

# Digital preservation of records at Wazalendo and Umoja Savings and Credit Cooperative Societies in Tanzania

**Erasto Gerald Luvanda**

Department of Knowledge Management, Moshi Cooperative University  
[luvanda.eg@gmail.com](mailto:luvanda.eg@gmail.com)

**John Jackson Iwata**

Department of Knowledge Management, Moshi Co-operative University  
[iwata\\_john@yahoo.co.uk](mailto:iwata_john@yahoo.co.uk)  
<http://orcid.org/0000-0002-4491-650X>

Received: 08 April 2024

Revised: 03 June 2024

Accepted: 24 September 2024

## Abstract

Cooperative societies in Tanzania face seemingly insurmountable challenges in transforming their hitherto largely paper-based records into electronic formats for preservation in this digital age, which negatively impacts on their operational efficiency. This study, therefore, aimed to determine practices for preserving cooperatives' records in electronic format and associated challenges, focusing on two institutions: Wazalendo and Umoja Savings and Credit Cooperative Societies (SACCOS) in Moshi municipality of Kilimanjaro region. The technology acceptance model served as the theoretical framework, supplemented by insights from archival science. The study adopted a qualitative approach and utilised face-to-face semi-structured interviews, focus group discussions and observations to collect data. The study population consisted of 35 staff from two SACCOS whereby 23 respondents were confined to the study through purposive and simple random sampling techniques. The resultant qualitative data was subjected to thematic analysis. The study found that the two SACCOS under review have yet to transform their records fully into electronic formats and face numerous challenges in fostering preservation. The major barriers to such electronic record presentation emerged to be dire financial constraints and a lack of skilled personnel to facilitate such a process. Significantly, it emerged that managerial commitment to adopting new technologies positively influenced the electronic preservation of SACCOS records. As such, SACCOS should invest in ICT infrastructure and offer comprehensive training for staff in addition to formulating and enforcing clearcut policies and guidelines for digital records preservation.

**Keywords:** Digital preservation, electronic record, electronic records preservation, electronic record-keeping systems, record-keeping practices, SACCOS, Tanzania

## 1. Introduction

The landscape of cooperative organisations, particularly for Savings and Credit Cooperative Societies (SACCOS), is increasingly shaped by advancements in digital record management

practices. Electronic records keeping and preservation have emerged to be essential components in the development and effective management of cooperative entities worldwide (Anania, Gikuri & Hall 2015). Proper preservation of records, especially in electronic formats, is crucial for maintaining organisational integrity and facilitating the making of informed decisions (Ngulube & Tafor 2006). In this regard, the advent of science and technology has revolutionised the storage, accessing and utilisation of information, particularly through digital platforms. This transformation has led to a heightened reliance on digital platforms for records management, a development that offers unprecedented opportunities for boosting efficiency and accessibility. However, amidst these opportunities also lie significant challenges, particularly those concerning the long-term preservation of digitally born records (Ngulube & Tafor 2006). Issues such as technological dependencies, rapid obsolescence of old technologies, and organisational resource constraints present formidable obstacles to effective digital preservation efforts.

In the context of cooperative organisations, including SACCOS, which often grapple with issues of poor records keeping, these challenges are especially pronounced (Anania et al. 2015). Despite initiatives aimed at modernising records-keeping systems spearheaded by governmental institutions, these challenges persist. In Tanzania, for example, since the 1990s, the government has been grappling with the challenges blocking the modernisation of records management since bottlenecks persist (Madulu 2016). To begin with, the introduction of e-Government strategies in Tanzania, designed to leverage information and communication technologies (ICT) for citizen service enhancement, has offered frameworks for electronic records retention and transfer (Madulu 2016). Yet, resource limitations and the rapid pace of technological evolution hindered the widespread adoption of comprehensive digital preservation practices in Tanzania and across Africa, (Ngoepe & Van der Walt 2010).

Against this backdrop, this study explored the digital landscape in preserving cooperative records at Wazalendo and Umoja SACCOS in Moshi municipality of Kilimanjaro region, Tanzania. It aimed to determine the opportunities and challenges inherent in the electronic preservation of SACCOS' records, providing insights that could enhance organisational effectiveness, service delivery and sustainable development within these cooperative societies through robust digital preservation practices.

## **1.1 Statement of the problem**

Cooperative societies, particularly SACCOS in Tanzania, face difficulties in transitioning from traditional paper-based record-keeping to electronic systems despite the recognised importance of digital preservation. This over-reliance on paper records in the digital age does not only expose financial data to wear-and-tear as well as loss of vital information, but also undermines auditing activities, jeopardising the integrity of financial data (Aladejebi & Oladimeji 2019). These challenges include technological dependencies, resource constraints and organisational resistance.

Addressing these challenges requires a deeper understanding of the barriers and opportunities associated with digital transformation in cooperative records management. Effective digital preservation practices are crucial not only for improving operational efficiency but also for

ensuring data integrity and facilitating informed decision-making within cooperative entities. Despite the recognised importance of digital preservation for cooperative organisations, SACCOS in Tanzania face persistent challenges in transitioning to electronic records-keeping systems. Thus, the purpose of this study was to investigate the challenges to effective digital preservation and transitioning of SACCOS in Moshi municipality, Tanzania, from analogue to digital records management. Therefore, this study intended to:

- (i) Assess the current record-keeping practices of Wazalendo and Umoja SACCOS in Tanzania.
- (ii) Identify barriers and factors hindering the adoption of electronic record-keeping systems for Wazalendo and Umoja SACCOS in Tanzania.
- (iii) Explore opportunities for enhancing digital preservation practices of Wazalendo and Umoja SACCOS in Tanzania.
- (iv) Provide actionable insights to facilitate the effective transition from traditional paper-based methods to digital preservation practice for Wazalendo and Umoja SACCOS in Tanzania.

