

MOSHI CO-OPERATIVE UNIVERSITY

**DETERMINANTS OF CO-OPERATIVE SUPERVISION MANAGEMENT
INFORMATION SYSTEM COMPLIANCE AMONG SACCOS IN IRAMBA
AND MANYONI DISTRICTS, TANZANIA**

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INFORMATION SYSTEM COMPLIANCE AMONG SACCOS IN IRAMBA
AND MANYONI DISTRICTS, TANZANIA**

BY

HERMENEGILD HERMAN

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE DEGREE OF MASTER OF ARTS IN
CO-OPERATIVE AND COMMUNITY DEVELOPMENT OF MOSHI
CO-OPERATIVE UNIVERSITY, MOSHI, TANZANIA**

DECEMBER, 2025

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I, **HERMENEGILD HERMAN**, declare that this Dissertation is my original work and that it has not been presented and will not be presented to any other learning institution for a similar or academic award.

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the Moshi Co-operative University a Dissertation titled “*Determinants of Co-operative Supervision Management Information System compliance among SACCOS in Iramba and Manyoni Districts, Tanzania*” in fulfilment of the requirements for the award of a Master of Arts in Co-operative and Community Development of Moshi Co-operative University.

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DEDICATIONS

This study is dedicated to Almighty God and to my dearest family. This work reflects the love, support and inspiration they have provided me throughout my journey. To my parent, whose unwavering belief in me has been my guiding light, and to my family, whose encouragement has been a constant source of motivation, this achievement is as much yours as it is mine. Thank you for being my pillars of strength and for sharing in this journey with me.

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LIST OF ABBREVIATIONS

BOT	Bank of Tanzania
CSMIS	Co-operative Supervision Management Information System
ERP	Enterprise Resource Planning
ICA	International Co-operative Alliance
ICT	Information Communication Technology
MIS	Management Information System
NFIF	National Financial Inclusion Framework
SACCOS	Savings and Credit Co-operative Society
SASRA	SACCOS Regulatory Authority
SDGs	Sustainable Development Goals
TAM	Technology Acceptance Model
TCDC	Tanzania Co-operative Development Commission
URT	United Republic of Tanzania
UTAUT	Unified Theory of Acceptance and Use of Technology
WOCCU	World Council Credit Union

ABSTRACT

This study examined the determinants of Co-operative Supervision Management Information compliance among Savings and Credit Co-operative Societies in Iramba and Manyoni Districts, Tanzania. Despite the increasing significance of digital platforms in enhancing co-operative governance and accountability, compliance with CSMIS among SACCOS remains low. The objectives of the study were: to identify organisational factors influencing CSMIS compliance; to explore the effects of socio-demographic factors on CSMIS compliance among SACCOS; and to examine attitudinal factors affecting CSMIS compliance. A cross-sectional research design was employed, with SACCOS serving as the unit of analysis. Data were collected through questionnaires and a key informant interview guide, with a sample of 167 respondents. Analysis was conducted using thematic analysis, descriptive statistics and a binary logistic model. Guided by the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology, the study found that organisational factors such as strong financial capacity, active managerial support for digital systems, adequate operational structures, and reliable leadership training were the strongest predictors of CSMIS compliance, while unreliable electricity significantly reduced the likelihood of compliance. Socio-demographic factors showed that higher education, prior digital experience, and ICT-skilled staff increased compliance, whereas female-led SACCOS were less likely to comply, indicating a gender-related gap in digital readiness. Attitudinal factors indicated that positive perceptions of transparency, efficiency, and ease of use encouraged compliance, while concerns about the high cost of compliance discouraged it, underscoring the role of perceived benefits in technology acceptance. It is concluded that socio-demographic factors, particularly leadership education and gender, along with organisational capacity, digital competence, and positive system perceptions, have a strong influence on CSMIS compliance. Perceived costs and unavailability of reliable electricity remain key barriers. Based on the established evidence, it is recommended that a holistic, multi-stakeholder approach is essential to strengthen leadership, promote gender inclusivity, enhance infrastructure, and build Trust in technology through training, policies, and investment.

CHAPTER ONE

1.0. INTRODUCTION

1.1. Background of the study

Savings and Credit Co-operative Societies (SACCOS) are financial institutions that prioritise collective support and responsibility (Messabia *et al.*, 2023). These member-owned organisations offer savings and lending services at more favourable rates than traditional banks. Mary (2024) observed that SACCOS contribute significantly to economic development by facilitating members' savings and access to credit. They channel individual savings into productive ventures, thereby stimulating economic activities. The Co-operative Supervision Management Information System (CSMIS) is a specialised platform designed to enhance the effectiveness, transparency, and accountability of SACCOS by leveraging technology to improve processes such as data management, loan administration, and financial documentation (Opuko *et al.*, 2022). Its implementation enhances decision-making, reduces operational expenses, and improves service delivery. In contrast to conventional management information systems used in banks, CSMIS is specifically tailored for SACCOS and offers features that promote member participation and transparency, such as automated profit-sharing and member-centric account management, making it a crucial tool for improving competitiveness and ensuring regulatory compliance (TCDC, 2023).

The integration of Information and Communication Technology (ICT) has been instrumental in enhancing efficiency and operational growth within financial co-operatives (Mary, 2024). Nations such as India and the Philippines have successfully implemented ICT-driven systems, resulting in improved operational performance and increased member satisfaction (Mauliddiyah, 2021). However, the implementation of Management Information Systems (MIS) varies across regions, particularly in developing nations where SACCOS encounter challenges such as limited financial resources, inadequate infrastructure, and insufficient technical expertise (Gichuki & Mumbi, 2021).

This disparity is particularly significant given that SACCOS serve as essential financial resources for underserved populations in these areas (Millan *et al.*, 2023). While research has demonstrated the benefits of ICT in improving SACCOS

operations (Messabia *et al.*, 2023; Chelangat, 2018), there is a paucity of comprehensive studies examining the specific factors, such as socio-demographic characteristics, organisational dynamics, and attitudes, that influence CSMIS compliance in SACCOS.

Countries such as Kenya, Uganda, and Ghana have made significant strides in adopting ICT-driven systems to enhance SACCOS operations (Phineas, 2021; Mbaya *et al.*, 2020). In Ghana, initiatives led by the government and private sector have enhanced digital transformation in SACCOS, enabling better financial reporting and regulatory compliance (Gaichuru, 2023). In Kenya, the SACCOS Societies Regulatory Authority (SASRA) has been instrumental in promoting the implementation of MIS among SACCOS (Chelangat, 2021). However, challenges such as high implementation costs and resistance to change hinder MIS compliance among SACCOS (Mwita, 2022; Mugendi, 2023). Research in Uganda highlights that while some SACCOS have successfully integrated ICT systems, others struggle due to limited technical expertise and financial resources (Benard, 2019).

Tanzania's Savings and Credit Co-operative Societies (SACCOS) have long struggled with operational inefficiencies, poor record-keeping, and inadequate financial management systems, which undermine their governance and transparency (Lupia & Kagata, 2024; Erasto, 2018). To address these challenges, the Tanzania Co-operative Development Commission (TCDC) introduced the Co-operative Supervision and Management Information System (CSMIS) in 2022 (TCDC, 2023). This digital platform was designed to streamline operations by automating key processes, such as registration and licensing, and to improve governance and enhance transparency (Boaz *et al.*, 2024).

Research has demonstrated that SACCOS adopting technology systems achieve better financial performance, improved record-keeping, and greater member satisfaction, highlighting the system's potential benefits (Lasse, 2020). However, compliance with CSMIS has been slower than anticipated, raising concerns about the system's implementation and SACCOS's ability to transition effectively. By the end of 2022, a total of 2,047 SACCOS had been registered manually. However, with the introduction of the co-operative supervision management information system, only 1,283

SACCOS had re-registered by the end of 2023, leaving 764 unregistered (TCDC, 2023).

Rural and peri-urban Savings and Credit Co-operative Societies (SACCOS), which make up the majority of Tanzania, face several challenges, including insufficient oversight, financial constraints, and a lack of Trust in digital systems. Despite the direction of the Tanzania Co-operative Development Commission (TCDC) mandating all SACCOS to comply with a web-based co-operative supervision Management Information System (CSMIS) to enhance record keeping, financial management, transparency, service delivery efficiency, and accountability, most SACCOS in underserved areas have not complied with the system, hence complicating oversight and restricting accountability (TCDC, 2023).

In Iramba and Manyoni Districts, SACCOS play a significant role in driving economic development and improving financial inclusion and livelihoods. However, their compliance with CSMIS remains minimal, resulting in inefficiencies in service delivery and poor financial management. Studies by Aryani (2023) and Erasto (2024) have identified factors such as lack of technical skills, resistance to change, insufficient infrastructure, and limited financial capacity as key barriers to CSMIS compliance. These studies, however, focus largely on urban SACCOS, leaving a critical gap in understanding the unique challenges faced by peri-urban and rural SACCOS. In light of this, the study aimed to assess the determinants of compliance with the Co-operative Supervision Management Information System among Savings and Credit Co-operatives in Iramba and Manyoni Districts, Tanzania.

1.2. Statement of the Problem

For SACCOS to effectively comply with ICT standards, it is crucial to understand their operational context and the key factors that influence their ability to meet regulatory requirements (Reuben *et al.*, 2019). Despite the benefits of the Co-operative Supervision Management Information System (CSMIS), a significant number of SACCOS in Tanzania have neither complied with it nor integrated it into their operations. Statistics indicate that of the 2,047 SACCOS registered manually by the end of 2022, only 1,283 (62.7%) had complied with CSMIS by the end of 2023, leaving 764 (37.3%) unregistered. Singida region has 66 SACCOS; however, only 19 (28.8%) have successfully complied with CSMIS, while the remaining 47 (71.2%)

continue to operate manually (TCDC, 2023). Iramba District has 13 SACCOS, while Manyoni has 16 SACCOS. Among these SACCOS, only 2 in Iramba District and 6 in Manyoni District had complied with CSMIS, totalling 8 (27.6%), compared to those that have not complied, 21 (72.4%).

The low compliance with CSMIS hampers effective financial management, record-keeping, and member service delivery, thereby threatening the sustainability and competitiveness of SACCOS (URT, 2022). To successfully develop and integrate information systems into organisational operations, it is essential to assess the factors that influence SACCOS's compliance with its mandatory requirements (Elias, 2024). This highlights the importance of exploring the motivations behind compliance with and the use of CSMIS, especially given significant changes in the system's format and reduced implementation costs (Nnko & Haule, 2023).

Government initiatives, such as the National Financial Inclusion Framework (2018–2022), aimed to promote digital adoption by financial institutions to enhance efficiency and accountability (BOT, 2022). Likewise, the 2002 Co-operative Development Policy and the 2019 SACCOS Regulations called for the modernisation of SACCOS through technology (URT, 2022). In 2022, the Tanzania Co-operative Development Commission introduced CSMIS, a web-based external system designed to improve transparency and oversight within SACCOS to facilitate their digital transition. Despite these efforts, the compliance rate remains low. Existing studies (Ngongo, 2019; Rwechunura, 2024) have primarily focused on internal ICT adoption, with limited attention to regulatory compliance among SACCOS in rural and peri-urban contexts. This study addresses that gap by assessing the determinants of CSMIS compliance among SACCOS in Iramba and Manyoni Districts.

1.3.Objectives of the Study

1.3.1. Main objective

The main objective of the study was to assess the determinants of compliance with the Co-operative Supervision Management Information System among SACCOS in Iramba and Manyoni Districts, Tanzania.

1.3.2. Specific objectives

The study aimed to:

- i. Identify the organisational factors influencing CSMIS compliance among SACCOS.
- ii. Explore how leaders' socio-demographic factors influence CSMIS compliance among SACCOS.
- iii. Examine the attitudinal factors that influence CSMIS compliance among SACCOS.

1.4. Research Questions

- i. How do organisational factors influence CSMIS compliance among SACCOS?
- ii. How do socio-demographic characteristics of SACCOS leaders influence compliance with the CSMIS?
- iii. How do the attitudes of SACCOS leaders influence compliance with the CSMIS?

1.5. Significant of the Study

This study is of considerable significance as it seeks to elucidate the key determinants of CSMIS compliance among SACCOS. The evidence generated is grounded in local realities, making the findings directly relevant to policymakers, SACCO's leaders, and other stakeholders within Tanzania. The relevance of the study to various stakeholders is multifaceted:

For government agencies and support organisations, the findings will inform the design of tailored capacity-building programs, awareness campaigns, and user support initiatives to reduce resistance and enhance compliance rates. By identifying organisational enablers and barriers, the study will assist SACCOS in strengthening internal systems, allocating resources more effectively and sustaining digital transformation. For policymakers, the results will provide a basis for developing targeted policies, optimally allocating resources, and implementing capacity-building and awareness interventions that directly address identified barriers.

Academically, the study addresses a gap in the literature on CSMIS compliance within financial co-operatives in Tanzania, offering a contextualised framework for future research on digital tools, financial inclusion, and co-operative governance.

Ultimately, the findings will contribute to the realisation of Tanzania's Vision 2025 by promoting a transparent, efficient, and innovative co-operative sector. They will also support broader development agendas, including the African Union's Agenda 2063 and Sustainable Development Goal 9, by advancing innovation, infrastructure development, and inclusive economic growth.

1.6. Organisation of the Study

The study is organised into five distinct chapters. Chapter One addresses the foundational aspects of the study, including the research background, the statement of the problem, the research objectives, the research questions, and the justification of the study. Chapter Two provides an extensive literature review, categorised into theoretical and empirical sections, along with an exploration of research gaps and the development of a conceptual framework. Chapter Three details the methodology, covering research design, area of study, target population, sample size, sampling procedure, data types and sources, data collection methods, and considerations of reliability and validity in data collection and analysis. Chapter Four presents, analyses, and discusses the findings. Finally, Chapter Five provides the conclusions and recommendations.

CHAPTER TWO

2.0. LITERATURE REVIEW

2.1. Definitions of Key Terms

2.1.1. Co-operative societies

Co-operatives are distinctive economic organisations characterised by collective ownership, democratic control, and a focus on promoting the shared interests of their members through collaborative enterprise management (Kustepeli *et al.*, 2020). The International Co-operatives Alliance (ICA, 2022) describes a co-operative as a self-governing group of individuals who voluntarily unite to address their shared economic, social, and cultural objectives through collectively owned and democratically operated businesses. This research adopted ICA's definition of co-operatives, which is widely recognised and encapsulates the essential features that set them apart from traditional business models.

