SCHOOL OF LIBRARY, ARCHIVES AND DOCUMENTATION STUDIES (SLADS)

A RESEARCH REPORT ON

EVALUATING THE TRANSITION FROM PAPERBASED TO DIGITAL LAND RECORDS FOR IMPROVED SERVICE DELIVERY IN TANZANIA: A CASE OF BAGAMOYO DISTRICT COUNCIL

BY

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A research report to be submitted at the school of Library, Archives and Documentation Studies (SLADS) in partial Fulfilment of the requirement for the award of ordinary diploma in Records and Archives Management

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CERTIFICATION

The undersigned certifies that he has read and hereby recommended for acceptance by the School of Library, Archives and Documentation Studies (SLADS), a research report titled: "**Evaluating the Transition from Paper Based to Digital Land Records for Improved Service Delivery in Tanzania: A Case of Bagamoyo District Council**", in partial fulfilment of the requirements for the award of the Ordinary Diploma in Library, Records and Information Studies.

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To the best of my knowledge, this work has not been submitted or presented for a similar degree award or any other academic qualification in any other college, university, or higher learning institution. All the sources and materials used in this report have been duly acknowledged through citations and references.

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Lastly, I am eternally grateful to my family and friends for their moral and financial support, patience, and prayers. Their belief in my academic journey has been my greatest source of motivation.

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DEDICATION

This work is dedicated to my family for their love, support, and care, which helped me throughout my academic journey. It is also dedicated to my friends and everyone who encouraged and advised me along the way. Your belief in me gave me the motivation to achieve this success.

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LIST OF ABBREVIATIONS AND ACRONYMS

AU	**-**	African Union
FIG	-	International Federation of Surveyors
GIGO	-	Garbage In, Garbage Out
GIS	-	Geographic Information System
ICT	-	Information and Communication Technology
IGIF	-	Integrated Geospatial Information Framework
ILMIS	-	Integrated Land Management Information System
ISO	-	International Organization for Standardization
LADM	-	Land Administration Domain Model
LAIS	-	Land Administration Information System
NLIMS	-	National Land Information Management System
PEOU	-	Perceived Ease of Use
PU	-	Perceived Usefulness
SLADS	-	School of Library, Archives and Documentation Studies
SRS	-	Simple Random Sampling
TAM	-	Technology Acceptance Model
UN-GGIM	-	United Nations Committee of Experts on Global Geospatial Information Management
URT	-	United Republic of Tanzania

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ABSTRACT

This study examined the transition from paper-based records to digital land records at Bagamoyo District Council and its influence on service delivery. The study was guided by four specific objectives which are to examine the processes involved in the transition from paper-based land records to digital land records systems in Tanzania; to assess the effectiveness of digital land records in improving efficiency and accessibility of land services; to identify the challenges affecting the implementation and use of digital land records systems in land administration offices. and to propose strategies for improving digital land records management for better service delivery in Tanzania.

A mixed-methods case study design was employed. Data were collected through structured questionnaires, semi-structured interviews, and non-participant observation. The study involved 25 respondents selected from a target population of 30. Quantitative data were analysed using descriptive statistics in Microsoft Excel, while qualitative data were analysed using thematic analysis.

The findings revealed that Bagamoyo District Council currently operates a hybrid records management system that combines paper-based and digital records. Major digitalization activities include scanning and electronically storing paper records; the systems used to store electronic records are known as Geographic Information System (GIS) and Integrated Land Management Information System (ILMIS). The digital transition has improved service delivery by reducing the time required to process title deeds and conduct land searches. However, the study finds that there is unstable internet connectivity and sometime record keeping system experiences hardware failures; there is an unreliable electricity supply, and the legal requirements still require paper copies of digital records to be preserved, that form duplications of record-keeping.

The study concludes that digital transformation has significantly enhanced land administration and service delivery at Bagamoyo District Council. Although it is accompanied by challenges that should be checked and solved on time

The study recommends that Bagamoyo District Council strengthen ICT infrastructure, provide continuous staff training, enhance district-level technical support, and review land legislation to provide full legal recognition of electronic records and digital signatures.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.0 Introduction

This chapter covers the background of the study, statement of the problem, research objective of the study, research question, and purpose of the study and definition of operation terms.

1.1 Historical background

In the global context, land records were official documents that show land ownership, boundaries, and rights. Examples of these records include title deeds, land registers, and survey maps. In the field of records and archives management, these documents were very important because they help the government and citizens to prove ownership, solve land disputes, and support planning (ISO, 2016). Today, managing land records is a major part of building a modern digital government. In the past, many countries used two main systems: the Napoleonic model and the Torrens model. These systems relied on large physical books, handwritten registers, and manual filing systems (Enemark, 2014; Williamson, 2010). However, as cities grew faster, these manual systems started to fail. Paper records became too slow to find, easy to lose, and difficult for different government departments to share. Because of these problems, international organizations created new rules to help countries move from paper to computers. One of the most important rules is the ISO 19152 Land Administration Domain Model (LADM). This is like a global "language" that helps countries put land information into digital databases (ISO, 2012). This makes it easier for different systems to "talk" to each other and ensures that digital records were accurate.

The move to digital records started in Northern Europe, in countries like the Netherlands and Denmark. By the 1990s, they had already joined their land registry and map data into one digital system. This made land services cheaper and easier for the public to get

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information (Steudler, 2014). In Asia, Singapore created the "SLA Integrated Land Information System" (SILIS). Since their records were digital, property searches were done instantly, which has increased investor confidence (World Bank, 2021). Furthermore, the United Nations (UN-GGIM) is now encouraging countries to use the Integrated Geospatial Information Framework (IGIF) to close the "digital gap" by using the latest technology (United Nations, 2022). These global trends show that changing to digital land records is a big reform of how government institutions work. By going digital, countries can stop "information silos" (where data is hidden in one office) and prevent old papers from rotting (Henssen, 2010; Williamson, 2010).

In Africa, the way land records were managed is changing very fast as governments move from old colonial systems to modern digital systems to help all citizens. Historically, land administration in Africa followed a "dual system," meaning there were formal paper records for cities, but in rural areas, land was managed through local traditions and oral agreements (Alden Wily, 2011). Because these paper records were kept in big cities, it was very hard for ordinary people to access them, and these physical files faced problems like getting old, torn, lost, or being changed illegally (Chigbu, 2021). Recently, the African Union (AU) created the "Framework and Guidelines on Land Policy in Africa" to encourage countries to use digital technology to protect land rights and stop corruption (African Union, 2010). Many African countries now use a "Fit-for-Purpose" approach, which means using simple and affordable digital tools, like satellite pictures and mobile GPS, to record land boundaries quickly (Enemark et al., 2014).

There were success stories that Tanzania can learn from, such as Rwanda, which successfully registered all land using a digital system called LAIS to reduce land disputes (Nkurunziza, 2015). In 2021, Kenya started an online platform called "Ardhisasa" to allow citizens to do land business online and remove "middlemen" (Ministry of Lands – Kenya, 2021). However, moving to digital records still has challenges like lack of reliable electricity or internet in rural areas, and some laws still do not fully recognize digital signatures (Chigbu, 2021; Williamson, 2010).In the Tanzanian context, land records were

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historically kept in paper form, a system that had many problems like loss of files, slow access to information, and poor storage, which delayed services like issuing title deeds (URT, 2018). To solve this, the government introduced the Integrated Land Management Information System (ILMIS) and the e-Ardhi platform to make land information easy to store, search, and protect while increasing transparency and reducing corruption (World Bank, 2021; URT, 2023).

Land administration in Tanzania has evolved from colonial manual systems (German and British) to a modern digital framework. After independence, these structures were improved through the Land Act and Village Land Act of the 1990s, following the 1995 National Land Policy (National Land Policy, 1995; Sullivan, 2019). Despite these reforms, records remained manual and fragmented, leading to slow processing and risks of data loss (Kitambi, 2025). In response, the Ministry of Lands started the ILMIS project between 2016 and 2018 to digitize cadastral data and title deeds in regions like Dar es Salaam and Dodoma (Barney & Laizer, 2023; Innola Solutions, 2018). Recently, the Revised National Land Policy (2023) and the e-Ardhi platform show a big shift toward fully digital administration for better accessibility nationwide (Danvast, 2025). However, some land laws still assume paper-based proof of ownership, which creates challenges for the full legal recognition of electronic records (Kitambi, 2025).

1.2 Statement of the problem

The primary objective of implementing digital land records was to modernize service delivery and reduce the challenges associated with manual record-keeping, such as delays, loss of files, and lack of transparency (Kironde, 2017). Ideally, systems like the Integrated Land Management Information System (ILMIS) were designed to ensure that land transactions were fast, accurate, and secure (Ministry of Lands, 2020). However, at Bagamoyo District Council, the transition hindered by the persistence of a “hybrid” system where paper and digital records were used simultaneously, leading to operational inefficiencies (Mndeme, 2021). This situation was further complicated by frequent power outages, slow internet connectivity, and a lack of adequate ICT skills among staff (Sanga

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& Masunzu, 2022). Consequently, if these bottlenecks were not evaluated and addressed, the benefits of digitization not be realized, leading to continued delays, potential land disputes, and a loss of public trust in land administration (Makwarimba & Mwalule, 2018). Therefore, this study aimed to evaluate the transition to digital land records at Bagamoyo District Council to provide strategies for improved service delivery.

1.3 Purpose of the study

The purpose of this study was to evaluate the transition from paper-based land records to digital land records systems and examine how this transition has contributed to improving service delivery in Tanzania, particularly in terms of efficiency, accessibility, and reliability of land information.

1.4 General objective

The general objective of this study was to evaluate the transition of digital land records and assess its effectiveness in improving service delivery in Tanzania.

1.4.1 Specific objective

i. To examine the processes involved in the transition from paper-based land records to digital land records systems in Tanzania.
ii. To assess the effectiveness of digital land records in improving efficiency and accessibility of land services.
iii. To identify the challenges affecting the implementation and use of digital land records systems in land administration offices.
iv. To propose strategies for improving digital land records management for better service delivery in Tanzania.

1.4.2 Research questions

i. What processes involved in the transition from paper-based land records to digital land records systems?

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ii. How effective were digital land records systems in improving efficiency and accessibility of land services?
iii. What challenges affect the implementation and use of digital land records systems in land administration offices?
iv. What strategies can be used to improve digital land records management for better service delivery?

1.5 Significance of the Study

i. The research was helped government authorities and policymakers understand the effectiveness of digital land records systems and develop policies to strengthen land administration and service delivery.
ii. The study was provided insights on how digital systems can improve efficiency, reduce delays, and make land services more accessible to citizens.
iii. The research was highlighted challenges related to staff skills and technology, which can guide training programs and capacity-building initiatives for land administration personnel.
iv. The study was contributed to the knowledge of proper records and archives management in digital environments, helping institutions maintain reliable, secure, and accessible land records for future use.

1.6 Limitation of the study

Experience; since the user who does not have an experience it was difficult to obtain the needed information.

Time; the research was conducted within a limited timeframe, and that time located to fulfil the study was too little which may affected the depth of data collection and analysis.

Access to Records; Some digital or paper-based land records may be restricted or confidential, limiting the availability of complete information.

Technical Challenges; Potential issues with digital systems or internet connectivity in the land offices may affect the smooth collection of data.

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Respondent Availability; Some land officers or clients may not be available or willing to provide information, which could impact the comprehensiveness of the study.

1.7Scope of the study

This study was be conducted at Bagamoyo District Council in ministry of land office in the Coast Region. The study was only focused on the transition process, which was the movement of land records from paper files to computer systems. It focused only on how transformation helps to improve service delivery for the citizens. To get the right information, the researcher was involved respondents. These include the Land Officers who use the systems every day and the clients or landowners who visit the office for services. The data was collected using three main methods, Questionnaires to get quick opinions, Observation where the researcher observed in the office to see with their own eyes how the digital system works and Interviews to have one on one talks with the staff about their technical “hustles,”. Data collection this data took place over three months, from March to May 2026.

1.8 Definition of terms/Operational terms

1.8.1 Land Records

Official documents that show information about land ownership, boundaries, and legal rights. Examples include title deeds, land registers, cadastral maps, and survey records. In this study, land records refer to all documents that prove ownership and support land administration processes (ISO, 2016).

1 8.2 Digital Land Records

Official land documents, such as title deeds, cadastral maps, and land registers, that have been converted from physical paper into electronic formats and were managed using computerized systems (World Bank, 2021).

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1.8.3 Paper-Based Land Records

Traditional land records maintained in physical form, such as files, maps, and registers, often stored in land offices. These records were prone to loss, damage, and slow retrieval (URT, 2018).

1.8.4 Service Delivery

Refer to the actual process of providing land-related services to the public, such as the registration of land, the transfer of ownership, and the timely issuance of title deeds. In land administration, it was measured by how fast, accurate, and transparent these services were for the citizens (World Bank, 2021).