## 2. Theoretical framework

TAM and the InterPARES framework were integrated and used as the major models to underpin the study. The TAM was developed by Fred Davis in 1986 and provides the foundation for understanding individual and organisational factors influencing the adoption and utilisation of technology. TAM posits two primary constructs such as perceived ease of use (PEU) and perceived usefulness (PU) as the basis in shaping users' intentions to adopt new technologies, including usage of electronic record-keeping systems, (Bagozzi, Davis & Warshaw 1992 as cited in Madulu 2014). These constructs are relevant in the context of transitioning from traditional record-keeping methods to electronic systems, as they directly address individuals' attitudes towards adopting electronic record-keeping systems in SACCOS.

PEU as a construct refers to the degree to which a person believes that using a technology will be free from effort. Therefore, in the context of the first objective of this study, the PEU influenced how staff and management at Wazalendo and Umoja SACCOS perceived the transition from manual to electronic record-keeping systems. Perceptions that digital systems were too complex or difficult to use hindered the adoption and effectiveness of electronic records-keeping systems in the selected SACCOS. On the other hand, PU refers to the degree to which SACCOS staff believe that using a particular technology will enhance their job performance. In the context of the second objective of this study, if key stakeholders in SACCOS did not perceive the technology as enhancing efficiency, reducing errors or improving accessibility, they may resist adoption despite the system's availability.

Even though TAM is effective in explaining individual-level adoption decisions, it may not comprehensively address broader organisational and social factors crucial in information management environments, especially those related to digital long-term preservation. To address this gap, this study also adopted the International Research on Permanent Authentic Records in Electronic Systems (InterPARES) framework, which was useful in addressing the challenges

associated with the preservation of digital records over time (Duranti 1998; Eastwood 2000). The InterPARES framework offers a more holistic view by emphasising not only technical factors but also organisational policies, cultural considerations and legal standards that impact the long-term viability of electronic record-keeping systems. The framework encompasses four key components aimed at ensuring the authenticity, reliability and accessibility of digital records.

The construct of authenticity in this study was crucial in exploring opportunities for enhancing digital preservation as stated in objective three of the study. For digital records to be deemed authentic, they must retain their integrity over time, reflecting the original content and context. This component is directly related to the preservation of electronic records within SACCOS, by ensuring that digital records remain accessible, reliable and usable. Furthermore, the construct on metadata plays a vital role in ensuring the long-term accessibility and authenticity of records. Focusing on metadata standards, the study explored opportunities for enhancing preservation practices for effective transition to digital systems at Wazalendo and Umoja SACCOS, as outlined in objective four of this study. Metadata provides the necessary context for understanding the meaning and value of digital records for effective preservation and accessibility in the future. Additionally, the construct on preservation strategies entails developing methods for maintaining digital records over time while ensuring their continued accessibility. In relation to objective four, preservation strategies, including migration and emulation, have the potential to ensure the ongoing usability of records as technology evolves. Finally, on the construct of developing standards and guidelines, the InterPARES framework emphasises the creation of policies, standards and best practices for digital preservation.

The InterPARES elements are essential for the successful implementation and sustainability of digital record-keeping systems in the Wazalendo and Umoja SACCOS, as discussed in objective four. More importantly, integrating insights from both TAM and the InterPARES framework, this study explored both the individual-level factors influencing the adoption of technology (through TAM's constructs of PEU and PU) and the broader organisational and preservation challenges (through the InterPARES framework's focus on authenticity, metadata and preservation strategies). This dual approach enabled more comprehensive understanding of the barriers, opportunities and strategies for enhancing digital preservation practices and facilitating a successful transition from traditional paper-based methods to digital systems in SACCOS in Tanzania.

### **3. Literature review**

The literature review for this study was structured to align with the thematic areas of the study objectives, focusing on assessing the digital landscape in preserving cooperative records. The three thematic areas were current record-keeping practices, challenges in adopting electronic record-keeping systems and opportunities for enhancing digital preservation practices.

#### **3.1 Record-keeping practices**

Iwata's (2023) study found that current record-keeping practices in cooperatives are predominantly traditional and paper based, which reflects a historical reliance on manual

systems. Under these conditions, these records are at risk of being lost or neglected, as their management are inadequate, hence leading to their loss, destruction, or mismanagement. In addition, Anania et al. (2015) and Kanuti (2014) in their studies highlighted the widespread use of paper records in many Tanzanian SACCOS. These traditional methods pose significant challenges, including inefficiencies in data management, increased risk of data loss and physical deterioration of records over time (Madulu 2016). Despite some efforts made towards modernisation of records-management systems, the transition to electronic systems is inconsistent and often hampered by inadequate infrastructure and support.

Moreover, the effectiveness of governmental initiatives aimed to promote digital record-keeping is still a subject of debate. For instance, Cumming and Findlay (2010) argue that, even though some initiatives show promise, many SACCOS in Tanzania remain ill-prepared for a full transition due to lack of strategic implementation and support. This debate is further complicated by differing perspectives on the readiness of SACCOS to embrace digital transformation. Even though some scholars, including Iwata (2023), emphasise the potential benefits of electronic systems in enhancing efficiency and reliability, others caution that the persistent reliance on paper-based methods highlights a significant gap between policy and practice. In fact, the dichotomy between the aspirations of modernisation and the reality of current practices remains a critical point of discussion in the literature.

