E-GOVERNANCE AND EMPLOYEE PERFORMANCE IN THE MINISTRY OF HEALTH HEADQUARTERS, KAMPALA, UGANDA

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A DISSERTATION SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF THE MASTER OF BUSINESS ADMINISTRATION OF UGANDA CHRISTIAN UNIVERSITY

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UGANDA CHRISTIAN UNIVERSITY

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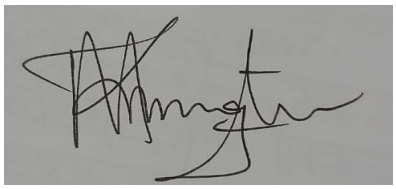
DECLARATION

I, **Livingstone Matsiko,** hereby declare that this Dissertation entitled ***"E-governance and employee performance in the Ministry of Health headquarters"*** is my own original work and has never been presented in fulfillment of the requirements for any academic award at any other academic Institution. All sources of information used in this report have been well cited, and the corresponding authors are acknowledged. I therefore submit it to Uganda Christian University for the award of a Master's Degree in Business Administration.

Signed:



Date: **17th May 2025**

APPROVAL

I certify that this research by Livingstone Matsiko, entitled ***"E-governance and employee performance in the Ministry of Health headquarters,"*** was conducted under my supervision and is now ready for submission.

Joseph Jakisa Owor, PhD

May 18, 2025

DEDICATION

I dedicate this work to my beloved children Birungi Mitchell Ashley and Itungo Abigail Matsiko.

ACKNOWLEDGEMENT

I thank God because it is by his sufficient grace that I have come this far. I extend my gratitude to my supervisor: Dr. Owor Joseph who didn't stop at being my supervisor but went ahead and became a friend and an inspiration to me. I sincerely thank God for having given me a chance to meet him as my supervisor.

I wish to thank all my respondents from Ministry of Health in their different capacities, for the support and cooperation extended to me. Similarly, I wish to thank my research assistants Ms. Patricia Nandawula and Ms Nabagesera Lynette for their tireless efforts towards a successful data collection exercise.

However nothing would have been achieved without the understanding and encouragement of my entire family especially my wife who stood by me throughout this study and encouraged me to continually search for excellence; my lovely children whose time I borrowed to concentrate on this work.

Finally, for those persons not revealed here but in one way or another supported me in the completion of this study, I greatly appreciate their contribution.

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LIST OF ABBREVIATIONS

ICT	Information and Communication Technology
IT	Information Technology
MoH	Ministry of Health
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
SMS	Short Message Service
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
UCC	Uganda Communication Commission
UICT	Uganda Institute for Information and Communication Technology

ABSTRACT

This study examined the relationship between e-governance and employee performance in the Ministry of Health (MoH) headquarters, Kampala Uganda. Specifically, the study investigated the relationship between e-application, e-database and e-feedback on one hand and employee performance on the other hand. The study adopted a correlational study design, enabling the performance of both correlation and regression analysis. Data was collected from 209 MoH staff using questionnaires and an interview guide. Quantitative data were analyzed using SPSS software (SPSS V25), while qualitative data were analyzed using thematic analysis. The multiple regression results indicated a positive but not significant relationship between e-application and employee performance ($\beta = 0.132$, t = 1.838, $P = 0.067$). On the other hand, e-database had a positive significant relationship with employee performance ($\beta = 0.286$, t = 4.133, $P < 0.001$). Similarly, the results found a strong positive significant relationship between e-feedback and employee performance ($\beta = 0.460$, t = 5.798, $P < 0.001$). Whereas all the three variables were associated with employee performance, the relationship was significant for e-database and e-feedback. Further, multiple regression results showed that duration on the Job had significant negative relationship with employee performance (β =-0.366, t =-5.482, P<0.000) and non-significant negative relationship was observed with the level of education (β = -.165, t = -2.384, P=018). Therefore, it was concluded that e-database and e-feedback systems significantly enhance employee performance at MoH, while e-application showed a positive but not statistically significant relationship. This suggests that the potential of e-applications requires further investigation and enhancement. It is recommend that the MoH revise the National e-health policy and National Human Resources for Health policy to incorporate strategies for e-database and e-feedback systems. Additionally, the MoH should advocate for increased investment in technological infrastructure, conduct training and capacity-building programs for staff, and engage stakeholders to ensure the successful implementation and utilization of e-governance technologies. Lastly, further research should be conducted to explore the impact of e-application systems on employee performance and address any factors hindering their effectiveness.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Uganda has made significant progress in advancing e-governance and Information and Communication Technologies (ICTs) to enhance public service delivery (Kiwanuka et al., 2023). The government has introduced policies and strategies such as the National Information and Communication Technology Policy (2014) and the National e-Government Strategy (2018) to support these e-governance initiatives.

This study aimed to investigate the relationship between e-governance and employee performance at the Ministry of Health Headquarters in Uganda. In this study, e-governance served as the independent variable, while employee performance was the dependent variable. E-governance was assessed through e-application, e-database, and e-feedback, whereas employee performance was evaluated based on efficiency, meeting deadlines, achieving work targets, timeliness in completing tasks, transparency, and responsiveness.

This chapter provides an overview of the study, including the background, problem statement, general and specific objectives, research questions, hypotheses, conceptual framework, justification, scope, significance, and definitions of key concepts..

1.1 Background to the study

Globally, the concept of employee performance has evolved significantly in the two decades. Initially, performance was measured primarily through output metrics such as productivity and efficiency. However, this approach often overlooked factors such as job satisfaction, employee engagement, and overall well-being (Maiga, 2019).

In the 1990s, Total Quality Management (TQM) and Continuous Quality Improvement (CQI) frameworks were introduced and marked a shift towards a more holistic understanding of performance. These frameworks emphasized not only the quantity of output but also the quality of work, employee involvement, and continuous improvement (Bala et al., 2018; Gupta et al., 2020). The widespread implementation of the Balanced Score Card in the early 2000s further reinforced the need for comprehensive performance measurement systems that include customer, internal process, financial, learning, and growth perspectives (Kiwanuka et al., 2023; Kyakulumbye et al., 2019). The last decade has witnessed a growing emphasis on integrating technology into performance management (AfDB, 2020). Revolutions such as Machine Learning (ML), Artificial Intelligence (AI), and big data analytics have transformed how organizations monitor and enhance employee performance. These technologies provide real-time data, predictive analytics, and personalized feedback, enabling more precise and efficient performance management (Deloitte, 2021).

In Africa, the evolution of employee performance management has been shaped by the continent's unique challenges and opportunities. During the early post-independence years, many African countries focused on building basic institutional capacities and expanding public sector employment, often with limited attention to performance management (World Bank, 2019).

The 2000s saw a shift towards performance-based management systems, driven by the need to improve accountability and efficiency in public services. Performance contracts, introduced in countries like Kenya and Rwanda, link employee performance to specific targets and outcomes, thereby motivating employees to boost performance (Khatib et al., 2020; Umbach et al., 2022).

More recently, African organizations have been adopting digital technologies to enhance performance management. Mobile technology, e-learning platforms, and digital performance

management systems have been increasingly used to provide training, monitor performance, and offer real-time feedback (AfDB, 2020). For instance, in Uganda, mobile-based solutions are used to monitor field staff performance and provide instant feedback, significantly improving efficiency and accountability (Nakisanze, 2020).

In East Africa, the evolution of employee performance management has mirrored broader continental trends, with some region-specific developments (Tumushabe, 2019). During the 1980s and 1990s, the region faced significant challenges related to political instability, economic crises, and the need for public sector reform (World Bank, 2020). The introduction of performance contracts in Kenya in the early 2000s marked a significant development in performance management. These contracts set specific targets for public sector employees and link their performance to rewards and sanctions. This approach has been credited with improving efficiency and accountability in public services (Kobia & Mohammed, 2019).

In recent years, East African countries have increasingly adopted digital technologies to enhance performance management. For example, Rwanda has implemented a comprehensive e-government strategy that includes digital performance management systems for public sector employees (Rwanda Governance Board, 2021). Similarly, Tanzania has introduced electronic performance appraisal systems to improve transparency and accountability in the public sector (Mollel & Teyoteya, 2021).

In Uganda, the evolution of employee performance management has been shaped by the country's socio-economic development and public sector reforms. In the years following independence, the focus was primarily on expanding public sector employment to support nation-building efforts, often with limited attention to performance management (Muhumuza, 2019).

The 1990s and early 2000s saw a series of reforms in the public service that were aiming at improving efficiency and accountability. The introduction of the Results-Oriented Management (ROM) framework marked a shift towards performance-based management, with a focus on setting clear targets, monitoring performance, and linking performance to rewards and sanctions (Tumushabe, 2019).

More recently, Uganda has focused on enhancing employee performance through digital innovations. The government has implemented electronic Human Resource Management Systems (eHRMS) to streamline HR processes, monitor performance, and provide real-time feedback (Ministry of Public Service Uganda, 2021). Additionally, mobile-based performance monitoring tools have been introduced to track the performance of field staff and provide instant feedback (Nakisanze, 2020).

Since the early 2010s, the Ministry of Health has recognized the importance of e-governance in improving employee performance and elevating service delivery standards within the sector (Davis et al., 2022). Amidst challenges such as limited resources and a growing population with diverse healthcare needs, the Ministry has embarked on a transformative journey towards digitalization to address these pressing issues (Kiwanuka et al., 2023). For instance, initiatives like the District Health Information Software (DHIS2) have revolutionized data management systems, allowing health workers across the country to capture, analyze, and share health-related data in real time. Through DHIS2, the Ministry can monitor disease trends, track vaccination coverage, and assess the impact of various healthcare interventions, leading to more informed decision-making and better resource allocation at both national and district levels (Kyakulumbye et al., 2019).

Moreover, the introduction of telemedicine services in rural and remote areas since the mid-2010s has bridged the gap in access to specialized healthcare services, enabling patients to

consult with doctors and specialists remotely, thereby improving health outcomes and reducing the burden on physical health facilities (Anwar et al., 2021). Additionally, the e-Health Uganda platform, introduced in 2015, has facilitated the electronic management of medical records, which has allowed service providers to have access to patient information seamlessly, streamline care processes for patients, and minimize errors associated with manual record-keeping (Stone et al., 2020).

These e-governance initiatives not only enhance the efficiency and effectiveness in service delivery but also foster transparency and accountability within the Ministry (Kiwanuka et al., 2023). Different stakeholders, including; service providers, policy-makers, and beneficiaries, now have increased access to health-related information, enabling them to actively inform decision processes and hold public servants accountable for their actions. Despite the progress made, challenges such as limited ICT infrastructure, data privacy concerns, and resistance to change persist, highlighting the need for sustained efforts to solve the issues and fully leverage the potential of e-governance to advance public health outcomes in Uganda (Kiwanuka et al., 2023; Kyakulumbye et al., 2019).

1.2 Statement of the Problem

The Mid-Term Review (MTR) of the Health Sector Strategic Plan that was carried out in March 2023, revealed poor performance of the workforce in the Ministry of health headquarters that was characterized by delays in reporting, delays in issuing licences, bureaucracy, failure to meet employee targets, too much paper work which results into document loss, long waiting times for feedback, corruption, complaints on continuous delays, and bad health outcomes, absenteeism, low staff productivity, negative attitudes towards service delivery, rampant dualism as major constraints to the achievement of the Health Sector Strategic plan 2020/21-2025/26 and National Development Plan III 2020/21-2024/25.

The Health sector launched HMIS, DHIS2, HRHIS, OpenMRS and knowledge Management Portal as part of its on-going health sector reforms to improve health outcomes and boosting employee performance (NICT, 2021). Despite these efforts, challenges in employee performance still exist as reported in Annual health sector performance report, 2023. This threatens progress towards achieving better health outcomes as stipulated in National Development Plan III. Besides, There was a notable shortage of empirical evidence regarding the efficacy and effect of e-governance practices on employee performance (Ngabirano, et al., 2021). Therefore, there was a pressing need to systematically investigate the relationship between e-governance and employee performance in the context of the MOH headquarters

1.3 Purpose of the study

To investigate the relationship between e-governance and employee performance in the Ministry of Health Headquarters, Uganda

1.4 Specific objectives

The study sought to achieve the following specific objectives

1. To examine the relationship between e-application of services and employee performance at MOH headquarters
2. To examine the relationship between the implementation of e-database and employee performance at MOH headquarters
3. To investigate the relationship between the implementation of e-feedback and employee performance at the MOH headquarters

1.5 Research questions

The study sought to answer the following questions;

1. What is the relationship between the e-application of services and employee performance at MOH headquarters?
2. What is the relationship between the implementation of e-database and employee performance at MOH headquarters?
3. What is the relationship between the implementation of e-database and employee performance at MOH headquarters?

1.6 Research Hypothesis

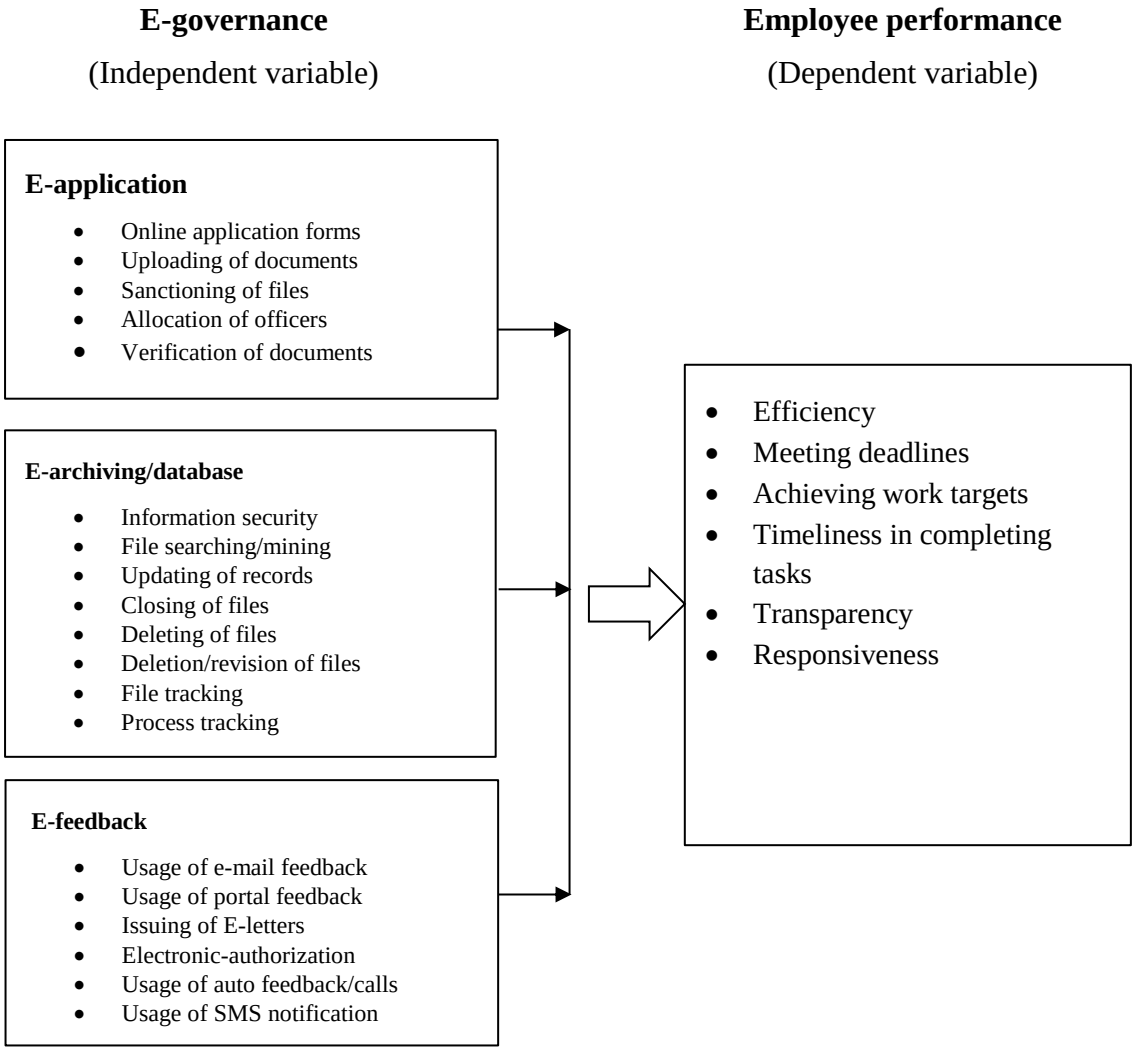
This study tested the following hypotheses;

H1: There is a significant relationship between the e-application of services and employee performance at MOH headquarters.