1.8.5 Records Management

The process of creating, organizing, storing, retrieving, and preserving records efficiently and securely to ensure their authenticity, reliability, and usability over time(ISO, 2016).

1.8.6 Land Administration

Activities and processes involved in managing land information, ownership, boundaries, and legal rights. This includes registration, documentation, and updating of land records.

1.8.7 Transition to Digital Land Records

Refer to the process of moving from paper-based land records to electronic/digital systems in order to improve efficiency, accuracy, accessibility, and transparency in land administration (Barney & Laizer, 2023; Innola Solutions, 2018).

This study adopted the above definitions

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CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

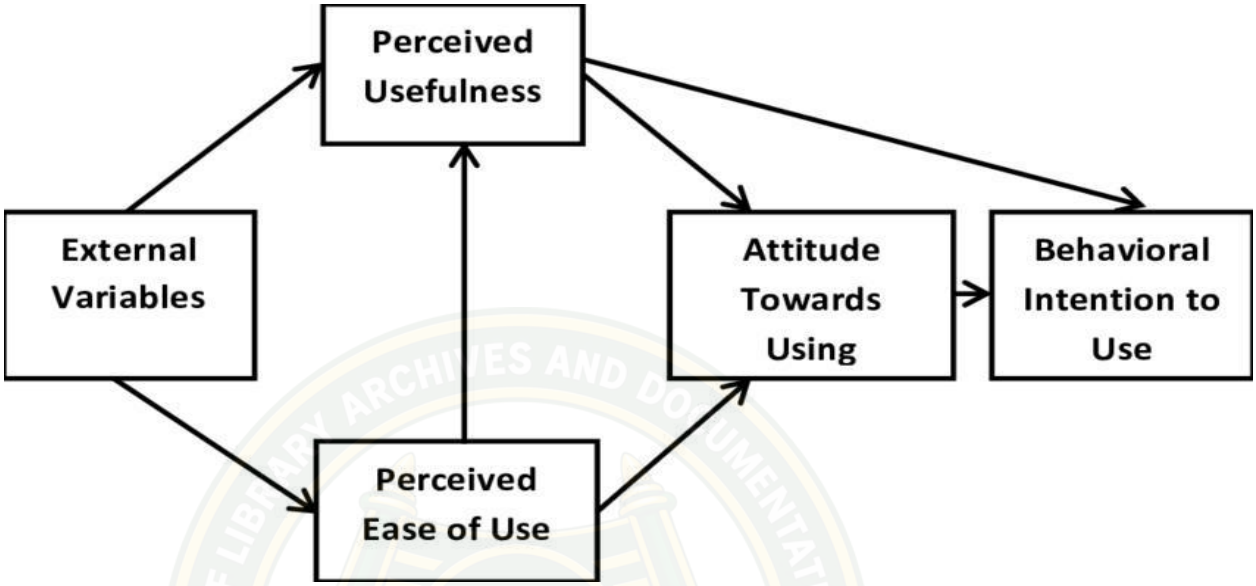
This chapter presents information from relevant sources in the field of study, it includes a review of related concepts, the theoretical framework, the conceptual framework, and identifies the research gap of the study.

2.1 Theoretical Framework

This study was grounded in the Technology Acceptance Model (TAM), which was originally developed by Fred Davis in 1989. TAM was one of the most influential theories in information systems, used to explain and predict how users accept and adopt new technology in an organizational setting.The theory posits that when an organization introduces a new systemsuch as the digital land records at the Bagamoyo District Council the actual usage and success of that system were determined by the users' Behavioural intentions, which were driven by two primary internal beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).

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Figure 2.1 Technology acceptance model



2.1.2 Perceived Usefulness (PU)

According to Davis (1989), Perceived Usefulness was the degree to which a person believes that using a particular system would enhance their job performance. In the context of this study, if the land officers at Bagamoyo perceive that the Integrated Land Management Information System (ILMIS) makes their work more efficient, reduces the time taken to process title deeds, and improves data accuracy, they was have a positive attitude toward the system. For the citizens (service users), PU was reflected when they realize that digital records eliminate the need for long waiting hours and multiple visits to the land office.

2.1.3 Perceived Ease of Use (PEOU)

Perceived Ease of Use refers to the degree to which a person believes that using a particular system would be free of effort. For the staff at the Bagamoyo District Council, if the digital interface of the land system wasuser friendly, well structured, and easy to navigate without constant technical errors, their acceptance level was be significantly higher. However, literature suggests that if the system was complex or if the staffs lack

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the necessary ICT training, the PEOU wasbelow, leading to a “resistance to change” and a tendency to revert to manual paper-based methods.

2.1.4 Application of TAM to the Study

In this research, TAM serves as a lens to evaluate why the transition to digital land records may succeed or struggle at the district level. The model suggests that the technical transition alone was not enough to improve Service Delivery; the human element (the staff) must find the technology both useful and easy to operate. Therefore, this study was use TAM to analyze if the current challenges such as poor internet connectivity or low ICT literacy were affecting the “Perceived Ease of Use” among Bagamoyo staff, thereby hindering the overall effectiveness of the digital land management system.

2.2 Review of the related concepts

2.2.1 Processes of the Digital Transition in Land Administration.

Literature shows that the transition from manual to digital systems was a multi-dimensional process that goes beyond simple scanning; it involves the legal validation of paper data, system migration, and the harmonization of administrative workflows before data enters the centralized system. Globally, countries like Estonia have achieved 100% digitalization by adopting the “Once-Only” principle; ensuring data was captured once and utilized across all government agencies. In Africa, Rwanda was recognized as a pioneer, having successfully digitized its land registry to facilitate rapid land tenure security. In Tanzania, studies by Sileyew (2019) indicate that while the digital transition was a national priority, many district offices including the Bagamoyo District Council continue to operate in a “hybrid” mode. This dual system approach, where both manual and electronic records coexist, often creates administrative confusion and operational overlaps during the transition phase. The transition process within the Tanzanian land sector was primarily executed through the Integrated Land Management Information System (ILMIS), which involves the following critical stages:

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Data auditing and Inventory cleansing; the foundational stage of the transition requires a comprehensive audit of all existing physical land files. According to Adeoye (2024), data cleansing was the most vital step, as it involves verifying the legal status of titles and resolving discrepancies in plot boundaries before they were digitized. This stage prevents the "Garbage In, Garbage Out" (GIGO) phenomenon, where historical manual errors were simply converted into digital errors, which would otherwise undermine the integrity of the entire database.

Conversion and Digital Archiving; Once validated, physical records were subjected to highspeed scanning and conversion into machine-readable formats. This stage turns fragile paper documents into durable digital assets. However, scholarly literature emphasizes that scanning was merely the "image" stage; for the system to be effective for the Bagamoyo Land Office, these images must be properly indexed with metadata (such as parcel numbers and owner Ids) to allow for instantaneous retrieval.

Data Migration and GIS Integration; A significant part of the transition process was the migration of alphanumeric data into a Geographic Information System (GIS). This allows for the spatial mapping of land parcels, where every title deed was linked to a specific set of coordinates. Jilcha Sileyew (2020) notes that this integration was what transforms a simple list of names into a powerful administrative tool, enabling land officers to visualize land use and prevent the double-allocation of plotsa common problem in manual registries.

The Administrative Transition and Change Management; finally, the transition requires a shift in human capital and organizational culture. Literature on public sector reforms suggests that the technical shift must be supported by Change Management strategies. For the staff at Bagamoyo District Council, this involves moving away from the physical "Registry of Documents" to a digital workflow. As noted by Ayana et al. (2024), the success of this transition was often hindered by the "hybrid" nature of the laws, which in some cases still require a physical signature or stamp to make a digital document legally binding, thereby slowing down the overall pace of the digital transition.

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2.2.2 Effectiveness of Digital Land Records in Improving Efficiency and Accessibility.

According to Adeoye (2024), digital records significantly enhance accessibility by facilitating "one-stop-shop" services, which centralize various land-related tasks into a single electronic interface. In the Tanzanian context, the introduction of the Integrated Land Management Information System (ILMIS) was strategically intended to democratize land information, allowing citizens to verify plot status and ownership details via mobile devices and online portals. Empirical evidence from similar administrative reforms suggests that where digital infrastructure was stable, the turnaround time for a standard land search has plummeted from a manual average of 14 days to less than 24 hours (Garg, 2016). This radical improvement in efficiency was primarily driven by the elimination of physical file retrieval, which in the manual system often involved searching through thousands of paper records in the registry. By automating these processes at the Bagamoyo District Council, the government reduces the administrative burden on land officers, allowing them to process titles, transfers, and mortgages with unprecedented speed. Furthermore, the electronic nature of these records ensures that they were available 24/7, removing the geographical and temporal barriers that previously forced citizens to travel long distances to the land office during limited working hours.

Beyond mere speed, the effectiveness of digital land records was deeply rooted in the enhancement of transparency and the systematic reduction of "rent-seeking" opportunities or corruption. When land records were digitized and made accessible through public portals, it removes the need for "middlemen" or informal brokers who often exploited the complexity of the manual system to charge citizens extra fees for "finding" files. Ajayi (2017) notes that digital systems create an immutable audit trail, where every access and modification to a land record was logged, making it nearly impossible for records to be backdated or altered without authorization. This structural integrity was vital for the Bagamoyo District Council, as it helps in building public trust and ensuring tenure security for property owners and real estate investors. Additionally, the improved accessibility allows for better revenue collection for the council; when citizens can easily verify their

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land rent and taxes online, compliance rates tend to increase. Ultimately, the transition to digital records serves as a catalyst for socio-economic development, as efficient land administration was the backbone of a secure investment climate, enabling faster collateralization of land for bank loans and reducing the litigation costs associated with overlapping land claims.

2.2.3 Challenges Affecting the Implementation and Use of Digital Land Records.

The implementation of digital land records in Tanzania was hindered by a complex interplay of infrastructural deficits and systemic "digital divides" that prevent the full realization of the system's potential. A primary challenge identified in scholarly literature was the unreliability of critical utilities, specifically stable electricity and high-speed internet connectivity. As noted by Etikan & Bala (2017), land administration offices in many African districts often suffer from frequent power outages which "freeze" the digital registry, forcing staff to either stop working or temporarily revert to manual methods. This inconsistency creates a "bottleneck" at the Bagamoyo District Council, where the digital transition was intended to accelerate services but was instead stalled by hardware downtime. Furthermore, the high cost of maintenance for servers and the lack of localized technical support mean that when the system crashes, it may remain offline for days. This infrastructural gap was often compounded by the "Garbage In, Garbage Out" (GIGO) risk; if the historical paper records were inaccurate, fragmented, or physically damaged, migrating them into the Integrated Land Management Information System (ILMIS) simply digitizes the error. This leads to "digital land disputes" that can be even more difficult to resolve than manual ones because they carry a false sense of electronic authority.

Beyond technical hurdles, the human and organizational dimension presents a significant barrier to the effective use of digital land records. According to the Technology Acceptance Model (TAM), "Perceived Ease of Use" was a major determinant of system success. In many instances, long-serving land officers who were deeply accustomed to manual filing systems exhibit a "resistance to change," fearing that digitalization was

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make their skills obsolete or increase their workload without a corresponding increase in salary. This psychological barrier was often exacerbated by a lack of continuous ICT training, leaving staff feeling overwhelmed by complex database interfaces and GIS mapping tools. Additionally, there was the challenge of Legal Incompatibility; the existing statutes such as the Land Act have not always been fully harmonized to treat digital certificates with the same legal weight as physical ones in every context. This creates a situation where land registry staff in Bagamoyo must perform "double work," maintaining both a digital record for the system and a paper record for legal safety. Consequently, the transition phase becomes longer and more expensive than initially planned, reducing the overall satisfaction of both the service providers and the citizens who expect a modern, seamless system.

2.2.4Strategies for Improving the Digital Transition in Land Administration

The literature emphasizes that for the transition to digital land records to be sustainable and impactful at the local government level, several strategic interventions must be prioritized. One of the most critical strategies was the implementation of Continuous ICT Capacity Building and Technical Empowerment. According to Ayana et al. (2024), the success of technological reforms in public institutions was not solely dependent on the quality of the software, but on the technical proficiency of the human users. At the Bagamoyo District Council, providing regular, specialized training for land officers on the use of ILMIS and GIS tools was essential to reduce "technophobia" and administrative errors. When staff were well-trained, the "resistance to change" decreases, and the system was utilized to its full potential, thereby accelerating the speed of service delivery and ensuring data integrity during the migration process.

Furthermore, scholars advocate for the strategy of Infrastructural Resilience and Decentralized Technical Support. In many African contexts, the digitalization process was often crippled by centralized support systems that were far from the district offices. To improve the transition, literature suggests that district councils should invest in Off-grid

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Energy Solutions, such as solar power systems and high-capacity Uninterruptible Power Supplies (UPS), to mitigate the frequent power outages that freeze digital registries. Additionally, having a dedicated IT support team at the district level, rather than relying solely on the Ministry headquarters, ensures that system technical glitches were resolved instantly. This localized technical maintenance strategy prevents long periods of system downtime, which often forces staff to revert to manual filing, thus maintaining the momentum of the digital transition.