### **3.2 Challenges in adopting electronic record-keeping systems**

Adopting electronic record-keeping systems in SACCOS is often characterised by challenges, as underlined by numerous studies (Iwata 2023; Anania et al. 2015), which identified key obstacles to including limited financial and technical resources, hence making it difficult for many SACCOS to invest in and maintain electronic systems. Also, technological barriers, such as inadequate ICT infrastructure, lack of reliable internet access and outdated hardware and software hinder the adoption process (Ngulube & Tafor 2006). Additionally, organisational culture and resistance from staff accustomed to traditional methods present further significant barriers (Ngoepe & Van der Walt 2010). Furthermore, concerns about data security and privacy in the transition to digital systems necessitate robust cybersecurity measures (Ngoepe & Van der Walt 2010). Training and capacity-building are also critical, as ongoing education is necessary to ensure staff are proficient in using new technologies (Iwata 2023; Madulu 2016).

The literature presents a robust debate on these challenges. Whereas Iwata (2023) and Anania et al. (2015) emphasise financial and technological hurdles, Ngoepe and Van der Walt (2010) argue that the human element, specifically resistance to change and lack of training, is equally critical. Implicitly, addressing one dimension, such as financial investment, without considering others, like cultural change, may be insufficient for a successful transition from traditional to electronic records management. Moreover, Madulu (2016) stresses that without adequate training and capacity-building, even well-funded and technologically advanced initiatives may falter. The interplay between these various challenges underlines the necessity of a holistic approach, integrating financial, technological and human resource considerations (Iwata 2023).

### 3.3 Opportunities for enhancing digital preservation practices

Regardless of these challenges, several opportunities exist for improving digital preservation practices in SACCOS. Technological advancements provide innovative solutions for records management, including the use of cloud-based storage, which offers scalable and secure options for storing and accessing records remotely, reducing the risk of data loss and physical damage (Madulu 2016). Moreover, digital archiving facilitates long-term preservation and easy retrieval of records, improving efficiency and reliability (Madulu 2016). Furthermore, data analytics enhances the ability to analyse and utilise data for decision-making and strategic planning (Madulu 2016). Strategically, government initiatives, such as e-government strategies, play an important role in promoting the adoption of ICT in record-keeping practices (Cumming & Findlay 2010). These initiatives aim to increase awareness, foster investment and encourage collaboration among stakeholders.

Existing literature also reveals a dynamic debate regarding the potential of these opportunities. Whereas Madulu (2016) and Saurombe (2018) highlight the transformative potential of cloud-based storage and digital archiving, Cumming and Findlay (2010) note that without significant investment and strategic alignment, these technologies may not be fully utilisable. Additionally, the success of these opportunities is often contingent upon addressing the underlying challenges previously discussed. To fully leverage these opportunities, studies, including Iwata (2023) Aladejebi and Oladimeji (2019), Madulu (2016), Nengomasha (2009), Cumming and Findlay (2010) and Ndenje-Sichalwe (2011) call for investing in infrastructure and technology to support digital systems, providing comprehensive training and support to staff to build their capacity and competencies, developing clear guidelines and policies for digital preservation to ensure consistency and compliance, and fostering a culture of innovation and collaboration among SACCOS and with governmental agencies. However, it is important to recognise the complexities and costs associated with such electronic records keeping. As Cumming and Findlay (2010) caution, even though electronic records offer significant benefits, they also introduce new threats and challenges, including software dependencies and the need for qualified personnel (Ndenje-Sichalwe 2011).

## 4. Research methodology

This study employed a cross-sectional design, allowing for the collection of data at a single point in time. To ensure a comprehensive understanding of the digital landscape in preserving cooperative records at both Wazalendo SACCOS and Umoja SACCOS in Moshi municipality, Tanzania, the study adopted a qualitative approach, which facilitated the collection of rich and detailed data, hence enabling a holistic exploration of the research objectives. This study comprised a sample size of 23 participants in the categories of: two SACCOS managers, five SACCOS staff (comprising two accountants, two cashiers and one IT staff member from SACCOS 2), and 16 board members (seven from SACCOS 1 and nine from SACCOS 2). According to the Tanzania Cooperative Act No. 6 of 2013, a board for cooperative society should comprise not less than nine members nor exceed 13 members, including the chairperson. The responses from these participants were coded using a manual coding approach, applied for interview transcripts and focus group discussion data in order to protect respondents' privacy.

Data from each group were carefully segmented into meaningful units of text (sentences, phrases or paragraphs) relevant to the study's objectives and presented in direct quotes for participants one to 12.

Furthermore, participants were mainly selected using purposive sampling based on their strategic position they occupied in SACCOS, expertise and experience. SACCOS managers and other strategic staff participated in face-to-face semi-structured interviews. The remaining study participants (SACCOS board members) who were selected using simple random sampling took part in two focus group discussion (FGDs) sessions, each comprising seven to nine participants. FGDs and observations generated supplementary data that augmented findings from interviews, hence allowing the study to achieve a triangulation effect. Collectively, these methods facilitated the gaining of comprehensive insights into digital record preservation, perceived benefits, challenges and organisational barriers to adopting electronic record management systems.