2.1.2. Savings and Credit Co-operative Societies (SACCOS)

The World Council of Credit Unions (WOCCU) characterises Savings and Credit Co-operative Societies (SACCOS) as co-operatives primarily engaged in accumulating savings and providing loans. These entities rely on aggregating resources from their members to establish funds for lending (WOCCU, 2022). Nevertheless, WOCCU's definition of SACCOS is restrictive, as it primarily emphasises resource collection and lending, rather than encompassing the full array of financial services offered by SACCOS. In contrast, this study defined Savings and Credit Co-operative Societies as co-operative financial institutions that offer a broad range of financial services, including, but not limited to, savings mobilisation, credit provision, investment facilitation, and financial education aimed at improving the economic well-being of their members. This broader perspective acknowledges the expanding role of SACCOS, which now includes services such as financial education, insurance products, and digital banking, thereby highlighting their increasing significance in promoting comprehensive financial inclusion.

2.1.3. Co-operative Supervision Management Information System (TCDC)

Tanzania Co-operative Development Commission (TCDC) described a Co-operative Supervision and Management Information System (CSMIS) as a specialised tool designed to enhance the efficiency, transparency, and accountability of Savings and

Credit Co-operatives (SACCOS) by leveraging information technology to streamline operations such as registration, record-keeping, loan management, and financial reporting (TCDC, 2023). This study adopted the TCDC definition, which is nationally accepted and acknowledged. CSMIS is tailored to meet the unique needs of SACCOS by providing features that promote member inclusivity and transparency, such as automated dividend distribution and member-based account management, making it a crucial tool for enhancing competitiveness and aligning with regulatory requirements.

2.2. Theoretical Literature Review

The study on determinants of Co-operative Supervision Management Information System (CSMIS) compliance among SACCOS employs the TAM and UTAUT models because TAM elucidates how perceived usefulness and ease of use shape compliance, while UTAUT extends this by incorporating social influence and facilitating conditions. Collectively, these frameworks provide a comprehensive lens for examining behavioural, organisational, and technological factors that affect compliance. They enable a deeper understanding of both individual leaders' attitudes and institutional readiness

2.2.1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), introduced by Davis (1989), continues to serve as a fundamental framework for comprehending user interactions with information systems. Central to the model are two constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), which influence users' attitudes and behavioural intentions, ultimately determining system usage. PU represents the belief that a system enhances job performance, while PEOU denotes the degree to which a system is perceived as easy to operate. Over time, TAM has been rigorously tested and applied across various domains, from taxation to healthcare, establishing it as a pertinent theoretical foundation for analysing compliance with institutional systems (Wulandari & Dasman, 2023).

TAM posits that cognitive evaluations underpin behavioural outcomes. Within this framework, individuals form compliance intentions based on rational judgments about a system's utility and ease of use. It further suggests that external factors, such as training, technical support, and system quality, indirectly influence compliance by shaping perceptions of PU and PEOU (Rosli *et al.*, 2022). Another core assumption is

the strong link between behavioural intention and actual behaviour. In the context of the Co-operative Supervision Management Information System (CSMIS), this implies that favourable attitudes toward the system should translate into compliance behaviours, such as accurate reporting and timely data entry (Alsyouf *et al.*, 2023). While this assumption is compelling, critics argue that compliance is not always voluntary and may be influenced by external enforcement mechanisms and institutional norms, areas where TAM is comparatively weak.

The strengths of TAM lie in its simplicity, predictive ability, and adaptability. Studies consistently demonstrate that PU and PEOU account for significant variation in compliance-related behaviours across e-government, taxation, and healthcare contexts (Sun *et al.*, 2020). Its simplicity allows researchers to construct robust baseline models, while its flexibility enables the inclusion of context-specific variables such as Trust, perceived security, cost, and organisational readiness (Alsyouf *et al.*, 2023; Mageria, 2018). However, TAM has been criticised for under-specifying contextual and institutional drivers. By focusing heavily on individual cognition, it risks overlooking structural factors such as organisational mandates, enforcement policies, and cultural influences, which are often central to compliance (Saghafian *et al.*, 2021). This limitation has led to widespread extensions of TAM to better capture the institutional realities of compliance behaviour.

Recent studies underscore TAM's adaptability to compliance-oriented contexts. For instance, Wulandari and Dasman (2023) found that PU and PEOU significantly influenced taxpayer compliance, with internet literacy mediating this relationship. Similarly, research on Tanzania's upgraded tax portal confirmed TAM's utility in predicting compliance among business entrepreneurs (Badi & Maliganya, 2025). In healthcare, Alsyouf *et al.* (2023) demonstrated that incorporating Trust and system quality into TAM improved its explanatory power for compliance with electronic health systems. Building on these insights, the present study extends TAM by integrating socio-demographic, attitudinal, and organisational variables to analyse CSMIS compliance among SACCOS in Iramba and Manyoni districts.

2.2.2. Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh *et al.* (2003), integrates constructs from eight earlier models to explain

variations in behavioural intention and system usage. UTAUT identifies four main constructs: performance expectancy (the belief that using the system will improve job performance), effort expectancy (the perceived ease of use), social influence (the perceived social pressure to use the system), and facilitating conditions (the technical and organisational support available). Together, these constructs predict intention and actual usage, with their effects moderated by age, gender, experience, and voluntariness (Saptono *et al.*, 2023). The model's simplicity and predictive power have made it a widely used framework in information systems research, including studies on compliance with institutional technologies.

UTAUT is based on the premise that instrumental and social evaluations drive behavioural intention, and that intention, when supported by facilitating conditions, leads to actual behaviour. In the context of compliance, this implies that users' perceptions of the usefulness of CSMIS in simplifying reporting (performance expectancy), its ease of operation (effort expectancy), and social or organisational pressures (social influence) shape compliance intentions. These intentions, along with facilitating conditions such as ICT infrastructure and training, determine whether compliance behaviour occurs, such as the production of timely and accurate reports. Evidence from e-government and e-taxation studies supports that UTAUT constructs predict compliance-related outcomes, especially when mediated by factors like infrastructure availability and digital literacy (Airawaty *et al.*, 2023)

The strength of UTAUT is its explanatory breadth. Meta-analyses and applied reviews confirm that the model's four core constructs consistently account for substantial variance in intention and usage across contexts such as taxation, healthcare, and e-learning (Akinnuwesi *et al.*, 2020). Its adaptability further enhances its utility; researchers have successfully extended UTAUT by incorporating Trust, perceived cost, system quality, and digital literacy, thus tailoring the framework to sector-specific realities (Blut *et al.*, 2022). However, criticisms of UTAUT point to reduced parsimony when multiple moderators and extensions are included, potential overfitting in original validations and limited attention to institutional enforcement mechanisms and cultural norms that often shape compliance (Chipeta & Lipunga, 2025).. Therefore, while UTAUT remains a robust baseline model for explaining

intention and use, it requires targeted extensions to capture the coercive, normative, and structural drivers underlying compliance (Saptono *et al.*, 2023)

Empirical studies demonstrate how UTAUT can be tailored for compliance contexts. For instance, performance expectancy and system quality have been associated with compliance intentions in digital taxation, especially when digital literacy and facilitating conditions are considered (Airawaty *et al.*, 2023; Saptono *et al.*, 2023). In the healthcare sector, UTAUT extensions that incorporate Trust, privacy, and security have enhanced the model's ability to explain compliance with mandatory electronic health records (Akinnuwesi *et al.*, 2020). Similarly, research on e-learning during COVID-19 highlighted the significance of social influence and facilitating conditions in maintaining mandated system use (Korsah, 2025). These findings indicate that for CSMIS, UTAUT can be effectively utilised if it is complied with and includes domain-specific factors such as system quality, Trust/security, digital skills, and enforcement expectations. Consequently, performance expectancy aligns with the perceived usefulness of CSMIS for supervisory functions, effort expectancy reflects its ease of operation, social influence represents peer and regulatory pressures to comply, and facilitating conditions encompass training and ICT support. By integrating extensions such as Trust, perceived cost, and enforcement expectations, along with socio-demographic and organisational factors, UTAUT's ability to explain compliance with CSMIS reporting is enhanced.

2.3. Empirical Literature Review

2.3.1. Organisational factors and compliance with co-operative supervision management information system.

Compliance with regulator-driven reporting systems in co-operatives is treated in the literature as a multidimensional outcome influenced by organisational design and capacity, leadership characteristics, and the interplay between technical systems and organisational culture. AyinOluwa's (2024) research on organisational factors influencing information security governance and compliance underscores the significant impact of internal structures and culture on achieving compliance. Employing a mixed-methods approach that integrates literature review, case studies, and expert interviews, the study pinpointed clear governance roles, budget allocation, staff resourcing, and leadership commitment as key indicators of compliance. This

finding is pertinent to CSMIS as it illustrates how governance and culture influence system usage in regulated settings. However, the study's broad, cross-industry scope leaves a gap regarding SACCO-specific compliance in Tanzania. This research will adapt these organisational constructs to explore compliance with CSMIS.

Msechu *et al.* (2024) explored how firm characteristics impact compliance with International Financial Reporting Standards for SMEs (IFRSs for SMEs) in Tanzania. They analysed panel data from 103 SMEs, totalling 412 observations, collected between 2018 and 2021, using descriptive statistics and panel regression. Their findings revealed that SMEs adhered to only 42.3% of disclosure requirements. Factors such as firm age, size, profitability, and auditor type positively influenced compliance, whereas leverage had a weak negative effect. Furthermore, SMEs audited by Big Four firms demonstrated higher compliance.

Conversely, Mwakapala *et al.* (2024) examined the influence of corporate governance characteristics on IFRS compliance among 202 SACCOS in Tanzania from 2013 to 2020, utilising descriptive statistics and regression models on financial report data. The study concluded that board members' financial skills, the presence of women on boards, and supervisory committee expertise significantly enhanced compliance, while board size and meeting frequency had no impact, with compliance averaging 44%. Both studies focused on IFRS disclosures rather than Co-operative Supervision Management Information Systems. This study addresses that gap by assessing how organisational and governance factors, such as ICT expertise, leadership capacity and board functioning, affect CSMIS compliance in SACCOS.

Erasto (2024) explored the best practices and challenges in maintaining electronic data at Wazalendo and Umoja SACCOS in Moshi municipality, Tanzania. This research employed the Technology Adoption Model and insights from archival science, using qualitative methods such as interviews, focus groups, and observations with 23 employees. It pinpointed major obstacles, including a lack of adequately skilled personnel and financial constraints that impede the complete digitisation of records. The study highlighted managerial commitment as a crucial element in improving electronic record preservation, stressing the importance of clear policies,

investments in ICT and staff training. However, the study's narrow focus and lack of quantitative data limit its generalizability and empirical depth.

Tanjung (2023) assessed the level of corporate governance compliance and its determinants among Indonesian publicly listed companies, focusing on both family-owned and non-family firms under a voluntary disclosure framework. Using logistic regression and a CG index, the study found that high-compliance firms were typically older, larger, financially stronger and benefited from effective founder leadership, while low compliance was more common in family-owned firms with concentrated ownership. The findings are relevant to the current study on SACCO's compliance with the Co-operative Supervision Management Information System, as they emphasise the roles of organisational characteristics, leadership, and governance structures in shaping regulatory compliance, offering insights that can guide efforts to strengthen SACCO's oversight in similar voluntary or capacity-constrained regulatory environments.

Omollo (2019) investigated the strategic factors affecting compliance with the SACCOS Act of 2008 among financial co-operatives in Kenya, using a census survey of 42 SACCOS. Data collected through questionnaires were analysed using SPSS, with descriptive statistics and multiple regression. The study found that inadequate ICT infrastructure, limited human resource capacity, and weak corporate governance were major challenges, with 80% of SACCOS not fully compliant. It recommended reviewing the SACCOS Act and enhancing training and change management. The findings are relevant to this research because they highlight how institutional capacities influence compliance with external regulatory systems.

Internal dynamics, such as management support, organisational culture, technical capacity, and change management practices, also influence SACCOS's compliance with CSMIS. While Himanshu *et al.* (2025) focus on high-level institutional factors, the implication is clear: digital transformation requires more than just technology; it demands leadership commitment, alignment of organisational goals with technology use, and a willingness to invest in skills and systems that support long-term integration. The study explored the adoption of blockchain in the BFSI sector, providing a broader understanding of the organisational factors that enable or hinder the adoption of complex information systems. Through a combination of extensive

literature review and expert interviews, the study identified a set of interrelated factors that influence the organisational integration of blockchain.

Using the Total Interpretive Structural Modelling (TISM) approach, the study develops a hierarchical model that categorises these factors according to their levels of influence and interdependence. Government support is positioned at the foundational level of the hierarchy, suggesting it is the most critical driver for successful compliance. This is followed by factors such as social influence and security concerns, which also play significant roles in shaping implementation readiness. Similar to blockchain in BFSI, CSMIS is a transformative tool that improves oversight, transparency, and operational performance in co-operative financial management. However, the success of such digital systems is closely tied to organisational readiness, institutional support and structural alignment, all of which echo the identified themes.

In software systems, inefficient resource allocation stemming from factors such as skill mismatches, evolving task dependencies, and budget constraints can substantially hinder project execution, resulting in time delays and cost overruns. These organisational inefficiencies are not confined to software engineering; they are equally pertinent to the financial and co-operative sectors, particularly in the context of complex systems such as the Co-operative Supervision Management Information System (CSMIS). Asif *et al.* (2025) address these organisational challenges by introducing CAMP-GNN, a graph neural network-based framework for optimising resource allocation in software projects. The model incorporates critical organisational variables such as urgency, skill alignment, and budget flexibility directly into its computational processes. This integration enables real-time, context-sensitive decisions in task-resource matching, highlighting the importance of aligning organisational capacity with system requirements.

In their study, Maroufkhani *et al.* (2022) examined the factors influencing the adoption of digital analytics in Chinese SMEs, emphasising the interrelatedness of technological, organisational, and environmental components within the Technology-Organisation-Environment (TOE) framework. The research underscored that these elements interact dynamically rather than independently, with top management

support serving as a crucial mediating factor. Utilising data from 171 manufacturing SMEs and employing the partial least squares (PLS) method, the study found that organisational factors such as compatibility, competitiveness, and readiness did not directly lead to acceptance. Instead, their influence was mediated by leadership support, indicating that internal readiness alone is insufficient without strategic backing from top executives. Furthermore, environmental factors such as market pressure and regulatory changes were found to moderate the relationship between organisational capabilities and managerial involvement. While Maroufkhani focused on the adoption of technology by SMEs, this research will focus on CSMIS compliance among SACCOS.