Lastly, a fundamental strategy for a successful digital transition involves Legal Harmonization and Policy Integration. As noted by Adeoye (2024), many digital land systems operate in a legal vacuum where old statutes like the Land Act still demand physical signatures, paper deeds, and rubber stamps for a transaction to be legally valid. To improve the effectiveness of the system, the government must update land laws to fully recognize Electronic Signatures and Digital Title Deeds. By removing the legal requirement for paper-based backups, the "double-work" bottleneck was eliminated. This policy shift allows the district land office to operate as a truly paperless environment, which not only saves administrative costs but also enhances the transparency of the system by creating a fully digital audit trail that was legally binding in courts of law.

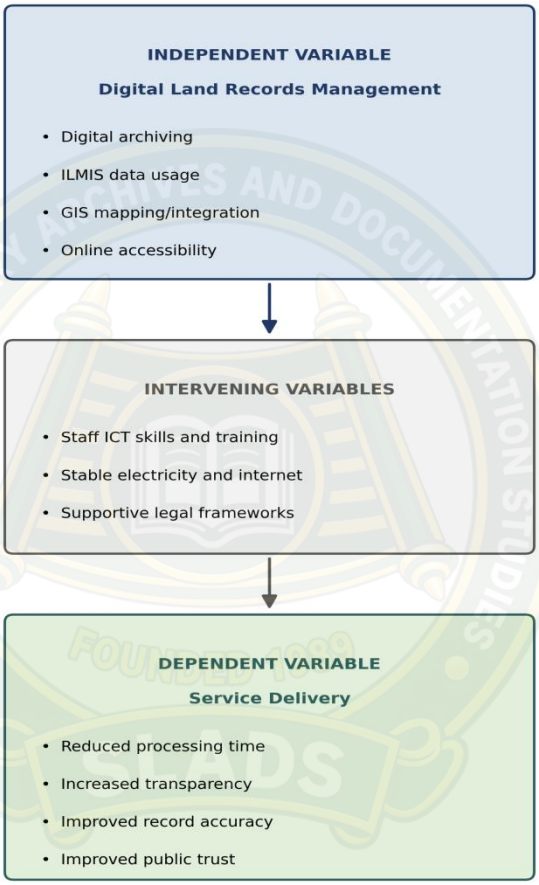
2.3 Conceptual Framework

A conceptual framework is a visual and logical representation of the relationship between the variables of a study. It provides a guide for understanding how the independent variable influences the dependent variable and how other factors may affect this relationship. In this study, the conceptual framework was developed based on the Technology Acceptance Model (TAM) and findings from the reviewed literature. It shows that the transition from paper-based to digital land records management is expected to improve service delivery. However, the extent of this improvement depends on intervening factors such as staff ICT skills and training, the availability of stable electricity and internet, and supportive legal frameworks. These factors can either strengthen or hinder the successful implementation of digital land records management and its

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contribution to improved service delivery. The relationship among these variables is illustrated in Figure 2.2 below.

Figure 2.2: Conceptual Framework Showing the Relationship between the Variables



***Source**: Researchers own construct (2026), adapted from Davis (1989).*

2.3.1 Description of the Variables

The conceptual framework consists of three categories of variables, namely the independent variable, the intervening variables, and the dependent variable.

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i. Independent Variable: Digital Land Records Management

The independent variable in this study is digital land records management. It refers to the transition from paper-based land records to digital systems through activities such as digital archiving, the use of the Integrated Land Management Information System (ILMIS), GIS mapping and integration, and online accessibility of land information. These activities are expected to improve the management of land records and support better service delivery.

ii. Intervening Variables

Intervening variables are the factors through which digital land records management is expected to translate into improved service delivery. In this study, these variables include staff ICT skills and training, stable electricity and internet connectivity, and supportive legal frameworks. The successful implementation of digital land records depends on the availability of these conditions. Where they are inadequate, the benefits of digital systems may not be fully achieved.

iii. Dependent Variable: Service Delivery

The dependent variable is service delivery. It refers to the outcomes expected from implementing digital land records management. In this study, improved service delivery is measured by reduced processing time, increased transparency, improved record accuracy, and improved public trust in land administration services.

2.4 Research gap

Although many studies have examined digital land systems in developing countries, most have focused on national institutions and major cities such as Dar es Salaam. There was limited research on how district land offices manage the transition from paper records to digital systems and the challenges faced by staff in their daily operations. In addition, little evidence exists on whether these systems have improved service delivery for citizens at

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the grassroots level. Therefore, this study examined the implementation of digital land records at the district level and its contribution to improving service delivery.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

Research methodology was the systematic framework and scientific approach used by researchers to identify, collect, analyze, and interpret data to solve a specific research problem or test a hypothesis (Adeoye, 2024; Jilcha Sileyew, 2020). This chapter was comprised of the design of the study, population, type of data, sample size and sampling technique, data collection methods and data analysis.

3.1 Research design

Research design was the comprehensive plan or "roadmap" that outlines the strategy a researcher was use to integrate various components of a study in a logical and coherent manner (Adeoye, 2024; Ayana et al., 2024). The researcher used qualitative data in analysing the research data and at some point also use quantitative data where necessary to analyze data that was be collected so this study adopted a mixed-methods research approach, integrating both quantitative and qualitative data collection and analysis.

3.2 Area of study

According to Sileyew (2019), the study area refers to the geographical location or setting where the research was conducted. The research was conducted at Bagamoyo District Council in ministry of land office. The area of the research has been selected by the researcher because it was one of the district council which operate under Digital Land Records Management System, where the researcher obtained key data.

3.3 Population

Refers to the entire group of individuals, objects, or events that possess the specific characteristics the researcher was interested in studying. It represents the total set of cases from which a researcher intends to draw conclusions (Asiamah, 2017). The target population comprised 33 participants that including Technical Staff employees from the

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Bagamoyo District Council Land Department including Surveyors, Values, and Town Planners and Service Users like Property owners and real estate agents in Bagamoyo who have used the digital system within the last 24 months.

3.4 Sample size

In research, the Sample Size refers to the specific number of individual observations or participants selected from the target population to be included in a study (Salkind, 2010). The sample comprised 30 respondents including service users and technical staff employees.

Table 3.1 Distribution of sample size

S/N	Staff Members	Sampling Techniques	Sample Size
1	Administrative Officers	Purposive Sampling	9
2	Registry Officers	Random Sampling	10
3	IT Staffs	Purposive Sampling	4
4	Service Users	Random Sampling	7
	Total		30

3.5 Sampling technique

In research, sampling technique refers to the specific process or method used to select a smaller group of individuals (a sample) from a larger population to participate in a study. The goal of a sampling technique was to ensure that the selected sample was representative of the population, allowing the researcher to draw accurate conclusions about the whole group (Garg, 2016). The researcher used purposive sampling technique to select to participants with specialized knowledge regarding the digital land record system and simple Random Sampling technique to select general public to ensure an unbiased evaluation of service delivery improvements.

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3.5.1 Simple random sampling

A Simple Random Sampling (SRS) was a basic type of probability sampling where every individual member of a population has an equal and known chance of being selected. In this method, the selection was made entirely by chance, similar to a lottery system, ensuring that the process was completely unbiased (Garg, 2016). The researcher used simple Random Sampling to select service seekers because it gives each member of the target population an equal chance of being included in the sample.

3.5.2Purposive sampling

Purposive sampling, also known as judgmental or selective sampling, was a non-probability sampling technique in which a researcher relies on their own judgment when choosing members of the population to participate in their study (Adeoye, 2024; Etikan & Bala, 2017). Purposive sampling was sometime chosen because it meets certain criteria, the method was used for case studies. A Purposive sampling technique was used to obtain land registry staffs.

3.6 Data collection methods

Data collection methods refer to the systematic processes, techniques, and instruments used by researchers to gather information from various sources to address a research problem, test a hypothesis, or evaluate outcomes (Adeoye, 2024; Jilcha Sileyew, 2020). The researcher used three methods to collect data which were interview, questionnaire and observation.

3.6.1 Primary data

Primary data was defined as the original information collected first-hand by a researcher specifically for the purpose of addressing a particular research problem (Adeoye, 2024). Often referred to as “raw data,” it was gathered directly from the source through various interactions, ensuring that the information was current and tailored to the specific needs of the study (Ajayi, 2017). Primary data was be collected from the sample population

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using the following method questionnaires, interview and observation this was enable the researcher to get first-hand information was gathered.

3.6.2 Questionnaire method

The questionnaire method was a structured data collection instrument consisting of a series of written questions designed to gather specific information from respondents (Adeoye, 2024). It mainly made up of a list of questions but should also include clear instructions and space for answers or administrative details.

3.6.3 Advantage of Questionnaire

The main importance of questionnaire was economical was way of accumulation information so advantage of the questionnaire method was its efficiency in collecting large amounts of standardized data from a high number of respondents at a relatively low cost (Adeoye, 2024). So this need low cost and affordable.

3.6.4 Interview method

The interview method was a qualitative data collection technique that involves a direct, systematic conversation between a researcher (the interviewer) and a participant (the interviewee) to gather in-depth information, opinions, and experiences (Adeoye, 2024; Campbell, 2020). Unlike a questionnaire, which was rigid, an interview allows for a social interaction where the researcher can explore complex issues through follow-up questions and probing (Conaty, 2021). This method can be used through person interview and telephone interview.

3.6.5 Advantages of interview

The main advantage of the interview method was its ability to provide in-depth and detailed information that helps a researcher understand a participant's true feelings and opinions (Adeoye, 2024). Unlike other methods like questionnaires, an interview allows the researcher to ask "why" or "how" to get more clarification on difficult issues that cannot be answered by just saying "Yes" or "No" (Campbell, 2020). This method was

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very good because it helps the researcher to see if the person was happy or sad through their face and body language while talking (Conaty, 2021).

3.6.6 Observation Method

Observation was a primary data collection method where the researcher gathers information by personally watching the physical setting and the behaviour of people in the field (Sileyew, 2019). In this study, the researcher used non-participant observation to witness how the transition from paper-based to digital records was happening at the Bagamoyo District Council Land Office. This method was very powerful because it provides "first-hand" information that cannot be obtained through interviews or questionnaires alone (Adeoye, 2024).

3.6.7Advantage of Observation

The main advantage of observation was that it provides "first-hand" and "live" information about what was actually happening on the ground, rather than just what people say was happening. In this research at the Bagamoyo Land Office, observation allowed the researcher to see the real "hustle" of the transition, such as how staff struggle with old paper files while using new computers or how power cuts affect the digital system (Adeoye, 2024).

3.6.8 Secondary data

Secondary data refers to information that was already collected, processed, and published by someone else for a different purpose, but which a researcher re-uses for their own study (Adeoye, 2024; Ajayi, 2017). Unlike primary data, which you collect yourself at the Bagamoyo District Council, secondary data already exists in records, reports, or books (Garg, 2016). Secondary data was obtained from books, research report, journals, articles, electronic sources and abstract.

3.7 Data collection instruments

In research, Data Collection Instruments were the specific tools or documents that a researcher uses to gather information from the participants. These tools act as the "bridge"

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between the researcher and the reality on the ground at the Bagamoyo District Council. Choosing the right instruments was very important because if the tools were weak, the data collected was be poor, leading to wrong conclusions (Adeoye, 2024). In this study, the researcher used three main instruments: questionnaires, interview guides, and observation schedules to ensure that the information gathered was deep and accurate (Sileyew, 2019).

3.7.1 Questionnaire Instrument

The questionnaire was a formal list of written questions designed to collect standardized data from many people at the same time. In this study, the questionnaires were used to gather opinions from service seekers and land office staff about the speed and transparency of the digital system. According to Adeoye (2024), questionnaires were very effective because they allow the researcher to collect a large amount of information quickly and at a low cost. For this research, the questions included both "closed-ended" (where people tick boxes) and "open-ended" (where people write their views) to provide a clear picture of how the digital transition was working (Ajayi, 2017).

3.7.2 Interview Guide Instrument

An interview guide was a set of open-ended questions that the researcher asks during a face-to-face conversation with the participants. This instrument was used specifically for the Technical Land Officers and IT staff at the Bagamoyo District Council to understand their technical "hustles" and the challenges of moving from paper to digital files. Literature suggests that interview guides were better than questionnaires for understanding complex feelings and expert opinions because the researcher asks "why" to gather more details (Campbell et al., 2020). Using this tool helps to capture the "human side" of the digital transition that cannot be seen in numbers alone (Conaty, 2021).