H2: There is a significant relationship between e-database and employee performance at MOH headquarters.

H3: There is a significant relationship between e-feedback and employee performance at MOH headquarters.

1.7 Conceptual framework



Source*: Adapted from Holm (2010) and revised*

Figure 1.1: Conceptual Framework for e-governance and employee Performance

The conceptual framework illustrated in Figure 1 outlines the relationship between e-governance and employee performance. E-governance is assessed through three components: e-application, e-database, and e-feedback. Employee performance is measured based on efficiency, meeting deadlines, achieving work targets, timeliness in completing tasks, transparency, and responsiveness.

According to the framework, the implementation of e-governance practices (e-application, e-database, and e-feedback) at the Ministry of Health is expected to enhance employee

performance in the aforementioned aspects. This model is influenced by the Technology Acceptance Model (TAM) proposed by Davis (1989), which emphasizes that the adoption and effectiveness of technology are determined by its "perceived usefulness" and "perceived ease of use."

TAM suggests that if employees perceive e-governance technologies as easy to use and beneficial, their acceptance and utilization of these technologies will likely improve their performance. Therefore, the positive impact of e-governance on employee performance is contingent upon the staff's perception of the technology's ease of use and its usefulness in enhancing their efficiency, meeting deadlines, achieving work targets, ensuring timeliness, and fostering transparency and responsiveness in their roles. The selection of efficiency and timeliness in achieving work targets as key performance indicators is supported by results from factor analysis, where these items loaded strongly onto a single performance factor. This confirms their empirical relevance as valid dimensions of employee performance. Their inclusion in the framework, therefore, reflects both theoretical grounding and statistical justification.

1.8 Scope of the study

1.8.1 Geographical scope

The study was conducted at the MoH headquarters on "Plot 6 Lourdel Road" Wandegeya Division, Kampala, the Capital City of Uganda, about 2.5 kilometers (2miles) to the North of Kampala, with Coordinates of; 0°19'59.0"N, 32°34'39.0" E (Latitude: 0.333044; Longitude: 32.577486). This institution was chosen because it had continuously experienced employee performance gaps including but not limited to; delays in reporting, approving of licences, bureaucracy, too much paper work which results into document loss, long waiting times for feedback, corruption, complaints on continuous delays, which have greatly contributed to the

bad health outcomes even after launching e-governance mechanism (Annual Health sector performance reports 2019/2020 to 2022/23).

1.8.2 Time scope

The study's focus was on the period 2020–2023 due to significant performance challenges at both individual and institutional levels at the MoH headquarters, as highlighted in the MOH Annual Performance Report (2022/2023). Moreover, this period coincided with the COVID-19 pandemic, which imposed unprecedented demands on the Ministry's workforce. Employees were expected to perform at their best, leveraging e-governance platforms to sustain essential health services amid widespread disruptions. The pandemic not only tested the resilience of health systems but also accelerated the adoption of digital tools, making this period a critical case study for evaluating the contribution of e-governance in maintaining and improving employee performance during a global crisis (Annual Performance Report, 2022/2023).

1.8.3 Content scope

The study explored the influence of e-governance on employee performance in the MoH Headquarters. The study specifically focused e-application, e-database, and e-feedback and their relationship with the employee performance (efficiency, meeting deadlines, achieving work targets, timeliness in completing tasks, transparency, responsiveness of staff) at MoH. These components were selected based on their prominence in the implementation of e-governance systems within the MoH and their direct influence on work processes, decision-making, and service delivery (MOH, 2023).

1.9 Justification of the study

World-wide, e-governance is one of the transformative forces in the health sector; facilitating improved service delivery, enhanced data management, and increased transparency (Kiwanuka

et al., 2023). In Uganda's context, where MOH has challenges such as limited resources, infrastructure gaps, and a rapidly growing population affect healthcare delivery, it is crucial to evaluate and understand the relationship between e-governance on employee performance is. This study aimed to investigate effectiveness of digital solutions in addressing administrative system challenges, healthcare challenges and improving outcomes for both healthcare providers, patients and clients by exploring how e-governance systems have been implemented and utilized within the Ministry. The findings will have practical implications for health care policy and practice in Uganda. Therefore, identifying successful e-governance strategies and best practices, will enable policymakers to make informed policy decisions regarding the allocation of resources, the design of healthcare interventions, and the implementation of digital health solutions. Additionally, healthcare administrators and managers might use the insights gained from this study to streamline work processes, optimize ICT usage, and foster an innovation culture within the Ministry. Ultimately, the study outcomes will contribute to strengthening Uganda's healthcare system and advancing the country's broader development goals related to health and well-being.

1.10 Significance of the Study

This study findings contributed to the existing body of knowledge on e-governance and employee performance in healthcare settings, particularly in the context of low-resource environments such as Uganda.

The research findings will serve as a valuable resource for future studies, enabling scholars and researchers to build upon the findings and explore new avenues for research in the area of e-governance and healthcare management.

Academia, policy experts, and researchers will use the study findings in designing better policies for guiding the management of Public Institutions in Uganda and other countries with similar settings.

Policymakers might use the study results to review and update the "Human Resources for Health" policy and other related policies not only in the MoH but also in other Ministries, Departments and Agencies of government.

The researchers will use the study findings to inform future research especially in exploring the connection between e-governance and other performance areas.

Other organizations will use study findings to improve their operational processes at minimal costs.

The study was conducted to partially satisfy the requirements for the award of a Master of Business Administration from Uganda Christian University

1.11 Operational definitions

E-application: The utilization of electronic applications or digital technologies by clients/stakeholders to apply for the services without necessarily visiting the premises physically.

E-archiving: The electronic storage and management of data, documents, or records in a digital format. This approach involves using database systems or specialized software applications to organize, store, retrieve, and maintain digital archives of information.

E-feedback: refers to the process of providing or receiving feedback through digital channels or platforms particularly encompassing the exchange of opinions, comments, authorization, signing, approvals, evaluations, or suggestions using electronic means such as email, online surveys, social media, or feedback forms on websites.

1.12 Chapter summary

Chapter one focused on background from the global, regional and local context. A problem statement, purpose, objectives, conceptual framework, scope, significance in regard to e-governance and employee performance at MOH headquarters formed conceptual framework presented. The next chapter details the review of literature.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter analyses the related literature on e-governance and employee performance based on what other authors have observed world over. The literature is based on the objectives of the study. The various sources of literature reviewed include; past research dissertations, textbooks, journals, conference papers, and magazines. The chapter is organized in four sections; introduction, theoretical review, empirical review in accordance with the specific objectives, and summary of the literature review.

2.1 Theoretical review

This study was guided by Technology Acceptance Model, developed by Davis (1989). According to the model, individuals are influenced by “perceived usefulness” and “perceived ease-of-use” in making decisions on whether to use a new technology or not (Davis, 1989).

The Technology Acceptance Model (TAM) was developed to explain the factors influencing individuals' decisions to adopt new technologies (Venkatesh et al., 2015). According to Davis (1989), the likelihood of people using a technology largely depends on how beneficial they perceive it to be in enhancing their performance. However, Davis also emphasized that the perceived usefulness of a technology alone may not guarantee its acceptance. He argued that even if a technology is deemed to improve performance, users might still reject it if they find it difficult to use. Therefore, the concept of ‘perceived ease of use’ plays a critical role in determining technology adoption.

Lai (2017) described TAM as a model within information systems that outlines the processes individuals go through when deciding to accept, integrate, and utilize new technologies. This model is particularly useful for those aiming to achieve technology literacy by guiding the adoption and effective use of new technological tools. Perski et al. (2022) argue that TAM assumes its belief constructs—perceived ease of use and perceived usefulness—fully capture the impact of external variables on IT usage behavior. This study adopts TAM as a theoretical foundation to explore how e-governance affects employee performance at the Ministry of Health Headquarters.

Different scholars hold varying perspectives on TAM. For instance, Okunogbe et al. (2022) view TAM as a model designed to examine the factors that influence technology adoption. They further suggest that the model's simplicity can spark curiosity and encourage the adoption of technology, although this may sometimes impact the actual use of the system. This aligns with Davis's (1989) earlier assertion that external factors, in addition to belief constructs, may influence the decision to accept an information system, as shown in Figure 2.1.

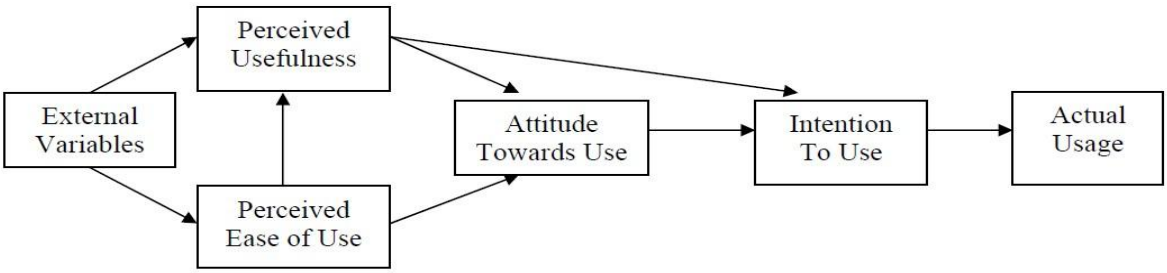


Figure 2.1: Technology Acceptance Model adapted from Davis (1989)

In line with Davis's argument, the adoption of e-governance practices at the Ministry of Health may also be influenced by external factors such as political, social, legal, economic, and technological elements. A study by Mustafa et al. (2021) tested the validity of TAM by examining its effectiveness in predicting the acceptance of computer usage among pre-service teachers, finding a strong correlation between TAM and technology adoption. Additionally,

Jiang, Chen, and Lai (2017) found that while individual behaviors towards technology acceptance are significant, they are incomplete without considering social factors and personal environments. Similarly, Bee et al. (2021) conducted a systematic review comparing TAM with consumer adoption of online banking and identified a strong correlation. Mustafa (2021) also observed that "perceived usefulness" and "perceived ease of use" have a direct influence on the intention to adopt technology, potentially shaping users' thought processes. Nadal et al. (2020) argued that the decision to accept a technology is often driven by the ongoing advancements in ICT applications, suggesting that both individuals and organizations are more likely to adopt a service if they perceive it as valuable. However, Khatib et al. (2020) emphasized the importance of considering social and environmental factors in this decision-making process.

TAM has faced criticism for its limited empirical value, weak predictive power, and lack of real-world applicability (Granić & Marangunić, 2019). Rahimi et al. (2018) supported Davis's (1989) view that perceived usefulness is a key factor in determining whether individuals will use an application, based on its ability to enhance performance. However, Rahimi et al. (2018) also cautioned that these two factors alone may not be sufficient to predict technology adoption. Consequently, organizations like the Ministry of Health should carefully weigh the factors that encourage technology adoption to avoid situations where the perceived difficulty of use outweighs the benefits.

In a study by Okafor, Nico, and Azman (2016), it was found that perceived ease of use did not influence the adoption of audio-visual aid technology among SMEs in Malaysia. Participants in the same study also indicated that perceived usefulness did not necessarily predict their intention to adopt a combination of media technologies in the future. Rahimi et al. (2018) highlighted the limitations of TAM, noting that most studies validating the theory have focused on academic settings rather than business contexts.

Mohamed et al. (2021) offered a different perspective, arguing that TAM is insufficient for explaining technology adoption as it overlooks the societal influences that shape technology adoption. They contended that TAM is inadequate for examining technology adoption from an individual perspective because factors such as environment, exposure, society, and economic status collectively impact an individual's decision to adopt and use technology.

Despite its limitations, TAM was used in this study to explore how e-governance affects employee performance at the Ministry of Health headquarters. The theory suggests that staff at the Ministry may be more likely to adopt e-governance tools (such as e-applications, e-databases, and e-feedback systems) if they perceive these technologies as both useful in addressing performance challenges and easy to use.

2.2 Empirical review of literature

2.2.1 E-application of services and employee performance

Globally, e-applications have been instrumental in transforming healthcare management and administration, offering solutions for data management, decision support, and resource allocation (Anwar et al., 2021). Consistent with this, Larson (2019) conducted a meta-analysis of e-health interventions worldwide, highlighting their ability to streamline administrative processes and enhance employee efficiency within healthcare systems. However, empirical studies like Smith et al., (2020) emphasize the significance of aligning e-applications with employee goals and user needs to maximize their effectiveness.

In Africa, the adoption of e-applications by healthcare institutions in different countries has gained momentum in the last decade (Singh et al., 2018). Studies like Osei et al. (2018) investigated the impact of e-health initiatives on governance of healthcare in Ghana,

highlighting improvements in data management and processes of making decisions at the national level. Similarly, studies in South Africa by Ndlovu et al. (2019) demonstrated the effectiveness of e-services in facilitating communication and collaboration among healthcare stakeholders, enhancing coordination of healthcare delivery efforts.

According to Kiwanuka et al (2023), the electronic application of services has the potential to improve operational functions of governments in the East African region. Relatedly, Mbarika et al. (2017) evaluated the implementation of electronic health records systems in Tanzanian hospitals, revealing improvements in data accuracy, information sharing, and policy formulation processes. Additionally, studies in Ethiopia by Arega et al. (2020) highlighted the role of e-services in strengthening health information systems and facilitating evidence-based decision-making at the national level.

In Uganda, several studies have explored the impact of e-governance on public service delivery and citizen engagement. For example, Nabunya and Mawejje (2017) investigated how e-governance affects public service delivery in Uganda. Their study revealed that e-governance positively influenced service delivery, especially in areas like tax administration, land registration, and business registration. Similarly, Kibirige and Katongole (2017) focused on the role of e-governance in enhancing citizen engagement in Uganda. They found that e-governance significantly improved citizen involvement, particularly in sectors such as health, education, and agriculture. Their research also emphasized the importance of ongoing training and capacity building for those involved in e-governance initiatives.

Empirical studies have provided insights into the adoption and outcomes of e-applications by the Ministry of Health. For instance, Kabayiza et al (2020) explored the use of telemedicine for healthcare planning and resource allocation, demonstrating its potential to enhance access to specialized services and optimize healthcare delivery strategies. In other settings, Mugume et al. (2019) did a qualitative study assessing the effect of e-tax systems on revenue

management practices, revealing improvements in tax compliance and revenue collection efficiency.

While empirical evidence suggests the potential benefits of e-applications for supporting the functions of the Ministry of Health headquarters, several critical considerations warrant attention. These include the need for putting in place data governance frameworks which are robust and can support security and privacy, capacity-building initiatives to enhance digital literacy among healthcare personnel, and sustainable funding mechanisms to support the adoption and maintenance of e-services (Kiwanuka et al., 2023; Mustafa et al., 2021; Rahimi et al., 2018). Furthermore, the integration of e-applications into employee workflows should be supported by robust change management strategies to reduce resistance and facilitate smooth implementation. Empirical research offers important insights into the adoption and impact of e-applications by the Ministry of Health headquarters in Uganda and other regions. Therefore, policymakers and healthcare administrators can unlock the transformative potential of e-services, ultimately enhancing employee effectiveness and improving health outcomes at the national level by utilizing these findings and addressing key challenges.