Ghobakhloo *et al.* (2022), in their global study on the integration of technology in manufacturing SMEs, corroborated these findings through a comprehensive narrative synthesis based on the TOE model. They identified internal organisational barriers, including limited strategic foresight, insufficient digital skills among employees, and a weak innovation culture, as major impediments to technology acceptance. Conversely, factors such as digital readiness, managerial commitment and workforce competence were identified as critical enablers. The study proposed a structured digital transformation roadmap that emphasised the need for internal organisational coherence as a prerequisite for technology adoption.

These insights closely parallel the dynamics observed in CSMIS compliance among SACCOS, where organisational readiness, encompassing financial capacity, technical infrastructure, and human capital, plays a significant role. In resource-limited settings like the Iramba and Manyoni districts, leadership decisions tend to be more centralised, and the direct impact of organisational variables may be more pronounced than in larger, more diversified firms. Unlike general SME environments, SACCOS operate under unique regulatory frameworks that further complicate compliance decisions, underscoring a gap in the existing literature on sector-specific compliance dynamics in co-operative financial institutions.

Tavana *et al.* (2021) make a significant contribution to the study of organisational factors affecting technology acceptance by conducting a comprehensive systematic review using the Technology–Organisation–Environment (TOE) framework. Their methodological analysis of the global literature on cloud-based technology adoption

reveals that, in addition to the frequently emphasised technical considerations, such as data security, organisational determinants also play a crucial role in shaping implementation decisions. Specifically, top management support, perceived relative advantage, system complexity and competitive pressure are identified as the primary drivers. However, it diverges by identifying transparency, accountability, and infrastructural readiness as the more prominent organisational dimensions in the co-operative context.

Expanding on this global perspective, Chipeta and Lipunga (2025) apply the Unified Theory of Acceptance and Use of Technology (UTAUT) within the FinTech sector in Malawian SACCOS. Through quantitative survey data and probit regression analysis, they demonstrate that facilitating conditions such as infrastructure and technical support, social influence, and effort expectancy significantly impact FinTech utilisation, whereas performance expectancy does not. Among these, facilitating conditions are the most influential predictor. These findings reinforce the current research's focus on organisational enablers, particularly infrastructure maturity and staff readiness for successful compliance with CSMIS.

Both studies highlight that organisational support, technological benefits, and systemic readiness are essential for technology uptake in co-operative settings. Tavana *et al.* (2021) emphasise leadership commitment and perceived advantage, while Chipeta and Lipunga (2025) emphasise institutional facilitation and peer influence. However, each study also reveals notable gaps. Tavana underexplored sector-specific contextual factors relevant to co-operatives, while Chipeta and Lipunga paid limited attention to governance arrangements and financial sustainability. These are precisely the organisational dimensions this Dissertation seeks to elucidate, particularly within the SACCOS environment.

2.3.2. Socio-demographic factors and compliance with CSMIS

In a swiftly growing economy, co-operatives offer a shared platform for addressing current financial challenges. Bălăeț *et al.* (2023) explored demographic trends in adherence to COVID-19 guidelines in the UK through a comprehensive cross-sectional survey. Using regression models, the study found that younger adults and men were less likely to comply, whereas higher education and employment status were associated with greater compliance. The focus on health compliance highlights a

gap in organisational reporting system compliance that the current study aims to address in the SACCO context. Similarly, Folayan *et al.* (2023) conducted a multi-country survey to investigate socio-demographic predictors of adherence to COVID-19 measures. Their multilevel analysis consistently showed that age, gender, education, and employment status influenced compliance. The use of multivariable modelling and contextual adjustment offers a framework for examining the demographics of SACCO's leaders in relation to CSMIS compliance.

Wright *et al.* (2022) expanded this research by analysing compliance over time using repeated surveys in the UK. The study demonstrated that demographic predictors, such as education and age, not only accounted for differences in compliance but also interacted with attitudinal factors, such as Trust and perceived risk. This suggests that socio-demographic effects may be mediated or moderated by leaders' attitudes, a mechanism highly pertinent to CSMIS compliance. However, the study did not explore organisational or co-operative contexts, which presents an opportunity for this research to extend these dynamics into SACCO leadership behaviour. The reviewed literature indicates that age, gender, education, and tenure shape compliance behaviours across various domains. These effects often operate through attitudes and perceptions. While robust methodologies exist for studying these links, there is a lack of SACCOS-specific evidence in Tanzania.

Oyebanjo *et al.* (2020) examined the factors affecting IT integration and its impact on co-operative performance in Nigeria. A multi-stage sampling technique and a questionnaire were employed to collect primary data from 122 participants. Binary Logit, the Cobb-Douglas function, and descriptive statistics were used to examine the data. Regression estimates indicated that age, education, experience, and computer literacy of co-operative managers influenced IT implementation, while computer systems, office phones, televisions, and managers' experience enhanced co-operative performance. The primary obstacles to IT integration were low membership/finance (45.9) and high IT costs. Consequently, the government should implement policies to increase co-operative membership and funding. Oyebanjo largely focused on general performance outcomes rather than on compliance with supervisory or regulatory information systems. These findings are relevant in examining compliance with co-operative supervision management information systems (MIS), as such systems

require both technological capability and managerial willingness for effective implementation.

A range of socio-demographic and institutional factors increasingly shapes compliance with digital financial systems. A study in Ghana examined the determinants of Digital Financial Services (DFS) utilisation using a logit regression model, with average marginal effects to measure the impact of factors such as effort expectancy, awareness, facilitating conditions, transaction costs, security and privacy, and self-efficacy. The research concluded that all six determinants had a positive and significant impact, with facilitating conditions (28.5%) and transaction costs (3%) exerting the strongest influence (Anane & Nie, 2022). The study highlighted that socio-demographic attributes, specifically education, gender, place of residence, and administrative region, significantly influenced DFS adoption patterns. Unlike the research by Anane and Nie, which overlooked the roles of employee position and perceived age, this study integrates these dimensions.

Further insights can be drawn from research in Indonesia, which examined ICT integration among small and medium enterprises (SMEs) by analysing the roles of demographic factors such as gender, age, educational level, managerial status, and business experience (Kusuma *et al.*, 2020). Using structured, self-administered questionnaires validated by experts and a pilot study, the researchers found that while gender and educational level had minimal influence, factors like age, managerial responsibility, and business experience significantly shaped ICT uptake. Furthermore, younger individuals were more inclined to adapt to technological innovations, while older managers showed resistance. These findings parallel observations in the SACCOS context, where dynamic, younger leaders may be more receptive to compliance with CSMIS, whereas longer-serving or traditionally oriented personnel may exhibit inertia toward change.

However, diverging from the above study's conclusion, emerging literature on SACCOS suggests that education can be a critical enabler of CSMIS compliance, particularly by enhancing understanding of system transparency and operational efficiency. The study by Kusuma *et al.* (2020) focused on general business settings or financial service environments without accounting for the distinct regulatory frameworks, governance structures, and accountability mechanisms that characterise

SACCOS operations. This study aims to bridge this gap by providing a sector-specific analysis of how socio-demographic characteristics, such as education, age, gender, and employee position, influence CSMIS compliance, thereby contributing to a more nuanced understanding of ICT integration in co-operative financial institutions.

Siddika and Sarwar (2024) conducted a comparative analysis of MMS implementation across 23 countries in the Middle East and North Africa and Sub-Saharan Africa, focusing on socio-demographic and macro-level determinants. Using the Generalised Least Squares (GLS) method, the study identified gender and income level as significant socio-demographic factors positively influencing MMS integration. These findings suggest that individuals with higher income and, in some contexts, male users are more likely to engage with mobile financial platforms. These insights are particularly relevant for the Tanzanian SACCOS context, where gender and income disparities may similarly affect members' ability or willingness to comply with digital systems such as CSMIS. Moreover, the study highlighted the role of macro-level factors, including the affordability index, political stability, and the regulatory environment, in shaping technology utilisation. Interestingly, while the affordability index showed an inverse relationship with MMS utilisation, possibly reflecting greater demand for affordable digital services in less economically stable contexts, political stability was positively correlated with adoption in the Middle East and North Africa region. The regulatory index, though overall positively correlated, showed no significant influence within the SSA region.

This implies that in regions like Tanzania, local SACCOS might be more influenced by immediate, micro-level factors such as user demographics and financial capacity, rather than broader institutional or regulatory environments. The findings underscore the importance of tailoring digital financial service implementation strategies to the unique socio-economic and political contexts of target populations. In Tanzania, understanding how socio-demographic variables such as age, gender, and education of SACCO's leaders affect their compliance with CSMIS is critical. Drawing on the comparative approach, this study seeks to extend understanding of these dynamics by focusing specifically on SACCOS, which play a pivotal role in community-level financial services in Tanzania.

Sait *et al.* (2025) make a significant contribution by examining how socio-demographic variables affect not only acceptance but also discontinuance and resistance to digital wallet services. Conducted in Brunei Darussalam with a sample of 442 respondents, the study utilised chi-square tests to explore the relationship between demographic characteristics and users' acceptance decisions. The results indicated that age, education level, and income significantly influence the likelihood of utilising digital wallet services, while gender did not have a notable impact. These findings have important implications for the broader discourse on digital system acceptance, particularly in developing economies. Age-related preferences and digital literacy often shape users' confidence and comfort with new technologies. Similarly, higher educational attainment generally correlates with increased technology acceptance, as individuals with more education may better understand the utility and functionality of digital platforms. Income levels also play a crucial role, as users with higher incomes may have greater access to compatible devices and greater exposure to digital financial ecosystems. In Tanzania, where CSMIS was introduced to enhance efficiency and oversight within SACCOS, understanding the influence of these socio-demographic factors is essential.

2.3.3 Attitudinal factors and compliance with co-operative supervision management information system

Delso *et al.* (2025) examined attitudinal drivers of compliance among bank employees, focusing on perceived usefulness, normative pressure, managerial support, and training. Through regression and mediation analyses, the study found that employee attitudes and managerial backing were strong predictors of compliance, with training often serving as a mediator. These results suggest that compliance is shaped not only by formal enforcement but also by encouragement and the attitudes modelled by leaders. In the context of SACCOS, this underscores the need for leaders to actively demonstrate positive attitudes toward CSMIS and support its use. However, the banking sector differs from co-operative organisations, in which governance is more democratic and resources are limited. To address this gap, this study examines the relevance of attitudinal predictors of CSMIS compliance among Tanzanian SACCO leaders, adapting validated constructs to assess their influence in this setting.

Reuben *et al.* (2019) examined the factors influencing the adoption and use of open-source ERP systems by deposit-taking SACCOS in Kenya. The diffusion of innovation theory was employed to assess the level of adoption, while the extended, deconstructed theory of perceived behaviour, organisation, technology, and environment frameworks was used to evaluate the significance of acceptance-use drivers. The study involved 378 respondents, with 164 deposit-taking SACCOS licensed by the SACCOS regulating authority (SASRA) in 2016 serving as the unit of analysis. Quantitative data were gathered through a questionnaire. Descriptive analysis revealed that 85.5% of deposit-taking SACCOS have implemented open-source ERP, while 14.5% have not. The implementation and use of open-source enterprise resource planning (ERP) systems by Savings and Credit Co-operative Societies (SACCOS) that accept deposits in Kenya are substantially influenced by ecological, mind-set-related, and standardised framework factors. Conversely, technological, institutional, and perceived conduct aspects did not exert any impact. These discoveries provide crucial insight into the degree of technological integration, aligning with the research's objective of exploring the factors that shape the incorporation of CSMIS within SACCOS.

The study by Hadiyan *et al.* (2024) explored the factors influencing user acceptance of digital e-payment systems within Malaysia's Ar-Rahnu sector, a segment closely linked to co-operative and microfinance institutions. Based on the Unified Theory of Acceptance and Use of Technology (UTAUT), the research highlights attitudinal factors as key drivers of implementation. The UTAUT framework focuses on four main constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions, each reflecting a user's perception and attitude toward a technological system. Using Partial Least Squares Structural Equation Modelling (PLS-SEM), the study confirmed that all four hypothesised relationships were statistically significant, indicating that users' attitudes toward digital e-payment systems are strong predictors of integration behaviour. For instance, users were more inclined to accept the system if they believed it would enhance their performance (performance expectancy) and was easy to use (effort expectancy).

Moreover, social influence and the availability of support systems played crucial roles in fostering positive attitudes toward integration. It becomes clear that attitudinal factors, such as perceived usefulness, ease of use, and social encouragement, are equally vital in influencing SACCOS' compliance with CSMIS. Members and staff of SACCOS are more likely to embrace CSMIS if they perceive it as improving task performance, reducing manual effort, and being supported by their peers and leadership.

The study assessing the impact of employee attitudes on the adoption of the Information System in public institutions in Tanzania found that employees' attitudes significantly affect the successful implementation of FMIS (Elias, 2024). Organisations should place a high priority on tactics such as full staff engagement in system user demands, effective communication throughout installation, hands-on training, and continuous system developer support to help staff adjust to information technology. The study further suggests that the government should ensure that staff members who frequently use these accounting systems are well-informed about their benefits in daily operations. The study employed a quantitative methodology, gathering primary data using a structured questionnaire, and analysed the data using Pearson's chi-square test, one-way ANOVA, and ordinal regression.

Similarly, Ngongo (2019) investigated the factors affecting the adoption of ICT and its influence on productivity within Kenyan dairy co-operative societies. The research identified crucial factors, including integration costs, perceived usefulness, staff skills, and support from top management, with perceived usefulness emerging as the most critical. The study also underscores the beneficial impact of ICT on productivity in dairy co-operatives. Data were collected from 40 participants across 20 dairy co-operatives using a structured questionnaire. These results reinforce the notion that organisational factors, especially top management support and perceived technological benefits, are vital to technology acceptance. This research expands on Ngongo's findings by examining the unique operational environment of SACCOS in Iramba and Manyoni Districts, which might present additional challenges or opportunities for compliance with CSMIS.

Chatterjee *et al.* (2021) examined how agile Indian organisations are adopting AI-enhanced CRM systems, with a particular focus on how digital transformation strategies influence technology adoption. Employing a quantitative methodology supported by Partial Least Squares Structural Equation Modelling (PLS-SEM), the research underscored the significance of stakeholder involvement, perceived value, ease of use, and employee Trust in shaping adoption intentions. These insights align with the study on CSMIS compliance among SACCOS, which found that perceived usefulness and ease of use are also crucial. However, in the SACCO context, perceived costs and risks are more significant due to limited resources and heightened sensitivity to system reliability.