This empirical study was approved by the Regional Administration and Local Government, Kilimanjaro Region and Moshi Municipal Council to ensure ethical standards were upheld throughout the research process. After the data were gathered, the study used an interpretive thematic analysis to determine themes in the data based on their importance and relevance to the questions and objectives of the study. This method offered a fresh framework for finding, evaluating and summarising patterns (themes) in research of this kind that concentrated on deciphering and comprehending the data's more profound implications. Thus, this method highlighted the organisational and social variables impacting digital preservation methods and offered a knowledge of the present situation of electronic record preservation at Wazalendo SACCOS and Umoja SACCOS.

## **5. Results and discussion**

This section highlights the findings after analysing data collected from the field to cover all the thematic areas in accordance with this study's objectives by providing valuable insights into the current state, challenges and opportunities regarding digital preservation practices within SACCOS in Tanzania. The discussion in this section synthesises the results with relevant literature and theoretical frameworks to elucidate on key implications for practice and future research.

### **5.1 Record-keeping practices**

In assessing the current record-keeping practices of SACCOS in Tanzania, the study employed the TAM to understand individual attitudes towards adopting electronic record-keeping systems. Insights from archival information science were integrated to explore organisational barriers and practices influencing current record-keeping methods. The study examined three critical aspects: awareness, readiness and preparedness of SACCOS in transitioning from traditional paper-based records to digital preservation practices, availability of ICT equipment and skills possessed in using such equipment. The respondents in the SACCOS under review were interviewed to gauge their awareness regarding the current practices of managing records, including the types of records preserved, the metadata associated with these records, and the responsibilities involved.

Although the findings revealed varying degrees of awareness among the participants, they were all aware of the importance of digital record-keeping and its preservation systems. A participant from the category of managers, specifically from SACCOS 1 noted that:

*“We understand the importance of digital records, especially in terms of their preservation for future reference.”* (Participant 1)

Other participants, a staff member from SACCOS 2 offered a similar response as one from the category of cashiers commented that:

*“We actually need more training to handle digital systems efficiently. We really understand that it could have been very easy managing records through electronic systems, but currently, our knowledge is very basic in that area, thus we are still dealing with paper works.”* (Participant 3)

This sentiment was echoed by other staff members, hence indicating a general need for enhanced training and support. During interviews and FGDs, most of the study participants cited a lack of training and expertise and SACCOS financial inability to hire qualified personnel and necessary equipment as factors hindering efforts for fostering record-keeping in electronic format.

The study participants then stated the readiness and preparedness of their SACCOS in navigating from traditional paper-based records keeping to digital preservation practices. Results showed that many participants admitted to being unfamiliar with electronic record-keeping systems. From observation, during the period of this study, many institutions still relied heavily on traditional paper-based methods. In this regard, a manager at SACCOS 2 stated that:

*“We primarily rely on and maintain physical ledgers and paper-based documents for member accounts, recording member transactions and financial activities. This has been a system we have used for years due to familiarity and perceived reliability.”* (Participant 2)

This is consistent with the findings from Anania et al. (2015) and Kanuti (2014), whose studies revealed that traditional paper-based records-keeping methods persist in many SACCOS in Tanzania. However, Iwata (2023) observed that much of the traditional paper-based records among the cooperatives surveyed were scattered and disorganised in nature, hence making it difficult to access and utilise them for reference and decision-making purposes. Implicitly, a prevalent reliance on outdated practices continues to present challenges such as inefficiencies in data management and heightened risks of data loss (Madulu 2016). Indubitably, despite sporadic modernisation efforts, the readiness of SACCOS to transition to electronic systems remains questionable, indicating a gap in their readiness and preparedness for digital preservation practices.

Regarding the availability of ICT facilities for records preservation, the study found that SACCOS faced significant challenges due to inadequate infrastructure. During data collection, it was observed that the SACCOS under review had a limited number of computers primarily dedicated to financial record-keeping, with challenges including weak internet connectivity. This



insufficient ICT resources hindered electronic records preservation efforts. As one participant from the category of board members lamented during an FGD session in SACCOS 1:

*“Most of the challenges that we face when it comes to preserving our SACCOS’ records in electronic systems include the absence of enough computers, lack of strong internet services, servers, and their respective rooms, which is generally about inadequate ICT infrastructures.”* (Participant 6)

Thus, the availability of ICT equipment was another crucial aspect as most SACCOS had basic computer equipment, but there was a notable lack of advanced tools necessary for efficient digital records keeping. A staff member in the category of accountant at SACCOS 2 explicated this dilemma:

*“We have computers, but they are outdated and often slow, making it difficult to manage digital records effectively.”* (Participant 4)

Furthermore, it was observed that the SACCOS under review possessed a limited number of computers ranging from two to five per SACCOS, and primarily dedicated to financial records keeping. Hence, staff members often resorted to using their own mobile devices and modems for internet connectivity due to the lack of institutional support. This scarcity of ICT facilities also contributed to the obsolescence of software and hardware, hence hindering electronic records preservation efforts among these SACCOS. This inadequacy of ICT facilities revealed a significant challenge regarding their application for records preservation in SACCOS. According to Ndenje-Sichalwe (2011), insufficient or lack of ICT infrastructure such as a limited number of computers and weak internet connectivity has been a longstanding and vexing problem in Africa, that persistently threatened to undermine the adoption of digital record-keeping practices. Moreover, the absence of adequate ICT facilities contributes to the obsolescence of software and hardware, further complicating electronic record-preservation initiatives. This dire situation emphasises the need for further and heavy investment in ICT infrastructure to support effective record management practices (Iwata 2023; Ndenje-Sichalwe 2011).