3.7.3 Observation checklist Instrument

An observation schedule was a checklist or a guide used by the researcher to record what they see happening in the field without asking questions. The researcher visited the

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Bagamoyo Land Office to observe how the staffs use the ILMIS and e-Ardhi systems and how they handle the old paper files. According to Sileyew (2019), observation was a powerful tool because it allows the researcher to see the actual reality (the "live" situation), such as power outages or system delays, which participants might forget to mention in an interview. This instrument helps to confirm if what people said in the questionnaires was actually what was happening on the ground (Adeoye, 2024).

3.8 Data quality control

In research, Data Quality Control was the process of making sure that the information you collect was correct, honest, and can be trusted by other people. If the data was of low quality, the research was not be useful for the Bagamoyo District Council. To ensure high-quality data, the researcher must check two main things: Validity and Reliability (Adeoye, 2024). These two were like the "security guards" of your research data, ensuring that the tools you use (like questionnaires) were doing their job correctly (Sileyew, 2019).

3.8.1 Validity of the Research Instruments

Validity refers to the "accuracy" of the research tools. It asks the question: Was this tool really measuring what it was supposed to measure? (Garg, 2016). For example, if the researcher wants to measure the "speed" of the digital land system at Bagamoyo, the questionnaire must ask about time and delays, not about the beauty of the office building. To ensure Content Validity, the researcher submit the draft of the questionnaires and interview guides to the supervisor at SLADS and land experts to check if the questions were right for the study (Adeoye, 2024). This "expert check" helps to remove confusing or useless questions before they were given to the land officers (Salkind, 2010).

3.8.2 Reliability of the Research Instruments

Reliability refers to the "consistency" or the "dependability" of the research tools. It means that if the same research was done again under the same conditions, it should produce the same results (Asiamah et al., 2017). For this study at the Bagamoyo District Council, the researcher was ensured through a Pilot Study (a small test) with a few respondents before

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the main data collection. According to Adeoye (2024), pre-testing the instruments helps the researcher to identify “bugs” or technical errors in the questions. If the respondents understand the questions and give consistent answers during the pilot, then the tool was considered reliable and ready for use in the field (Garg, 2016).

3.8.3Data processing and analysis

Data processing and analysis refer to the systematic stages of transforming raw data into meaningful information that can be used to answer research questions or make decisions (Adeoye, 2024). While they were closely related, they represent two different steps in the research journey: Processing prepares the data, while Analysis interprets it (Jilcha Sileyew, 2020). Therefore, the study utilized Microsoft Excel and Microsoft Word programs to process and analyze data collected from the respondents, and the result was be presented accordingly.

3.8.4Research ethics

Research ethics refers to the moral principles and guidelines that govern how research was conducted to ensure the protection of participants, the integrity of the data, and the accountability of the researcher (Adeoye, 2024). Information obtained was be used solely for the purpose of this study and was kept confidential.

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CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF THE FINDINGS

4.0 Introduction

This chapter presents analyses and discusses the findings of the study which was conducted at the Bagamoyo District Council Land Office. The study aimed to evaluate the transition from paper-based land records to digital land records and to assess how this transition has helped to improve service delivery in Tanzania. A total of 30 respondents participated in this study, comprising Land Office Staff (including Administrative Officers, Registry Officers, Survey and Mapping Officers, and ICT Support Staff) and Service Users (citizens who visited the land office for services). Data was collected using structured questionnaires for both staff and service users. The findings were presented question by question using frequency distribution tables followed by analysis and discussion. The findings were organised according to the four specific objectives of the study.

4.1 Response Rate

Response rate refers to the proportion of respondents who successfully completed and returned research instruments compared to the total number of distributed instruments. The study targeted 30 respondents from different departments within the Bagamoyo District Land Office. Out of the 30 questionnaires distributed to respondents, 25 questionnaires were successfully returned and well filled, representing a response rate of 83%. According to Mugenda and Mugenda (2003), a response rate above 70% was considered adequate for data analysis and interpretation. Therefore, the response rate obtained in this study was satisfactory and reliable for generating study findings. More details were seen in Table 4.1 below.

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Table 4.1Response Rate of Respondent (n=25)

Category	Frequency	Percentage %
Returned questionnaire	25	83%
Not returned questionnaire	5	17
Total	**30**	**100%**

Source: *Field Study (2026)*

The findings in Table 4.1, in the subject aimed to evaluate the transition from paper-based land records to digital land records and to assess how this transition has helped to improve service delivery in Tanzania. This show that out of 30 questionnaires distributed to respondents, 25 questionnaires were successfully completed and returned, representing 83% of the total sample. The response rate of 83% was considered adequate and reliable for analysis because it exceeds the minimum acceptable response rate suggested by Mugenda and Mugenda (2003). Therefore, the collected data were sufficient for achieving the study objectives.

4.2 Demographic Characteristics of Respondents

Demographic characteristics refer to the background information of respondents that helps researchers understand the composition of the study population. According to Saunders, Lewis, and Thornhill (2019), demographic characteristics provide important information that assists researchers in interpreting findings based on respondents' social and personal attributes. The demographic information of the respondents in this part represents the distribution of Gender, Age and Level of Education. The researcher decided to collect personal information of respondents for the purpose of knowing which groups in the targeted population were involved in and aware of the transition from paper-based to digital land records management at the Bagamoyo District Council

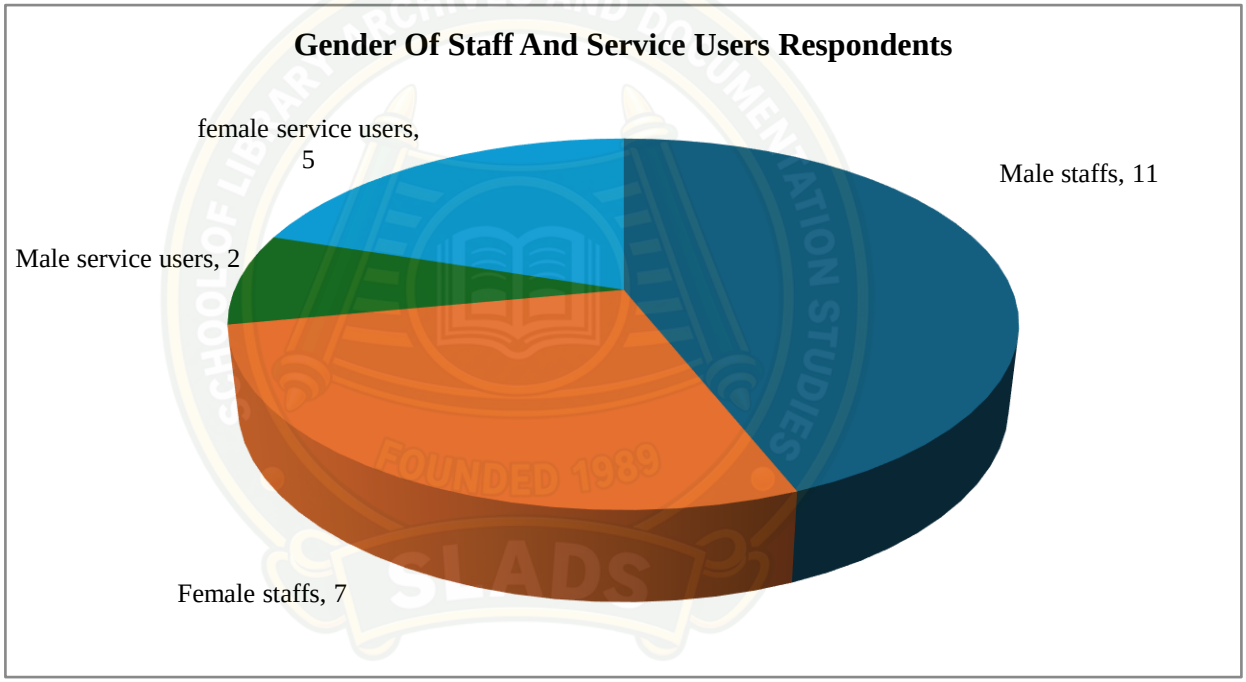
4.2.1 Gender of Respondents

Gender refers to the classification of individuals as male or female within a particular population. According to Creswell (2014), gender was an important demographic variable

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because it helps researchers understand the representation and participation of different groups in a study. Out of all of total 25 respondents 13 were male and 12 were female. Among the staff respondents (n=18), 11 (44%) were male and 7 (28%) were female. Among the service user respondents (n=7), 2 (8% of users) were male and 5 (20% of users) were female. The respondents were asked to indicate their gender, and their responses were as presented in Figure 4.1 below.

Figure 4.1: Gender Distribution of Staff and Service Users Respondents



Source: *Field study (2026)*

Figure 4.1 shows the gender distribution of both land office staff and service user respondents at the Bagamoyo District Council. Among the staff respondents, 11 (44%) were male and 7 (28%) were female. Among the service user respondents, 2 (8% of users) were male and 5 (20% of users) were female. The total number of all respondents was 25.

The findings indicate that among the land office staff, male respondents (44%) were more than female respondents (28%). This situation reflects the general composition of technical departments in land administration offices in Tanzania, where positions such as

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surveyors, values, and land administration officers were more commonly occupied by men. However, the presence of female staff members (28%) was a positive sign that women were increasingly participating in land administration work at the district level, which was line with the Tanzania government requirements that encouraged equal participation of men and women in all areas of public service. Asiamah et al. (2017) further noted that ensuring gender balance among respondents strengthens the representativeness of research findings and reduces the risk of gender bias in the conclusions drawn from the data.

On the other hand, among the service user respondents, female users (20%) were more than male users (8%). This was an interesting finding because it shows that more women than men visited the Bagamoyo District Council Land Office for land-related services during the period of data collection. This could be a reflection of the increasing awareness among women of their land rights and the importance of formalising land ownership through the digital land records system. The government's efforts to promote women's land rights through policies such as the National Land Policy (URT, 1995) may be encouraging more women to visit land offices to register their land and apply for title deeds. Overall, the participation of both male and female respondents from both groups ensures that the findings of this study represent the views and experiences of all genders, which strengthens the reliability and completeness of the data collected.

During the interview one female registry officer noted:

> *"We were working together with our male colleagues in this department. The digital system has actually made it easier for all of us to do our work because we can find records faster without carrying heavy files."*

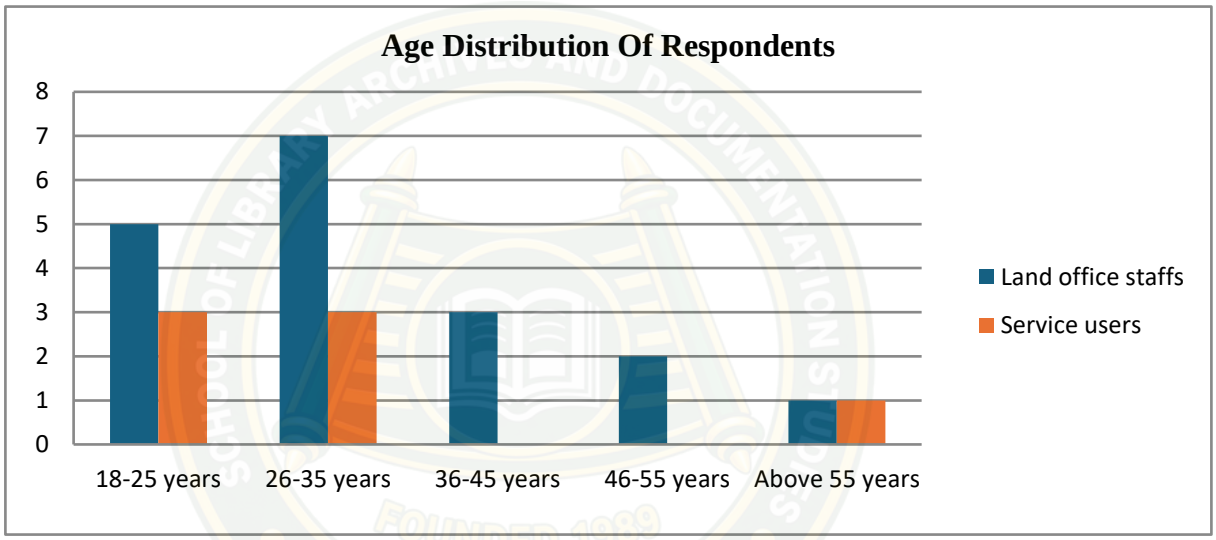
4.2.2 Age Distribution of Respondents

Age refers to the number of years that a person has lived since birth. According to Saunders et al. (2019), age was an important demographic characteristic because it influences individuals' knowledge, experience, skills, and ability to adapt to technological

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changes. Most respondents (84%) were below 45 years of age. Among the Land Office staff, the largest age group was 26–35 years (28%), followed by 18–25 years (20%). Among service users, the 18–25 years and 26–35 years age groups had equal representation, with each accounting for 12% of the total sample. Respondents were asked to indicate their age category and their response were as presented in Figure 4.2 below.