2.2.2 E-database and employee performance

E-databases have revolutionized data management practices worldwide, offering efficient storage, retrieval, and analysis of vast amounts of information within various sectors, including healthcare (Abah et al., 2019; Akpan-Obong et al., 2023; Mustafa et al., 2021). Globally, studies have highlighted the transformative impact of e-databases on Health Information Systems (HIS) and public health surveillance. A meta-analysis done by Smith et al. (2018) emphasized the role of e-databases in improving disease monitoring and response coordination, leading to enhance epidemic control and healthcare resource allocation. Similarly, research by Johnson and Patel (2019) underscored the importance of inter-operable e-databases in

facilitating data sharing and collaboration among healthcare institutions and policymakers on a global scale.

Research conducted across various African countries has highlighted the potential of e-databases to enhance health information systems and support evidence-based policymaking. For instance, Osei et al. (2017) assessed the implementation of an e-database for disease surveillance in Ghana, finding significant improvements in data accuracy and timeliness, which led to more targeted public health interventions. Similarly, Adeleke et al. (2019) examined the role of e-databases in Nigeria for monitoring healthcare service delivery and resource allocation, which contributed to better maternal and child health outcomes.

In the East African region, e-databases have been instrumental in promoting data-driven decision-making within the healthcare sector. Studies in Kenya, Tanzania, and Rwanda offer valuable insights into the adoption and impact of e-databases in managing health information. Mbarika et al. (2016) evaluated the implementation of an e-database for electronic medical records in Tanzanian hospitals, noting improvements in data quality, accessibility, and patient care coordination. Similarly, research by Kifle et al. (2018) on e-databases for disease surveillance in Kenya highlighted their effectiveness in the early detection and response to infectious disease outbreaks.

In Uganda, the government has played a pivotal role in establishing policies and guidelines for adopting and utilizing e-databases within the healthcare system (Kiwanuka et al., 2023). Empirical studies have explored the implementation and outcomes of e-databases across various healthcare settings in the country. For example, Mugume et al. (2020) conducted a qualitative study on the impact of an e-database for health facility management, reporting enhancements in data accuracy, service delivery efficiency, and resource allocation. Additionally, Kabayiza et al. (2018) examined the use of e-databases for disease surveillance

and reporting in rural Ugandan communities, demonstrating their potential to improve public health surveillance and response capabilities.

While empirical evidence points to the benefits of e-databases in enhancing healthcare data management and decision-making, several challenges persist. These include concerns related to data privacy and security, interoperability, and sustainability (Maiga, 2019; Oyo et al., 2022). Addressing these challenges requires a comprehensive approach, including the development of robust data governance frameworks, investment in technological infrastructure and capacity building, and active stakeholder engagement to ensure support for e-database initiatives.

Moreover, as Maiga (2019) suggests, the integration of e-databases into existing health information systems necessitates careful planning and coordination to prevent duplication of efforts and data fragmentation. Collaboration among stakeholders, such as government agencies, healthcare providers, and technology partners, is essential to ensure the interoperability and scalability of e-database solutions (Kagoya et al., 2019). Additionally, ongoing monitoring and evaluation are crucial to assess the impact of e-databases on healthcare delivery outcomes and to guide continuous quality improvement efforts.

Overall, e-databases have the potential to transform healthcare data management practices and support evidence-based policymaking in public institutions.

In African countries, the usage of e-databases in healthcare has been pivotal in addressing data management challenges and improving health outcomes (Kiwanuka et al., 2023). Studies conducted across various African countries have demonstrated the potential of e-databases to strengthen health information systems and support evidence-based policymaking. For example, Osei et al. (2017) evaluated the implementation of an e-database for disease surveillance in Ghana, reporting significant improvements in data accuracy and timeliness, leading to more targeted public health interventions. Relatedly, research in Nigeria by Adeleke et al. (2019)

highlighted the role of e-databases in monitoring healthcare service delivery and resource allocation, contributing to improved maternal and child health outcomes.

In East African region, e-databases have played a crucial role in enhancing data-driven decision-making processes within the healthcare sector. Studies conducted Kenya, Tanzania, and Rwanda have provided valuable insights into the adoption and impact of e-databases in health information management. For instance, Mbarika et al. (2016) assessed the implementation of an e-database for electronic medical records in Tanzanian hospitals, revealing improvements in data quality, accessibility, and patient care coordination. Similarly, research by Kifle et al. (2018) examined the utilization of e-databases for disease surveillance in Kenya, highlighting their effectiveness in early detection and response to infectious disease outbreaks.

In Uganda, government has played a critical role in establishing policies and guidelines for the adoption and utilization of e-databases within the healthcare system (Kiwanuka et al., 2023). Empirical studies have explored the implementation and outcomes of e-databases in various healthcare settings across the country. For example, Mugume et al. (2020) conducted a qualitative study assessing the impact of an e-database for health facility management, reporting improvements in data accuracy, service delivery efficiency, and resource allocation. Additionally, research by Kabayiza et al (2018) investigated the use of e-databases for disease surveillance and reporting in rural Ugandan communities, demonstrating their potential to enhance public health surveillance and response capabilities.

Whereas empirical evidence suggests the benefits of e-databases for improving healthcare data management and decision-making processes, several challenges persist. These include issues related to data privacy and security, interoperability, and sustainability (Maiga, 2019; Oyo et al., 2022) Efforts to address these challenges require a multi-faceted approach, including the development of robust data governance frameworks, investment in technological infrastructure

and capacity building, and stakeholder engagement to ensure buy-in and support for e-database initiatives.

Furthermore, as suggested by Maiga (2019), integration of e-databases into existing health information systems requires careful planning and coordination to avoid duplication of efforts and fragmentation of data. Collaboration among stakeholders, including government agencies, healthcare providers, and technology partners, is essential to ensure the interoperability and scalability of e-database solutions (Kagoya et al., 2019). Additionally, ongoing monitoring and evaluation are critical to assess the impact of E-databases on healthcare delivery outcomes and inform continuous quality improvement efforts.

From the literature, e-databases have the potential to revolutionize healthcare data management practices and support evidence-based policymaking in public institutions. Through addressing key challenges and leveraging best practices from global and regional experiences, policymakers and healthcare stakeholders can harness the full potential of e-databases to improve health outcomes and advance public health priorities.

2.2.3 E-feedback and employee performance

World-wide, e-feedback systems have emerged as crucial tools for improving healthcare quality, patient satisfaction, and employee performance (Azizi et al., 2021). Empirical studies have highlighted the transformative impact of e-feedback on healthcare delivery processes and outcomes. For example, a meta-analysis by Smith et al. (2018) emphasized the role of e-feedback in enhancing clinical decision-making, fostering continuous quality improvement, and reducing medical errors. Additionally, research by Johnson and Patel (2019) underscored the importance of e-feedback systems in promoting patient engagement, facilitating communication between patients and healthcare providers, and improving health outcomes.

In Sub-Saharan Africa, the adoption of e-feedback systems in healthcare has been gaining traction, driven by efforts to improve patient-centered care and strengthen health systems (Kagoya et al., 2019). Research conducted in various African countries has shown the potential of e-feedback systems to address challenges related to healthcare quality and accessibility. For example, Osei et al. (2017) evaluated the implementation of an e-feedback system for monitoring patient satisfaction in Ghana, finding that it led to improvements in service delivery responsiveness and increased patient trust in healthcare facilities. Similarly, Adeleke et al. (2019) highlighted the role of e-feedback systems in Nigeria in enhancing accountability and transparency in healthcare service delivery, which resulted in better patient outcomes and improved employee performance.

In the Great Lakes Region, e-feedback systems have been instrumental in improving healthcare service delivery and patient engagement (Maiga, 2019). Research in countries such as Kenya and Tanzania has provided important insights into the adoption and impact of e-feedback initiatives. For instance, Mbarika et al. (2016) assessed the implementation of an e-feedback system aimed at healthcare quality improvement in Tanzanian hospitals, finding that it led to higher patient satisfaction and greater responsiveness from healthcare providers. Similarly, Kifle et al. (2018) studied the use of e-feedback systems for monitoring community health worker performance in Kenya, demonstrating their effectiveness in promoting accountability and optimizing performance.

In Uganda, the Ministry of Health has developed policies and guidelines to support the adoption and use of e-feedback systems within the healthcare system (Kiwanuka et al., 2023). Empirical studies have examined the implementation and outcomes of e-feedback initiatives across various healthcare settings in the country. For example, Mugume et al. (2020) conducted a qualitative study on the impact of an e-feedback system for evaluating healthcare provider performance, reporting improvements in service quality and increased patient satisfaction.

Additionally, Kabayiza et al. (2018) investigated the use of e-feedback systems for enhancing patient engagement and communication in rural Ugandan communities, demonstrating their potential to improve healthcare access and quality.

Whereas empirical evidence suggests the benefits of e-feedback systems for improving healthcare quality and patient engagement, several gaps persist. These include issues related to data privacy and security, digital literacy, and cultural barriers to feedback participation (Anand & Khemchandani, 2019; Kagoya et al., 2019). Therefore, efforts to address these challenges require a multi-faceted approach, including the development of user-friendly feedback platforms, capacity building initiatives for healthcare providers and patients, and community engagement strategies to promote feedback culture as suggested by Akpan-Obong et al (2023).

As suggested by Kagoya et al (2020), the integration of e-feedback systems into existing healthcare delivery processes requires careful planning and coordination to ensure their effectiveness and sustainability. Therefore, it is essential to ensure collaboration among stakeholders, including Ministries, Departments and Agencie, healthcare providers, and technology partners, is essential to design and implement e-feedback solutions that meet the needs of diverse populations. Moreover, the ongoing monitoring and evaluation are critical to assess how e-feedback systems affects healthcare outcomes and inform continuous quality improvement efforts.

From the literature, is it revealed that e-feedback systems have the potential to revolutionize healthcare delivery processes and patient engagement within the Ministry of Health in Uganda and beyond. Through addressing key challenges and leveraging best practices from global and regional experiences, policymakers and healthcare stakeholders can harness the full potential of e-feedback to improve health outcomes and advance public health priorities as suggested by (Kyakulumbye et al., 2019).

2.3 Summary of the literature

This literature review presented a thorough overview of the Technology Acceptance Model, as well as e-application, e-database, and e-feedback mechanisms, highlighting their global, African, East African, and Ugandan significance. The literature examined revealed a lack of scientific evidence regarding the impact of e-governance on employee performance, especially in low-resource contexts. While some research had investigated how e-governance enhances public sector service delivery, few empirical studies have specifically looked at the effects of components like e-application, e-database, and e-feedback on individual employee performance. Furthermore, much of the existing literature had concentrated on service efficiency and citizen participation, neglecting internal organizational results such as staff productivity, efficiency, and timeliness. There was no clear agreement on the influence of e-governance on employee performance, particularly in health ministries of developing nations. Although theoretical perspectives suggested that individuals and organizations are inclined to adopt technology they find useful and user-friendly, there was minimal contextual evidence from Uganda that connects these theoretical views to actual employee outcomes. Consequently, this study filled these gaps by empirically exploring the connection between e-governance and employee performance at the Ministry of Health headquarters in Uganda, providing context-specific insights and practical recommendations for policy and organizational enhancement.

2.4 Chapter summary

This chapter presented the sources of literature, theoretical review, empirical review by objectives and the research gaps. The next chapter presents the research methodology.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter outlines the procedures followed to generate the research findings. It covers the research design, study area, sources of information, study population, determination of sample size, sampling techniques and procedures, data collection methods, data collection instruments, validity and reliability, data collection process, data analysis, measurement of variables, dissemination of findings, and methodological constraints.

3.1 Research design

The study used a correlational study design, focusing on examining relationships between e-governance components (e-application, e-database, e-feedback) and performance of employees at Ministry of Health. This design was chosen because it allows for the analysis of relationships between variables without manipulating them, making it suitable for exploring associations and predicting outcomes based on observed data (Thomas, 2021). The correlational design was both efficient and effective for analyzing the strength and direction of these relationships among Ministry of Health staff. Additionally, the study employed a mixed-methods approach, incorporating both quantitative and qualitative methods. The quantitative approach was used for its effectiveness in analyzing larger populations and establishing statistical relationships, while the qualitative approach provided insights into respondents' views, attitudes, and experiences, offering a deeper understanding of the phenomena in their natural setting and explaining the underlying reasons behind the observed relationships (Thomas, 2021).

3.2 Area of study

The study was conducted at the Ministry of Health headquarters, located on Plot 6 Lourdel Road in Wandegeya Division, Kampala, the capital city of Uganda, approximately 2.5 kilometers (2 miles) north of Kampala's city center.

3.3 Sources of information

The study utilized both primary and secondary data. Primary data was gathered directly from respondents at the Ministry of Health, while secondary data was sourced from publications, journal articles, textbooks, and other relevant materials.

3.4 Study Population

The study population comprised of 648 employees at the Ministry of Health headquarters (Staff with government contracts and Project supported staff), taking the categories of; Top leadership, Middle level managers, and Operational officers.

3.5 Study sample and sampling techniques

This section describes how the procedure that was used to determine the study sample and the sampling techniques used for different population categories.

3.5.1 Determination of sample size

The study employed a sample of 250 respondents, determined according to Krejcie and Morgan's (1970) sampling guidelines. These respondents were selected from various sub-population groups, as detailed in Table 3.1 below.

Table 3.1 Sample size and sampling techniques

Category	**Population**	**Sample**	**Sampling techniques**
Top management (Ministers, PS, undersecretary & Directors)	6	6	Census sampling
Middle level managers (Commissioners)	13	10	Purposive sampling
Operational staff (Principal, Senior and Junior officers)	629	234	Stratified sampling
TOTAL	**648**	**250**	

Source: S***taff list from HR department***

3.5.2 Sampling techniques and procedure

In this study, the researcher employed both probability and non-probability sampling techniques in selecting study participants as per Cooper et al (2020). The sampling techniques are further explained below;

3.5.2.1 Census sampling

The study used Census sampling where by all the individuals in the population category were selected to participate in the study. The technique was applied in selecting respondents in the category of Top management (Ministers, PS, undersecretary & Directors). This sampling method would generate reliable data since information was got from all the individuals in the population category. Besides, the technique was convenient for small populations like that of Top Management at Ministry of Health.

3.5.2.2 Purposive sampling

The study employed purposive sampling to select participants in the category of Middle-level managers (Commissioners/Heads of Departments). This technique involved the researcher

using their own judgment and expertise to identify respondents who were deemed to have relevant information for the study's objectives. Subjects were specifically chosen for their knowledge and insight into the issues being investigated. The purposive sampling method was selected due to its cost-effectiveness in terms of time, manpower, and financial resources. This approach allowed the researcher to gather detailed and meaningful information regarding employee performance at the Ministry of Health headquarters

3.5.2.3 Stratified sampling

This sampling technique was employed to select respondents in the category of Operational staff (Principal, Senior and Junior officers). The technique involved sampling from all departments of the Ministry. Stratified sampling was used because it would enable the researcher to get diversity of views on e-governance and employee performance since the respondents were selected according to the departments in which they served.

3.6 Procedure for data collection

This section presents the procedure that was followed in collecting qualitative and quantitative data.

3.6.1 Quantitative data collection

An introductory letter from Uganda Christian University was obtained, authorizing the researcher to conduct the study at the Ministry of Health. Additionally, a cover letter detailing the study was attached to the questionnaire and interview guide. The researcher distributed self-administered questionnaires, created using Google Forms, which were sent to respondents via email. Respondents were given 10 working days to complete and submit the online questionnaires to accommodate their busy schedules. This method was chosen for its uniformity and to prevent interference from the interviewer.

Additionally, the online questionnaire allowed flexibility where by respondents were able to fill the questionnaires even when they were out of station. After submission, the researcher checked the questionnaires in the database for completeness and clarity. Excel dataset was downloaded, coded, and uploaded into the Statistical Package for Social Sciences (SPSS-v25) for analysis.