Studies including Ngowi (2021) and Luvanda (2020) also found that skills that the SACCOS personnel possessed in using ICT equipment were generally limited. In this study, it was further observed that many staff members had only rudimentary knowledge of computer operations and required extensive training to utilise fully digital record-keeping systems as one of the board members from SACCOS 2 affirmed that:

*“Our staff are eager to learn, but without proper training, we cannot make full use of the technology available to us.”* (Participant 7)

This reality on the ground further indicates that most of the personnel in the SACCOS under review lacked necessary skills for electronic records preservation through ICT. During an interview, a SACCOS member of staff admitted to being unfamiliar with electronic record-keeping systems. In a similar vein, a board member from SACCOS 2 had this observation during FGD:

*“We are actually strangers to the new technology for records preservation. In our SACCOS we have not yet installed any system for electronic record preservation. Thus, we do not know anything about it.”* (Participant 9)

This evidential statement revealed that personnel in SACCOS lacked necessary skills, training and expertise for electronic records preservation. Similarly, Iwata (2023) and Madulu (2016) emphasise the significance of skilled personnel for effective organisational management. Additionally, when asked about their plans for hiring experts in electronic record management, many respondents mentioned financial constraints as the single factor that mostly prevented them from recruiting qualified personnel. This financial barrier has led some SACCOS to rely on staff members who lack formal training in records management. A manager from SACCOS 1 opined that:

*“Our budget limitations mean we cannot afford to hire specialised staff, so we have to make do with the personnel we have, who often lack the necessary training.”*  
(Participant 1)

This shortage of skilled personnel has significant negative implications for both record-preservation practices and the timely access to records. As a result, crucial records may not be preserved adequately, and accessing these records can be time-consuming and inefficient. These findings align with Tsabedze and Kalusopa (2018) and Mukred, Mokhtar and Manap (2016), whose studies highlighted the importance of having qualified personnel for effective records management practices. The scarcity of skilled personnel highlights a critical need for capacity-building initiatives. Investing in training and development for existing staff could significantly improve the quality of records management in a digital era.

Furthermore, preservation strategies are essential to ensure the longevity and accessibility of digital records. Effective preservation involves maintaining the original hardware and software environments where the records were created, including regularly transferring (migrating) records to newer systems and formats to ensure continued accessibility. Emulation, or using software to recreate the original operating environments of digital records, is another critical strategy. In this regard, a manager in SACCOS 1 had the following views to suggest for refinement of the situation:

*“We need to adopt robust preservation strategies, such as emulation and regular migration, to ensure our digital records remain accessible and authentic over time.”*  
(Participant 1)

By addressing these issues through enhanced training, better financial planning and implementing effective preservation strategies, SACCOS can significantly improve their records management practices. These improvements are essential for maintaining the authenticity and accessibility of records, ultimately supporting the operational efficiency and reliability of the cooperative societies.

Finally, the assessment of current record-keeping practices revealed a predominant reliance on traditional paper-based methods among SACCOS in Tanzania. This aligns with previous studies also underscoring the persistence of manual record-keeping despite advancements in digital technologies (Anania et al. 2015; Kanuti 2014). The theoretical framework, anchored in the TAM, offers insights into the organisational factors influencing the slow adoption of electronic systems. Organisational attitudes and PU significantly impact technology adoption and echo the

resistance and inertia observed among SACCOS staff towards digital transformation, as Bagozzi et al. (1992) noted.

## 5.2 Challenges to adopting electronic record-keeping systems

To determine barriers to the adoption of electronic record-keeping systems by SACCOS, the study applied TAM to specify technological, organisational and social challenges, drawing on interdisciplinary perspectives from the archival science framework. The results revealed several significant challenges. The TAM was applied to the objective of identifying challenges to adopting electronic record-keeping systems through the following ways: firstly, applying the construct of PEU to the adoption of electronic record-keeping systems, challenges may arise especially if the system is perceived as something difficult to use, and requiring a significant effort to master it. This perception can create barriers to adoption, as users may resist using systems they believe will be cumbersome in terms of existing resources or time-consuming. On the other hand, the construct of PU implied that if users perceive the system as ineffective, unnecessary, or unlikely to improve their work, they will be less motivated to adopt it. During an FGD with board members in SACCOS 2, a participant highlighted financial constraints as a major challenge:

*“Implementing digital systems requires substantial upfront investment in software, hardware, and training. Our SACCOS struggles with limited financial resources, making it difficult to justify the initial costs.”* (Participant 8)

Financial limitations emerged as a significant barrier to electronic record-preservation efforts that undermined the operations of these SACCOS. Indeed, during a FGDs many participants highlighted these financial limitations as a major stumbling block. During FGD, another participant at SACCOS 1 claimed that:

*“Our financial situation doesn't allow for such investments, so we are forced to stick with paper records.”* Similarly, a manager at SACCOS 2 asserted, *“We simply don't have the budget for the necessary technology and training to facilitate electronic records management.”* (Participant 10)

Respondents attributed these financial constraints to members' reluctance to deposit substantial savings, resulting from their low-income status. Consequently, SACCOS lacked the necessary funds to allocate to electronic record-preservation initiatives. This finding concurs with Iwata (2023) and Eton, Basheka and Fabian (2020), whose studies highlighted the effect of financial constraints on organisational initiatives, including record management. Insufficient funds result in a lack of resources for acquiring ICT infrastructure, training staff and developing policy frameworks to support electronic record-preservation efforts. Therefore, addressing financial constraints requires innovative approaches to generating income and securing funding for electronic record-preservation projects.