Figure 4.2: Age Distribution of Respondents



Source: *Field study (2026)*

Figure 4.2 shows that out of 25 respondents, the majority of land office staff were aged between 26 and 35 years were 7 (28%), followed by those aged 18 to 25 years were 5 (20%). Staffs aged 36 to 45 years were 3 (12%), while those aged 46 to 55 years were 2 (8%). Only one staff member (4%) was above 55 years of age. Also, Table 4.2 shows that out of 25 respondents, those service users aged between 18 and 25 years were 3 (12%) and those aged 26 to 35 years were also 3 (12%). Only one service user (4%) was aged above 50 years.

The findings show that most land office staff at the Bagamoyo District Council were young and middle-aged workers. This was a positive sign for the digital transition because young people were generally more comfortable with technology and can learn to use digital systems like ILMIS and GIS more quickly. However, the small number of older

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staff (above 45 years) may face challenges in adapting to the digital system if they have worked with paper files for many years. Franks, (2020) explains that employees resisted digital records systems because they lack digital skills, fear change or prefer traditional paper-based methods. Also, the findings show that most citizens who visited the Bagamoyo District Council Land Office during the data collection period were young adults. This could be because younger people were more likely to be buying land, applying for title deeds or checking land ownership for the first time. The fact that younger service users were visiting the office was positive for digital service delivery because young people were generally more familiar with technology and may find it easier to interact with digital systems.

4.2.3 Education Level of Respondents

Educational level refers to the highest academic qualification attained by an individual. According to Kothari (2004), educational background was important in research because it influences respondents' knowledge, competence, understanding, and ability to perform professional duties effectively. In the study 84% of all participants possessed higher education credentials (Diploma level or above). The majority of staff held a Diploma (32%) or a Bachelor's Degree (20%). Furthermore, all 7 service users (28% of total sample) had achieved College or University level education. The respondents, both staff and users, were asked to indicate their education level, and their responses were as presented in Table 4.4 below.

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Table 4.2: Education Level of Respondents (n=25)

Category	Education Level	Frequency (n)	Percentage (%)
Land Office Staff	Certificate	4	16%
	Diploma	8	32%
	Bachelor Degree	5	20%
	Master's Degree	1	4%
	PhD	0	0%
Service User	Primary	0	0%
	Secondary	0	0%
	College / University	7	28%
	Total	25	100%

Source: *Field study (2026)*

Table 4.2 shows that out of 25 respondents, the largest group had Diploma qualifications (32%), followed by Bachelor Degree holders (20%), Certificate holders (16%), and one Master's Degree holder (4%). No staff member had a PhD qualification. Also Table 4.3 shows that out of 25 respondents, all 7 service users who responded to this question (28% of total respondents) had College or University level education. No respondent had only Primary or Secondary level education.

The findings revealed that the majority of land office staff at the Bagamoyo District Council has Diploma and Degree level education. This shows that the workforce was educated and has the academic foundation needed to understand and work with digital systems. Audrin and Audrin (2022) noted that higher levels of education were generally associated with better ability to learn and use new digital technologies. However, having

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a qualification alone was not enough staff also needs specific ICT training to use systems like ILMIS effectively, as discussed further in the findings below. Also the finding that all service users in this study had College or University education was a notable result. Educated citizens were more likely to visit the land office directly to sort out their land matters rather than relying on middlemen. However, this finding means that the study did not capture the views of citizens with lower levels of education, which could be a limitation of the study that future researchers should address.

4.2.4 Department of Land Office Staff Respondents

Respondents from staff only were asked to indicate which department they belong to. This information was needed to ensure that respondents from different departments were included in the study for a complete picture of the digital transition. Strong participation from frontline record custodians, with the largest proportion of staff drawn from the Registry/Archives department (44.4%), followed by Land Administration (27.8%), ICT Support (16.7%), and Survey and Mapping (11.1%). The responses were as presented in Table 4.5 below.

Table 4.3: Department of Land Office Staff Respondents (n=18)

Department	Frequency (n)	Percentage (%)
Land Administration	5	27.8%
Registry / Archives	8	44.4%
Survey and Mapping	2	11.1%
ICT Support	3	16.7%
Total	**18**	**100%**

Source: *Field study (2026)*

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Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.3 shows that out of 18 staffs' respondents, the majority of staff were from the Registry and Archives department (44.4%), followed by Land Administration (27.8%), ICT Support (16.7%) and Survey and Mapping (11%).

The high representation of Registry and Archives staff (44.4%) was expected because this department handles the most land records on a daily basis and was therefore most directly affected by the transition from paper to digital records. The inclusion of ICT Support staff (16.7%) and Survey and Mapping staff (11.1%) ensures that technical and spatial data perspectives were also captured in the findings. This diversity of departments means the findings give a complete picture of how the digital transition was experienced across different areas of the land office. Sileyew (2019) noted that including respondents from multiple departments within a single institution strengthens the internal validity of a case study, as it prevents the findings from reflecting the views of only one section of the organisation.

4.3 Processes Involved in the Transition from Paper-Based to Digital Land Records

This section presents findings related to the first specific objective of the study which was to examine the processes involved in the transition from paper-based land records to digital land records systems at the Bagamoyo District Council.

4.3.1 Whether Bagamoyo District Council Uses Digital Systems

Staffs only were asked whether the Bagamoyo District Council currently uses digital systems such as ILMIS or GIS for managing land records. The findings show that 12 respondents (66.7% of staff; 48% of the total sample) confirmed that digital systems are actively used, while 6 respondents (33.3% of staff; 24% of the total sample) reported that digital systems are not yet used in their sections. The responses were as presented in Table 4.6 below.

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Table 4.4: Use of Digital Systems (ILMIS/GIS) at Bagamoyo District Council (n=18)

Response	Frequency (n)	Percentage (%)
Yes	12	66.7%
No	6	33.3%
Total	**18**	**100%**

Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.4 shows that out of 18 staffs' respondents, 12 staff members (66.7%) confirmed that the Bagamoyo District Council uses digital systems such as ILMIS and GIS for managing land records. However, 6 staff members (33.3%) said the office does not use digital systems.

The finding that only 66.7% of respondents confirmed the use of digital systems was a concern because it meant that many staff were either not aware of the digital system or were working in sections that have not yet adopted it. This suggests that the digital transition at the Bagamoyo District Council was still incomplete and that some parts of the office were still operating using paper files only. This was consistent with what Danda and Wema (2024) found that many district land offices in Tanzania continue to work in a hybrid mode during the transition period.

During the interview one registry officer explained:

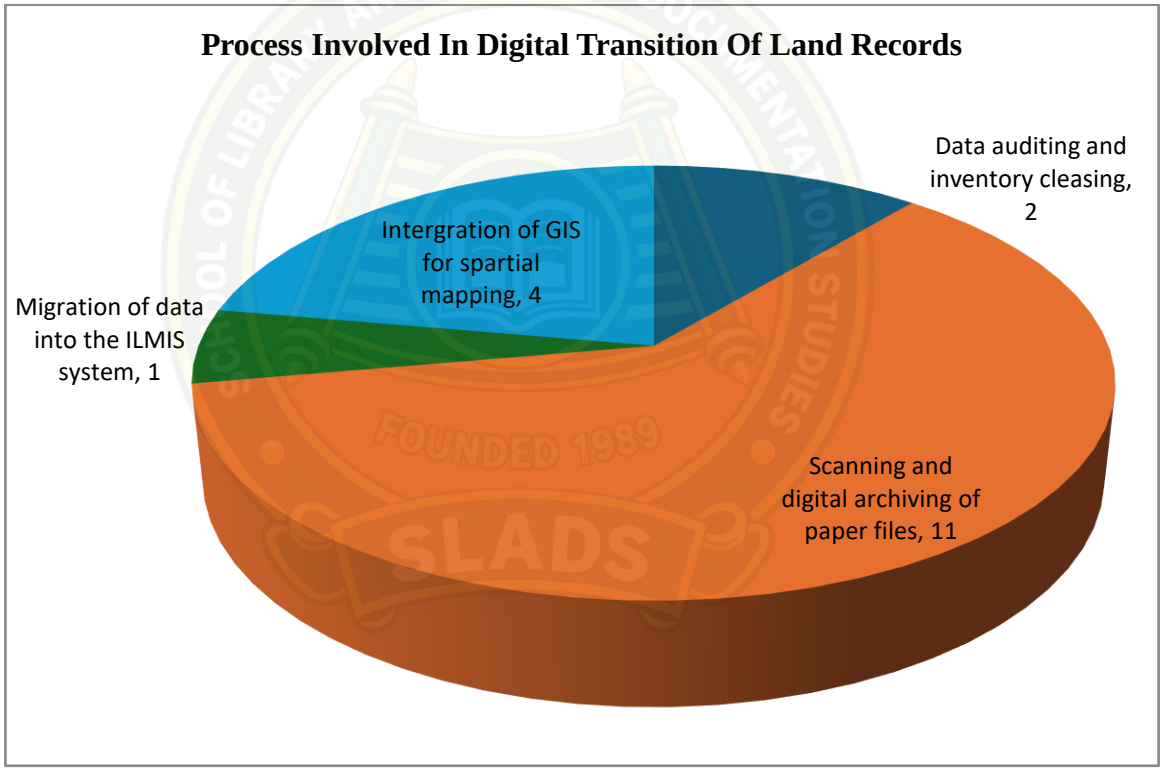
> *"In our section we have started using the computer for new records, but the old files from many years ago were still in paper form. We have not finished putting all of them into the system yet."*

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4.3.2 Processes Involved in the Digital Transition

Staffs only were asked to identify the processes that have been used during the transition from paper-based to digital land records at the Bagamoyo District Council. Scanning and digital archiving of paper files was the primary process identified by 61.1% of respondents (11 staff). This was followed by GIS integration for spatial mapping (22.2%), data auditing and inventory cleansing (11.1%), and data migration into ILMIS (5.6%). The results were shown in Figure 4.3 below.

Figure4.3: Process involved in the transition of Digital Land Records.



Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Figure 4.3 shows that out of 18 staffs' respondents, scanning and digital archiving of paper files was the most commonly identified process, mentioned by 11 respondents (61.1%).

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Integration of GIS for spatial mapping was mentioned by 4 respondents (22.2%). Data auditing and inventory cleansing was identified by only 2 respondents (11.1%), while data migration into ILMIS was mentioned by only 1 respondent (5.6%).

The dominance of scanning and digital archiving (61.1%) shows that the main activity in the digital transition at the Bagamoyo District Council was converting paper documents into electronic files. However, the very low percentage of respondents who mentioned data migration into ILMIS (5.6%) and data auditing (11.1%) was concerning. These were actually the most important steps because without proper data entry and error-checking, the digital system was contained wrong information a risk known as 'Garbage In, Garbage Out' (GIGO) (Adeoye, 2024). During the interview one ICT support officer said:

> *"Many of my colleagues think digitisation is just about scanning papers. But the most difficult and important part was entering the data correctly into ILMIS and making sure the information was accurate before it goes into the system."*

4.4 Effectiveness of Digital Land Records in Improving Service Delivery

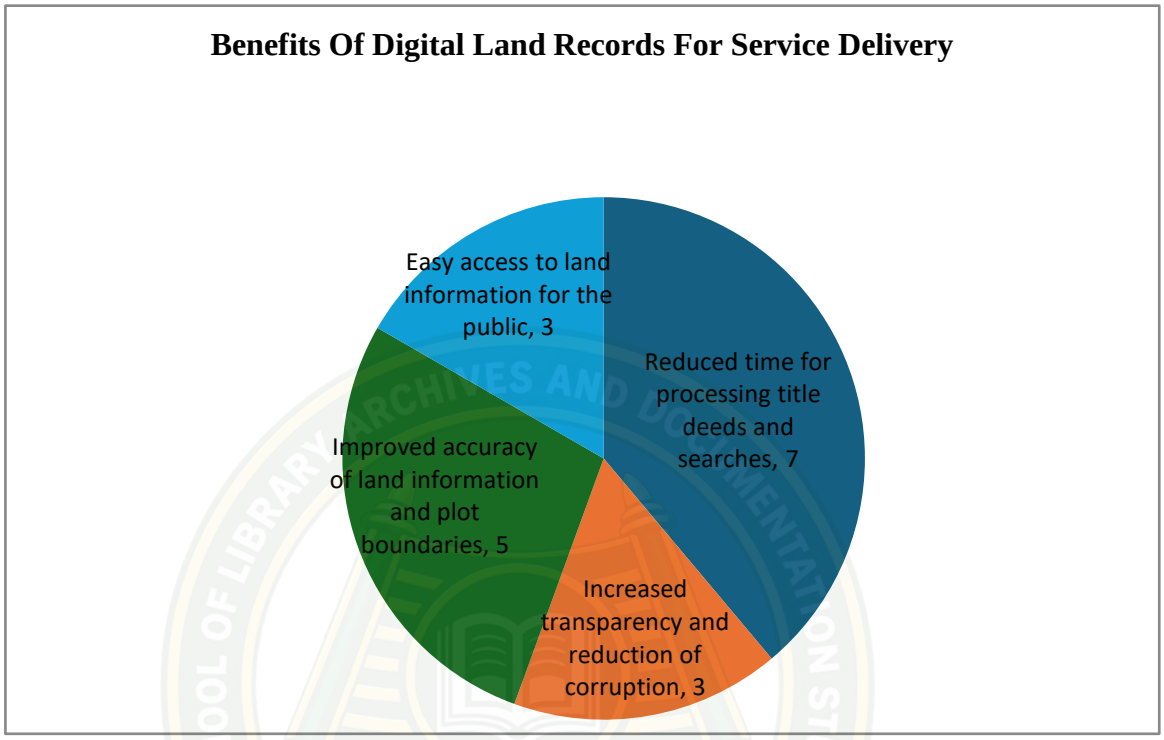
This section presents findings related to the second specific objective which was to assess the effectiveness of digital land records in improving the efficiency and accessibility of land services.