3.6.2 Qualitative data collection

Qualitative data from the interviews was transcribed in real time, and at the conclusion of each interview, the interviewer reviewed the records to ensure clarity and completeness. Key informant interviews were conducted with members of top management and commissioners at the Ministry of Health, providing the researcher with detailed, accurate, and in-depth information that could not be obtained through questionnaires alone. These interviews allowed the researcher to explore topics more thoroughly and address any issues that might have been overlooked in the questionnaires but were essential for the study. During the interviews, the researcher took notes and recorded findings in a notebook, which were then analyzed, processed, and presented.

3.7 Data collection instruments

The data was collected using a questionnaire and an interview guide.

3.7.1 Questionnaire

A close-ended questionnaire was utilized, divided into sections covering Background Information, e-Application of Services, e-Database, e-Feedback, and Employee Performance at the Ministry of Health. The questionnaire employed a five-point Likert scale, as standardized by Cooper et al. (2018), to collect quantifiable primary data from respondents. This scale ranged from “Strongly Disagree” to “Strongly Agree,” allowing for the measurement of respondents’ levels of agreement with specific statements related to e-governance practices and performance outcomes. The use of a structured Likert scale facilitated consistency in responses,

enabling robust statistical analysis, including correlation and regression. This tool was specifically used to gather data from respondents in the category of Operational Staff, who were directly involved in day-to-day service delivery and more likely to interact with the e-governance systems under study. Their insights were considered vital, as they provided first-hand experience of how e-application, e-database, and e-feedback systems influenced their efficiency, responsiveness, and ability to meet performance targets

3.7.2 Interview guide

An interview guide was utilized to generate responses from members of Top Management and Commissioners. The guide enabled the researcher to obtain in-depth data regarding the relationship between e-governance and employee performance at the MoH headquarters. Unlike the structured questionnaire administered to operational staff, the interview guide comprised open-ended questions that facilitated flexibility and probing, allowing respondents to elaborate on their experiences, insights, and perceptions. This approach was particularly effective for capturing strategic-level perspectives on policy implementation, challenges, and institutional readiness related to e-governance.

Top management and commissioners were chosen for their leadership roles and oversight responsibilities in the design, deployment, and monitoring of e-governance systems. Their input provided valuable context on how high-level decisions and institutional frameworks shape the effectiveness of e-applications, e-databases, and e-feedback mechanisms in enhancing employee performance. The qualitative data obtained through the interview guide complemented the quantitative findings and deepened the overall understanding of the study objectives.

3.8 Data Quality Control

3.8.1 Validity

The validity of instruments was tested using Content Validity Index (CVI). The Content Validity Index of the instruments was ascertained through expert judgment of the relevance to the study of the various items in the data collection instruments and a consensus judgment was given on each variable taking only variable scoring above 0.70, as recommended by Thomas (2021). This helped the researcher to determine the credibility, accuracy, and correctness of the questionnaire.

$$\text{CVI} = \frac{Number\ of\ items\ declared\ valid}{Total\ number\ of\ items\ in\ the\ instrument}$$

The results of validity are presented in Table 3.4 below;

Table 3.2: Content validity results

Variable	Total number of items	Number of valid items	CVI
e-application	14	10	0.72
e-database	12	11	0.92
e-feedback	12	11	0.91
Employee performance	13	12	0.92

Source: Expert Judgement

From Table 3.2, e-application yielded CVI of 0.72, e-database yielded 0.92, e-feedback yielded 0.91 and employee performance yielded 0.92. All the variables produced CVI greater than 0.70 which is the considered acceptable for Social Sciences Research, according to Amin (2005). Therefore the instruments were declared relevant and valid.

3.8.2 Reliability

The study instruments were pretested using the first 10 respondents, who not later participate in the data collection exercise. Reliability was used determine the consistency of the data instruments. Cronbach's alpha coefficient was computed to show the reliability of data using

Statistical Package for Social Sciences (SPSS-V25), taking only variables that score 0.7 as suggested by Thomas (2021). The Cronbach's alpha formula is as follows;

$$\text{Cronbach's alpha, } \alpha = \frac{N\acute{c}}{\tilde{v}+(N-1)\acute{c}}$$

Where, N signifies a number of items, ć average covariance between item pairs and $\tilde{v}$ is the average variance.

Table 3.3 Cronbach's alpha value and the level of consistency

Cronbach's alpha	**Internal consistency**
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	unacceptable

The results of reliability analysis are presented in Table 3.4 below

Table 3.4 Reliability Statistics

	Reliability Statistics	
Variable	**Cronbach's Alpha**	**N of Items**
e-application	0.830	14
e-database	0.889	12
e-feedback	0.977	12
Employee performance	0.812	13

Source: Primary data

From Table 3.4, all the variables had a Cronbach's alpha greater than 0.7 which is the acceptable minimum value, according to Amin (2005). Therefore research instruments were reliable and consistent in collecting data. Results in Table 3.4 were generated basing on the Cronbach's alpha value and the level of consistency in Table 3.3.

3.9 Data analysis

3.9.1 Quantitative data Analysis

Quantitative data was analysed at univariate, bi-variate and multivariate levels as explained below;

3.9.1.1 Univariate analysis

At the univariate level, data were analyzed using descriptive statistics to summarize the characteristics of each variable individually. Descriptive statistics, such as means and standard deviations, were computed to provide an overview of the central tendency and dispersion of the variables, as recommended by Denis (2021). The mean and standard deviation of responses concerning e-application, e-database, e-feedback, and employee performance were calculated to understand their general patterns and variability among the Ministry of Health staff. This analysis provided a comprehensive understanding of the individual variables under investigation, laying the groundwork for further exploration at higher levels of analysis.

3.9.1.2 Bivariate analysis

At the bivariate level, Pearson correlation coefficients were used to examine the pairwise relationships between e-application, e-database, e-feedback, and employee performance. This analysis helped in identifying the strength and direction of the relationships between each pair of variables as recommended by Denis (2021). The correlations between e-application, e-database, and e-feedback and employee performance were assessed to determine how these e-governance components are associated with employee performance.

3.9.1.3 Multivariate analysis

At the multivariate level, multiple regression analysis was conducted to assess the impact of e-application, e-database, and e-feedback on employee performance simultaneously. This

analysis allowed for evaluating the unique contribution of each e-governance component while controlling for the effects of the others. The regression coefficients, along with their significance levels, were used to interpret the relative importance of each component in explaining the variance in employee performance. This analysis provided deeper insights into the complex interactions among e-governance variables and their combined influence on employee performance.

3.9.2 Qualitative Data Analysis

Qualitative data was analyzed using content analysis, where information from the interviews was categorized into major themes such as e-application of services, e-database, and e-feedback. These themes were then presented through narratives provided by the respondents. Implications, conclusions, and inferences about e-governance and employee performance at the Ministry of Health headquarters were drawn from this qualitative information. Efforts were made to cross-examine the qualitative data with the quantitative findings to identify areas of agreement and disagreement. This process helped assess the quality of the quantitative data in the study.

3.10 Ethical consideration

The study was conducted with sensitivity due to its focus on assessing employee performance at a public institution like the Ministry of Health headquarters. To mitigate potential negative impacts on respondents, the researcher adhered to all professional research guidelines, including obtaining an official introductory letter from Uganda Christian University. Proper citations and references were used for all sources.

Additionally, oral consent was sought from each respondent before any interviews took place. This process involved explaining the study's objectives, potential risks, and benefits, and

ensuring that respondents understood their right to confidentiality and their freedom to participate or withdraw from the study at any time.

3.11 Measurement of variables

The variables in the study were measured at the nominal and ordinal scales of measurement. Specifically, members were nominally assigned to the different attributes of respondent's bio-data which resulted into categorization of the respondents according to these attributes. On the other hand, e-governance and employee performance was measured at ordinal level, where responses to the various questions were assigned numbers depicting the extent of agreement or disagreement with a certain view. A five-point Likert scale namely; 1=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree" were used to measure both the independent and dependent variables.

3.12 Chapter summary

Chapter Three covered the methodological aspects of the research, including the research design, population, sampling techniques, research instruments and their validity, data collection methods, data analysis methods, and ethical considerations. This chapter provided the foundation for writing of Chapter Four.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.0 Introduction

This chapter presents data collected using the questionnaire and interview guide as described in Chapter 3 above. The corresponding interpretations also follow each presentation. The results of the study are presented according to the study objectives. All the responses are presented in form of frequencies, percentages, mean, standard deviations, correlation and regression matrices which are presented in tables. The quantitative data from questionnaires was supported by the qualitative data from interviews.

4.1 Response rate

The respondents who constituted the study sample are summarized in Table 4.1 below.

Table 4.1 Response rate

Category of respondent	**Number expected**	**Number responded**	**Response rate**
Top management (Ministers, PS, Undersecretary & Director general)	6	5	83.3%
Middle level managers (Commissioners)	10	8	80%
Operational staff (Principal, Senior and Junior officers)	234	209	83.6%
Total /overall response rate	**250**	**222**	**88.8%**

Source: Primary data

A total of 234 questionnaires were distributed to members of the Operational staff (Principal, Senior, and Junior officers). Of these, 209 were completed and returned on time, resulting in a response rate of 83.6%, as shown in Table 4.1. According to Darren (2002), a response rate

above 80% indicates that the study was well-executed, with respondents having a clear understanding of the questions.

Additionally, the researcher aimed to conduct interviews with six members of top management (Ministers, Permanent Secretaries, Undersecretaries, and Directors). Five interviews were successfully conducted, yielding a response rate of 83.3%. For Middle-level managers (Commissioners), the researcher planned to interview ten individuals, of whom eight were interviewed, resulting in a response rate of 80%.

Overall, the study targeted a sample of 250 respondents, with 220 fully participating, achieving an overall response rate of 83.8%. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate, 60% is good, and above 70% is very good. Thus, the response rate for this study was considered very good.

4.2 Findings on demographic characteristics of the respondents

The respondents' demographic information was considered for this study, since it might affect the ability of the respondents to adopt and embrace the use of e-governance systems. The aspects covered herein were; duration on current job, age, gender, level of education, and religion of the respondents. The rationale of collecting and analysing background data was to have appropriate opinion about the study findings.

Table 4.2: Findings on the background characteristics of the respondents

		Frequency (N=209)	Percent (%)
Duration on current job	Less than one year	0	0.0%
	1-2 years	175	83.7%
	3-5 years	32	15.3%
	5-10 years	2	1.0%
	10 years and above	0	0.0%
Age	18-25 years	5	2.4%
	26-35 years	82	39.2%
	36-45 years	119	57.0%
	46-55 years	3	1.4%
	55 years and above	0	0.0%
Gender	Male	113	54.1%
	Female	96	45.9%
Level of education	Certificate	0	0.0%
	Diploma	77	36.8%
	Bachelors	130	62.2%
	masters	2	1.0%
	PhD	0	0.0%
Religion	Catholic	121	57.9%
	Protestant	85	40.7%
	Moslem	3	1.4%

Source: Primary data

The duration of respondents' tenure in their current job was used to assess their experience with the operations at the Ministry of Health headquarters. The study revealed that 83.7% of the respondents had been with the Ministry for 1-2 years, 15.3% for 3-5 years, and only 1% for 5 years or more. Overall, the majority of respondents (83.7%) had over one year of experience with the Ministry, indicating that they had substantial experience and were likely to provide reliable responses.

On the other hand, age was used to describe respondent's characteristics since it greatly influences an individual's decision to accept or reject modern technology like e-governance systems. Findings indicate that majority of the respondents (57%) were in category of 36-45 years, followed by 39.2% who were in the category of 26-35 years, 2.4% in the category of 18-25years and 1.4% in the category of 46-55years. From the findings, over 65% of the

respondents were still in their youthful ages and therefore were expected to embrace the use of e-governance systems.

Gender was analyzed to understand respondents' characteristics, as opinions on e-governance practices may differ between males and females. The findings indicated that 54.1% of the respondents were male and 45.9% were female. Despite this variation, the results showed that the views of both male and female staff on e-governance and employee performance at the Ministry of Health headquarters were well represented.

Education level was also considered to gauge respondents' perspectives, as individuals with different educational backgrounds may have varying opinions on e-governance and employee performance. The results revealed that 36.8% of respondents had a diploma, 62.2% had a bachelor's degree, and only 1% had a master's degree. This suggests that the majority of respondents had the necessary qualifications for Ministry of Health operations, with over 60% holding at least a bachelor's degree.

Religion was another characteristic used to understand respondents' views, as opinions on e-governance practices and employee performance may vary by religious affiliation. The findings showed that the majority of respondents were Catholic (57.9%), followed by Protestants (40.7%), and a small percentage were Muslim (1.4%). This indicates that the opinions on e-governance and employee performance were representative of various religious backgrounds.

4.3 Empirical results

4.3.1 Descriptive statistics on e-application of services

The first objective was to examine the relationship between e-application of services and employee performance at MOH headquarters. The variable was measured using 14 items which

were given scores on “a five point Likert scale of; 1=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree”. The results are presented in Table 4.3 followed by analysis and interpretation.

Table 4.3: Descriptive statistics for e-application of services

	N	Min	Max	Mean	Std. Deviation
I access documents uploaded by our clients and save them locally in our local databases	209	2	5	4.34	.506
The e-application systems have embedded user manuals that equip me with skills to utilize its features for data analysis	209	1	5	4.42	.600
I can electronically sanction files and forward them to the Top management for approval	209	2	5	4.26	.674
The supervisors conduct online allocation of tasks to relevant technical officers	209	1	5	4.33	.657
I do online verification of client documents upon completion of application processes	209	1	5	4.38	.640
The Ministry provides online application templates that guide applicants of different services in providing relevant information for official use	209	2	5	4.65	.509
The ministry has online user-friendly platforms that are accessible to members of the public and stakeholders	209	1	5	4.48	.701
Online application platforms have reduced our administrative burden	209	1	5	4.32	.711
We receive uploaded files in real time without any delays	209	1	5	4.24	.687
The security of application processes is high since everything is done online	209	2	5	4.44	.553
The Ministry of Health staff can interact with clients in real-time to support them in making applications for different services	209	1	5	4.57	.705
I am able to reduce errors in information provided during online applications	209	2	5	4.35	.544
The applicants can make online inquiries before completing applications	209	1	5	4.27	.697
Our online platforms provide easy access to automated guidance	209	2	5	4.35	.507
Overall mean				**4.385**	**0.621**
Valid N (listwise)	209				

Source: Primary data

Results in Table 4.3 revealed a high level of agreement that e-application systems were used at the Ministry of Health (Mean =4.385 & SD =0.621). A high mean (Mean=4.385) shows that the study respondents agree that e-applications were used in the MoH. The relatively low overall standard deviation of 0.621 suggested that the responses were fairly consistent across the board. Several specific statements demonstrated a particularly high level of agreement among respondents. For stance, majority of the respondents strongly agreed that the Ministry provided online application templates that guide applicants of different services in providing relevant information for official use (Mean=4.65 & SD=0.509). Also, they highly perceived that the Ministry of Health staff can interact with clients in real-time to support them in making applications for different services (Mean=4.57 & SD=0.705). Similarly, they perceived that the ministry had online user-friendly platforms that were accessible to members of the public and stakeholders (Mean=4.48 & SD=0.701), and they perceived that security of application processes was high since everything was done online (Mean=4.44 & SD=0.553). These findings collectively highlight the respondents' confidence in the effectiveness, security, and support provided by the Ministry's e-application systems, reflecting a consistently positive experience with these digital tools.

The responses obtained from the operational staff using questionnaires were compared with what key informants reported in interviews. For instance, all the key informants (100%) shared an opinion that e-application of services improves employee performance at Ministry of Health.

When a commissioner was probed on how the Ministry of health benefited from adopting e-application of services in its operations, he was quoted saying;

"We no longer have long queues in our offices for clients coming to request for licences, renewal of permits, requesting for data to guide decision making among other services. Almost all services can now be provided through online platforms…"

Another commissioner said;

"…we are now able to hold department management and senior management meetings via ZOOM. At first we had fears of making critical decisions via ZOOM but now we are all used. This has really contributed to performance of our staff since information can be accessed at all times"

On the other hand, when respondents were asked about shortcomings of e-application at Ministry of Health, A commissioner was quoted saying;

"…we are not guided on what to share via e-services and what not to share. Some officers have misused the platforms by sharing confidential information to the public which has caused public outcry. I particularly think we should create our internal e-governance policy for the Ministry, so that we provide for control over these technologies.."