The study also found organisational inertia and staff resistance to be another major challenge. In this regard, an IT staff member at SACCOS 2 explained that:

*“There is a reluctance among staff, particularly managers, to transition from familiar paper-based methods. Some are concerned about technological disruptions and fear*

*potential errors in digital systems or lack confidence in their ability to use digital tools effectively.” (Participant 5)*

Resistance to change among SACCOS leaders also emerged as a significant barrier to adopting electronic record-preservation practices. Despite the potential benefits of digital record-keeping, many SACCOS leaders exhibited a preference for traditional paper-based systems. This resistance hindered the adoption of electronic record-preservation practices, delaying progress towards digital transformation (IFLA and IPA 2002). Thus, it is essential to raise awareness among SACCOS leaders about the benefits of electronic record-preservation and providing support to facilitate their transition and cultivate a culture of innovation and openness to change in these societies in a bid to overcome resistance and promote the adoption of electronic record-preservation practices.

The absence of policies supporting electronic record preservation was another significant challenge observed. During the study, it emerged that a lack of formal policies to support electronic records preservation among the surveyed SACCOS impeded progress in digital preservation initiatives. Even though a few respondents were familiar with policies related to record preservation, the majority (96%) reported the absence of such policies within their SACCOS. A senior board member of SACCOS 1 explained that:

*“We don't have any formal guidelines on how to manage not only digital records but also records in its generality, which makes it hard to implement new practices.”*  
(Participant 11)

This was complemented by a manager of the same SACCOS who opined that:

*“It is true that, without clear policies, our efforts to preserve records digitally are inconsistent and inefficient. This means that before we go any further in managing records electronically, we will need to have in place the sound policies.”* (Participant 1)

The lack of a policy framework underscored a gap in understanding among SACCOS managers regarding the importance of policy in guiding electronic records preservation efforts. These findings align with Iwata (2024), whose study highlighted the challenge of lack of policies for records management and inadequate ICT infrastructure in Africa. Madulu (2016) further contends that organisations need robust policies to support and regulate electronic record-preservation efforts effectively. Therefore, developing and implementing policies tailored to the specific needs of SACCOS is essential for enhancing electronic record-preservation practices and ensuring compliance with regulatory requirements.

Furthermore, readiness to accept changes in record-preservation practices also emerged as a challenge. It was observed that many SACCOS leaders exhibited reluctance to adopt new technologies, preferring traditional paper-based systems. Despite the potential benefits of electronic records preservation, a significant proportion of the participants preferred the familiar paper format to electronic records. During a focus group discussion, a board member of SACCOS 2 explained that:

*“Paper records are what we know and trust. Switching to digital feels risky and unnecessary.”* (Participant 12)

This resistance to change among SACCOS leaders hindered the adoption of electronic record-preservation practices, which aligns with Mosweu, Bwalya and Mutshewa (2016) who stressed the need for increased awareness and readiness for technological advancements. Therefore, the findings in this section underscore the urgent need for interventions to address challenges in electronic records preservation and facilitate the successful transition to digital record-keeping practices in SACCOS. Improving ICT infrastructure, enhancing staff training, developing robust policies and fostering a culture of innovation and collaboration are imperative for enhancing digital preservation efforts within SACCOS and promoting their sustainable development.

As earlier stated in the sub-section titled ‘current record-keeping practices’, a key challenge that emerged in this study was lack of skilled personnel for electronic record preservation in SACCOS. The findings underscored the importance of qualified personnel in implementing electronic record management systems. As one respondent in the category of manager in SACCOS 1 stated, *“Our staff simply does not have the training needed to manage digital records effectively.”* Insufficient training and expertise among SACCOS staff hindered the adoption of electronic record-preservation practices. This finding aligns with previous studies emphasising on the need for comprehensive training programmes to equip staff with the necessary skills for electronic record management (Mukred et al. 2016). As Tsabedze and Kalusopa (2020) highlighted, the absence of intensive staff training in record preservation significantly affects the implementation of electronic record management systems. The International Records Management Trust (IRMT 2008) further indicates that unqualified staff members are too ill-equipped to manage both paper and electronic records, hence resulting in improper records preservation practices. Therefore, investing in staff training and capacity-building initiatives is crucial for overcoming this challenge and enhancing electronic record-preservation practices.

The challenges this study identified, particularly financial constraints and organisational resistance, corroborate existing literature on barriers to digital transformation in cooperative organisations (Madulu 2016; Ngoepe & Van der Walt 2010). Financial limitations hinder investments in ICT infrastructure necessary for electronic record management, a barrier exacerbated by the rapid obsolescence of technology. Theoretical insights suggest that overcoming these challenges requires strategic interventions, such as targeted funding support and comprehensive capacity-building initiatives (Aladejebi & Oladimeji 2019). However, the study by Iwata (2023) recognised the potential of technology in addressing records management challenges, by highlighting the possibilities of electronic records management, especially as ICT access expands in the region.