4.4.1 Benefits of Digital Land Records for Service Delivery

Staffs only were asked to identify the benefits that digital land records have brought to service delivery at the Bagamoyo District Council. The most significant benefit reported was the reduction in processing time for title deeds and land searches, cited by 38.9% of respondents (7 staff). Other noted benefits included improved accuracy of land records (27.8%), easier public access to land information (16.7%), and increased administrative transparency and corruption reduction (16.7%). The results were shown in Figure 4.4 below.

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Figure 4.4: Benefits of Digital Land Records for Service Delivery



Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Figure 4.4 shows that out of 18 staffs' respondents, the most commonly mentioned benefit was the reduction in time for processing title deeds and land searches, identified by 7 respondents (38.9%). Improved accuracy of land information was mentioned by 5 respondents (27.8%). Easy access to land information for the public was identified by 3 respondents (16.7%), while increased transparency and reduction of corruption was mentioned by 3 respondents (16.7%).

The finding that 38.9% of respondents noted a reduction in processing time was the most important result in this section. It showed that the digital system was working and making land services faster. In the old paper system, finding a land file could take many days because staff had to search through large rooms full of paper records. With ILMIS, the

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same search could be done in minutes by typing the plot number or owner name into the computer (Garg, 2016).

During the interview one land administration officer shared:

> *"Before we used computers, we sometimes had two different paper files for the same plot of land with different information. Now with the digital system, there was only one record and we can see all the history of changes made to it."*

4.5 Challenges Affecting the Implementation and Use of Digital Land Records

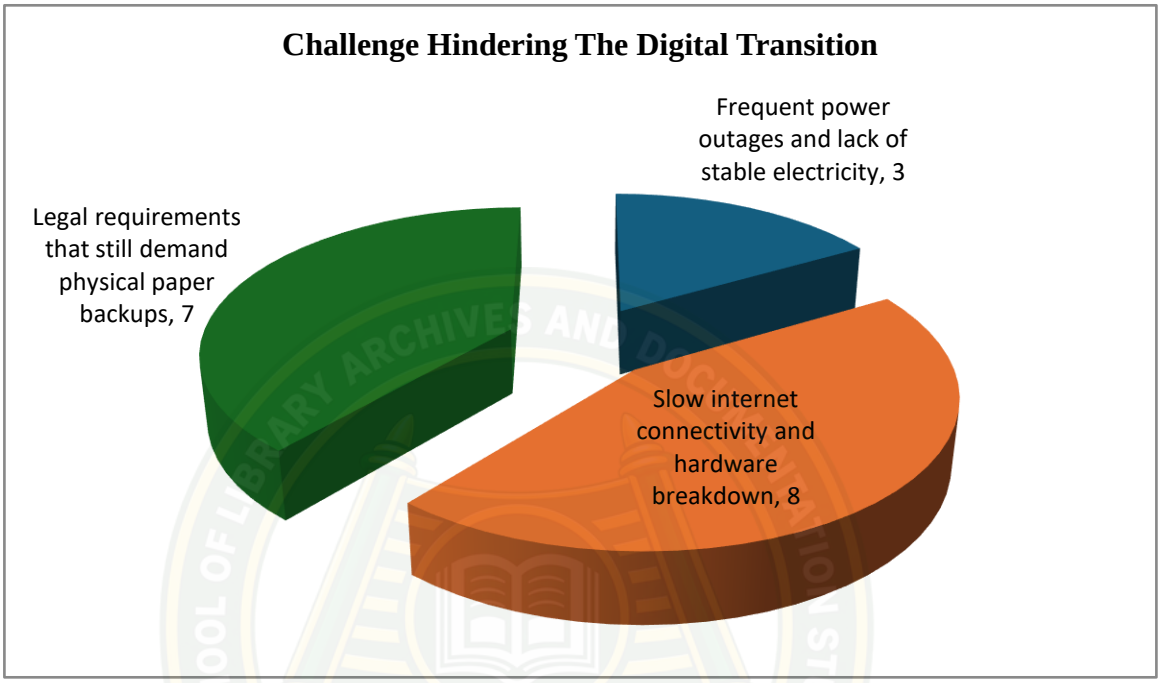
This section presents findings related to the third specific objective which was to identify challenges affecting the implementation and use of digital land records at the Bagamoyo District Council.

4.5.1 Challenges Hindering the Digital Transition

Staffs only were asked to identify the main challenges that were hindering the effective transition to digital land records at the Bagamoyo District Council. Slow internet connectivity and hardware breakdown emerged as the primary operational challenge, identified by 44.4% of respondents (8 staff). This was followed by legal requirements demanding physical paper backups (38.9%) and frequent power outages (16.7%). Notably, zero staff members (0%) cited a lack of personal ICT skills as a barrier. The results were shown in Figure 4.5 below.

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Figure 4.5: Challenges Hindering the Digital Transition at Bagamoyo District Council



Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Figure 4.5 shows that out of 18 staff's respondents, slow internet connectivity and hardware breakdown were the most commonly identified challenge, mentioned by 8 respondents (44.4%). Legal requirements that still demand physical paper backups were identified by 7 respondents (38.9%). Frequent power outages were mentioned by 3 respondents (16.7%). Notably, no respondent identified lack of ICT skills as a challenge (0%).

The finding that slow internet and hardware breakdown was the biggest challenge (44%) shows that the technical infrastructure at the Bagamoyo District Council Land Office was not adequate to support a fully functional digital system. When the internet was slow, the ILMIS system cannot load records properly, causing delays in service delivery. Etikan and

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Bala (2017) also found that poor ICT infrastructure was one of the leading barriers to digital transformation in African public institutions.

During interview one registry staff member explained:

> *"Even after we enter a record into ILMIS, we still have to print it out, stamp it and keep a physical copy in the file room. This takes a lot of extra time and uses a lot of paper and ink."*

4.6 Strategies for Improving Digital Land Records Management

This section presents findings related to the fourth specific objective which was to propose strategies for improving digital land records management for better service delivery at the Bagamoyo District Council.

4.6.1 Solutions to the Challenges of the Digital Transition

Staffs only were asked to identify the best solutions to the challenges affecting the digital transition at the Bagamoyo District Council. The most strongly supported strategy was the provision of continuous ICT training and capacity building, selected by 44.4% of respondents (8staff). Additional recommendations included decentralizing technical IT support to the district level (33.3%), investing in backup power solutions like solar or UPS (16.7%), and harmonizing land legislation (5.6%). The results were shown in Table 4.10 below.

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Table 4.5: Proposed Solutions to Challenges of the Digital Transition (n=18)

Proposed Solution	Frequency (n)	Percentage (%)
Provision of continuous ICT training and capacity building for staff	8	44.4%
Investment in backup energy solutions like solar or high-capacity UPS	3	16.7%
Harmonizing land laws to fully recognize digital signatures and deeds	1	5.6%
Decentralizing technical IT support to the district level	6	33.3%
Total	**18**	**100%**

Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.5 shows that out of 18 staff's respondents, the most strongly supported solution was the provision of continuous ICT training and capacity building for staff, mentioned by 8 respondents (44.4%). Decentralizing technical IT support to the district level was identified by 6 respondents (33.3%). Investment in backup energy solutions was mentioned by 3 respondents (16.7%), while harmonizing land laws was identified by 1 respondent (5.6%).

The strong support for ICT training (44.4%) showed that respondents understand that the success of the digital transition depends most on the skills of the people who use the system. According to the Technology Acceptance Model (TAM), when users found a

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system both useful and easy to use, they were accepting it and use it properly (Davis, 1989).

During the interview one ICT support officer recommended:

> *"We need more training so as to make us more aware about on how to control, manage and solve problems when occurs in digital records management systems."*

Decentralizing IT support to the district level (33.3%) was also very important. Currently, when the ILMIS system had a technical problem, the office may have to wait a long time for technical help to come from the Ministry of Lands headquarters. If there was a dedicated IT support person based at the district level, problems can be fixed quickly and service delivery was not be interrupted (Chigbu, 2021).Mogha, Dulle and Benard (2025) supported this view, arguing that the decentralisation of technical support to district level was a critical success factor for sustaining digital land systems in local government authorities in Tanzania.

4.7 Type of Service Sought by Service Users

Service users only were asked what service they came to the land office for on the day of data collection, the number of total service users (n=7). Paying land rent was the most common transaction sought (42.8% of total sample; 3 users), followed by applying for a Title Deed (28.6%; 2 users) and other general administrative services (28.6%; 2 users). Zero users were visiting strictly to check land ownership (0%). The results were shown in Table 4.11 below.

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Table 4.6: Type of Service Sought by Service User Respondents (n=7)

Type of Service	Frequency (n)	Percentage (%)
Checking land ownership	0	0%
Paying land rent	3	42.8%
Applying for a Title Deed	2	28.6%
Other services	2	28.6%
Total	**7**	**100%**

Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.6 shows that out of 7 service users' respondents, the most common reason for visiting the land office was paying land rent, mentioned by 3 respondents (42.8%). Applying for a Title Deed was mentioned by 2 respondents (28.6%). Two other respondents (28.6%) came for other services. No respondent came specifically to check land ownership (0%).

The finding that paying land rent was the most common reason for visiting the office shows that this was a routine service that many citizens need from the land office. The digital system should make both of these services faster and easier through platforms like e-Ardhi which allowed citizens to make payments and check their land status online (URT, 2018). Kironde (2009) noted that land rent payment and title deed processing were the two services most frequently demanded by citizens at district land offices in Tanzania, and that the digitisation of these services had the greatest potential impact on improving public satisfaction with land administration.

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4.7.1 Awareness of Digital Systems among Service Users

Service users only were asked whether they were aware that the Bagamoyo District Council Land Office now uses digital computer systems instead of paper files. All 7 service user respondents (100%) confirmed that they were fully aware that the land office operates digital computer systems. Zero respondents reported being unaware of the digital transition. The results were shown in Table 4.12 below.

Table 4.7: Awareness of Digital Systems among Service Users (n=7)

Response	Frequency (n)	Percentage (%)
Yes	7	100%
No	0	0%
Total	**7**	**100%**

Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.7 shows that out of 7 service users' respondents, all 7 service users who responded (100%) were aware that the Bagamoyo District Council Land Office now uses digital systems. No service user was unaware of this change.

The finding that all service users were aware of the digital system was a very positive result. It shows that information about the digital transition has reached the citizens who use the land office. This awareness was important because when citizens know that the office has a digital system, they were less likely to use middlemen and more likely to engage directly with the office for their land services (World Bank, 2021). Chigbu (2021) also noted that public awareness of digital land systems was a key factor in their successful

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adoption, as informed citizens were more likely to demand digital services and use them correctly, thereby reducing the administrative burden on land office staff.

4.7.2 Comparison of Digital Service to the Old Paper System

Service users only were asked to compare the current digital service at the land office with the old paper-based system. The 5 service users (71.4%) found the digital system to be much faster. Meanwhile, 1 user (14.2%) felt processing speed was the same, 1 user (14.2%) was not sure, and zero users (0%) reported that digital services were slower. The results were shown in Table 4.13 below.

Table 4.8: Comparison of Digital Service to Old Paper System (n=7)

Response	Frequency (n)	Percentage (%)
Digital was much faster	5	71.4%
It was the same	1	14.2%
Digital was slower	0	0%
Not sure	1	14.2%
Total	**7**	**100%**

Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.8 shows that out of 7 users' respondents, 5 service users (71.4%) said the digital system was much faster than the old paper system. One service user (14.2%) said the two systems were the same in terms of speed. No service user said the digital system was slower (0%). One service user was not sure (14.2%).

The finding that 71.4% of service users (which represents the majority of service users who answered this question) found the digital system to be much faster than the paper

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system was very encouraging. It shows that the transition to digital land records was producing real improvements in service delivery that citizens can see and experience.