The commissioner's quotation implies that Ministry of Health already appreciates that e-application can improve employee performance. However, the challenge is with the mind-sets of the public whom he thought feel comfortable submitting their papers physically. The findings from the key informant interviews were in agreement with those generated through questionnaires.

4.3.2 Descriptive statistics on the e-database

The second objective was to examine the relationship between e-database and employee performance at MOH headquarters. The variable was measured using 12 items which were given scores on "a five point Likert scale of 1=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree". The results are presented in Table 4.4 followed by analysis and interpretation.

Table 4.4: Descriptive statistics for e-database

	N	Min	Max	Mean	Std. Deviation
I find the e-database system easy to navigate and use.	209	2	5	4.13	.417
The e-database system easily meet my information retrieval needs	209	1	5	4.33	.620
I easily locate relevant documents or information in the database whenever I need them	209	1	5	4.37	.675
I am satisfied with the search functionality of the e-database system	209	1	5	4.33	.747
I am faster at producing my outputs/results when I used the e-database system in managing data and accessing documents	209	2	5	4.38	.633
I feel confident in the security measures implemented in the e-database system	209	1	5	4.45	.778
The training provided to us to use the e-database system was adequate.	209	1	5	4.39	.656
I encounter technical difficulties while using the e-database system.	209	1	5	4.51	.651
I use e-database system to organize my daily worked on documents	209	2	5	4.31	.541
I am satisfied with the performance speed of the e-database system that use on a regular basis	209	2	5	4.34	.632
The e-database system allows me to collaborate/share information with my colleagues	209	1	5	4.34	.608
I feel adequately supported by IT staff when encountering issues with the e-database system	209	2	5	4.34	.584
Overall Mean				**4.352**	**0.6285**
Valid N (listwise)	**209**				

Source: Primary data

The results in Table 4.4 revealed a high level of agreement that e-databases are available and used at MOH, with a moderate level of consistency (Mean=4.352 & SD=0.6285). A high mean

(Mean=4.352) suggested that respondents strongly perceived that e-databases were used at Ministry of Health. A standard deviation of 0.6285 indicates that the responses were moderately consistent and most respondents' opinions were closely clustered around the mean, suggesting that there was a general consensus among users regarding the e-database system. However, there was still some variability, meaning that not all respondents felt exactly the same way, but the differences were minor.

Several specific statements demonstrated a particularly high level of agreement among respondents. For instance, majority of the respondents encountered technical difficulties while using the e-database system (Mean=4.51 & SD=0.651). Although this reflects a challenge, the consistency (indicated by the standard deviation of 0.651) suggests that this experience was common among users. Also, respondents felt confident in the security measures implemented in the e-database system (Mean=4.45, SD=0.778), and they were provided adequate training (M=4.39 & SD=0.656). These findings collectively highlight the respondents' confidence in the e-database systems, reflecting a consistently positive experience with these digital tools despite operational challenges encountered in using these systems.

The responses on e-database obtained from the operational staff using questionnaires were compared with what key informants reported in interviews. For instance, all the key informants (100%) shared an opinion that e-database can significantly improve employee performance at Ministry of Health. When a commissioner was probed on how the Ministry of health benefited from adopting e-database in its operations, he was quoted saying;

> *"…through DHIS 2, staff at Ministry of Health headquarters can access reports from all Hospitals and other health facilities across the country, in just a click of a button. Our IT*

team has gone ahead to create dashboards where management can easily view summary of critical indicators…"

On the other hand, when respondents were asked howw the Ministry has benefited from adopting e-databases in its operations, he said;

"Online databases keep all the important records safe and makes them available whenever they are needed for staff. There are controls, some officers can view information without editing, some can download, others have full access rights. The archives assure us of security at all time…"

When respondents were probed about the shortcomings of e-database at Ministry of Health, one of the commissioners was quoted saying;

"…electronic databases are good, they have simplified our work by eliminating a lot paper work which we used to work with, however we have few people who can manipulate these systems, not every staff here is trained to use these information technology based systems..."

These responses suggested that e-databases can improve employee performance. However, the challenge is with the capacity of staff members to use e-databases. The findings from the key informant interviews were in agreement with those generated through questionnaires and added a voice to the findings.

4.3.4 Descriptive statistics on the e-feedback

The third objective was to examine the relationship between e-feedback and employee performance at MOH headquarters. The variable was measured using 12 items which were given scores on "a five point Likert scale of 1=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree". The results are presented in Table 4.5 followed by analysis and interpretation.

Table 4.5: Descriptive statistics for e-feedback

	N	Min	Max	Mean	Std. Deviation
The e-feedback system facilitates communication between me and management	209	1	5	3.89	.900
I use e-feedback technology to communicate with other members of staff	209	1	5	4.28	1.020
I use e-feedback technology to communicate with clients	209	1	5	4.14	.998
I use e-feedback mechanism to communicate with fellow staff members	209	1	5	4.16	1.042
I feel comfortable providing feedback through the e-feedback system	209	1	5	4.19	1.057
The e-feedback system allows me to express my opinions while I communicate	209	1	5	4.15	1.034
The feedback I provide through the e-feedback system is given the attention it deserves	209	1	5	4.10	.986
I receive timely responses to the feedback I submit through the e-feedback system	209	1	5	4.13	1.010
The e-feedback system helps me in identifying areas for improvement in my work.	209	1	5	4.17	.949
I feel that my contributions through the e-feedback system are valued by the organization and clients	209	1	5	4.22	.984
The e-feedback system helps me to capture diverse opinions from other staff members	209	1	5	4.12	.987
I feel empowered to contribute to decision-making processes through the e-feedback system	209	1	5	4.32	1.055
Overall mean				**4.155**	**1.002**
Valid N (listwise)	209				

Source: Primary data

Results in Table 4.5 suggest that respondents had a strong perception that e-feedback mechanism was available and frequently used at MOH (Mean=4.155 & SD=1.002). The overall mean of 4.155 indicates that respondents generally have a positive perception of the e-feedback system, suggesting that it is well-regarded and frequently used. The overall standard deviation of 1.002, however, shows that there is considerable variability in the responses. This indicates that while many respondents have a favourable view, there is a notable range of opinions, with some users possibly experiencing challenges or having different experiences.

Several specific statements demonstrated a particularly high level of agreement among respondents. For instance, most participants felt empowered to contribute to decision-making processes through the e-feedback system (Mean=4.32 & SD =1.055), The results also showed that majority of the respondents used e-feedback technology to communicate with other members of staff (Mean=4.281 & SD=0.020) and felt that their contributions through the e-feedback system was valued by the organization and clients (Mean=4.22 & SD=0.984). The overall mean of 4.155 and standard deviation of 1.002 indicate that the e-feedback system is generally well-received but with notable variations in user experiences. The statements with the highest mean scores highlight areas where the system is particularly effective, such as empowering users in decision-making and facilitating communication among staff. However, the relatively high standard deviations suggest that while many respondents have positive experiences, others might have differing levels of satisfaction with the system.

The responses on e-feedback obtained from the operational staff using questionnaires were compared with what key informants reported in interviews. For instance, all the key informants shared an opinion that e-feedback can significantly improve employee performance at Ministry of Health. When respondents were asked how the Ministry of health has benefited from adopting e-feedback in its operations, he was quoted saying;

"…the benefit is much, we have reduced the traditional system of issuing certificates and licences in hard copies. Currently, once a client's request has been approved and the necessary approvals made, documents like certificates, licences, receipts, authorisation letters, recommendation letters etc can be shared via client portals or emails. This was evident during issuing of COVID-19 vaccination certificates, how would we have managed to issue certificates to all Ugandans if it wasn't for e-feedback??...."

On the same issue, another commissioner was quoted saying;

"…The ministry has put in place mechanism for responding to customer's issues virtually. Issues to do with issuing of contracts, vaccination certificates, accreditation letters, a client doesn't have to come to the headquarters. They just have to interact with the system and automatically feedback will be received…"

When probed on the challenges of e-feedback, the Director had this to say;

"…of course our people out there may not be informed about the system-based feedback, and some don't know how to use the system. I think in some areas even network may be a problem which results into late receiving of feedback even when the Ministry has acted in time…."

This responses are in agreement with what was generated through questionnaire and support that e-feedback can improve employee performance at Ministry of health. However, there is need to orient members of the public on how to use the e-feedback services.

4.3.5 Descriptive statistics on employee performance

Respondents gave their opinion on employee performance using a five point Likert scale of "1=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree" as presented, interpreted and analyzed below.

Table 4.6: Descriptive statistics for e-employee performance

	N	Min	Max	Mean	Std. Deviation
I regularly complete my job tasks as stipulated in job description	209	2	5	4.18	.430
I contribute to program targets set by the Ministry of Health	209	2	5	4.39	.664
I show timeliness in completing my assigned tasks	209	1	5	4.32	.671
I communicate transparently to my supervisors about the progress of my work	209	1	5	4.35	.672
I respond promptly to inquiries from colleagues and superiors	209	2	5	4.37	.591
I take a proactive approach to completing tasks	209	1	5	4.32	.609
I meet o performance expectations regarding task completion	209	1	5	4.41	.653
I manage my workload to ensure timely completion of tasks	209	1	5	4.32	.712
I provide accurate updates on the status of my work	209	2	5	4.40	.556
I prioritize tasks effectively to meet both short-term and long-term goals	209	1	5	4.45	.596
I hold myself accountable for my work and its outcomes	209	1	5	4.53	.628
I seek feedback to improve my performance and enhance efficiency	209	2	5	4.44	.586
I actively seek solutions to overcome obstacles and challenges in my work	209	2	5	4.43	.534
Overall mean				**4.377**	**0.608**
Valid N (list wise)	**209**				

Source: Primary data

Results in Table 4.6 suggest that respondents had an overall good perception about performance of staff at Ministry of Health (Mean=4.377 & SD=0.608). This indicates that, on average, respondents generally agreed with the performance-related statements. The overall mean score across all statements was 4.377, indicating a high overall perception of performance among employees. This suggests that employees generally agreed with positive statements about their job performance, indicating high self-assessment scores.

On the other hand, the relatively low standard deviation (SD=0.608) suggests that most respondents' answers were clustered closely around the mean, indicating little variability in their responses, which implied that there was a strong consensus among respondents regarding their self-perceived performance.

Several specific statements demonstrated a particularly high level of agreement among respondents. For instance, most of the respondents held themselves accountable for their work and its outcomes (Mean=4.53 & SD=0.628), prioritized tasks effectively to meet both short-term and long-term goals (Mean=4.45 & SD=0.596) and sought feedback to improve their performance (Mean=4.44 & SD=0.586). The statements with high mean values, highlighted key areas where employees perceived themselves as performing well, emphasizing accountability, task prioritization, feedback seeking, and problem-solving.

From the interviews conducted, all the respondents (100%) appreciated the fact the employee performance in the Ministry of Health had challenges although they were working very hard to streamline the whole process by leveraging technology. The respondents believed that e-governance can transform the Ministry’s employee performance by increasing speed of service delivery, ensuring security of documents and removing the cases of inconsistences that existed.

When probed on how the ministry has leveraged e-application of services to improve employee performance, The director had this to say;

"…we have tried to innovatively find better ways to offer services to clients, most of the services including; application for licencing, internal forwarding of loose minutes, our district health information management system and of course the integrated banking of project system, a number of dashboards, among other innovations have eased the work of receiving requests from our clients and responding to them…. the adoption of these systems has in a way presented challenges that affect the performance out staff…"

The Director's quotation implies that e-governance is believed to improve the employee performance. This supports the quantitative data that was generated by the questionnaire. When prompted on how the Ministry of health has leveraged e-database mechanisms, one of the Commissioners was quoted saying;

"The Ministry of health is moving away from the traditional archiving of documents. The online archives makes it easy for us to access the files that we need on the daily basis and assure us of safety and security of our documents. However, we still have challenges of capacity to navigate these systems which has partly led to failure to fully migrate to these E-Systems…"

In line with how the Ministry has leveraged e-feedback, one Commissioner was quoted saying;

"…We still use a mix of traditional feedback mechanisms and where possible, we use the e-services. For instance, most of the information is now on dashboards, a client makes a request and access rights are provided through client portals where feedback is passed. This has greatly simplified our work and reduced the time of waiting for feedback……"

4.4 Correlation matrix for e-application, e-database, e-feedback and employee performance

In this section, findings on the relationship between e-application, e-database, e-feedback, and employee performance at Ministry of Health are detailed. Pearson correlation coefficient (r) was used to establish the relationship as presented in Table 4.7 followed by analysis and interpretation.

Table 4.7: Correlation matrix for e-application, e-database, e-feedback and employee performance

		Employee performance	E-application	E-database	E-feedback
Employee performance	Pearson Correlation	1	.724**	.756**	.798**
	Sig. (2-tailed)		.000	.000	.000
	N	209	209	209	209
E-application	Pearson Correlation	.724**	1	.752**	.818**
	Sig. (2-tailed)	.000		.000	.000
	N	209	209	209	209
E-database	Pearson Correlation	.756**	.752**	1	.804**
	Sig. (2-tailed)	.000	.000		.000
	N	209	209	209	209
E-feedback	Pearson Correlation	.798**	.818**	.804**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	209	209	209	209
**. Correlation is significant at the 0.01 level (2-tailed).					

The findings in Table 4.7 demonstrate a significant positive relationship between e-application and employee performance (r = 0.724**, p = 0.000 < 0.05). Similarly, a statistically significant positive correlation was observed between e-database and employee performance (r = 0.756**,

p = 0.000< 0.05). Likewise, e-feedback showed a significant positive relationship with employee performance (r =0.798**, p = 0.000 < 0.05). These results were statistically significant, with a p-value (p = 0.000) indicating a very strong correlation. The results indicated that all three aspects of e-application, e-database, and e-feedback are positively and significantly correlated with employee performance.

The significance level (p-value) of 0.000 for all the three variables, is less than the 0.05 threshold, confirming that the results were statistically significant. Therefore, the observed relationship is not due to chance, suggesting that e-application systems are likely an important factor in enhancing employee performance. Among these, the relationship was strongest for e-feedback, followed by e-database, and then e-application.

4.5 Multiple regression results

The researcher employed multiple linear regression analysis at 95% confidence intervals to analyse the hypotheses. The multiple regression analysis conducted in this study aimed to examine the relationship between e-governance components (e-feedback, e-database, and e-application) and employee performance. The regression results are presented in Table 4.8 below.

Table 4.8 Multiple regression results

Model Summary					
Model		R	R Square	Adjusted R Square	Std. Error of the Estimate
1		.824[a]	.679	.674	2.47903
a. Predictors: (Constant), E-feedback, E-database, E-application					

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2665.431	3	888.477	144.572	.000[b]
	Residual	1259.842	205	6.146		
	Total	3925.273	208			
a. Dependent Variable: Employee performance						
b. Predictors: (Constant), E-feedback, E-database, E-application						

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	23.748	3.471		6.842	.000	16.905	30.591
	E-application	.127	.069	.132	1.838	.067	-.009	.263
	E-database	.297	.072	.286	4.133	.000	.155	.439
	E-feedback	.197	.034	.460	5.798	.000	.130	.264
a. Dependent Variable: Employee performance								

The Model summary indicates a strong positive correlation between the predictors and employee performance. The analysis showed a good model fit: F(3, 205)= 144.572, *P<.001*, R=0.824, Adj R^2 =0.674 and R^2=0.679. The value of 0.824 suggests that e-governance components e-feedback, e-database, and e-application are closely associated with how well employees perform their duties.