Similarly, Egala *et al.* (2024) investigated employee attitudes toward digital innovation in service-based SMEs within an emerging economy. Using structural equation modelling, the study identified IT infrastructure and investment as key factors driving positive attitudes toward digital integration, while competencies and digital knowledge had a lesser impact. Although this supports the idea that institutional support encourages favourable attitudes, the study mainly focused on organisational factors. In contrast, the current research emphasises individual-level perceptions, such as perceived usefulness, ease of use, cost, and risk, which are particularly relevant in SACCO settings. These environments often encounter regulatory pressures and budget constraints, making personal attitudes toward technology acceptance a more crucial factor. The gap, therefore, lies in the limited exploration of user-centred attitudinal factors in previous studies, highlighting the importance of understanding how such perceptions affect technology adoption in resource-limited, co-operative financial institutions.

Alshari and Lokhande (2022) conducted a study to examine the impact of demographic characteristics on clients' attitudes and intentions to adopt FinTech services in Yemeni banks. Using the Technology Acceptance Model (TAM) as their theoretical framework, they applied Structural Equation Modelling with Partial Least Squares (PLS) to analyse data from 435 clients across five banks offering FinTech services. The study found that education and income played a crucial role in reducing perceived risk and enhancing perceived benefits. Additionally, gender, income, and perceived risk negatively influenced users' attitudes, while perceived ease of use (PEOU), perceived usefulness (PU), education, and Trust had strong positive effects.

A significant positive relationship was identified between attitude and behavioural intention. These findings are particularly relevant for understanding the compliance with CSMIS, where similar factors, perceived risk, and Trust could shape SACCO's leaders' attitudes. However, unlike individual banking clients, SACCO's leaders operate within institutional contexts, where Trust in the system and transparency mechanisms may have a more substantial impact on compliance decisions.

Oyetade *et al.* (2024) explored the growing dependence of organisations on Information and Communication Technology (ICT) to drive sustained development and maintain a competitive advantage in a swiftly changing global economy. Despite this trend, the research identified a significant gap in the existing literature, particularly in understanding the internal organisational factors that influence successful ICT adoption, and called for more qualitative case studies. Conducted within the context of global organisations, the study aimed to bridge this gap by examining how various intra-organisational factors affect the integration of ICT solutions. These elements included the organisational environment, managerial strategies, staff attitudes, resource availability, user perceptions, and influences from similar institutions. Each aspect was analysed in relation to its interaction with the organisation's broader strategic direction and digital transformation efforts.

Using a qualitative case study approach, the researcher reviewed literature published from 2003 to 2024 to assess how internal organisational factors impact ICT adoption and long-term success. Real-world examples from leading institutions illustrated effective ICT system implementation. The study was guided by the Innovation Diffusion Theory (IDT) and Technology Acceptance Model (TAM), emphasising the roles of leadership, culture, and resources in successful technology integration. The findings revealed that organisations that prioritise strategic alignment between ICT and their core objectives, foster a technology-supportive culture, and invest in suitable digital infrastructure are more likely to achieve seamless technological integration. This research provides a valuable foundation, underscoring the importance of internal factors, such as leadership behaviour and institutional culture, in shaping technology adoption outcomes. By applying these insights to the SACCOS environment, the current study seeks to explore how leadership perceptions and dispositions either facilitate or impede the implementation of CSMIS, contributing to a more nuanced

understanding of digital transformation within co-operative financial institutions in the Tanzanian context.

Bariu and Chun (2022) examined the integration of Information and Communication Technology (ICT) within university education systems, addressing the growing global demand for accessible, skill-based, and knowledge-driven learning in the 21st century. The study highlighted the growing importance of ICT in modern life, especially in educational institutions, where it plays a crucial role in both teaching and learning. Conducted in a Kenyan university, the research aimed to assess the attitudinal readiness of teaching staff, as their approach to technology integration was identified as a critical yet underexplored factor affecting the success of ICT initiatives. Despite educators' central role in the academic process, empirical research on how their perspectives shape the implementation of digital tools in learning environments remains limited. The study employed a descriptive survey design supported by quantitative research methods. A total of 475 university instructors were selected via stratified random sampling, and data were collected via structured questionnaires. The gathered data underwent various statistical analyses, including descriptive analysis, factor analysis, ANOVA, inferential statistics, and regression analysis.

The findings indicated that respondents generally had a positive attitude toward ICT adoption in education. Factor analysis identified several key components influencing these attitudes, with one factor proving particularly significant. Furthermore, regression analysis demonstrated that individuals with more favourable perceptions of ICT were more likely to support and engage in its use. By shifting the focus from educators to leadership within financial co-operatives, the current study aims to extend these insights to a new institutional context. It will help determine whether similar psychological and organisational factors, such as perceived value, openness to innovation, and willingness to adapt, influence digital transformation within SACCOS. This comparison strengthens the theoretical foundation for understanding how internal attitudes shape system compliance.

A study by Jeilani *et al.* (2025) examined how perceived Trust, user satisfaction, technological readiness, and individual disposition affect the adoption of e-

government systems among public sector employees. The research highlighted the mediating role of user attitude, recognising its importance in the adoption process. This study was based on several established theoretical models, including the Diffusion of Innovation Theory (DOI), the Theory of Planned Behaviour (TPB), and the DeLone and McLean Information Systems Success Model, to develop an integrated conceptual framework for understanding the factors that facilitate or impede digital government adoption. The sample consisted of 250 government personnel with direct experience using e-government platforms. Participants were chosen through a purposive sampling strategy, ensuring that only those with relevant exposure to digital government systems were included. Data were collected via structured questionnaires, and analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM), a technique suitable for testing complex relationships among variables.

The findings revealed that a positive user attitude is a crucial enabler of e-government adoption. Specifically, attitude served as a mediating factor linking variables such as Trust, satisfaction, and technology readiness to adoption behaviour. The study found that employees with higher levels of technological readiness were more likely to adopt e-government systems both directly and indirectly by fostering positive attitudes. Similarly, Trust in the system and user satisfaction promoted adoption by first cultivating favourable perceptions and beliefs about the technology. This research makes significant theoretical contributions by integrating insights from multiple models and by emphasising the psychological and organisational aspects of technology acceptance. Although the study focused on government employees, the emphasis on attitude as a mediator in system adoption offers a theoretical perspective for examining leadership behaviour in SACCOS. In the context of CSMIS, leaders' Trust in technology, satisfaction with its capabilities, and readiness to embrace innovations significantly influence their willingness to implement such systems.

In a related study, Amin *et al.* (2021) investigated customer attitudes toward mobile banking usage in Bangladesh using a quantitative approach. Of the 400 distributed questionnaires, 200 were analysed using descriptive statistics, factor analysis, and regression techniques. The study revealed that usage benefits, convenience, and psychological motivators positively influenced users' attitudes toward mobile

banking, although some usability concerns were noted. These findings are consistent with the anticipated attitudinal factors in CSMIS compliance, particularly regarding perceived benefits and psychological assurance. Nonetheless, CSMIS compliance is situated at the institutional level, emphasising governance objectives, transparency, and regulatory alignment, rather than focusing solely on individual utility. These studies highlight a significant research gap: while the role of attitudinal constructs in individual consumer technology utilisation is well documented, there is limited research on how these factors operate in institutional environments such as SACCOS. Specifically, there is a need to understand how SACCO's leaders perceive and internalise constructs such as perceived usefulness, perceived ease of use, Trust, perceived cost, and perceived risk in relation to supervisory information systems. In developing economies, where co-operatives are essential to financial inclusion, such insights are crucial for developing strategies to promote effective compliance with systems such as CSMIS.

While extensive research has been conducted on SACCO's regulatory compliance and technology adoption, there remains a limited understanding of the factors influencing compliance with externally imposed systems, such as the Co-operative Supervision Management Information System (CSMIS), particularly in rural Tanzanian districts like Iramba and Manyoni. Studies by Alukwe (2018) and Omollo (2019) emphasise institutional capacity and governance but fail to address external digital oversight systems. Similarly, Mageria (2018), Erasto (2024), and Reuben et al. (2019) have explored internal technology use without considering regulatory compliance. Elias (2024) and Ngongo (2019) examine staff attitudes and support, yet not within the context of external compliance. This underscores the necessity to assess how organisational, technological, and regulatory factors affect SACCOS' compliance with CSMIS in rural Tanzania.

Furthermore, the predominant methodological approach in the existing literature is quantitative. Scholars such as Oyebanjo *et al.* (2020) and Anane and Nie (2022) have employed binary logit and regression models to examine measurable determinants, while Reuben *et al.* (2019) and Maroufkhani *et al.* (2022) have used structured questionnaires and partial least squares structural equation modelling (PLS-SEM), respectively. While these methodologies offer valuable statistical insights, they often

fail to capture the nuanced contextual and interpretive elements that qualitative approaches can elucidate, particularly in institution-specific environments such as SACCOS.

To address this methodological and contextual gap, the present study employed a mixed-methods approach, integrating binary logit modelling for quantitative analysis with thematic analysis for qualitative data interpretation. This methodological approach facilitates a more comprehensive understanding of the factors influencing SACCO's compliance with CSMIS by capturing both quantifiable variables and the lived experiences of the SACCO's staff and leadership.

2.4. Conceptual Framework

The conceptual structure of the study describes how different factors affect compliance with the co-operative supervision management information system (CSMIS) among SACCOS. Socio-demographic influences are assessed using variables such as age, gender, education, occupation, and experience. Attitude factors encompass perceived usefulness, simplicity of use, compatibility, and perceived cost, indicating how users' perceptions impact their willingness to comply with the system. Organisational elements, including resource availability, organisational size, linking structures, top management support, and financial resources, underscore the institution's preparedness to implement CSMIS. The decision to comply with CSMIS or not is the dependent variable, influenced by several independent factors.

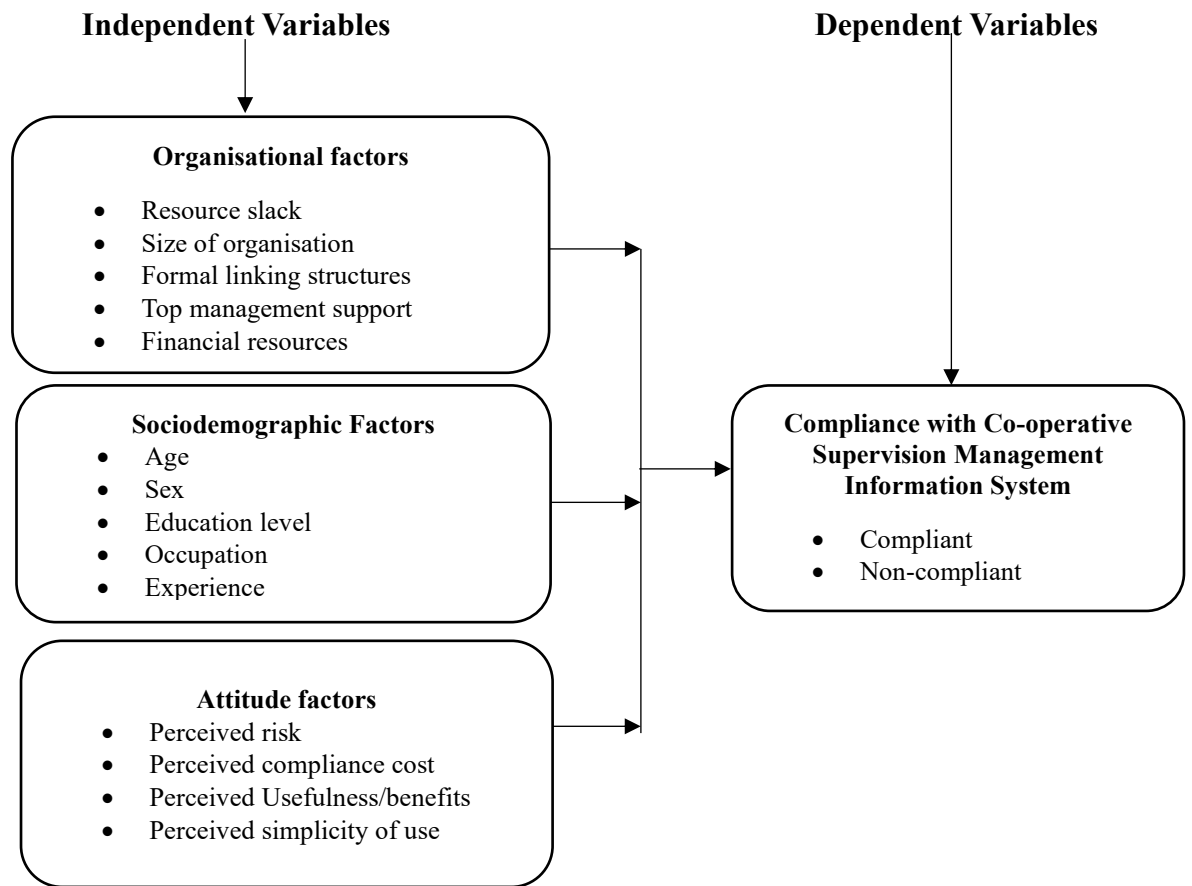


Figure 1: Conceptual Framework

Source: Author's Construct

CHAPTER THREE

3.0. RESEARCH METHODOLOGY

3.1. Research Design

This research employed a cross-sectional design, in which data were collected at a single point in time (Saunders *et al.*, 2019). Given their cost-effectiveness and brevity, cross-sectional designs allow researchers to swiftly complete data collection and proceed to analysis and reporting, avoiding the attrition concerns associated with tracking participants over time (Adinan *et al.*, 2019).

3.2. Geographical Coverage

This study focused on two districts in Singida Region: Manyoni and Iramba. Manyoni District covers 28,620 km² and has a population of 205,478, whereas Iramba District spans 4,571.4 km² with 328,912 residents (Census, 2022). There are 29 Savings and Credit Co-operative Societies (SACCOS) registered under the Co-operative Society Act in districts (Iramba District 13 and Manyoni District 16), but only 8 SACCOS (two in Iramba District and six in Manyoni District) have complied with Co-operative Supervision Management Information Systems, despite their recognised importance for enhancing efficiency and transparency (TCDC, 2023). Iramba and Manyoni districts were chosen for this study due to their rural nature, active involvement in microfinance activities and the significant variation in compliance with CSMIS among their SACCOS (Rodríguez & Velastequí, 2019).

3.3. Population, Sample and Sampling Strategies

3.3.1. Population

According to TCDC (2023), Iramba and Manyoni districts have 29 SACCOS in total. For this study, the target population included all 29 SACCOS.