During interview one service user who regularly visits the office shared:

> *"Before, I used to come here three or four times before I could get my papers sorted. Now they can find my information very quickly on the computer and I can finish everything in one visit."*

4.7.3 Whether the Digital System Has Reduced Corruption and Middlemen

Service users only were asked whether they felt that the digital system has helped to reduce corruption and the use of middlemen at the land office. The5 service users (71.4%) agreed that the digital system has successfully reduced corruption and middlemen, whereas 2 users (28.6%) disagreed. The results were shown in Table 4.14 below.

Table 4.9: Whether Digital System Has Reduced Corruption and Middlemen (n=7)

Response	Frequency (n)	Percentage (%)
Yes	5	71.4%
No	2	28.6%
Total	**7**	**100%**

Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.9 shows that out of 7 service users' respondents, 5 service users (71.4%) agreed that the digital system has helped to reduce corruption and the use of middlemen at the Bagamoyo District Council Land Office. Two service users (28.6%) did not agree.

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The finding that 20% of all respondents (representing the majority of service users) believe the digital system has reduced corruption and middlemen were a significant result. Ameyaw and De vries (2020) explained that digital systems create an audit trail where every access and change to a record was automatically recorded, making it very difficult to hide corrupt activities. The 8% who did not agree reflected cases where corruption still happens in other parts of the process that were not yet fully digitised. Mogha, Dulle and Benard (2025) further noted that the introduction of digital land records in Tanzania was associated with a measurable reduction in informal payments and the use of unauthorised intermediaries at land offices, as citizens gained direct access to their land information without needing to depend on third parties.

4.7.4 Biggest Problem Faced When Using Digital Land Services

Service users only were asked to identify the biggest problem they face when using digital land services at the Bagamoyo District Council. Slow internet and network downtime was cited as the major frustration by 6 service users (85.7%), with 1 user (14.3%) citing power outages. System complexity and staff unhelpfulness were selected by zero respondents (0%). The results were shown in Table 4.15 below.

Table 4.10: Biggest Problem Faced by Service Users When Using Digital Land Services (n=7)

Problem	Frequency (n)	Percentage (%)
Slow internet / Network problems	6	85.7%
The system was hard to use	0	0%
Lack of help from staff	0	0%
Power outages (No electricity)	1	14.3%
Total	**7**	**100%**

Source: *Field study (2026)*

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Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.10 shows that out of 7service users. 6 service users (85.7%) identified slow internet and network problems as the biggest challenge when using digital land services. One service user (14.3%) mentioned power outages as a problem. No service user said the system was hard to use (0%) or that staff do not help them (0%).

The finding that slow internet was the biggest problem confirms what staff respondents also said about poor internet connectivity being a major challenge. The fact that no service user said the system was hard to use (0%) or that staffs were unhelpful (0%) was a positive finding, showing that staffs were providing good support to citizens.

During interview one service user commented:

> *"The staffs here were very helpful and they know how to use the computer well. The only problem was that the internet was very slow and sometimes we wait for minutes just for one record."*

4.7.5 Level of Satisfaction of Service Users with Digital Land Services

Service users only were asked about their overall level of satisfaction with the digital land services they received at the Bagamoyo District Council Land Office. Overall positive satisfaction reached with 3 users (42.8%) expressing they were Satisfied and 2 users (28.6%) stating they were Highly Satisfied. Conversely, 2 users (28.6%) reported being Not Satisfied. The results were shown in Table 4.16 below.

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Table 4.11: Level of Satisfaction of Service Users with Digital Land Services (n=7)

Satisfaction Level	Frequency (n)	Percentage (%)
Highly Satisfied	2	28.6%
Satisfied	3	42.8%
Not Satisfied	2	28.6%
Total	**7**	**100%**

Source: *Field study (2026)*

Note: *The study involved a total of 25 respondents (n=25), consisting of 18 land office staff and 7 service users. Land office staff represented 72% of the respondents, while service users represented 28% of the total participants.*

Table 4.11 shows that out of 7 service users' respondents, 3 service users (42.8%) were satisfied with the digital land services, while 2 service users (28.6%) were Highly Satisfied. However, 2 service users (28.6%) were Not Satisfied with the services they received.

The overall satisfaction rate of 71.4% (combining Highly Satisfied and Satisfied out of all 7 service users respondents) showed that the service users who used the digital land services at the Bagamoyo District Council were generally happy with what they received. However, the 28.6% who were Not Satisfied cannot be ignored. Based on the previous findings about slow internet being the biggest problem (85.7%), it was likely that the dissatisfied service users were those who experienced long waiting times due to network problems. Improving internet connectivity would therefore directly improve service user satisfaction (World Bank, 2021). Adeoye (2024) also noted that service user satisfaction with digital government systems was closely linked to the reliability and speed of the underlying ICT infrastructure, and that dissatisfaction caused by poor connectivity could

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undermine the credibility of the entire digital transition programme if not addressed promptly.

4.8 Summary of Chapter Four

This chapter has presented, analysed and discussed the findings from both the Land Office Staff Questionnaire and the Service Users Questionnaire at the Bagamoyo District Council, with a total of 25 respondents in all tables throughout this chapter. The findings from staff show that the digital transition was underway with 12 out of 18 service users respondents (66.7%) confirming the use of ILMIS and GIS. The main transition process identified was scanning and digital archiving (61.1%). Digital records have brought important benefits including reduced processing time (38.9%) and improved accuracy of land information (27.8%). The biggest challenge identified was slow internet and hardware breakdown (44.4%), followed by legal requirements for paper backups (38.9%). The most supported solutions were continuous ICT training (44.4%) and decentralising IT support to the district level (33.3%).

From the service user's side, all 7 service user respondents (100%) of total 7 service respondents were aware of the digital system and 5 out of 7 service users said it was much faster than the old paper system. The same proportion agreed that the digital system has reduced corruption and the use of middlemen. However, 6 respondents identified slow internet as their biggest problem. Overall, the findings showed that the digital transition at the Bagamoyo District Council was making good progress and bringing real improvements in service delivery, but there were still important challenges especially with internet connectivity and legal frameworks that need to be addressed urgently. Chapter Five was present the summary, conclusions and recommendations of the entire study.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter provides a brief summary of the main findings that were discussed in Chapter Four, draws conclusions based on those findings, and provides recommendations related to the evaluation of the transition from paper-based to digital land records for improved service delivery at the Bagamoyo District Council in Tanzania. The chapter also identifies areas that need further research in the field of digital land records management.

5.1 Summary of the Main Findings

The study was conducted at the Bagamoyo District Council Land Office and involved a total of 25 respondents comprising Land Office Staff and Service Users. The study was guided by four specific objectives which were to examine the processes involved in the digital transition of land records, to assess the effectiveness of digital land records in improving service delivery, to identify challenges affecting the implementation of digital land records, and to propose strategies for improving digital land records management.

5.2 The findings of this study were summarised as followed

5.2.1 Response Rate

The study targeted 30 respondents from different departments within the Bagamoyo District Council Land Office. Out of the 30 questionnaires and interview guides administered, 25 were successfully completed and returned, representing a response rate of 83%. According to Mugenda and Mugenda (2003), a response rate above 70% is considered adequate for data analysis and interpretation. The response rate obtained in this study was therefore satisfactory and reliable for generating credible findings.

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5.2.2 Demographic Characteristics of Respondents

The study further examined the demographic characteristics of the 25 respondents, namely gender, age, level of education, and department, in order to understand the composition of the study population and the extent to which the sample represented the target population.

5.2.3 Gender of Respondents

The study shows that 25 respondents, 13 (52%) were male and 12 (48%) were female, indicating a fairly balanced representation of both genders. Among Land Office Staff, males accounted for 44% and females for 28%, while among Service Users, females predominated at 20% compared to males at 8%.

5.2.4 Age of Respondents

The majority of respondents were relatively young, with 84% of all participants below 45 years of age. Among Land Office Staff, the dominant age bracket was 26–35 years (28%), while among Service Users, participation was evenly split between the 18–25 and 26–35 age brackets (12% each).

5.2.5 Education Level of Respondents

Most respondents were highly educated, with 84% holding a Diploma qualification or above. Among Land Office Staff, the majority held a Diploma (32%) or a Bachelor's Degree (20%), while all Service User respondents (28% of the total sample) had attained College or University level education.

5.2.6 Department of Respondents

Among Land Office Staff, the largest proportion of respondents was drawn from the Registry/Archives department (44.4%), followed by Land Administration (27.8%), ICT Support (16.7%), and Survey and Mapping (11.1%), reflecting strong participation from the staff most directly involved in day-to-day records management.

5.2.7 Processes Involved in the Digital Transition

The study found that scanning and digital archiving of paper files was the most commonly practised process (61.1%), while more technical steps such as data migration into the

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ILMIS system (5.6%) and data auditing and inventory cleansing (11.1%) were far less common. Only 48% of respondents confirmed that the Council was currently using digital systems such as ILMIS and GIS, indicating that the digital transition was still incomplete.

5.2.8 Effectiveness of Digital Land Records in Improving Service Delivery

The study revealed that the most significant benefit of the digital system was the reduction in time taken to process title deeds and land searches (38.9%), followed by improved accuracy of land information (27.8%), easier public access to land information (16.7%), and increased transparency (16.7%). Most service users reported satisfaction with the improvements brought by the digital transition.

5.2.9 Challenges Affecting Implementation of Digital Land Records

The study found that slow internet connectivity and hardware breakdown were the most serious challenges (44.4%), followed by legal requirements still demanding physical paper backups (38.9%) and frequent power outages (16.7%). These findings show that the main obstacles were related to poor infrastructure and outdated legal frameworks rather than staff unwillingness to adopt the digital system.

5.2.10 Strategies for Improving Digital Land Records Management

The study found that continuous ICT training and capacity building for staff was the most supported solution (44.4%), followed by decentralising technical IT support to the district level (33.3%), investment in backup energy solutions (16.7%), and harmonising land laws to fully recognise digital signatures and deeds (5.6%).

5.3 Conclusion

The study concluded that the transition from paper-based to digital land records at the Bagamoyo District Council was underway but has not yet been completed. The digital system, particularly the Integrated Land Management Information System (ILMIS) and the e-Ardhi platform, has brought real and measurable improvements in service delivery, most notably in reducing the time taken to process title deeds and land searches, improving the accuracy of land information, and reducing the opportunities for corruption and the

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use of middlemen. Citizens who have experienced the digital system were generally satisfied with the improvements it has brought to their interaction with the land office.

However, the study also concludes that the full potential of the digital land records system has not yet been realised at the Bagamoyo District Council. This was mainly because of poor ICT infrastructure, particularly unreliable internet connectivity and frequent power outages, which continue to cause system downtime and force staff to revert to paper-based methods. Additionally, the legal framework for land administration in Tanzania has not been fully updated to recognise digital records and electronic signatures as legally valid in all situations, which forces staff to perform double work by maintaining both digital and paper records at the same time.

The study further concludes that the success of the digital transition depends not only on having the right technology in place but also on building the capacity of the human beings who use that technology every day. As the Technology Acceptance Model (TAM) which guided this study suggested, staff who find the system both useful and easy to use were more likely to accept it and use it to its full potential. Therefore, addressing the skills gap through continuous and specialised ICT training was as important as investing in better hardware and internet connectivity. In summary, the transition to digital land records at the Bagamoyo District Council was a positive and necessary reform that has already begun to improve service delivery, but it requires sustained investment in infrastructure, legal reform, and human capacity building to achieve its full goals.

5.7 Recommendations

Based on the findings of this study, the following recommendations were made to the Bagamoyo District Council, the Ministry of Lands of Tanzania, and other relevant stakeholders:

1. **Invest in Reliable ICT Infrastructure at the District Level**

   The Bagamoyo District Council should urgently upgrade its internet connectivity by procuring high-speed broadband services that were dedicated to the land office. Slow

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internet was identified as the number one problem by both staff and service users, and without fast and reliable connectivity, the ILMIS system cannot function properly.

The land office should install solar power systems and high-capacity Uninterruptible Power Supply (UPS) machines to ensure that digital systems continue to work during power outages. These were preventing the loss of unsaved data and allow staff to continue serving citizens even when electricity from the national grid was not available.

Old and broken computer hardware should be replaced with modern and efficient equipment. The government should set up a regular maintenance and replacement schedule for all ICT equipment at district land offices across Tanzania.

2. Provide Continuous and Specialised ICT Training for Land Office Staff

The Ministry of Lands and the Bagamoyo District Council should organise regular and structured training programmes for all land office staff on the proper use of ILMIS, GIS mapping tools, and the e-Ardhi platform. Training should not be a one-time event but should be provided continuously as the systems were upgraded and new features were added.

New staff members joining the land department should receive mandatory induction training on digital land records management before they begin their duties. This was ensuring that all staff has a minimum level of digital competency from the start of their employment.

A dedicated IT support officer should be permanently stationed at the Bagamoyo District Council Land Office to provide on-site technical assistance to staff whenever they encounter problems with the digital system. This was reduce the time wasted waiting for technical support to come from the Higher levels.