The R Square value of 0.679 reveals that approximately 67.9% of the variance in employee performance can be explained by these factors, underscoring the substantial impact of e-governance initiatives on employee performance. The Adjusted R Square of 0.674 indicates that the model remains robust even when accounting for the number of predictors, reflecting a reliable and well-fitted model. The ANOVA table further reinforces the model's validity, with a significant F-statistic of 144.572 and a p-value of 0.000. This finding indicates that the overall regression model significantly predicts employee performance, highlighting the relevance of

e-feedback, e-database, and e-application in the context of e-governance. The degrees of freedom (3 for regression and 205 for residual) correspond to the number of predictors and the sample size, providing a basis for the statistical tests.

In terms of individual predictors, the coefficients table provides detailed insights into the contributions of each e-governance component. The constant term, with a value of 23.748, represents the baseline level of employee performance when all predictors are zero, serving as a reference point for interpreting the effects of the variables.

The analysis shows that e-application had a positive but not significant relationship with employee performance ($\beta = 0.132$, t = 1.838, $P = .067$). *Hence, Hypothesis* 1 was rejected . The e-application variable, with a standardized coefficient (B) of 0.132, suggests a positive but not statistically significant influence on employee performance (p =0.067). This finding indicates that while e-application systems are beneficial, their impact may not be as pronounced or consistent across all contexts.

On the other hand, the analysis shows that e-database had a significant positive relationship with employee performance ($\beta = 0.286$, t = 4.133, $P < .001$); therefore, Hypothesis 2 was accepted. This result implies that improved access to and management of data through electronic databases can significantly enhance employee efficiency and effectiveness. Similarly, the results found a significant positive relationship between e-feedback and employee performance ($\beta = 0.460$, t = 5.798, $P < .001$), hence, the hypothesis 3 was accepted. The e-feedback variable, with a B value of 0.460 and a p-value of 0.000, demonstrates a strong positive relationship with employee performance. The high standardized coefficient (Beta) of 0.460 for e-feedback suggests that timely and constructive feedback can significantly motivate and guide employees toward better performance.

Overall, these findings underscore the pivotal role of e-governance components in enhancing employee performance. This aligns with the concepts of perceived ease of use and perceived usefulness as outlined in the Technology Acceptance Model. The strong correlation and significant contributions of e-database and e-feedback suggest that these tools are essential for fostering a productive work environment. The results of this study contribute valuable insights to the ongoing discourse on e-governance and its implications for organizational performance.

4.5.1 Multiple regression results for demographic factors and employee performance

An analysis of regression was further done to determine the extent to which demographic factors were associated with employee performance. Regression results are presented in Table 4.9 below.

Table 4.9: Regression results for demographic factors and employee performance

Model summary						
Model		R	R Square	Adjusted R Square	Std. Error of the Estimate	
1		.456[a]	.208	.188	3.91394	
ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	815.525	5	163.105	10.647	.000[b]
	Residual	3109.747	203	15.319		
	Total	3925.273	208			
a. Dependent Variable: Employee performance						
b. Predictors: (Constant), Religion, Level of education, Gender, Duration on job, Age						
Coefficients[a]						

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	70.833	2.318		30.553	.000	66.261	75.404
	Duration on job	-3.943	.719	-.366	-5.482	.000	-5.362	-2.525
	Age	-.157	.524	-.020	-.299	.766	-1.191	.877
	Gender	-.108	.559	-.012	-.194	.846	-1.210	.993
	Level of education	-1.435	.602	-.165	-2.384	.018	-2.622	-.248
	Religion	-.698	.528	-.087	-1.323	.187	-1.738	.342

The regression model summary in Table 4.9 provides an overview of the regression analysis that was conducted to understand the influence of demographic factors on employee performance at the Ministry of Health. The analysis showed a good model fit: F(5, 203)= 10.647, *P<.001,* Adj R^2 =0.188 and R^2=208. The R Value of 0.456 indicates a moderate positive correlation between the combined demographic factors and employee performance. While not extremely high, this correlation suggests that there is a relationship worth considering. Similarly, R Square Value of 0.208 means that approximately 20.8% of the variance in employee performance can be explained by the demographic factors included in the model. Although this is a substantial portion, it also implies that a significant 79.2% of the variance is attributed to other factors not captured in this model. This indicates that while demographic factors are important, other aspects like organizational culture, job roles, or personal motivation may also play critical roles in influencing performance. Besides, the adjusted R Square 0.188 accounts for the number of predictors in the model and adjusts for the potential overestimation of the variance explained. The slight decrease from the R square value suggests that while the model is reasonably good, it may still include some variables that do not significantly contribute to explaining employee performance. The standard Error of the Estimate 3.91394 was relatively moderate, indicating some variability in employee performance that the model does not capture.

Regarding the individual demographic factors, the analysis shows that Duration on the Job had significant negative relationship with employee performance (β = -0.366, t = -5.482, *P<0.000).* This suggests that employees who have been in the ministry for a longer period may experience decreased performance, potentially due to factors like job monotony, lack of new challenges, or insufficient career development opportunities. A similar significant negative relationship was observed with the level of education (β = -0.165, t = -2.384, *P*=018*).* This was attributed

to factors such as overqualification, where employees with higher educational qualifications might feel underutilized or unchallenged, leading to reduced motivation and performance.

On the other hand, the analysis revealed that there was no significant relationship between age and employee performance, implying that age diversity within the workforce does not significantly impact how employees meet work targets, deadlines, or other performance metrics. Relatedly, the lack of significant relationship between gender and employee performance highlights gender equity in employee performance levels, suggesting that men and women perform equally in their roles within the Ministry of Health. Finally, religion did not show a significant impact on performance, indicating that employees' religious affiliations do not correlate with differences in their efficiency, responsiveness, or other performance measures.

4.6 Chapter summary

Chapter Four presented the findings, analysis, and interpretation of the research results. This section included an overview of demographic factors and detailed empirical findings, incorporating descriptive statistics, correlation analysis, and regression analysis. This formed basis on which chapter five was written.

CHAPTER FIVE

SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study's findings, discusses the empirical results in relation to the research objectives and hypotheses, and compares these findings with similar research conducted elsewhere. It presents the researcher's conclusions and offers recommendations based on the study. Additionally, the chapter identifies areas for future research on the topic of e-governance and employee performance.

5.2 Summary of major findings

The study revealed a number of findings. These findings are summarized below;

5.2.1 E-application and the employee performance

E-application had a non-significant positive relationship with employee performance in the Ministry of Health (β =*0*.132, t = 1.838, *P*=.067*)*. In particular, the positive significant relationship implied that a change in use of e-application platform contributes to a change in the employee performance whereby increase in usage of e-application by using online application forms, uploading of documents, sanctioning of files, allocation of officers, and verification of documents, improves employee performance in the Ministry of Health and vice versa. Additionally, a multiple regression analysis revealed that e-application variable, with a standardized coefficient (B) of 0.132, suggests a positive but not statistically significant influence on employee performance (p = 0.067). This finding indicate that while e-application systems are beneficial, their impact may not be as pronounced or consistent across all contexts.

5.2.2 E-database and employee performance

E-database had a significant positive relationship with employee performance in the Ministry of Health headquarters *(β=0.286, t = 4.133, P <.001)*. In particular, the positive significant relationship implied that a variation in use of e-database system contributes to a change in employee performance whereby adoption of e-database improves employee performance in the Ministry of Health and vice versa. In addition, there was a strong significant relationship between e-database and employee performance. The combinations of the dimensions for e-applications accounted for 28.6% variation in the employee performance. Therefore when staff use e-database to ensure information security, searching for client files, update client records, close file, delete/review files, and track files, employee performance will improve.

5.2.3 E-feedback and employee performance

E-feedback had a significant positive relationship with employee performance in the Ministry of Health (β =0.460, t = 5.798, *P <.001)*. In particular, the positive significant relationship implied that a change in use of e-feedback contributes to a change in employee performance whereby the increase in use of e-mail feedback, usage of portal feedback, issuing of e-letters, electronic-authorization, usage of auto feedback/calls, and usage of SMS notification improves employee performance in the Ministry of Health headquarters. Besides, e-feedback accounted for a 46% variation in employee performance. Additionally, The e-feedback variable, with a Beta value of 0.460 and a p-value of 0.000, demonstrates a significant positive relationship with employee performance. The high standardized coefficient (Beta) of 0.460 for e-feedback highlights its critical role in contributing to employee performance, suggesting that timely and constructive feedback can significantly motivate and guide employees toward better performance. The combinations of dimensions of e-feedback (e-mail feedback, usage of portal

feedback, issuing of e-letters, electronic-authorization, usage of auto feedback/calls, and usage of SMS notification) accounted for 46% variation in the employee performance.

5.2.4 Demographic factors and employee performance

Duration on the Job had a significant negative relationship with employee performance (β = -0.366, t = -5.482, *P<0.000)*. This suggests that employees who have been in the ministry for a longer period may possibly experience decreased performance, potentially due to factors like job monotony, lack of new challenges, or insufficient career development opportunities. A similar significant negative relationship was observed with the level of education (β = -0.165, t = -2.384, *P*=018*)*. This was attributed to factors such as overqualification, where employees with higher educational qualifications might feel underutilized or unchallenged, leading to reduced motivation and performance.

5.3 Discussion of findings

5.3.1 E-application and employee performance in Ministry of Health

The study found out that e-application had a positive but not significant relationship with employee performance in the Ministry of Health. The findings of this research were consistent with other studies, where it had been indicated that adoption of e-application methods contributed to employee performance while failure to adopt e-application accounted for poor performance. For instance, Osei et al. (2018) examined the impact of e-health initiatives on healthcare governance in Ghana, highlighting improvements in data management and decision-making processes at the national level. Similarly, Ndlovu et al. (2019) demonstrated the effectiveness of e-services in facilitating communication and collaboration among healthcare stakeholders, enhancing coordination of healthcare delivery efforts.

Still incongruent with the research findings, Kabayiza et al (2020) explored the use of telemedicine for healthcare planning and resource allocation, demonstrating its potential to enhance access to specialized services and optimize healthcare delivery strategies. This was further supported by Arega et al. (2020) who highlighted the role of e-services including e-application in strengthening health information systems and facilitating evidence-based decision-making at the national level. This was consistent with the findings of this study.

Conversely, Kiwanuka et al., (2023) presented a different opinion that e-application may not give the desire outcomes if robust data governance frameworks are not put in place to ensure data security and privacy, capacity-building initiatives to enhance digital literacy among healthcare personnel, and sustainable funding mechanisms to support the adoption and maintenance of e-services. Moreover, Anwar et al., (2021) believes that efforts to integrate e-applications into employee workflows should be accompanied by comprehensive change management strategies to mitigate resistance to change and ensure smooth implementation.

The Technology Acceptance Model (TAM) by Davis (1989) helps explain the positive but not significant relationship between e-application and employee performance found in your study. While e-application is perceived as useful in enhancing job performance, its impact may be limited by factors such as ease of use, digital literacy, and organizational readiness (Davis, 1989). The mixed results suggest that challenges like complex systems, insufficient training, and inadequate support could be hindering the full benefits of e-application. This was consistent with the findings of this study.

5.3.2 E-database and employee performance in Ministry of health

The study revealed that there is a significant positive relationship between e-database and employee performance in the Ministry of Health headquarters. The research findings was consistent with what had been earlier established by other scholars world-wide.

For example; a meta-analysis by Smith et al. (2018) emphasized the role of e-databases in improving disease monitoring and response coordination, leading to enhanced epidemic control and healthcare resource allocation. Similarly, research by Johnson and Patel (2019) underscored the importance of inter-operable e-databases in facilitating data sharing and collaboration among healthcare institutions and policymakers on a global scale.

Osei et al. (2017) evaluated the implementation of an e-database for disease surveillance in Ghana, reporting significant improvements in data accuracy and timeliness, leading to more targeted public health interventions. Relatedly, research in Nigeria by Adeleke et al. (2019) highlighted the role of e-databases in monitoring healthcare service delivery and resource allocation, contributing to improved maternal and child health outcomes.

Again Mbarika et al. (2016) assessed the implementation of an e-database for electronic medical records in Tanzanian hospitals, revealing improvements in data quality, accessibility, and patient care coordination. Still congruent with the findings, Kifle et al. (2018) examined the utilization of e-databases for disease surveillance in Kenya, highlighting their effectiveness in early detection and response to infectious disease outbreaks.

Mugume et al. (2020) conducted a qualitative study assessing the impact of an e-database for health facility management, reporting improvements in data accuracy, service delivery efficiency, and resource allocation. This was in support of Kabayiza et al (2018) who investigated the use of e-databases for disease surveillance and reporting in rural Ugandan communities, and demonstrated their potential to enhance public health surveillance and response capabilities. This was consistent with the findings of this study.

However, Maiga (2019) noted that whereas empirical evidence suggests the benefits of e-databases for improving healthcare data management and decision-making processes, the system is still challenged by issues related to data privacy and security, interoperability, and

sustainability. He therefore suggests that efforts to address these challenges require a multi-faceted approach, including the development of robust data governance frameworks, investment in technological infrastructure and capacity building, and stakeholder engagement to ensure buy-in and support for e-database initiatives. Maiga (2019) further suggests that integration of e-databases into existing health information systems requires careful planning and coordination to avoid duplication of efforts and fragmentation of data.

The significant positive relationship between e-database and employee performance found in your study can be understood through the Technology Acceptance Model (TAM) by Davis (1989). According to TAM, the successful adoption and impact of e-databases on employee performance are likely driven by the high Perceived Usefulness (PU) as e-databases enhance data accuracy, accessibility, and collaboration, leading to improved healthcare outcomes and Perceived Ease of Use (PEOU), where the effective integration and user-friendliness of the e-database systems facilitate their widespread acceptance and utilization by employees (Davis, 1989).

Kagoya et al., (2019) also noted that collaboration among stakeholders, including government agencies, healthcare providers, and technology partners, is essential to ensure the interoperability and scalability of E-database solutions coupled with ongoing monitoring and evaluation which he said is critical to assess the impact of E-databases on healthcare delivery outcomes and inform continuous quality improvement efforts. Therefore, the findings of these scholars are consistent with the findings of this study.

5.3.3 E-feedback and employee performance in Ministry of health

The study discovered a significant positive relationship between e-feedback and employee performance in Ministry of Health headquarters. The research finding was consistent with what had been earlier established by other scholars word-wide. For example, a meta-analysis by

Smith et al. (2018) emphasized the role of e-feedback in enhancing clinical decision-making, fostering continuous quality improvement, and reducing medical errors. Similarly, research by Johnson and Patel (2019) underscored the importance of e-feedback systems in promoting patient engagement, facilitating communication between patients and healthcare providers, and improving health outcomes.

On the other hand, Osei et al. (2017) assessed the implementation of an e-feedback system for monitoring patient satisfaction in Ghana, noting improvements in service delivery responsiveness and increased patient trust in healthcare facilities. Similarly, Adeleke et al. (2019) emphasized the role of e-feedback in enhancing accountability and transparency in healthcare service delivery in Nigeria, which contributed to better patient outcomes and improved employee performance.

Still consistent with the findings, Mbarika et al. (2016) assessed the implementation of an e-feedback system for healthcare quality improvement in Tanzanian hospitals, revealing enhancements in patient satisfaction levels and healthcare provider responsiveness. This was further supported by Kifle et al. (2018) who investigated the utilization of e-feedback systems for community health worker performance monitoring in Kenya, demonstrating their effectiveness in promoting accountability and performance optimization.

On the other hand, Kabayiza et al. (2018) investigated the use of e-feedback systems for patient engagement and communication in rural Ugandan communities, demonstrating their potential to enhance healthcare access and quality. This was consistent with the findings of this study.