3.3.2. Sampling frame

The unit of observation comprised 174 participants drawn from the 29 Savings and Credit Co-operative Societies that constitute the intended population. The sampling frame included the Information Technology Manager, Credit Manager, Internal Auditor, Finance Manager, General Manager, and Chairperson of the Board from each SACCOS in the districts. This is based on the assertion that managers are primarily responsible for technology-related decisions (Ngongo, 2019).

3.3.3. Sample size

The study involved all 29 Savings and Credit Co-operative Societies (SACCOS) operating within the selected districts, which served as the units of analysis, thereby ensuring comprehensive representation of the entire population under investigation. These SACCOS are distributed across two districts: Iramba and Manyoni. In Iramba District, 13 SACCOS were included, with nine (9) situated in rural areas and four (4) in urban areas. Similarly, in the Manyoni District, 16 SACCOS participated, comprising thirteen (13) rural and three (3) urban SACCOS. A total of 174 respondents were sampled from these SACCOS to serve as the units of observation. These respondents were key decision-makers and stakeholders within SACCOS, including the Information Technology Manager, Credit Manager, Internal Auditor, Finance Manager, General Manager, and Chairperson of the Board. By involving representatives from all operational SACCOS and capturing a broad spectrum of roles within each SACCOS, the study was able to gather detailed and reliable data, offering a comprehensive understanding of the factors influencing compliance with the Co-operative Supervision Management Information System across both rural and urban settings in the two districts.

3.3.4. Sampling strategies

Ngongo (2019) posited that conducting a census is appropriate for populations of fewer than 200. Thus, this study undertook a census of all identified Savings and Credit Co-operative Societies in the Districts. In each of the 29 SACCOS, respondents were purposively selected based on their organisational roles and responsibilities. This selection process yielded 174 participants, including key decision-makers and managerial personnel such as Information Technology Managers, Credit Managers, Internal Auditors, Finance Managers, General Managers, and Board Chairpersons. Choosing individuals in these strategic positions enhanced the data's reliability and contextual relevance, as it captured insights from those directly responsible for governance and operational management within the SACCOS.

3.4.Data and data collection Methods

3.4.1. Types of data

To gain an understanding of the research problem, both quantitative and qualitative data were utilised. While qualitative data provided contextual depth and meaning, quantitative data yielded quantifiable, generalizable results (Sarkar, 2020).

3.4.2. Data sources

To meet the study's objectives and answer its questions, this research used both primary and secondary data sources. Primary data were collected from the Information Technology Manager, Credit Manager, Internal Auditor, Finance Manager, General Manager and Chairperson of the Board of each SACCOS using a survey questionnaire. Gathering primary data directly from respondents enhanced the reliability of the information, as it is specifically aligned with the study's objectives. Secondary data were gathered from literature on the co-operative supervision management information system, including articles, books, magazines, and websites. This approach ensured a comprehensive analysis of both primary and secondary data to fulfil the research objectives (Nyang *et al.*, 2021).

3.4.3. Data collection instruments

A semi-structured questionnaire and interview guide served as the central mechanism for acquiring primary data from study participants. Ten individuals with in-depth knowledge of the CSMIS compliance were purposively chosen to provide valuable insights (Moser & Korstjens, 2018). Additionally, the study used a documentary review, collecting secondary data from journals, SACCO's reports, magazines, research papers, SACCOS-related books, and websites. Before further analysis, the response rate was calculated to establish the number of responses. Of the 174 questionnaires distributed, 167 were returned, representing a 95.98% response rate. Boyer *et al.* (2021) suggest a response rate of at least 50% for further analysis. Based on this, a response rate of 95.98 % was considered adequate for further analysis.

3.5. Validity and Reliability of the Data

3.5.1. Validity of data

The extent to which a measurement tool accurately assesses the intended concept is called validity. As stated by Scott *et al.* (2020), the validity of an instrument is established by the degree to which it effectively captures the construct it was developed to measure. The validation process consisted of two phases: instrument development and data evaluation. The instrument's validity was assessed using both quantitative and qualitative methods, with input from at least 5 experts. Subsequently, the Content Validity Index was employed to quantify content validity. Experts were asked to evaluate the relevance of each item within the instrument using a five-point

rating scale, which was then used to calculate the Content Validity Index. The Content Validity Index (CVI) was then calculated to quantify the degree of consensus among the experts regarding the relevance of each item. The CVI is computed as the ratio of the number of items deemed valid by the experts to the total number of items in the instrument. Out of the 41 items included in the instrument, 34 were judged to be valid by the expert panel. Therefore, the overall CVI was:

$$CVI = \frac{\text{Number of items declared valid}}{\text{total number of items in questionnaire}} = \frac{34}{41} = 0.83$$

A CVI score of 0.83 indicates a high level of content validity, suggesting that the majority of the items included in the instrument were considered appropriate and relevant for measuring the intended constructs. This outcome provides strong evidence of the instrument's validity.

3.5.2. Data reliability

Taherdoost (2018) defined reliability as the degree to which findings remain constant over time and accurately reflect the entire population under study. If similar approaches yield the same results, the instrument is considered reliable. The reliability of an instrument is assessed based on its ability to consistently and precisely generate data. Using Cronbach's alpha, several reliability tests were conducted to assess the reliability of the results. As recommended by Saunders *et al.* (2019), a value exceeding 0.7 is considered acceptable; otherwise, the instrument must be revised. The results of the reliability analysis are presented in Table 1

Table 1: Reliability Test

Variable	Cronbach's Alpha	N of Items
Likelihood of compliance	0.792	2
Socio-demographic Factors	0.815	6
Attitudinal Factors	0.805	8
Organisational Factors	0.818	12

All variables demonstrated satisfactory internal consistency, with Cronbach's alpha values exceeding the recommended threshold of 0.70. Specifically, the likelihood of compliance variable yielded a Cronbach's alpha of 0.792 across 2 items, indicating acceptable reliability. The Socio-demographic factors scale, comprising six items, yielded an alpha of 0.815, while the attitudinal factors scale, comprising eight items,

yielded an alpha of 0.805. The Organisational Factors variable, comprising 12 items, yielded the highest alpha value of 0.818, further confirming strong internal consistency. These results suggest that the instruments used to measure the study variables were reliable and suitable for further analysis.

3.6. Data analysis

To analyse qualitative data and increase depth, the study used thematic analysis. Information gathered from Key Informant Interviews was transcribed, coded, categorised into themes, and contextualised in accordance with the study's specific objectives (Guzik & Więckowska, 2023).

The study used descriptive statistics to evaluate participants' socio-demographic traits and to provide a thorough summary of the research variables, ensuring all study objectives were met. The results were presented using metrics such as frequency distributions, means, standard deviations, and percentages. A Binary Logistic Regression model was applied to assess the relationship between the dependent variable (1 = likelihood of compliance; 0 = otherwise) and the independent variables (Socio-demographic factors, Attitudinal factors, and Organisational factors). This model was selected for this study because the dependent variable was binary. The dependent variable was CSMIS compliance, with two possible outcomes (1 = probability of compliance, 0 = otherwise). The equation of Binary logistic regression is shown below:

$$P_i = \exp^{Z_i} / 1 + \exp^{Z_i} \dots\dots\dots (1)$$

In this context, P_i represents a random variable that predicts the likelihood of CSMIS compliance, while Z_i serves as an index linearly associated with a range of sociodemographic, attitudinal, and organisational factors influencing CSMIS compliance. The relationship between these variables and Z_i can be further specified as follows:

$$Z_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \dots\dots + \beta_n X_{ni} \dots\dots\dots (2)$$

The model specification was summarised in the equation below.

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots\dots + \beta_n X_n + \epsilon \dots\dots\dots (3)$$

Where:

Z = Dependent variable

$X_1, X_2, X_3, \dots, X_n$ Predicting variables

E = Error term

3.6.1. Diagnostic Testing and Model Validation for Binary Logistic Regression Analysis

Before conducting binary logistic regression analysis for each specific objective, diagnostic tests were performed to ensure the models' validity and robustness. The Hosmer-Lemeshow test was used to evaluate the model's goodness-of-fit, and multicollinearity among the independent variables was assessed using the Variance Inflation Factor (VIF). These tests are essential for determining whether the logistic regression models are statistically sound and if the predictor variables are suitable for inclusion in the analysis.

3.6.2. Diagnostic Test Results for Objective One: Influence of Organisational Factors on CSMIS Compliance

The first objective examined the impact of organisational factors on CSMIS compliance. The variables considered in this model were: Designated office for operations, SACCOS financial liquidity, Availability and reliability of electricity, Availability of functional computers, Manager training on digital systems, Manager's promotion of digital systems, Existence of an official ICT/digital systems policy, Board support for CSMIS compliance, Resource slack, Membership size of the SACCOS, Availability of formal communication linkages, and financial capacity to invest in CSMIS.

The Hosmer-Lemeshow test yielded a p-value of 0.341, which exceeds the conventional 0.05 threshold, indicating robust goodness-of-fit. This result confirms that the logistic regression model is appropriate and valid for evaluating the organisational factors influencing compliance with CSMIS.

Table 2: Multicollinearity Test Results

Variables	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Designated office for operations	.867	1.153
SACCOS financial liquidity	.732	1.366
Reliability of electricity	.855	1.170
Availability of functional computers	.555	1.803
Manager Training on Digital Systems	.855	1.170
Manager's Promotion of Digital Systems	.342	2.927
Official ICT/Digital Systems Policy	.697	1.435
Board Support for CSMIS compliance	.842	1.188
Resource slack	.841	1.189
Membership Size of SACCOS	.939	1.065
Availability of communication Link	.538	1.860
Financial Capacity to Invest in CSMIS	.861	1.161

The analysis indicates that all organisational predictors have VIF values under 5, with the highest being 2.927 for the variable assessing managers' promotion of digital systems. Despite this, none of the values exceed the critical threshold, confirming the absence of severe multicollinearity and supporting the reliability of the model inputs.

3.6.3. Diagnostic Test Results for Objective two: Influence of Socio-demographic Factors on compliance with CSMIS

This objective sought to determine how socio-demographic factors of SACCO's leaders affect their decision to comply with the CSMIS. The independent variables examined under this objective included: the age of SACCO's leaders, the gender of SACCOS decision-makers, the experience of SACCO's leaders, employees' roles in SACCOS, and SACCOS staff's prior IT knowledge.

The Hosmer-Lemeshow goodness-of-fit test yielded a p-value of 0.115, which exceeded the conventional significance level of 0.05. This result suggests that there was no significant difference between the observed and predicted values, indicating that the logistic regression model provided an adequate fit to the data. Therefore, the model based on socio-demographic factors was considered appropriate for predicting CSMIS compliance in this study.

Table 3: Multicollinearity Test Results

Variables	Collinearity Statistics	
	Tolerance	VIF
Age of SACCOS leaders influences	.817	1.224
Gender of SACCOS Leaders	.433	2.307
Education level of SACCOS leaders	.770	1.298
Experience of SACCOS Leaders	.740	1.352
Employee's role in SACCOS	.636	1.573
SACCOS staff have prior IT knowledge	.608	1.644

All VIF values are below the commonly accepted threshold of 5, indicating no evidence of multicollinearity among the socio-demographic predictors. Therefore, all variables were reliably included in the model without redundancy or inflated standard errors.

3.6.4. Diagnostic Test Results for Objective Three: Influence of Attitudinal Factors on CSMIS Compliance

The second objective focused on evaluating the impact of leaders' attitudes and perceptions on compliance with CSMIS. The attitudinal variables included: the perception that the cost of compliance with CSMIS is a financial burden, the belief that CSMIS makes operations more efficient, the belief that CSMIS improves record management, the belief that CSMIS enables faster report generation, the perception that CSMIS supports better decision-making, the perception that compliance with CSMIS is risky, and the belief that CSMIS enhances transparency in operations.

The Hosmer-Lemeshow test yielded a p-value of 0.223, which exceeds the conventional threshold of 0.05. This result indicates a satisfactory model fit, suggesting that the logistic regression model based on attitudinal factors is appropriate for predicting compliance with the CSMIS.

Table 4: Multicollinearity Test Results

Variables	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Perceived cost of compliance	.364	2.748
Perceived improvement in efficiency	.484	2.068
Enhancement of record management	.763	1.310
Increase in report generation speed	.529	1.890
Support for decision-making	.395	2.530
Perceived risk of compliance	.529	1.890
Perceived ease of use	.833	1.200
Improvement in transparency	.324	3.085

The VIF values for all attitudinal variables are below 5, indicating no significant multicollinearity issues. The highest VIF value recorded is 3.085, associated with the perception that CSMIS enhances transparency in SACCO's operations, indicating acceptable independence among the predictors. These findings support the inclusion of attitudinal factors in the regression model.

3.7. Measurement of variable

Table 5: Operational Definition of Variables and their Measurement Levels

Variables	Definition	Type of variable	Measurement of variables	Source
CSMIS compliance	Compliance with CSMIS	Nominal	1 If Probability to comply, 0 otherwise	Reuben <i>et al.</i> (2019)
Sex	Biological attributes that classify the respondent as male, female, or intersex	Nominal	1 if Male, 0 if otherwise	Mageria (2018)
Age	Age of the respondent in years	Ordinal.	Years of the respondent	Erasto (2024)
Education level	The highest level of education attained by the respondent	Ordinal	1 if certificate or diploma, 2 if degree, 3 if postgraduate degree	Mageria (2018)
Experience	Number of years of operation of the respondent	Ratio	Average number of years of experience of the respondent.	Kustepeli <i>et al.</i> (2020).
Socio-demographic factors	Age, Gender, Level of education, occupation, Experience	Dummy	1 if yes, 0 if otherwise	Reuben <i>et al.</i> (2019)
Attitude factors	Perceived usefulness, Perceived simplicity of use, Compatibility, Perceived compliance cost	Dummy	1 if yes, 0 if otherwise	Elias (2024) Braun <i>et al.</i> , (2019)
Organisation Factors	Resource slack, size of organisation, Formal and informal linking structures, Top management support, financial resources	Dummy	1 if yes, 0 if otherwise	Ngongo (2019)

3.8. Ethical Considerations

This study adhered to established ethical protocols, prioritising the protection, respect, and equitable treatment of all participants, institutions, and stakeholders involved. Prior to data collection, formal ethical clearance was obtained from Moshi Co-operative University. Additionally, official research permits were secured from the Iramba and Manyoni District Councils, granting access to SACCOS operating within

the study areas. To uphold the rights and dignity of respondents, each participant was informed about the study's purpose, procedures, and their right to voluntary participation. Informed consent was obtained in writing, and participants were assured that they could withdraw at any time without consequences. Confidentiality was strictly maintained; no identifying information was to be published or disclosed, and all data were securely stored and used solely for academic purposes.