### **5.3 Opportunities for enhancing digital preservation practices**

The seemingly intractable challenges notwithstanding, several opportunities for improving digital preservation practices within SACCOS emerged during the study. For example, integrating TAM’s focus on technology acceptance with the archival science framework facilitates the identification of these opportunities, by considering technological advancements

alongside organisational readiness and capacity-building needs. In this regard, study participants suggested several actionable insights to facilitate the transition from traditional paper-based methods to digital preservation practices. A board member who specialised in cooperative governance from SACCOS 2 emphasised the importance of training by saying:

*“Comprehensive training programmes tailored to staff and members can alleviate concerns and build confidence in using digital record-keeping tools effectively. Collaborative training efforts and clear communication are crucial to fostering a culture of digital adoption.”* (Participant 12)

This statement underscores the need for targeted training initiatives aimed at addressing the specific needs and concerns of SACCOS staff and members, promoting a smoother transition from analogue to digital practices. Additionally, a senior board member at SACCOS 1 highlighted the potential of cloud-based storage solutions by stating that:

*“Advancements in cloud-based storage offer promising solutions for secure data preservation. Cloud platforms could mitigate risks associated with physical document handling, improve accessibility, and enhance data security.”*(Participant 11)

In other words, leveraging cloud technology can help address several key challenges associated with traditional record-keeping methods. Cumming and Findlay (2010) support tapping into the potential of cloud technologies to mitigate risks associated with physical document handling and enhancing data accessibility.

Significantly, under the TAM framework, promoting the PU of digital preservation, such as improved data security and operational efficiency, could facilitate acceptance and adoption among SACCOS stakeholders (Davis, 1989). Based on these findings, actionable insights include the development of tailored training programmes and collaborative initiatives involving stakeholders across SACCOS are required. These recommendations align with calls from previous studies, including Ndenje-Sichalwe (2011) and Nengomasha (2009), who advocate for comprehensive capacity-building efforts and supportive policies to facilitate the transition to electronic record-keeping. Moreover, fostering a culture of innovation and continuous learning is crucial for overcoming organisational resistance and promoting sustainable digital preservation practices (Ngulube & Tafor 2006). Thus, by developing standards, guidelines and best practices for digital preservation, and establishing organisational policies that support these efforts, SACCOS can create a robust framework for digital transformation. This includes investing in ICT infrastructure, enhancing staff training and developing clear, supportive policies that guide electronic record-preservation initiatives.

## **6. Conclusion and recommendations**

This study comprehensively examined of the digital preservation landscape prevailing in the two SACCOS based in Moshi-Kilimanjaro, Tanzania, under review. It illuminated the current state of digital technology adoption for managing SACCOS records, highlighting both challenges and opportunities in transitioning from traditional paper-based methods to electronic systems. The findings underscored a persistent reliance on manual record-keeping practices despite the clear advantages offered by digital preservation technologies, including enhanced data security,

operational efficiency and accessibility. By contributing empirical insights and theoretical perspectives, this study enriches the ongoing discourse on digital preservation practices within cooperative organisations. It also identified critical barriers such as financial constraints, organisational resistance and technological dependencies that impede the adoption of electronic record-keeping systems. These barriers reflect broader challenges within cooperative settings particularly in the developing country's context of Tanzania and call for targeted interventions to overcome inertia and foster digital transformation. Conversely, the study identified promising opportunities for enhancing digital preservation practices, particularly through the adoption of cloud-based solutions. Cloud technologies offer secure and scalable platforms for data management, mitigating risks associated with physical document handling and supporting regulatory compliance. Based on the findings, several strategic recommendations are proposed to facilitate the effective transition to digital preservation practices within SACCOS as follows:

- (i) SACCOS should budget for or seek financial support from various source to upgrade their ICT infrastructure, including software, hardware and cloud-based solutions. This investment is crucial for overcoming financial barriers and facilitating the adoption of digital record-keeping systems.
- (ii) SACCOS need to implement comprehensive training programmes aimed to equip staff and members with the necessary skills and knowledge to effectively utilise electronic record-keeping systems. These programmes should be tailored to address specific organisational needs and foster a culture of digital literacy and innovation.
- (iii) SACCOS should develop and implement supportive policies and regulatory frameworks that promote digital preservation standards and practices within cooperative organisations. Clear guidelines and incentives can facilitate compliance and enhance organisational readiness for digital transformation.
- (iv) SACCOS should foster collaboration among stakeholders, including government agencies, cooperative societies, and technology providers. By working together, these stakeholders can address common challenges, share best practices and leverage collective expertise to maximise opportunities in digital preservation.

## 6.1 Future research directions

This study was limited to Moshi-Kilimanjaro, Tanzania, and probably liable to some potential biases in some of the participants' responses. Therefore, we recommend that future research could explore the following avenues:

- (i) Conduct comparative studies across different regions or sectors within Tanzania to generalise findings and identify context-specific solutions for enhancing digital preservation practices.
- (ii) Undertake longitudinal studies to monitor the progress of SACCOS in adopting electronic record-keeping systems over time. These studies could provide insights into the sustainability of digital preservation initiatives and the evolving needs of cooperative organisations.

Addressing these research gaps can allow future studies to contribute further to the theoretical understanding and practical implementation of digital preservation practices within cooperative organisations, thereby supporting sustainable development and resilience in a rapidly evolving digital landscape.