However, Anand and Khemchandani (2019) noted that whereas empirical evidence suggests the benefits of e-feedback systems for improving healthcare quality and patient engagement, it is still challenged by issues relating to information privacy, digital literacy, and cultural barriers to feedback participation. Besides Akpan-Obong et al (2023) suggested that efforts to address

e-feedback challenges should have a multi-faceted approach, including the development of user-friendly feedback platforms, capacity building initiatives for healthcare providers and patients, and community engagement strategies to promote feedback culture. The significant positive relationship between e-feedback and employee performance identified in your study aligns with the Technology Acceptance Model (TAM) by Davis (1989). The findings are still consistent with TAM, whereby the effectiveness of e-feedback in enhancing employee performance is driven by high Perceived Usefulness (PU), as e-feedback systems improve clinical decision-making, patient satisfaction, and healthcare quality, making employees view the technology as beneficial to their work. Additionally, Perceived Ease of Use (PEOU) plays a crucial role; when e-feedback systems are user-friendly and accessible, employees are more likely to adopt and integrate them into their daily routines, thereby enhancing their performance. Therefore the findings of this study is consistent with what was earlier put forward by other researchers globally.

5.3.4 Demographic factors and employee performance

Duration on job and level of education were found to have a significant negative relationship with employee performance at MOH. Given the lack of specific literature on the influence of these demographic factors on employee performance within this context, these findings offer a unique contribution to understanding the dynamics at play in the Ministry of Health. The negative relationship between duration on job and performance could be attributed to the fact that employees who have spent extended periods in the same role may experience job monotony, which can lead to disengagement and reduced motivation. The routine nature of their tasks may no longer stimulate their interest, resulting in decreased productivity. This aligns with the theory of job characteristics, which posits that jobs can be designed in ways that

lead to higher motivation and better job outcomes by focusing on five core job characteristics (skill variety, task identity, task significance, autonomy, and feedback).

Furthermore, the negative relationship was associated with limited career progression opportunities within the Ministry, leading to stagnation. According to Anand and Khemchandani (2019), eemployees may feel that they have reached a plateau in their career development, which can dampen their enthusiasm and drive to perform. The absence of new challenges or opportunities for growth may contribute to a sense of complacency or resignation, further exacerbating the decline in performance.

On the other hand, the study revealed a negative relationship between education level and employee performance which was attributed to cases overqualification, where employees who possess skills and knowledge that exceed the requirements of their job roles may feel underutilized and unchallenged, which can lead to frustration and disengagement (Kabayiza et al., 2018).

5.4 Conclusion

5.4.1 E-application and employee performance

It was concluded that e-application had a positive but statistically non-significant relationship with employee performance in the Ministry of Health. This indicates that while there is some evidence suggesting that the use of e-application systems such as online application forms, document uploads, file sanctioning, officer allocation, and document verification can positively influence employee performance, the effect is not statistically significant. This suggests that the benefits of e-application systems may not be consistently impactful or pronounced across all contexts within the Ministry. Consequently, while e-application systems hold potential for enhancing employee performance, their effectiveness may vary and further investigation is needed to explore the factors influencing their impact.

5.4.2 E-database and employee performance at Ministry of Health

In line with e-database, it was concluded that e-database had a significant positive relationship with employee performance in the Ministry of Health. This indicates that increased use of e-database systems significantly enhances employee performance. The use of e-database for efficient data storage, retrieval, and management allows employees to access necessary information swiftly and accurately, thereby improving their productivity and overall performance. These findings underscore the critical role of e-database systems in supporting and optimizing the operations of the Ministry. The significant impact of e-database on employee performance suggests that continued investment and improvements in e-database infrastructure and training for staff are essential to fully harness the benefits of this technology. This will ensure that employees can efficiently manage and utilize data, leading to sustained improvements in performance and service delivery within the Ministry.

5.4.3 E-feedback and employee performance

It was concluded that e-feedback had a strong significant positive relationship with employee performance in the Ministry of Health, with a standardized coefficient (β) of 0.460 and a p-value of less than 0.001. This indicates that the use of e-feedback systems greatly enhances employee performance. E-feedback mechanisms, which include regular and structured feedback through digital platforms, enable employees to receive timely and constructive input on their work. This, in turn, facilitates continuous improvement, accountability, and motivation among staff. The significant positive impact of e-feedback systems on employee performance highlights their importance in creating a responsive and performance-oriented work environment.

5.5 Recommendations

The findings of the study revealed a great need for the Ministry of Health to improve its employee performance by adopting e-governance as described by the respondents on the contributions of e-application, e-database and e-archiving on the employee performance. In light of the above conclusion, below are the suggested recommendations as per study objectives;

5.5.1 E-application and employee performance

Based on the empirical results, it is recommended that the Management of Ministry of Health should revise its National e-health policy 2017-2021 to incorporate the new trends brought by technology advancement that allows for online application templates, uploading of documents, sanctioning of files, allocation of officers, and verification of documents. MoH should focus on standardizing the process of applying for services so that the institution completely shifts from traditional application systems to online applications. Additionally, information should be availed to the public by displaying on the websites guidelines for accessing application templates. Further, the Ministry should approve further studies in line with e-governance framework based on organizational priorities. Also, deliberate efforts should be made to build capacity of staff to support e-application processes.

5.5.2 E-database and employee performance

Based on the empirical results, it is recommended that the Management of the Ministry of Health (MoH) should revise its National e-health policy 2017-2021 to incorporate new technological advancements that enhance e-application processes. This revision should include the adoption and standardization of online application templates, document uploading, file sanctioning, officer allocation, and document verification. The transition from traditional to online application systems will streamline processes, improve efficiency, and ultimately

enhance employee performance. To facilitate this shift, the MoH should ensure that information and guidelines for accessing application templates are readily available to the public through the Ministry's website. This transparency will encourage wider use of the e-application systems and improve the overall user experience.

Moreover, the Ministry should prioritize capacity-building initiatives to equip staff with the necessary skills and knowledge to effectively support e-application processes. This can be achieved through targeted training programs and continuous professional development. Also, the management of the Ministry of health should ensure that facilities required to manage an e-database system are in place. This is in terms of computers, cloud storage accounts, internet servers, among others. Besides, the Ministry should create capacity of all staff members to use e-database systems.

In addition, the Ministry should approve and encourage further research on e-governance frameworks aligned with organizational priorities. This will help identify and address any challenges in the implementation of e-application systems and explore their full potential in enhancing employee performance..

5.5.3 E-feedback and employee performance

From the conclusions of the study, it was recommended that Management of the Ministry of Health should review the National e-health policy 2017-2021 and the National Human Resources for Health policy to incorporate comprehensive e-feedback strategies. These strategies should include the use of email feedback, portal feedback, issuing of e-letters, electronic authorization, auto feedback/calls, and SMS notifications.

Also, the management should ensure provision of facilities necessary for implementing these e-feedback strategies. This includes establishing SMS and conferencing facilities, and developing Standard Operating Procedures (SOPs) and guidelines for conducting e-feedback.

Additionally, the Ministry should approve and promote further research in the area of e-feedback to generate additional evidence and insights. This research will help in understanding the effectiveness of various e-feedback mechanisms and in identifying best practices.

Finally, the Ministry should focus on building the capacity of existing staff to ensure prompt and efficient e-feedback to clients. Training programs and capacity-building initiatives should be designed to enhance the skills and knowledge of staff in utilizing e-feedback tools effectively.

5.6 Limitations of the study

The study had several limitations. Firstly, it focused solely on the Ministry of Health headquarters and did not include other levels of the institution due to constraints of time and financial resources. Future research should expand to cover various levels of the Ministry, such as National Referral Hospitals, Regional Referral Hospitals, and Local Governments.

Additionally, the study concentrated on only three factors (e-application, e-database, and e-feedback) while other aspects of e-governance that may impact employee performance were not examined. Future research could explore these additional factors to provide a more comprehensive understanding of e-governance's effects on employee performance.

This study primarily used self-reported data from questionnaires and interviews, which might have led to response bias or social desirability bias, thereby impacting the findings' accuracy. Moreover, the cross-sectional design restricted the potential to establish causal links between e-governance components and employee performance. Future research might benefit from

longitudinal or mixed-method approaches to strengthen the findings and offer more in-depth insights into changes over time.

5.7 Contributions of the study

Although existing literature had explored the effects of e-application, e-database, and e-feedback on employee performance, there was a lack of evidence specific to the Ministry of Health. This study provides new insights into the relationships between these e-governance factors and employee performance within the Ministry of Health. The findings offer valuable evidence that can be referenced by other researchers examining similar contexts.

5.8 Areas recommended for future research

Overall, the study achieved its intended objectives, yet it identified several areas for further research. Firstly, the focus was limited to e-governance and its impact on employee performance, suggesting a need for future studies to explore additional variables that may affect employee performance. Secondly, the research concentrated on a few dimensions of e-governance, so future investigations should employ a multidisciplinary approach and examine a broader range of e-governance factors and employee performance aspects. Lastly, the study's scope was restricted to the Ministry of Health headquarters, limiting its findings to this specific context. To gain a more comprehensive understanding, future research should replicate the study across other government ministries, departments, and agencies in Uganda, to uncover potential differences in findings and provide a more generalized view of e-governance's impact on employee performance.

REFERENCES

Abah, E. O., Nwokwu, P. M., Abah, E. O., Nwokwu, &, & Monday, P. (2019). Challenges and successes of e-Government development in developing countries: A theoretical review of the literature. *Researchgate.Net*. https://doi.org/

AfDB. (2020). Leveraging Digital Technologies for Improved Performance Management. African Development Bank.

Akpan-Obong, P. I., Trinh, M. P., Ayo, C. K., & Oni, A. (2023). E-Governance as good governance? evidence from 15 West African countries. *Information Technology for Development*, *29*(2–3), 256–275. https://doi.org/10.1080/02681102.2022.2123770

Akpan-Obong, P., Trinh, M., (2023). E-Governance as good governance? evidence from 15 West African countries. *Taylor & Francis*. https://www.tandfonline.com/doi/

Ali, M., Sohaib Article, S., Journal, P., Commer Soc Sci, P. J., Ali Khan, M., Khurram, S., & Sohaib Zubair, S. (2020). Societal e-readiness for e-governance adaptability in Pakistan. *Papers.Ssrn.Com*, *14*(1), 273–299. https://papers.ssrn.com/sol3/papers

Anand, D., & Khemchandani, V. (2019). Study of e-governance in India: A survey. *International Journal of Electronic Security and Digital Forensics*, *11*(2), 119–144. https://doi.org/10.1504/IJESDF.2019.098729

Anwar, G., (2021). The impact of Human resource management practice on Organizational performance. *Papers.Ssrn.Com*. https://papers.ssrn.com/sol

Arora, S., Cooper, P. R., Ratnayake, J. T., Lara, Friedlander, T., Rizwan, S. B., Seo, | Benedict, & Hussaini, H. M. (2022). A critical review of in vitro research methodologies used to study mineralization in human dental pulp cell cultures. *Wiley Online Library*, *55*(S1), 3–13. https://doi.org/10.1111/iej.13684

Azizi, M., Atlasi, R., Ziapour, A., Abbas, J., Heliyon, (2021). Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach. *Cell.Com*. https://doi.org/10.1016/j.heliyon.2021.e07233

Bala, M., (2018). Governance to good governance through e-Governance: A critical review of concept, model, initiatives & challenges in India. *Indianjournals.Com*. https://www.indianjournals.com/ijor.aspx?target=ijor:ijmie&volume=8&issue=10&article=021

Bee, F., Rahman, B. A., Hanafiah, M. H., Salehuddin, M., Zahari, M., & Jipiu, L. B. (2021). Systematic literature review on the evolution of technology acceptance and usage model used in consumer behavioural study. *Researchgate.Net*. https://doi.org/10.6007/IJARBSS/v11-i13/8548

Brocke, J. Vom, Winter, R., (2020). Special issue editorial–accumulation and evolution of design knowledge in design science research: a journey through time and space. *Aisel.Aisnet.Org*. https://aisel.aisnet.org/jais/vol21/iss3/9/

Chowdhury, R., (2019). Electronic Public Health and e-Governance. *Springer*. https://link.springer.com/chapter/10.1007/978-981-13-8530-8_12

Cooper, B., Eva, N., Fazlelahi, F., (2020). Addressing common method variance and endogeneity in vocational behavior research: A review of the literature and suggestions for future research. *Elsevier*. https://www.sciencedirect.com/

Cooper, C., Booth, A., Varley-Campbell, J., Britten, N., & Garside, R. (2018). Defining the process to literature searching in systematic reviews: A literature review of guidance and supporting studies. *BMC Medical Research Methodology*, *18*(1). https://doi.org/10.1186/S12874-018-0545-3

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, *13*(3), 319–339. https://doi.org/10.2307/249008

Davis, M., Ali, M., Benard, E., Kassim, M., & Gilibrays, O. G. (2022). ICT Integration Challenges into Service Delivery in the Ugandan Ministry of Local Government: A Literature Review. *Ajpojournals.Org*. https://ajpojournals.org/journals/index

Deloitte. (2021). The Role of AI and ML in Enhancing Employee Performance. Deloitte Insights.

Denis, D. (2018). *SPSS data analysis for univariate, bivariate, and multivariate statistics*. https://books.google.com/books?hl=en&lr=&id

Denis, D. (2021). *Applied Univariate, Bivariate, and Multivariate Statistics Using Python: A Beginner's Guide to Advanced Data Analysis*. https://books.google.com/books?hl=en&lr=&id

Dubey, U. K. B., & Kothari, D. P. (2022). Research Methodology. *Research Methodology*. https://doi.org/10.1201/9781315167138/Research-Methodology-Umesh-Kumar-Dubey-Kothari

Gberevbie, D. E., Ayo, C. K., Iyoha, F. O., Duruji, M. M., & Abasilim, U. D. (2018). Electronic governance platform: Towards overcoming the challenges of non-inclusion of citizens in public policy formulation and implementation in Nigeria. *International Journal of Electronic Governance*, *10*(1), 56–73. https://doi.org/

Gberevbie, D., Ayo, C., (2018). Electronic governance platform: towards overcoming the challenges of non-inclusion of citizens in public policy formulation and implementation in Nigeria. *Inderscienceonline.Com*. https://www.inderscienceonline.com

Granić, A., & Marangunić, N. (2019). Technology acceptance model in educational context: A systematic literature review. *British Journal of Educational Technology*, *50*(5), 2572–2593. https://doi.org/10.1111/BJET.12864

Gupta, R., Muttoo, S., (2020). Regional E-governance development index for developing nations. *Dl.Acm.Org*. https://dl.acm.org/doi/abs/10.1145/3386163

Hope, K. R. (2019). Performance management and public service delivery in Africa: The Kenyan experience. *Public Administration and Development*, 39(4-5), 172-183.