3. Update Land Laws to Fully Recognise Digital Records

The Government of Tanzania should urgently review and update the Land Act and other relevant land laws to fully recognise electronic signatures, digital title deeds, and

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other digital land documents as legally valid instruments in all situations. This was eliminating the need for staff to keep paper backup copies of every digital record, which currently creates double work and slows down the transition.

The Ministry of Lands should work together with the Attorney General's office and Parliament to pass legal amendments that align the land administration legal framework with the digital systems already in use. Without legal recognition, a digital land record was always operating in a legal vacuum and their full potential cannot be achieved.

4. Complete the Digitisation of Historical Paper Records

The Bagamoyo District Council should develop a clear plan and timeline for completing the digitisation of all remaining historical paper land records. Priority should be given to records that were most at risk of being lost or damaged due to their age or poor storage conditions.

Before any historical records were entered into the ILMIS system, a thorough data auditing and inventory cleansing exercise must be carried out to identify and correct any errors or inconsistencies in the original paper records. This was preventing the problem from undermining the integrity of the digital database.

5. Raise Public Awareness about Digital Land Services

The Bagamoyo District Council should conduct public awareness campaigns to educate citizens about the digital land services available to them through ILMIS and the e-Ardhi platform. Many citizens still do not know that they can access land information and make payments online, which leads them to rely on middlemen unnecessarily.

The land office should provide clear and simple instructions in Swahili on how to use the digital services, particularly for citizens with lower levels of education who may find it difficult to navigate online platforms without guidance.

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5.8 Areas for Further Study

This study was limited to the Bagamoyo District Council Land Office and focused on the transition from paper-based to digital land records. Future research can explore the following areas to deepen understanding and improve digital land records management in Tanzania and across Africa.

i. A Comparative Study of Digital Land Records Transition across Multiple District Councils in Tanzania
ii. The Impact of the e-Ardhi Platform on Citizens' Access to Land Services in Rural Areas
iii. The Role of Legal Reforms in Accelerating Digital Land Administration in Tanzania
iv. The Long-Term Security and Preservation of Digital Land Records in Tanzania
v. ion with Digital Land Services Across Different Socioeconomic Groups

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APPENDINCES

APPENDIX I

RESEARCH WORK PLAN

This research work plan shows what will be done and at what time. In general research work plan schedule reveal the activities that will be done from the starting point to the final stage of the study indicating the specific time for their basis of operation. The research work plan schedule or time frame in this research study will be for six weeks as follows.

TYPE OF ACTIVITIES	1st MONTH	2nd MONTH	3rd MONTH	4th MONTH	5th MONTH	6th MONTH
Reporting at Centre and observing situation						
Preparation of questionnaire forms						
Distribution of form to the respondents						
Collecting questionnaire form from respondents						
Completing and analysing data preparing of first draft of report						
Proof reading and submission to SLADS						

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APPENDIX II

RESEARCH BUDGET

In order to accomplish good research stated we should work under the following budget bellow.

	ACTIVITY	COST ANALYSIS	TOTAL COST
1.	Transport	Dunda to Bagamoyo municipal council cost 2000 x 8	16000
2.	Printing, Photocopy and Biding	Report printing pages = @page x 200 Binding research 1 x 2500 Research report pages 60 x 2 = @pages x 200 Research Biding 2 = @20000x2= 40000 Photocopy 16= @200 Data collection instruments 50 x 200	87900
3.	Stationary	Pen 5 = @200 File1 = @2500 Notebook = @2000	5500
4.	Internet and communication costs	Internet services 10000 Communication 10000	20000
5.	Food allowance	2000 x 30	60000
6.	Emergency	20000	20000
	Total		**209400**

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APPENDIX III

A QUESTIONNAIRE FOR LAND OFFICE STAFF

Dear Sir/Madam,

I am carrying out a study on "Evaluating the transition From Paper Based to digital land records for improved service delivery in Tanzania: A case of Bagamoyo District Council." I kindly request you to answer questions which are provided in questionnaire forms by making a tick and answer in the space provided and return to the researcher. The data collected and information obtained through this questionnaire will be treated as confidential and will be used for academic purpose only.

1. What is your gender?
    a) Male ()
    b) Female ( )
2. What is your age category?
    a) 18 – 25 ( )
    b) 26 – 35 ( )
    c) 36 – 45 ( )
    d) 46 – 55 ( )
    e) Above 55 ( )
3. What is your education level?
    a) Certificate ( )
    b) Diploma ( )
    c) Bachelor degree ()
    d) Master's degree ()
    e) PhD( )
4. Which department do you belong to?
    a) Land Administration ()

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b) Registry / Archives ( )
c) Survey and Mapping ( )
d) ICT Support ( )

5. Does the Bagamoyo District Council use digital systems (ILMIS/GIS) in managing land records?
   a) Yes ( )
   b) No ( )
6. If yes, what are the different processes involved in the digital transition? (You may tick more than one)
   a) Data auditing and inventory cleansing ( )
   b) Scanning and digital archiving of paper files ( )
   c) Migration of data into the ILMIS system ( )
   d) Integration of GIS for spatial mapping ( )

Any other please mention

…….....…….

7. What are the Benefits of digital land records for service delivery? (You may tick more than one)
   a) Reduced time for processing title deeds and searches ( )
   b) Increased transparency and reduction of corruption ( )
   c) Improved accuracy of land information and plot boundaries ( )
   d) Easy access to land information for the public ()

Any other please mention

…….....…….

8. In your opinion, which digital tool is most effective in land administration?

   ……

   ……....……

   ……

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9. What are the challenges that hinder the effective transition to digital land records? (You may tick more than one)
    a) Frequent power outages and lack of stable electricity ( )
    b) Slow internet connectivity and hardware breakdown ( )
    c) Lack of adequate ICT skills and technical training among staff ( )
    d) Legal requirements that still demand physical paper backups ( )

Any other please mention….....…….

10. What are solutions to the challenges that hinder the digital transition in land administration? (You may tick more than one)
    a) Provision of continuous ICT training and capacity building for staff ( )
    b) Investment in backup energy solutions like solar or high-capacity UPS ( )
    c) Harmonizing land laws to fully recognize digital signatures and deeds ()
    d) Decentralizing technical IT support to the district level ( )

Any other please mention …….....…….

THANK YOU FOR YOUR COOPERATION

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APPENDIX IV

A QUESTIONNAIRE FOR LAND SERVICE USERS

Dear Respondent,

I am SAIDI HEMEDI MBONDELA, a student from SLADS. I am doing a study on how digital land records improve service delivery at Bagamoyo District Council. I kindly ask you to answer these few questions. Your identity will remain secret and the information will be used for school purposes only.

Instructions

i. Complete by putting tick on the space provided of a letter of a letter of the right answer for each question or by providing explanations as appropriate

PART A: PERSONAL INFORMATION

1. Please indicate your gender?

(a) Male [ ]

(b) Female []

2. What is your age?

(a) 18–25 [ ]

(b) 26–35 [ ]

(c) Above 50 [ ]

3. What is education Level

(a) Primary [ ]

(b) Secondary [ ]

(c) College/University [ ]

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PART B: SERVICE DELIVERY QUESTIONS

4. What service did you come for today?
    a) Checking land ownership [ ]
    b) Paying land rent [ ]
    c) Applying for a Title Deed [ ]

Other:

.....

5. Are you aware that Bagamoyo Land Office now uses computer systems (Digital) instead of old paper files?
    d) Yes [ ]
    e) No [ ]
6. How do you compare the current digital service to the old paper system?
    a) Digital is much faster [ ]
    b) It is the same [ ]
    c) Digital is slower [ ]
7. Do you think the digital system has reduced corruption or “middlemen” (madalali)?
    a) Yes [ ]
    b) No [ ]
8. What is the biggest problem you face when using digital land services?
    a) Slow internet/Network problems [ ]
    b) The system is hard to use [ ]
    c) Lack of help from staff [ ]
    d) Power outages (No electricity)[ ]
9. Are you satisfied with the way you received your service today?
    a) Highly Satisfied [ ]
    b) Satisfied []
    c) Not Satisfied [ ]

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10. What should the government do to make digital land services better?

.....

.....

.....

.....

THANK YOU FOR YOUR TIME!

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APPENDIX V

INTERVIEW GUIDE FOR DISTRICT LAND OFFICERS, REGISTRARS AND HEADS OF DEPARTMENT

1. How does the organization transition its land records from manual to digital formats?
2. What are the primary reasons for the council to engage in the digital transition process?
3. From the processes mentioned above, which ones are more effective in improving service delivery and why?
4. Is the current digital infrastructure (hardware and software) in your organization sufficient to support the transition?
5. Have you leaned on digital transition strategies pursued by other district councils in Tanzania?
6. What types of digital systems or software are pursued much by other land offices for record management?
7. Which digital tools or systems are considered to be working 'best' by land officers and registrars?
8. Does the government provide technical or financial support to facilitate the digital transition at the district level?
9. Does the support provided cover the technical needs of the land department in Bagamoyo?
10. What does your organization do to offset the challenges of the "hybrid" (paper and digital) system?

THANK YOU FOR YOUR COOPERATION

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APPENDIX VI

OBSERVATION CHECKLIST

Research Title: EVALUATING THE TRANSITION FROM PAPER-BASED TO DIGITAL LAND RECORDS FOR IMPROVED SERVICE DELIVERY IN TANZANIA: A CASE OF BAGAMOYO DISTRICT COUNCIL.

Location: Bagamoyo District Council Land Office.

Date of Observation: .....

SN	Area of Observation	Status (Yes/No)	Researchers comment
Records Storage & Environment			
1.	Presence of physical paper files (manual registries) in the office.		
2.	Presence of modern ICT equipment (Computers, Scanners, UPS).		
Digital System Usage (ILMIS/e-Ardhi)			
3.	Staffs are actively using the ILMIS/e-Ardhi system for land search.		
4.	Use of both paper and digital systems simultaneously (Hybrid).		
Service Delivery to Customers			
5.	Presence of a clear customer service desk/help desk.		

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6.	Use of digital payment systems (GePG) for land fees.		
Technical Infrastructure Challenges			
7.	Internet connectivity stability (Is it "online" throughout?).		
8.	Availability of backup systems (Generators or Solar).		
Data Security & File Handling			
9.	Restricted access to the digital server room/physical file room.		
10.	Use of passwords to log in to the land systems.		

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APPENDIX VII

APPROVAL LETTER

JAMHURI YA MUUNGANO WA TANZANIA

OFISI YA WAZIRI MKUU
TAWALA ZA MIKOA NA SERIKALI ZA MITAA
HALMASHAURI YA WILAYA BAGAMOYO

Unapojibu tafadhali taja
Kumb Na. JB.311/375/01/321

Tarehe: 15 Aprili, 2026

Mkuu wa Chuo,
Chuo cha Ukutubi na Uhifadhi wa Nyaraka (SLADS),
S.L.P 227,
BAGAMOYO – PWANI.

Yah: **RUHUSA YA KUFANYA UTAFITI NDUGU SAIDI HEMEDI MBONDELA**

Kichwa cha habari hapo juu cha husika.

2. Ofisi ya Mkurugenzi Mtendaji Halmashauri ya Wilaya Bagamoyo inakiri kupokea barua yenye Kumb. Na. **DA/201/457/VOL/1/20** ya tarehe **2 Februari, 2026** yenye somo tajwa hapo juu.

3. Kwa barua hii, napenda kukufahamisha kuwa mtajwa hapo juu ameruhusiwa kufanya utafiti katika Halmashauri ya Wilaya ya Bagamoyo katika **Idara ya Ardhi** kuhusa mada **"Evaluating the transition to digital land records for improved service delivery in Tanzania"** kwa kipindi cha kuanzia tarehe **30 Machi, 2026** hadi tarehe **08 Mei, 2026.**

4. Namtakia Utafiti mwema.

Shauri Selenda
MKURUGENZI MTENDAJI
HALMASHAURI YA WILAYA
BAGAMOYO.

MKURUGENZI MTENDAJI
HALMASHAURI YA WILAYA
BAGAMOYO
S.L.P. 59
BAGAMOYO

Nakala: Mkuu wa Idara ya Ardhi,
Halmashauri ya Wilaya ya Bagamoyo,
S.L.P. 59,
BAGAMOYO.

Saidi Hemedi Mbondela – Ripoti Ofisi za Idara ya Ardhi.

Barua zote ziandikwe kwa Mkurugenzi Mtendaji (W)
Ofisi ya Mkurugenzi Mtendaji, Halmashauri ya Wilaya Bagamoyo,Barabara ya uhindini, S.L.P. 59, 61301 BAGAMOYO Mkoa wa Pwani.
Simu Na: +255 733860575, Nukushi: 023 2440338 Barua Pepe: ded.bagamoyo@pwani.go.tz. barua@bagamoyodc.go.tz. Tovuti: www.bagamoyodc.go.tz

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