistically significant relationship between Level of ICT Adoption in Administrative operations and speed in the Administrative service delivery.

6. Discussion

The Pearson correlation results depicted and obtained was 0.809**. The P-value that was associated with this correlation was 0.000. The P-value of 0.000, was less than 0.01 which depicted that the observed correlation was statistically significant at 0.01 level. This correlation analysis depicted that there was a strong positive statistically significant relationship between Level of ICT Adoption in Administrative operations and speed in the Administrative service delivery.

The above quantitative findings were consistent with those from the qualitative side of the study in which it was noted by a respondent that; *“High level of adoption of ICTs in administrative operations is the way to go in modern organizations and definitely works as a strong niche and basis for any organization to craft its competitive advantage over others in this turbulent technology era”* (Field data, July, 2026).

These findings are consistent with Enwieme (2026), who found that ICT had become a core activity in administrative operations, particularly in communication, records management, information sharing and institutional administration. The study further established that institutions with good ICT facilities and competent staff were able to achieve more efficient administrative processes. The similarity between the two findings suggests that ICT adoption becomes more meaningful when staff actually use the available systems and possess the skills required to operate them.

The findings also agree with Matovu et al. (2019), who reported that the Level of ICT adoption in public institutions varies according to ICT competencies, internet access, institutional support and available resources. Their findings further indicated that the presence of ICT facilities alone does not guarantee effective ICT adoption unless users have the required competencies and institutions provide adequate support. This is relevant to the present study because, although staff ICT skills and actual use of ICT systems were highly rated, some aspects of the ICT environment received relatively lower ratings.

The adoption of Information and Communication Technology (ICT) has made a lot of changes in terms of administrative service delivery by minimizing paperwork, improving information access and communication and decision-making. According to various studies, institutions that adopt ICT effectively benefit from improved coordination of administrative activities, good records management, increased efficiency and responsiveness to stakeholder needs (Ahmed et al., 2018; Gupta et al., 2008; Enwieme, 2026).

7. Conclusion

The Pearson correlation results depicted in the table 1 above was 0.809**. The P-value that was associated with this correlation was 0.000. The P-value of 0.000, was less than 0.01 which depicted that the observed correlation was statistically significant at 0.01 level. This correlation analysis depicted that there was a strong positive statistically significant relationship between Level of ICT Adoption in Administrative service operations and the speed in Administrative service delivery.

8. Recommendations

There is need for continuous investment in ICTs especially in form of computer hardware, software among others in Kabale University in order to ensure that University attains a competitive advantage in terms of Administrative service delivery since the findings depicted that a high of level of ICT adoption in administrative operations strongly and positively impacts on administrative service delivery.

In connection to the above, the findings also implied the need for continuous refresher trainings in line with ICT hardware and software as this could be in position to help the staff in retaining the required skills for effective administrative service delivery.

Artificial Intelligence (AI) Stance in the work

The study acknowledges the advent of Artificial intelligence (AI) and it's crucial role in modern day research engagements. However, the tools of Artificial intelligence were ethically used this study and more specifically, in tandem with the Kabale University policy which provides for 20% and below in terms of Artificial intelligence (AI) content in research work.

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