For the participating SACCOS and stakeholders, the study adopted a collaborative and transparent approach. Organisational data were collected with prior permission from SACCO's leadership, and the findings were shared in a manner that supports mutual learning and institutional improvement, without compromising privacy or sensitive information. To maintain academic integrity, the final research report underwent plagiarism screening to ensure originality and adherence to scholarly standards. All sources and contributions were duly acknowledged in accordance with the appropriate referencing conventions.

CHAPTER FOUR

4.0.FINDINGS AND DISCUSSION

4.1. Respondents' Profile and SACCOS Characteristics

This section provides a detailed description of the socio-demographic characteristics of the respondents who participated in the study. Variables such as age, gender, level of education, years of operation of the SACCOS, Location of the SACCOS, working experience of the respondents, and the position of the respondents in the SACCOS were examined in relation to the CSMIS compliance decision among SACCOS in Iramba and Manyoni districts. Table 6 summarises the distribution of these socio-demographic variables and their association with the CSMIS compliance.

Table 6: Respondents' profile and SACCOS Characteristics (n=167)

Variables	Category	CSMIS compliant (48)		CSMIS Non-compliant (119)	
		<i>Freq</i>	<i>Per cent (%)</i>	<i>Freq</i>	<i>Per cent (%)</i>
Age of respondent	21-30	5	3.0	6	3.6
	31-40	18	10.8	35	21.0
	41-50	19	11.4	55	32.9
	51+	6	3.6	23	13.8
Gender of the respondent	Male	17	10.2	60	35.9
	Female	31	18.6	59	35.3
Education level of the respondent	Primary	6	3.6	22	13.2
	Secondary	13	7.8	62	37.1
	Cert/Diploma	17	10.2	26	15.6
	Degree & above	12	7.2	9	5.4
SACCOS years of operation	1-10	10	6.0	12	7.3
	11-20	15	9.0	47	28.1
	21 +	23	13.8	60	35.9
Location of SACCOS	Urban	13	7.8	29	17.4
	Rural	35	21.0	90	53.9
Experience of the respondent	1-10	28	16.7	44	26.3
	11-20	15	9.0	65	38.9
	21+	5	3.0	10	6.0
Position of the respondent	IT Manager	9	5.4	14	8.4
	Credit Manager	5	3.0	24	14.4
	Internal auditor	6	3.6	23	13.7
	Finance Manager	8	4.7	21	12.6
	General Manager	12	7.2	17	10.2
	Board chairperson	8	4.8	20	12

Regarding the age distribution of respondents, the analysis highlighted differences between SACCOS that complied with the Co-operative Supervision Management Information System and those that did not. Among the 48 respondents from the compiled SACCOS, 5 (3.0%) were aged 21-30 years, 18 (10.8%) were aged 31-40 years, 19 (11.4%) were aged 41-50 years, and 6 (3.6%) were aged 51 and above. In

contrast, of the 119 respondents from non-compliant SACCOS, 6 (3.6%) were in the 21–30 age group, 35 (21.0%) were aged 31–40, 55 (32.9%) were aged 41–50, and 23 (13.8%) were aged 51 and above. This pattern suggests a concentration of middle-aged and older individuals in the non-compliant group. The finding indicates that SACCOS led by individuals aged 41–50 years constitute the largest proportion in both the compliant and non-compliant categories, with notably higher representation in the non-compliant category.

Although younger respondents (21–30 years) were present in both categories, their representation was minimal and relatively balanced, suggesting a limited influence from this group. The disproportionate concentration of older respondents in non-compliant SACCOS reflects an organisational preference for traditional practices over digital innovation. This finding is supported by Esamah *et al.* (2023), who argue that younger co-operative leaders are generally more open to the digital transformation. Similarly, Kusuma *et al.* (2020) found that SACCOS managed by older professionals often lag in adopting ICT systems due to entrenched traditional routines and resistance to change. The finding implies that younger managers tend to demonstrate greater digital literacy and flexibility, facilitating smoother transitions to systems than older managers.

Regarding respondents' gender, the findings revealed that among SACCOS that had complied with the Co-operative Supervision Management Information System (CSMIS), 31 respondents (18.6%) were female, while 17 (10.2%) were male. Conversely, in non-compliant SACCOS, 59 respondents (35.3%) were female and 60 (35.9%) were male. This distribution shows a higher female representation in the complied group than in the male counterparts, whereas male respondents slightly outnumbered females in the non-compliant category. This suggests that female involvement in decision-making roles correlates with a greater propensity to comply with CSMIS. This finding aligns with Martinez-Leon *et al.* (2020), who noted that female leadership in co-operative institutions often demonstrates greater adherence to regulatory frameworks and openness to institutional reforms. The findings imply that operational orientation and a leadership style characterised by caution and accountability are frequently attributed to female managers, who are widely recognised for their cautious approach and accountability-driven leadership. Male-

dominated SACCOS are more inclined to resist transitioning from legacy systems because of their stronger attachment to conventional administrative structures.

For educational levels of SACCOS leaders, the findings indicate that among those from SACCOS that had complied with CSMIS, 6 (3.6%) had completed primary education, 13 (7.2%) had secondary education, 17 (10.2%) held certificate or diploma qualifications, and 12 (7.2%) possessed a degree or higher. In contrast, within non-compliant SACCOS, 22 (13.2%) had primary education, 62 (37.1%) had secondary education, 26 (15.6%) held certificate or diploma qualifications, and only 9 (5.4%) had achieved degree-level education.

These findings suggest that SACCOS with leaders who have higher educational qualifications are more inclined to comply with CSMIS, as only 3.6% of compliants had primary education compared to 13.2% of non-compliants, while 7.2% of compliants held a degree or higher versus just 5.4% of non-compliants, indicating a positive correlation between education level and system compliance. The results imply that formal education, especially at the tertiary level, equips leaders with the skills needed to engage with digital platforms such as CSMIS. Higher education enhances digital literacy, strategic thinking, and the ability to comprehend complex regulatory frameworks, all of which are crucial for the successful implementation of technology-driven oversight systems. Conversely, SACCOS led by individuals with only primary or secondary education may lack the technical proficiency and confidence to engage with such systems, leading to hesitation or outright resistance despite government efforts to promote digitalisation.

These observations align with previous studies. For example, Santos *et al.* (2024) highlighted that educational background is a fundamental enabler of digital transformation within co-operative institutions. Their research supports the idea that educated leaders are better equipped to understand, implement, and advocate for reforms that rely on technology to improve efficiency, transparency, and compliance. This implies that individuals with higher education possess advanced problem-solving and analytical skills that enable them to navigate complex systems. Such individuals are often more proactive in aligning institutional practices with emerging technological standards. Moreover, education reduces technophobia and enhances

adaptability, both of which are essential when transitioning from traditional manual processes to digital platforms.

Regarding the operational years of the SACCOS, the findings revealed significant differences by institutional age. Specifically, SACCOS that had complied with the system included those operating for 1–10 years (10; 6.0%), 11–20 years (15; 9.0%), and over 21 years (23; 13.8%). In contrast, non-compliant SACCOS exhibited higher proportions across all age brackets. Twelve respondents represent 7.3% for 1–10 years, 47 (28.1%) for 11–20 years, and a notable 60 (35.9%) for those operating for over 21 years. This disparity indicates that newer SACCOS are more inclined to comply with the CSMIS compared to their longer-established counterparts. Martinez-Leon *et al.* (2020) noted that older SACCOS tend to retain manual processes and exhibit organisational inertia, thereby limiting their responsiveness to emerging digital solutions. Conversely, newly established SACCOS are generally more agile, structurally flexible, and strategically aligned with modern regulatory requirements, allowing them to embrace digital systems more readily and effectively. These findings imply that older SACCOS maintain entrenched operational routines and view system transitions as disruptive, especially when legacy procedures remain functional. Consequently, such institutions are less likely to prioritise compliance with supervisory digital systems.

The findings on SACCOS' locations show differences in compliance with CSMIS. Among respondents from compiled SACCOS, 35 (21.0%) were located in rural areas, while only 13 (7.8%) were based in urban areas. However, non-compliers were predominantly rural, accounting for 90 (53.9%) of the total, compared to 29 (17.4%) in urban areas. This indicates that although CSMIS compliance is occurring in both settings, rural SACCOS are still underrepresented among compliants. This disparity is attributed to infrastructural and technological limitations, which impact the perceived ease of use and usefulness of the system, as suggested by the Technology Acceptance Model. The Unified Theory of Acceptance and Use of Technology further elucidates this phenomenon by highlighting the importance of facilitating conditions, such as ICT infrastructure and support systems, which are often weaker in rural areas. These findings align with those of Atsiaya and Bwire (2024), who reported that urban SACCOS in Kenya had higher acceptance rates of digital systems due to greater

access to resources and technical capacity. This suggests that urban SACCOS benefit from superior connectivity, trained personnel and institutional support, thereby enhancing their operational efficiency and adaptability to mandated systems. In contrast, the lack of infrastructure development in rural areas hinders compliance efforts and delays the achievement of digital transformation goals.

Regarding experience, among respondents from compiled SACCOS, 28 (16.8%) had 1–10 years of working experience, 15 (9.0%) had 11–20 years, and 5 (3.0%) had more than 20 years. In contrast, the figures for non-compliant SACCOS showed a higher concentration of experienced individuals: 44 (26.3%) reported 0–10 years, 65 (38.9%) reported 11–20 years, and 10 (6.0%) reported over 20 years of experience. The data suggest that compliance was more common among SACCOS with relatively less experienced personnel. This trend suggests that longer-serving leaders may resist technological change, perhaps because they prefer traditional, manual systems. According to TAM, experienced individuals might question the usefulness or ease of use of new technologies, especially when unfamiliar with them. UTAUT supports this through the concept of effort expectancy, which holds that more experienced leaders perceive the transition to digital systems as disruptive or burdensome. These findings align with those of Esamah *et al.* (2023), who noted that innovation in SACCOS was more readily embraced under the leadership of younger or less tenured individuals. Therefore, investing in targeted training and change management for experienced leaders could reduce resistance and enhance compliance with the system.

Regarding leadership positions between CSMIS compliants and non-compliants, the study revealed that General Managers constitute the largest group among compliants, with 12 individuals (7.2%). IT Managers and Board Chairpersons follow this, each accounting for 8 individuals (4.8%); Finance Managers, with 8 (4.7%); Internal Auditors, with 6 (3.6%); and Credit Managers, with 5 (3.0%). In contrast, among the non-compliant SACCOS, Credit Managers were the most represented with 24 respondents (14.4%), followed by Internal Auditors with 23 (13.7%), Finance Managers with 21 (12.6%), Board Chairpersons with 20 (12.0%), General Managers with 17 (10.2%) and IT Managers with 14 (8.4%). These findings indicate that the positions held within the SACCOS significantly influence the decision to comply with information systems. The highest proportion of compliance came from General Managers (7.2%), indicating a strong executive-level influence on system uptake.

Conversely, Credit Managers (3.0%) and Internal Auditors (3.6%) had the lowest compliance rates, despite their significant presence among non-compliers (14.4% and 13.7%, respectively).

This finding is supported by the Unified Theory of Acceptance and Use of Technology (UTAUT), which highlights performance expectancy and social influence as key determinants of technology acceptance. The findings resonate with research by Esamah *et al.* (2023), who emphasised that successful system implementation in SACCOS is significantly driven by an employee's position in the organisation. Results imply that strategic leadership plays a pivotal role in shaping organisational readiness and commitment to technology compliance. The findings imply that general managers, who are typically central to institutional decision-making and long-term planning, perceive compliance with CSMIS as beneficial to performance and are thus more likely to support it. Additionally, their endorsement could influence other staff to follow suit.

4.2. Influence of Organisational Factors on Compliance with Co-operative Supervision Management Information System

This study examined twelve organisational factors as independent variables to evaluate their influence on compliance with CSMIS among SACCOS in Iramba and Manyoni districts. These factors included: presence of a designated office for operations, financial liquidity to meet short-term obligations, reliability of electricity at the office, availability of functional computers for official use, whether the SACCOS manager has received training on digital systems or ICT tools, whether the manager actively promotes the use of digital systems, Existence of an official ICT or digital systems policy, board support for CSMIS compliance, availability of extra resources such as funds, staff, or time, number of active members, existence of formal communication and reporting systems, and financial capacity to invest in CSMIS. Each variable was measured through structured questionnaires using binary (yes/no) response options. The dependent variable, CSMIS compliance, was also measured as a binary outcome, with SACCOS that complied with the system coded as 1 and those that did not coded as 0. Binary logistic regression was used to assess the extent to which each independent variable influenced the likelihood of compliance with CSMIS. Table 7 presents the results of the logistic regression model, including

estimated coefficients, odds ratios (Exp (B)), and p-values for each organisational factor included in the analysis.

Table 7: Estimates of the Logit Model on Organisational Factors and Compliance with CSMIS

Variables	B	S.E.	Wald	Sig.	Exp(B)
Designated office for operations	1.335	.544	6.031	.014	3.800
SACCOS's financial liquidity to meet short-term obligations	1.994	.573	12.117	.000	7.346
Availability and reliability of electricity	-1.233	.590	4.364	.037	.291
Availability of functional computers for official use	-.904	.676	1.791	.181	.405
Manager Training on Digital Systems	1.254	.531	5.578	.018	3.503
Manager's Promotion of Digital Systems	3.966	.984	16.261	.000	52.777
Official ICT/Digital Systems Policy	-.971	.584	2.769	.096	.379
Board Support for CSMIS compliance	1.227	.571	4.627	.031	3.412
Resource slack	.255	.503	.258	.611	1.291
Membership Size of SACCOS	1.233	.534	5.327	.021	3.433
Availability of formal communication and reporting systems	1.034	.707	2.138	.144	2.813
Financial Capacity to Invest in CSMIS	1.904	.633	9.044	.003	.149
Constant	-6.760	1.334	25.676	.000	.001

The presence of a designated operations office significantly and positively impacts compliance with CSMIS ($\beta = 3.800$, $P = 0.014$) at the 5% level. This finding indicates that SACCOS with such an office are 3.8 times more likely to comply with CSMIS than those without one. The positive correlation suggests that having a dedicated operational space increases the likelihood of compliance with CSMIS. This aligns with the UTAUT model, particularly the facilitating conditions construct, which asserts that organisational and technical infrastructure supports technology compliance. A designated office provides a more structured, well-equipped environment conducive to integrating new systems. This result corroborates findings by Tavana *et al.* (2021), who highlighted the importance of organisational readiness in technology acceptance. A designated office likely provides the necessary physical and administrative framework to support compliance with CSMIS, including dedicated staff, equipment, and operational procedures. It also reflects a SACCOS' commitment to professionalisation and modernisation, fostering a culture more open to technological advancements. This finding implies that SACCOS, aiming to comply with CSMIS, should prioritise establishing a dedicated operations office. Such an office could serve as a centralised hub for system management, training, and troubleshooting, thereby facilitating compliance and ongoing use of CSMIS.