## Declarations

These authors declare that:

- The manuscript has not been previously published and is not under consideration for publication with any other journal or copyrighted publishing platform of any kind.
- Permission was granted for collection and publication of the presented identifiable data from target organisation.
- Unlawful statements that infringe any existing copyrights are avoided in the manuscript.
- We have sought permission for copyright from third parties by obtaining the necessary permission from the copyright holder/s to reproduce their materials in different media in the article, such as tables, diagrams, and photographs owned by them.
- Manuscript and study meet all the ethical requirements of the journal and that of our institution or company, as well as legal requirements of the study country.
- There is not any potential conflict of interest for the research.
- All authors are familiar with the content of this manuscript and gave consent to co publish.
- All authors contributed to the writing of the article manuscript.
- Authors take responsibility to keep participants information confidential as required by legislations including Protection of Personal Information Act.
- Author(s) gives consent to the Journal of South African Society of Archivist to publish the manuscript.

## Acknowledgements

None

## References

- Aladejebi, O. & Oladimeji, J.A. 2019. The impact of records keeping on the performance of selected small and medium enterprises in Lagos metropolis. *Journal of Small Business and Entrepreneurship Development* 7(1): 28-40.
- Anania, P., Gikuri, A. & Hall, J.N. 2015. Savings and credit cooperative societies and members' expectations: Factors affecting savings and credit cooperative societies capacity to meet members' expectations. Paper read at the Co-operative Research Workshop, JK Nyerere Hall, Moshi Co-operative University (MoCU), 24 March 2015, Moshi-Kilimanjaro, Tanzania.
- Bagozzi, R.P., Davis, F.D. & Warshaw, P.R. 1992. Development and test of a theory of technological learning and usage. *Human Relations* 45(7): 659-686.



- Cumming, K. & Findlay, C. (2010). Digital recordkeeping: are we at a tipping point? *Records Management Journal* 20(3): 265-278.
- Davis, F.D. 1986. A technology acceptance model for empirically testing new end-user information systems: theory and results. Unpublished doctoral thesis, Massachusetts Institute of Technology, Sloan School of Management.
- Davis, F.D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Research Center* 13(3): 319-340.
- Duranti, L. 1998. *Diplomatics: New uses for an old science*. Society of American Archivists.
- Eastwood, T. 2000. Putting the parts of the whole together: systematic arrangement of archives. *Archivaria* 50: 93-116.
- Eton, M., Basheka, B.C. and Fabian, M. 2020. Co-operative and saving societies and poverty reduction in Lango and Kigezi sub-regions of Uganda: A comparative empirical study. *African Journal of Business Management* 14: 278-290.
- IFLA and IPA 2002. Preserving the memory of the world in perpetuity: a joint statement on the archiving and preserving of digital information. Available at: <https://www.ifla.org/publications/preserving-the-memory-of-the-world-in-perpetuity-a-joint-statement-on-the-archiving-and-preserving-of-digital-information-2002/>
- International Records Management Trust. 2008. *Fostering trust and transparency in government: Botswana case study*. London: International Records Management Trust.
- Iwata, J.J. 2023. Management of inactive records by cooperatives in Lake Zone, Tanzania. *Journal of the South African Society of Archivists* 56: 148-168.
- Kanuti, A.I. 2014. Challenges facing preservation of vital records in public sector: The case of Tanzania. *International Journal of Education and Research* 2(7): 161-176.
- Luvanda, E.G. 2020. Adoption of electronic records management systems in managing SACCOS Records: a case of Wazalendo, Umoja and ELCT ND SACCOS in Kilimanjaro, Tanzania. Unpublished master's dissertation, University of Dar es Salaam.
- Madulu, N.F. 2016. Challenges facing the preservation of electronic records in Tanzania: A case study of selected government organisations in Dodoma Region. *International Journal of Information Science and Management* 14(1): 19-31.
- Mosweu, O., Bwalya, K. & Mutshewa, A. 2016. Examining factors affecting the adoption and usage of Document Workflow Management System (DWMS) using the UTAUT model. *Records Management Journal* 26(1): 38-67.
- Mukred, M., Mokhtar, N.B. & Manap, N.A. 2016. Electronic records management system adoption readiness framework for higher professional education institutions in Yemen. *International Journal on Advanced Science, Engineering and Information Technology* 6(6): 804-811.
- Ndenje-Sichalwe, E. 2011. The role of records management in the implementation of public service reform programme in Tanzania. XXI Bi-Annual East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA) General Conference on Access to Information: Archives and Records in Support of Public Sector Reform in Context, Maputo, Mozambique. 6-10.
- Nengomasha, C. 2009 Managing public sector records in Namibia: a proposed model. *Information Development* 25(2): 112-126.
- Ngoepe, M. & Van der Walt, T. 2010. A framework for a records management programme: Lessons from the department of cooperative governance and traditional affairs in South Africa. *Mousaion* 28(2): 82-106.

- Ngowi, S.A. 2021. Contribution of SACCOS in the growth of small enterprises: evidence from Tujikomboe SACCOS in Moshi district, Kilimanjaro Tanzania. *Journal of Co-operative and Business Studies* 6(1): 38-44.
- Ngulube, P. & Tafor, V.F. 2006. The management of public records and archives in the member countries of ESARBICA. *Journal of the Society of Archivists* 27(1): 57-83.
- Saurombe, N. 2018. Decolonising higher education curricula in South Africa: Factoring in archives through public programming initiatives. *Archival Science* 18, 119-141.
- Tsabedze, V. & Kalusopa, T. 2018. Towards a framework for e-records readiness in support of e-government in eSwatini. *ESARBICA Journal: Journal of the Eastern and Southern Africa Regional Branch of the International Council on Archives* 37: 39-68.
- Yusof, Z.M., & Chell, R.W. 1998. The elaboration of a records management programme. *Records Management Journal* 8(1): 41-53.