Kabir, K. H., Hassan, F., Mukta, M. Z. N., Roy, D., Darr, D., Leggette, H., & Ullah, S. M. A. (2022). Application of the technology acceptance model to assess the use and preferences of ICTs among field-level extension officers in Bangladesh. *Digital Geography and Society*, *3*. https://doi.org/10.1016/j.diggeo.2022.100027

Kagoya, S., (2020). An E-government Readiness Assessment Framework for Ugandan Ministries. *Orseajournal.Udsm.Ac.Tz*. https://orseajournal.udsm.ac.tz/index

Kagoya, S., Maiga, G., (2019). An E-government Readiness Assessment Framework for Uganda. A case study of Ugandan Ministries. *Journals. Udsm.Ac.Tz*, *123*. http://www.journals.udsm.ac.tz/index.php/orsea/article/view/2867

Khatib, M. El, Nakand, L., Almarzooqi, S., & Almarzooqi, A. (2020). *E-Governance in Project Management: Impact and Risks of Implementation*. https://doi.org/

Kiwanuka, M., Kwemarira, G., Kimuli, J. P., Paul Ssenyondo, J., Lubwama, A., Bufwambu Masolo, J., Kiwanuka, M., Kwemarira , G., Kimuli, J. P., & Paul Ssenyondo , J. (2023a). Challenges and Opportunities of Big Data for Managing the E-Governance. *Researchgate.Net*. https://www.researchgate.net

Kiwanuka, M., Kwemarira, G., Kimuli, J. P., Paul Ssenyondo, J., Lubwama, A., Bufwambu Masolo, J., Kiwanuka, M., Kwemarira, G., Kimuli ρ, J. P., & Paul Ssenyondo, J. (2023b). Strengthening Citizen Participation Through E-Governance: Taking Stock and Looking Forward to Uganda's Local Governments. *Journalspress.Uk*. https://journalspress.uk/index.php/LJRHSS/article/view/207

Kiwanuka, M., Kwemarira, G., Kimuli, J. P., Paul Ssenyondo, J., Lubwama, A., Bufwambu Masolo, J., Kiwanuka, M., Kwemarira, G., Kimuli, J. P., & Paul Ssenyondo, J. (2023c). Strengthening Citizen Participation Through E-Governance: Taking Stock and Looking Forward to Ugandas Local Governments. *Journalspress.Uk*. https://journalspress.uk/index.php/LJRHSS/article/view/207

Kiwanuka, M., Kwemarira, G., Kimuli, J. P., Paul Ssenyondo, J., Lubwama, A., Bufwambu Masolo, J., Kiwanuka, M., Kwemarira, G., Kimuli, J. P., & Paul Ssenyondo, J. (2023d). *Strengthening Citizen Participation through E-Governance: Taking Stock and Looking Forward to Uganda's Local Governments*. https://journalspress.com/LJRHSS_Volume23/

Kyakulumbye, S., Pather, S., & Jantjies, M. (2019a). Towards design of citizen centric e-government projects in developing country context: the design-reality gap in Uganda. *International Journal of Information Systems and Project Management*, *7*(4), 55–73. https://doi.org/10.12821/ijispm070403

Kyakulumbye, S., Pather, S., & Jantjies, M. (2019b). Towards design of citizen centric e-government projects in developing country context: the design-reality gap in Uganda. *International Journal of Information Systems and Project Management*, *7*(4), 55–73. https://doi.org/10.12821/ijispm070403

Lai, P. C. (2017). The literature review of technology adoption models and theories for the novelty technology. *Journal of Information Systems and Technology Management*, 14, 21-38.

Larson, R. W. (2019). Experiencing Sampling Research from Its Beginnings into the Future. *Journal of Research on Adolescence*, *29*(3), 551–559. https://doi.org/10.

Maiga, G. (2019). *An E-government Readiness Assessment Framework for Uganda. A case study of Ugandan Ministries*. https://www.academia.edu/69643274/

Ministry of Public Service Uganda. (2021). *Annual Performance Report 2020/21*. Ministry of Public Service.

Mohamed, N., (2021). Literature review on technology acceptance model: The enhanced variables of Venkatesh's UTAUT model on students' acceptance of use on online distance learning. *Pubs.Aip.Org*. https://doi.org/10.1063/5.0051924

Mustafa, A., (2021). Theories integrated with technology acceptance model (TAM) in online learning acceptance and continuance intention: A systematic review. *Ieeexplore.Ieee.Org*. https://ieeexplore.ieee.org/abstract/document/9638934/

Mutasa, L. (2022). *E-health and e-governance integration framework for the Namibian government*. https://etd.cput.ac.za/handle/20.500.11838/3521

Muwanguzi, P. A., Bollinger, R. C., Ray, S. C., Nelson, L. R. E., Kiwanuka, N., Bauermeister, J. A., & Sewankambo, N. K. (2021). Drivers and barriers to workplace-based HIV self-testing among high-risk men in Uganda: a qualitative study. *BMC Public Health*, *21*(1). https://doi.org/10.1186/S12889-021-11041-Y

Muwanguzi, P. A., Ngabirano, T. D., Kiwanuka, N., Nelson, L. E., Nasuuna, E. M., Osingada, C. P., Nabunya, R., Nakanjako, D., & Sewankambo, N. K. (2021). The Effects of Workplace-Based HIV Self-testing on Uptake of Testing and Linkage to HIV Care or Prevention by Men in Uganda (WISe-Men): Protocol for a Cluster Randomized Trial. *JMIR Res Protoc 2021;10(11):E25099 Https://Www.Researchprotocols.Org/2021/11/E25099*, *10*(11), e25099.

Nadal, C., Sas, C., (2020). Technology acceptance in mobile health: scoping review of definitions, models, and measurement. *Jmir.Org*. https://www.jmir.org/2020/7

Nakisanze, S. (2020). Mobile technology and employee performance in Uganda's public sector. *Journal of African Innovation and Entrepreneurship*, 8(3), 101-116.

Negumbo, S. I., & Christiaan Maasdorp, M. (2018). *E-Government for good governance: Barriers to the implementation of digital workflows in the Namibian public service*. https://scholar.sun.ac.za/handle/10019.1/103753

NICT. (2011). *National Electronic Government (e-Government) Policy Framework.*

Okunogbe, O., (2022). The Promise and Limitations of Information Technology for Tax Mobilization. *Academic.Oup.Com*. https://academic.oup.com/wbro/advance-article-abstract/doi/10.1093/wbro/lkac008/6764504

Oyo, B., Maiga, G., (2022). IT Governance Maturity for Uganda's Higher Institutions of Learning. *Search.Proquest.Com*. https://search.proquest.com/openview/

Perski, O., Hébert, E. T., Naughton, F., Hekler, E. B., Brown, J., & Businelle, M. S. (2022). Technology-mediated just-in-time adaptive interventions (JITAIs) to reduce harmful substance use: a systematic review. *Addiction*, *117*(5), 1220–1241. https://doi.org/10.1111/ADD.15687

Rahimi, B., Nadri, H., Afshar, H. L., & Timpka, T. (2018). A systematic review of the technology acceptance model in health informatics. *Applied Clinical Informatics*, *9*(3), 604–634. https://doi.org/10.1055/S-0038-1668091

Sarantis, D., Dhaou, S. Ben, Alexopoulos, C., Ronzhyn, A., Pereira, G. V., Charalabidis, Y., Sarantis, D., Dhaou, S. Ben, Alexopoulos, C., Ronzhyn, A., Pereira, G. V., & Charalabidis, Y. (2019). The evolving e-Governance curriculum: A worldwide mapping of education programs. *Dl.Acm.Org*, *9*, 378–386. https://doi.org/10.1145/3326365.3326415

Singh, M., Sahu, G. P., & Sahu, G. P. (2018). User's perception towards E-Governance-A literature review. *Researchgate.Net*, *x*, *No. x*(3), 1. https://doi.org/

Smith, B., Fricker, H. A., Gardner, A. S., Medley, B., Nilsson, J., Paolo Nicholas Holschuh, F. S., Adusumilli, S., Brunt, K., Csatho, B., Harbeck, K., Markus, T., Neumann, T., Siegfried, M. R., & Jay Zwally, H. (2020). Pervasive ice sheet mass loss reflects competing ocean and atmosphere processes. *Science*, *368*(6496), 1239–1242. https://doi.org/10.1126/SCIENCE.AAZ5845

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333–339. https://doi.org/

Stone, R., Cox, A., & Gavin, M. (2020). *Human resource management*. https://books.google.com/books?hl=en&lr=&id

Thomas, G. C. (2021). Research Methodology and Scientific Writing. *Research Methodology and Scientific Writing*, 1–620. https://doi.org/10.1007/978-3-030-64865-7

Tumushabe, G. (2019). Results-oriented management and public sector performance in Uganda. *Development Policy Review*, 37(4), 563-581.

Umbach, G., (2022). Evaluating e-governance through e-government: Practices and challenges of assessing the digitalization of public governmental services. *Elsevier*. https://www.sciencedirect.com/science/article/pii/S0149718922000726

Venkatesh, V., (2015). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Pubsonline.Informs.Org*, *46*(2), 186–204. https://doi.org/10.1287/mnsc.4

World Bank. (2019). *Enhancing Public Sector Performance: A Global Perspective*. World Bank.

APPENDICES

Appendix i: Questionnaire

Dear Sir/Madam

My name is Livingstone Matsiko, pursuing a Master's degree in Business Administration at Uganda Christian University. I am conducting a study on the e-governance and employee performance at Ministry of Health Headquarters, Uganda. I am conducting this study in partial fulfilment of the requirements for the award of a Master of Business Administration.

Any information provided in this questionnaire will be kept confidential and will strictly be used for academic purposes. Your participation in this study is voluntary. The study seeks to address the following objectives: To examine the relationship between e-application of services and employee performance at MOH headquarters, to examine the relationship between e-database and employee performance at MOH headquarters, and to investigate the relationship between e-feedback and employee performance at MOH headquarters.

Instructions: ***Tick appropriately, the background information that refers to you.***

SECTION A: BACKGROUND INFORMATION

A1.What is your administrative level?

a) Top Management ☐
b) Middle level managers ☐
c) Lower level staff ☐

A2. How long have you spent on the job (in years)?

a) Less than one year ☐
b) 1-2years ☐
c) 3-5 years ☐
d) 5 -10 years ☐
e) 10 years and above ☐

A3. How old are you (in years)?

a) 18-25 years ☐
b) 26-35 years ☐
c) 36-45 years ☐
d) 46-55 years ☐
e) 55 years and Above ☐

A4. What is your gender?

a) Male ☐
b) Female ☐

A5. What is your highest level of education?

a) Certificate ☐
b) Diploma ☐
c) Bachelors ☐
d) Masters ☐
e) PHD ☐

A6. What is your religion?

a. Catholic ☐
b. Protestant ☐
c. Moslem ☐
d. Others specify…….

SECTION B: INDEPENDENT VARIABLE (E-governance)

B1. E-application of services

Instructions: Please indicate the extent to which you agree with the following observations about e-application of services at MOH headquarters. *Use a scale of;1* =Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

	Statement	**SA**	**A**	***N***	**D**	**SD**
1	I access documents uploaded by our clients and save them locally in our local databases					
2	The e-application systems have embedded user manuals that equip me with skills to utilize its features for data analysis					
3	I can electronically sanction files and forward them to the top management for approval					
4	The supervisors conduct online allocation of tasks to relevant technical officers					
5	I do online verification of client documents upon completion of application processes					
6	The Ministry provides online application templates that guide applicants of different services in providing relevant information for official use					
7	The ministry has online user-friendly platforms that are accessible to members of the public and stakeholders					
8	Online application platforms have reduced our administrative burden					
9	We receive uploaded files in real time without any delays					
10	The security of applications processes is high since everything is done online					
11	The Ministry of Health staff can interact with clients in real-time to support them in making applications for different services					
12	I am able to reduce errors in information provided during online applications					

13	The applicants can make online inquiries before completing applications					
14	Our online platforms provide easy access to automated guidance					

B2: E-database

Instructions: Please indicate the extent to which you agree with the following observations about database at MOH headquarters. *Use a scale of; 1*=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree"

	Statement	**SA**	**A**	*N*	**D**	**SD**
1	I find the e-archiving/e-database system easy to navigate and use.					
2	The e-archiving/e-database system easily meet my information retrieval needs					
3	I easily locate relevant documents or information in the e-archive/database whenever I need them					
4	I am satisfied with the search functionality of the e-archiving/e-database system					
5	I am faster at producing my outputs/results when I used the e-database system in managing data and accessing documents					
6	I feel confident in the security measures implemented in the e-archiving/e-database system					
7	The training provided to us to use the e-archiving/e-database system was adequate.					
8	I encounter technical difficulties while using the e-archiving/e-database system.					
9	I use e-archiving/e-database system to organize my daily worked on documents					
10	I am satisfied with the performance speed of the e-archiving/e-database system that use on a regular basis					
11	The e-archiving/e-database system allows me to collaborate/share information with my colleagues					
12	I feel adequately supported by IT staff when encountering issues with the e-archiving/e-database system					

B3: E-feedback

Instructions: Please indicate the extent to which you agree with the following observations about E-feedback and employee performance at MOH headquarters. *Use a scale of; 1*=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree"

	Statement	**SA**	**A**	*N*	**D**	**SD**
1	The e-feedback system facilitates communication between me and management					
2	I use e-feedback technology to communicate with other members of staff at the headquarters					
3	I use e-feedback technology to communicate with clients					

4	I use e-feedback mechanism to communicate with other MoH staff outside the head quarters					
5	I feel comfortable providing feedback through the e-feedback system					
6	The e-feedback system allows me to express my opinions while I communicate					
7	The feedback I provide through the e-feedback system is given the attention it deserves					
8	I receive timely responses to the feedback I submit through the e-feedback system					
9	The e-feedback system helps me in identifying areas for improvement in my work.					
10	I feel that my contributions through the e-feedback system are valued by the organization and clients					
11	The e-feedback system helps me to capture diverse opinions from other staff members					
12	I feel empowered to contribute to decision-making processes through the e-feedback system					

SECTION C: EMPLOYEE PERFORMANCE (DEPENDENT VARIABLE)

Instructions: Please indicate the extent to which you agree with the following observations about employee performance at MOH headquarters. *Use a scale of; 1*=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree"

	Statement	**SA**	**A**	*N*	**D**	**SD**
1	I regularly complete my job tasks as stipulated in job description					
2	I contribute to program targets set by the Ministry of Health					
3	I show timeliness in completing my assigned tasks					
4	I communicate transparently to my supervisors about the progress of my work					
5	I respond promptly to inquiries from colleagues and superiors					
6	I take a proactive approach to completing tasks					
7	I meet o performance expectations regarding task completion					
8	I manage my workload to ensure timely completion of tasks					
9	I provide accurate updates on the status of my work					
10	I prioritize tasks effectively to meet both short-term and long-term goals					
11	I hold myself accountable for my work and its outcomes					
12	I seek feedback to improve my performance and enhance efficiency					
13	I actively seek solutions to overcome obstacles and challenges in my work					

Thank you for your participating in this study

Appendix ii: Interview guide

My name is Livingstone Matsiko, pursuing a Master's degree in Business Administration at Uganda Christian University. I am conducting a study on the e-governance practices and employee performance at Ministry of Health Headquarters, Uganda. I am conducting this study in partial fulfilment of the requirements for the award of a Master of Business Administration.

I assure you of the utmost confidentiality of the responses given. The study is intended to achieve the following objectives;

a) To examine the relationship between e-application of services and employee performance at MOH headquarters
b) To examine the relationship between e-database and employee performance at MOH headquarters
c) To investigate the relationship between e-feedback and employee performance at MOH headquarters

As a Key informant, you have been selected to participate in this study, you are free to choose not to participate in this study.

Questions

Section 1: E-application of services

1) How has the Ministry of health benefited from adopting e-application of services in its operations?
2) What are the shortcomings of e-application of services at Ministry of Health headquarters?

Section 2: Database

1) How has the Ministry benefited from adopting e- databases in its operations?
2) What are the shortcomings of e-archiving/databases at Ministry of Health headquarters?

Section 3: E-feedback

1) How has the Ministry of health benefited from implementing e-feedback strategies in its operations?
2) What are the challenges of e-feedback in the operations of Ministry of Health?

Section 4: Employee performance

1) How has the Ministry of Health leveraged e-application of services to improve employee performance?
2) How has the Ministry of health leveraged e-database mechanisms to improve employee performance
3) How has the Ministry of Health leveraged e-feedback mechanisms to improve employee performance

Thank you so much for participating in this study

Appendix iii: Letter of introduction

UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

5th June 2024

To Whom It May Concern;

RE: MASTERS IN BUSINESS ADMINISTRATION (MBA)

Mr. Matsiko Livingstone Access No. B00107 and REG. S22M15/213 is a student at Uganda Christian University, pursuing a degree of Master's in Business Administration.

In partial fulfillment of the requirements for the award of the Masters degree, he is conducting a research study titled: ***"E-governance and employee performance at Ministry of Health Headquarters, Kampala Uganda"***

This communication therefore serves to formally request you to allow him access any information in your custody/organisation, which is relevant to his research.

Thank you for your cooperation on this matter.

Yours Sincerely,

UGANDA CHRISTIAN UNIVERSITY P. O. BOX 4, MUKONO 25 JUN 2024 FACULTY OF BUSINESS AND ADMINISTRATION

Dr. Henry Mugisha
Head of Department, Postgraduate Studies

Appendix iv: Sampling guide

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.

Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities", Educational and Psychological Measurement, 1970.