Regarding SACCOS' financial liquidity to meet short-term obligations, findings revealed that financial liquidity significantly and positively affects compliance with CSMIS ($\beta = 7.346$, $P = 0.000$) at the 1% level. The odds ratio indicates that financially liquid SACCOS are more than 7 times more likely to comply with CSMIS than financially strained SACCOS. This observation supports the UTAUT model's facilitating conditions construct, suggesting that access to financial resources enables the practical implementation of technology. Liquidity directly influences an organisation's ability to absorb innovation costs. In line with Erasto (2024), financially capable organisations exhibit stronger tendencies toward innovation acceptance. This strongly supports UTAUT's assertion that performance expectancy and an enabling environment critically drive compliance behaviour. This implies that without liquidity, even the most capable systems will remain underutilised. SACCOS must, therefore, build financial buffers not only for operational sustainability but also to remain digitally competitive. Sector regulators could also consider linking CSMIS rollout with financial readiness indicators. The findings suggest that unless this structural condition improves, digital transformation efforts may be futile.

For the electricity availability variable, the findings indicate that both availability and reliability significantly and negatively affect compliance with CSMIS ($\beta = 0.291$, $P = 0.037$) at the 5% level. This suggests that the likelihood of complying with CSMIS is approximately 71% lower in SACCOS where electricity is unreliable. This finding aligns with the UTAUT model by underscoring the importance of facilitating conditions. The UTAUT posits that technology adoption depends on existing infrastructure, a claim strongly supported by this result. Additionally, research by Matsepe and Van der Lingen (2022) on rural African financial institutions similarly identified electricity reliability as a core determinant of technology acceptance, thereby reinforcing external validity. This was also expressed by KII 8, who said:

“One big challenge we face is the lack of reliable electricity at our office. Often, power outages disrupt our daily operations, making it difficult to run any digital systems smoothly. Without consistent electricity, even if we had the right computers or software, using CSMIS effectively becomes almost impossible for us right now” (KII8, 17 June 2025).

The finding implies that regardless of enthusiasm or training, if systems cannot be consistently powered, compliance falters. Unreliable electricity is a significant bottleneck, explaining the lag in digital compliance in rural and peri-urban co-operatives.

Regarding manager training on digital systems, the findings revealed a statistically significant and positive relationship between manager training and system compliance ($\beta = 3.503$, $P = 0.018$) at the 5% level. This means that SACCOS with trained managers are 3.5 times more likely to comply with the system than those without trained management. This result aligns with both TAM's "perceived ease of use" and UTAUT's "performance expectancy," where training not only enhances competence but also increases perceived value and reduces resistance. Studies such as Ghobakhloo *et al.* (2022) have shown that management training acts as a catalyst for ICT uptake in co-operative and community settings. This finding suggests that capacity building at the leadership level is crucial for digital transformation. Trained managers are more likely to champion innovation, address challenges, and allocate resources strategically. This result implies that human capital development is foundational to technological progress. Managerial training enhances both the confidence and technical ability to navigate new systems. Trained managers are also more likely to support team learning, effectively supervise implementation, and articulate the value of digital integration across their organisations.

Regarding managers' promotion of digital systems, the results show a very strong, statistically significant positive relationship between managerial promotion and compliance ($\beta = 52.777$, $P = 0.000$) at the 5% level. This indicates that where managers actively advocate for digital systems, the odds of compliance are over 52 times higher than where such advocacy is absent. This result aligns with the UTAUT construct of "social influence," which highlights leadership's role in shaping organisational attitudes toward technology. This finding aligns with empirical research by Maroufkhani *et al.* (2022), who emphasised top management support as a key driver of technology diffusion. The KII9 added by expressing that:

"Well, from my experience as board chair, the strongest support we needed was the manager's active promotion of digital systems. You see, when the manager is enthusiastic and leads by example, attending

trainings, encouraging the team, showing how it works, it really motivates everyone. It is like having a captain who believes in the ship; the crew naturally follows” (KII 9, 16 June 2025).

The findings imply that managerial commitment is not just helpful but transformative. It has the potential to overcome structural limitations and foster a culture of digital optimism. Managerial vision can act as a force multiplier, accelerating digital reform. It reiterates the need to target leaders as change agents in co-operative modernisation programs.

Board support exerts a statistically significant and positive effect on compliance ($\beta = 3.412$, $p = 0.031$) at the 5% level. This suggests that when boards are supportive, SACCOS are 3.4 times more likely to comply with CSMIS. The results underline the role of governance and organisational culture in facilitating digital change. In relation to UTAUT, this aligns with social influence and facilitating conditions, in which broader organisational leadership and governance directly shape compliance behaviour. According to Tavana *et al.* (2021), board support can establish legitimacy, reduce resistance, and prioritise budget allocations for ICT projects. The board's role is crucial in approving investments, setting strategic direction, and legitimising organisational change. When the board actively supports digital initiatives, resource allocation becomes easier, implementation resistance diminishes, and accountability structures for system performance are instituted. This implies that leadership from the top, especially from the governing board, is a vital component in ensuring that digital transformation through systems such as CSMIS is prioritised and executed effectively.

Regarding the size of the SACCOS, the findings revealed that a larger membership size significantly influenced compliance with CSMIS positively ($\beta = 3.433$, $p = 0.021$). This implies that SACCOS with larger memberships are 3.4 times more likely to comply with the system than those with smaller memberships. This result supports the performance expectancy component and perceived usefulness of TAM. Larger SACCOS are likely to experience higher transaction volumes and complex operations, necessitating digital systems to streamline operations. Studies such as those by Ahmad (2024) also support this, noting that larger co-operatives are more

inclined to comply with innovation to maintain efficiency. The findings were further supported by KII7, who said that:

“In our case, the size really matters. You see, we are still a small SACCOS with limited active members, so we have been focusing on just staying afloat and meeting basic needs. With our numbers, investing in a big system like CSMIS feels like a luxury. Maybe once we grow bigger, it will make more sense financially and operationally”
(KII7, 6 June 2025).

This shows that digital solutions are both more necessary and feasible for large-member SACCOS. This also suggests a scalability incentive: as co-operatives grow, their need for CSMIS increases, making compliance a matter of survival. This implies that scale acts as a natural driver of digitisation, pushing larger SACCOS toward systems that can efficiently handle their growing administrative and financial workloads.

The financial capacity to invest in the Co-operative Supervision Management Information System emerged as a statistically significant and robust positive predictor of compliance with it ($\beta = 7.346$, $p = 0.003$). An odds ratio of 7.346 indicates that SACCOS with sufficient financial resources are over 7 times more likely to comply with the CSMIS than those with limited financial capacity. This considerable effect suggests that financial readiness is not merely a peripheral factor but a crucial strategic enabler of digital transformation in co-operatives. This finding aligns with the Unified Theory of Acceptance and Use of Technology, particularly the constructs of facilitating conditions and external variables. The UTAUT highlights that enabling resources, including financial capital, determine the extent to which an organisation can implement and sustain digital systems. This observation is consistent with empirical evidence from Luiten Van Zanden (2022), who noted that financial constraints significantly impede ICT uptake in African financial co-operatives. This has two implications. First, financial stability directly empowers technological progress by facilitating investments in infrastructure, software licensing, staff training, and ongoing system maintenance. Second, it suggests that even when attitudes toward technology are positive, compliance is likely to stall without adequate funding. This result indicates that access to technology is not merely a function of will or awareness, but also of affordability and structural investment capacity.

4.3. Influence of Socio-demographic Factors on Compliance with Co-operative Supervision Management Information System

The study examined the influence of key socio-demographic characteristics on compliance with CSMIS among Savings and Credit Co-operative Societies (SACCOS). Using binary logistic regression, six independent variables were regressed on the binary dependent variable indicating CSMIS compliance status (1 = compliant, 0 = non-compliant). The independent variables included the age of SACCOS leadership, the gender of decision-makers, the education level of SACCOS leaders, experience with digital systems, the employee role within the SACCOS, and prior IT knowledge. All variables were coded as binary dummies (1 = Yes, 0 = No). This regression model aimed to quantify the likelihood of compliance with CSMIS based on these characteristics, as reflected by the odds ratios (Exp (B)) and their statistical significance (p-values). Table 8 presents the results of the logistic regression analysis, showing the estimated coefficients, odds ratios, and p-values for each socio-demographic factor examined in relation to compliance with CSMIS.

Table 8: Estimates of the Logit Model on Socio-demographic Factors and Compliance with CSMIS

Variables	B	S.E.	Wald	Sig.	Exp(B)
Age of SACCOS leaders influences	-.694	.422	2.700	.100	.500
Gender of SACCOS Leaders	-1.368	.596	5.276	.022	.255
Education level of SACCOS leaders	.848	.422	4.041	.044	2.335
Experience of SACCOS leaders	.926	.443	4.366	.037	2.524
Employee's role in SACCOS	1.053	.472	4.967	.026	2.865
SACCOS staff have prior IT knowledge	1.813	.723	6.286	.012	6.131
Constant	2.610	.622	17.612	.000	.074

The gender of SACCOS leaders had a statistically significant and negative effect on compliance with CSMIS ($\beta = 0.255$, $p = 0.022$) at the 5% significance level. Specifically, the odds of compliance decreased by approximately 74.5% for SACCOS led by females compared to those led by males. This finding is consistent with studies such as Kusuma *et al.* (2020), which noted lower ICT implementation rates in female-led institutions due to gender disparities in digital exposure and confidence. The UTAUT framework highlights the importance of facilitating conditions and social influence on compliance, suggesting that women in leadership may encounter more systemic barriers, such as limited institutional support or less peer encouragement to innovate. This was supported by KII 2, who expressed that:

“Yes, in my view, Socio-demographic characteristics of SACCO’s managers do affect the willingness to comply with CSMIS. For example, male managers often seem more confident in making digital decisions, but this may be because women often face more challenges accessing training or support. Managers who have gone to school for more years or have used digital systems before are more likely to understand and support CSMIS” (KII2, 11 June 2025).

These findings suggest that to promote equity in digital transitions, SACCOS and regulatory stakeholders should develop gender-inclusive digital capacity-building initiatives. By equipping female leaders with targeted ICT skills and empowering them to actively engage in digital transformation processes, the compliance gap could be narrowed, thereby enhancing overall institutional efficiency.

In the realm of education, the findings indicate that the educational level of SACCOS leaders significantly and positively affects compliance with CSMIS ($\beta = 2.335$, $p = 0.044$). This suggests that as education levels rise, the likelihood of complying with the system more than doubles. Specifically, leaders with higher education are 133.5% more likely to facilitate compliance compared to their less educated peers. This finding aligns with the Technology Acceptance Model (TAM), which suggests that perceived ease of use and perceived usefulness, both likely enhanced by a higher education boost system, boost system uptake. Research by Oyebanjo *et al.* (2020) observed similar trends, highlighting that well-educated leaders are better equipped to understand, value, and implement digital systems in SACCOS. These results were supported by KII 1, who explained that:

“When a manager has higher education, they are more likely to understand how the system works and the benefits it brings. Educated managers are also more confident with technology and are not afraid to try new systems. This helps them make better decisions and guide their staff in using CSMIS. So, in my view, education helps a lot in making managers more open, and ready to comply with the system” (KII1 13 June 2025).

This suggests that as the level of education of SACCO's leaders increases, their likelihood of complying with digital management systems such as CSMIS increases as well. Educated leaders are more likely to recognise the importance of digital transformation, understand how the system works, and appreciate its practical benefits. The implication is that educated leaders are more inclined to view the integration of CSMIS tools as beneficial rather than burdensome.

The experience of SACCOS leaders significantly enhances the likelihood of compliance with CSMIS ($\beta = 2.524$, $p = 0.037$). This suggests that SACCOS led by individuals with greater exposure to digital systems are 152.4% more likely to comply with CSMIS compared to those without such experience. This finding aligns with the UTAUT framework, which emphasises the impact of prior experience on performance expectancy. Leaders who are familiar with technology are better equipped to recognise its strategic value. Consistent with Oyeбанjo *et al.* (2020)'s findings, experienced leaders exhibit greater confidence in the compliance with ICT innovations, underscoring the importance of digital literacy in leadership as a catalyst for organisational transformation. The results imply that prior digital exposure forms a foundational layer for system implementation readiness. Leaders accustomed to financial technologies view new systems as extensions of existing workflows rather than as foreign constructs.

The positions of employees within SACCOS play a pivotal role in the compliance with CSMIS ($\beta = 2.865$, $p = 0.026$). Leaders in strategic positions, such as IT managers or general managers, are 186.5% more likely to positively influence compliance compared to those in operational roles. This observation aligns with UTAUT's emphasis on social influence and performance expectancy, highlighting that individuals in higher-ranking positions possess the necessary influence and strategic vision to advocate for compliance with the system. Anane and Nie (2022) also highlighted the critical role of top-tier leadership in determining organisational readiness and ICT integration. Findings were supported by KII 4, who said that:

“Managers who hold higher positions in the SACCOS have more authority to make decisions, and if they understand the benefits of the system, they are more likely to support its compliance. Their position

allows them to influence others, allocate resources, and push for changes” KII4, 9 June, 2025).

This indicates that IT managers, general managers, and board chairpersons, who are typically responsible for planning, budgeting, and technology policy, are central to the system integration process. In contrast, roles such as credit and internal auditors, while essential, often focus on regulatory compliance and operational oversight, which may limit their ability to drive innovation.

The presence of prior IT knowledge among SACCOS staff has the most significant impact on compliance with CSMIS ($\beta = 6.131$, $p = 0.012$), with statistical significance at the 5% level. SACCOS with staff who have prior IT knowledge are more than six times as likely to comply with the system compared to those without such expertise. This strong correlation aligns with TAM's concept of perceived ease of use and UTAUT's facilitating conditions, suggesting that users with prior IT experience are more confident and adept at engaging with new technologies. Anane and Nie (2022) noted that employees' digital skill levels are the strongest predictors of successful compliance with ICT. This finding underscores the critical importance of digital capacity-building initiatives for SACCOS staff to ensure the compliance and sustainability of systems such as CSMIS. It implies that prior IT knowledge reduces the perceived complexity of CSMIS and boosts confidence during implementation. Leaders who are familiar with mobile banking interfaces, ERP platforms, or financial software view CSMIS as a logical and beneficial progression. The findings suggest that fostering IT literacy among SACCOS leadership is not just beneficial but essential.

4.4. Influence of Attitude Factors on Compliance with Co-operative Supervision Management Information System

This objective sought to examine the influence of attitudinal factors on the compliance with CSMIS among Savings and Credit Co-operative Societies in Iramba and Manyoni districts, Tanzania. The dependent variable, CSMIS compliance, was measured as a binary outcome (1 = compliant, 0 = non-compliant). The independent variables were also measured as binary (dummy) variables, coded as 1 for a positive response (“yes”) and 0 for a negative response (“no”). These variables include

perceptions of cost burden, operational efficiency, record management improvement, report generation speed, decision-making support, transparency, ease of use, and perceived risk. Table 9 presents the results of the logistic regression model, detailing the estimated coefficients, odds ratios (Exp (B)), and p-values for each attitudinal factor considered in the analysis.

Table 9: Estimates of the Logit Model on Attitudinal Factors and Compliance with CSMIS

Variables	B	S.E.	Wald	Sig.	Exp(B)
Perceived cost of compliance with CSMIS	-1.725	.697	6.130	.013	.178
Perceived improvement in operational efficiency	1.104	.546	4.093	.043	3.018
Perceived enhancement of record management	-.504	.462	1.189	.276	.604
Perceived increase in report generation speed	1.715	.562	9.319	.002	5.555
Perceived support for decision-making	.897	.696	1.662	.197	2.452
Perceived risk associated with compliance	.464	.566	.671	.413	1.590
Perceived ease of use of CSMIS by staff	1.415	.485	8.503	.004	4.117
Perceived improvement in transparency	2.025	.759	7.123	.008	7.578
Constant	-3.698	.776	22.700	.000	.025

The perception that compliance with CSMIS is financially burdensome significantly and negatively affects the likelihood of compliance ($\beta = 0.178$, $p = 0.013$) at the 5% level. This odds ratio suggests that SACCOS whose leaders view the system as a financial burden are about 82.2% less likely to comply with it compared to those who do not hold this view. This finding is consistent with the Technology Acceptance Model (TAM), which posits that perceived barriers, such as high costs, diminish perceived usefulness and ease of use, thereby hindering compliance. Similarly, Ngongo (2019) found that cost-related concerns were a major obstacle to ICT integration in Kenyan SACCOS. These results highlight a persistent financial apprehension among SACCOS leadership that directly limits technological uptake. This underscores the importance of subsidies, cost-sharing programs, and donor-funded capacity-building initiatives to address financial constraints and promote compliance. The implication is that affordability remains a significant attitudinal and structural barrier, suggesting that economic perceptions play a central role in decision-making among co-operative leadership.

The belief that CSMIS can significantly enhance the efficiency of SACCOS operations positively impacts compliance ($\beta = 3.018$, $p = 0.043$) at the 5% level. This suggests that SACCOS whose leaders Trust in the operational efficiency of CSMIS

are over three times more likely to comply with the system compared to those who do not. This finding aligns with the performance expectancy construct of the UTAUT model, which posits that users' belief in technology's ability to improve job performance strongly influences their intention to comply with it. It also resonates with the findings of Chatterjee *et al.* (2021), who noted that perceived organisational benefits spurred early ICT integration in SACCOS. This result underscores a strong connection between anticipated productivity gains and actual compliance decisions, indicating that awareness campaigns highlighting the operational benefits of CSMIS could boost compliance rates. It implies that leaders who anticipate that automation can streamline tasks, reduce redundancies, and enhance response times are more inclined to adopt systems that promise such benefits. This indicates that technological systems perceived as solutions to inefficiency are more readily embraced by organisational leadership, emphasising the practical significance of functional outcomes in shaping attitudes.

The belief that CSMIS can expedite report generation had a strong and statistically significant positive influence on compliance ($\beta = 5.555$, $p = 0.002$) at the 1% level. SACCOS that believe the system speeds up report generation are over 5.5 times more likely to comply with it. This outcome supports the UTAUT framework, which emphasises the importance of perceived efficiency and performance gains. Timely reporting is crucial for compliance, monitoring, and decision-making in SACCOS, as observed in studies by Ombati and Amin *et al.* (2021), which identified timely reporting as a key motivator for SACCOS system upgrades. These results align with the expression by KII3, who said that:

“To be honest, our SACCOS has not yet started using the system. However, when we heard how CSMIS can help with work, like making things faster and reducing paper use, we got interested. One of our staff even said, “This system can really make our work easier.” It made us think more about it, but we still face some challenges” (KII3, 11 June 2025).

This result indicates that showcasing success stories of improved reporting with CSMIS can be a powerful motivator for hesitant SACCOS. It implies that operational speed, particularly in the form of timely reporting, is not merely a technical advantage

but a strategic necessity influencing compliance behaviour among co-operative leaders.

The perception that CSMIS is easy for staff to learn and use significantly and positively influences its compliance ($\beta = 4.117$, $p = 0.004$) at the 1% level. SACCOS with leaders who view the system as user-friendly are over four times more likely to comply with it. This directly aligns with the perceived ease of use construct in TAM and effort expectancy in UTAUT. User-friendliness is a major enabler of compliance, as Chatterjee *et al.* (2021) found that intuitive interfaces enhance staff acceptance in financial institutions. This was supported by KII 8, who said that:

“I have observed that when SACCO’s staff perceive CSMIS as easy to use, they are more confident and willing to comply with it. Simplicity reduces training time, lowers resistance to change, and boosts system acceptance, making implementation smoother and more effective within our organisation” (KII 8, 15 June 2025).

This finding implies that training simplicity and ease of on boarding are critical levers for expanding CSMIS reach. Compliance is more probable when leaders believe staff can competently use the system with minimal training.

The perception that CSMIS increases transparency in SACCOS operations exhibits the strongest and most significant influence on compliance ($\beta = 7.578$, $p = 0.008$) at the 1% level. Leaders who associate CSMIS with greater transparency are nearly eight times more likely to comply with it. This finding strongly speaks to the social influence and facilitating conditions components of UTAUT, where accountability and visibility of operations drive institutional acceptance. It also aligns with study findings by Egala *et al.* (2024), which showed that SACCOS that embraced ICT experienced reduced fraud and higher member confidence. Findings were supported by KII 5, who said that:

As a board chairperson, I have observed that our staff’s perception that CSMIS enhances transparency greatly influenced our decision to comply with it. When they believe the system promotes accountability, they are more supportive and committed to its successful implementation (KII5, 16 June 2025).

The results indicate that perceptions of increased transparency significantly influence compliance with the Co-operative Supervision Management Information System, with leaders who view the system as promoting transparency nearly eight times more likely to comply. This highlights transparency as a pivotal driver of compliance, suggesting that anti-corruption and governance narratives may be as influential as technical arguments in promoting digital transformation.

CHAPTER FIVE

5.0. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary of the Findings

5.1.1. Influence of organisational factors on compliance with CSMIS

The study examined 12 organisational variables to assess their influence on compliance with the Co-operative Supervision Management Information System (CSMIS) among SACCOS. The binary logistic regression model results indicated that several variables had statistically significant effects. Financial liquidity ($\beta = 7.346$, $p = 0.000$) and the financial capacity to invest in CSMIS ($\beta = 7.346$, $p = 0.003$) emerged as the strongest predictors, highlighting the crucial role of financial readiness in driving compliance with CSMIS. The manager's promotion of digital systems had the most substantial effect ($\beta = 52.777$, $p = 0.000$), underscoring the transformative influence of top leadership advocacy. Similarly, designated operational offices ($\beta = 3.800$, $p = 0.014$), manager training ($\beta = 3.503$, $p = 0.018$), board support ($\beta = 3.412$, $p = 0.031$), and larger SACCOS membership size ($\beta = 3.433$, $p = 0.021$) were all statistically significant, indicating that organizational structure, leadership engagement, and scale are key enablers of compliance.

Additionally, the availability and reliability of electricity showed a significant negative influence ($\beta = 0.291$, $p = 0.037$), suggesting that power supply challenges remain a fundamental constraint to digital integration, particularly in rural co-operatives. These findings collectively align with the UTAUT model, reaffirming the importance of facilitating conditions, performance expectancy, and social influence in shaping technology acceptance. However, several variables were not statistically significant, including the availability of functional computers ($\beta = 0.405$, $p = 0.181$), the presence of an official ICT policy ($\beta = 0.379$, $p = 0.096$), availability of resource slack ($\beta = 1.291$, $p = 0.611$), and formal communication and reporting systems ($\beta = 2.813$, $p = 0.144$). The lack of significance for these variables suggests that while they may conceptually relate to digital readiness, they do not independently predict compliance with CSMIS in the current organisational context. For example, despite having functional computers, compliance may not occur in the absence of reliable electricity, leadership support, and financial stability. Similarly, the presence of an

ICT policy, without corresponding enforcement or resource commitment, may lack operational impact.

5.1.2 Influence of socio-demographic factors on compliance with CSMIS

The study's findings indicate that various socio-demographic factors significantly impact compliance with the Co-operative Supervision Management Information System (CSMIS) among SACCOS. Notably, gender emerged as a significant negative factor, with SACCOS led by female leaders being 74.5% less likely to comply with the system compared to those led by males ($\beta = 0.255$, $p = 0.022$). This points to a potential gender gap in ICT compliance, likely driven by systemic barriers such as limited digital exposure and institutional support. Conversely, the education level of SACCOS leaders significantly increased the likelihood of compliance with CSMIS ($\beta = 2.335$, $p = 0.044$), highlighting the importance of educational attainment in enhancing technological readiness and decision-making.

Similarly, prior experience with digital systems ($\beta = 2.524$, $p = 0.037$) and employees' roles within the SACCOS ($\beta = 2.865$, $p = 0.026$) significantly increased the odds of compliance with CSMIS, suggesting that leaders with practical digital experience and those in strategic roles are better equipped to champion and implement CSMIS. Moreover, prior IT knowledge among staff had the strongest influence ($\beta = 6.131$, $p = 0.012$), indicating that SACCOS with digitally literate personnel are significantly more likely to embrace such systems. However, not all variables were statistically significant. The age of SACCOS leaders, despite showing a negative relationship ($\beta = 0.500$, $p = 0.100$), did not meet the 5% significance threshold. This implies that although age may influence compliance tendencies, potentially due to generational differences in technology perception, the effect was not strong enough to rule out random variation in this study.

5.1.3 Influence of attitudinal factors on compliance with CSMIS

The study explored how leaders' attitudinal factors affect compliance with the Co-operative Supervision Management Information System (CSMIS) among SACCOS. The findings reveal that several attitudinal factors significantly influence the decision to comply with the system. The perception that integrating CSMIS is costly negatively affects compliance ($\beta = 0.178$, $p = 0.013$). Specifically, SACCOS that

perceive higher costs are 82.2% less likely to comply with the system. Conversely, the belief in the system's ability to enhance operational efficiency ($\beta = 3.018$, $p = 0.043$), generate reports more quickly ($\beta = 5.555$, $p = 0.002$), and offer an easy-to-use interface ($\beta = 4.117$, $p = 0.004$) all showed strong positive effects on compliance. The most significant predictor was the perception that CSMIS increases transparency in SACCOS operations ($\beta = 7.578$, $p = 0.008$), suggesting that transparency concerns are a crucial motivational factor for complying with the system.

These findings align with the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), underscoring the importance of cost-benefit perceptions, usability, and organisational performance in shaping technology compliance. However, some attitudinal variables did not show statistically significant relationships with compliance. The belief that CSMIS improves record management ($\beta = 0.604$, $p = 0.276$), supports better decision-making ($\beta = 2.452$, $p = 0.197$), and the perception that the system is risky ($\beta = 1.590$, $p = 0.413$) were all statistically insignificant at conventional thresholds. This suggests that while these factors may seem intuitively relevant, they did not have a meaningful predictive influence in this context.

5.2.Conclusion

Based on the findings, the study concludes that organisational capacity is a critical enabler or a constraint to compliance with CSMIS. Financial stability, particularly in terms of liquidity and investment capability, was fundamental, highlighting that technological transitions are not solely guided by strategic will but also by economic feasibility. Equally decisive was leadership commitment, particularly when top managers actively promoted digital systems, reinforcing the idea that executive endorsement is a transformative catalyst. Institutional features such as operational infrastructure, board engagement, and SACCO's size also positively contributed to compliance with the system. Conversely, structural constraints, such as an unreliable electricity supply, significantly undermined compliance efforts, demonstrating that infrastructural fragility can neutralise even well-intentioned innovation strategies. Variables traditionally associated with digital preparedness, such as the presence of an ICT policy or functional computers, lacked independent influence, suggesting that without holistic institutional alignment and dedicated resources, such assets remain underutilised.

Similarly, socio-demographic characteristics significantly influence the likelihood of compliance with Co-operative Supervision Management Information Systems within SACCOS. Leaders' education level and gender emerged as significant factors, with more highly educated male leaders showing a stronger inclination toward digital transformation. Additionally, prior exposure to digital technologies and employees' positions within SACCOS positively affected compliance with CSMIS. These findings highlight the importance of human capital attributes, especially digital competence and educational background, in driving institutional readiness for technological integration. Conversely, while age appeared to have some influence on compliance tendencies, it did not exert a sufficiently strong effect, suggesting that generational differences in technology engagement, though present, are not determinative in isolation.

The research further reveals that attitudes toward system functionality and organisational benefit are key psychological determinants of compliance with CSMIS. Positive perceptions of the system's ability to enhance operational efficiency, transparency, and ease of use were strong predictors of compliance. In contrast, the perception of high implementation costs emerged as a significant barrier. These outcomes reflect the relevance of cognitive evaluations of technology, grounded in perceived usefulness and user-friendliness as conceptualised in leading theoretical frameworks such as the Technology Acceptance Model. However, certain intuitive beliefs, such as improved record management and better decision-making support, did not significantly influence compliance with CSMIS, indicating that only the most immediate and observable system benefits affect decision-making in resource-constrained environments.

5.3. Recommendations

Based on the findings, enhancing organisational capacity is crucial for improving adherence to the Co-operative Supervision Management Information System. The study recommends that SACCOS should bolster financial liquidity and allocate sufficient resources for digital transformation, including investments in CSMIS infrastructure. Managers must actively advocate for digital systems, raise awareness among members, establish operational offices, and provide regular training for both managers and staff. Policymakers and the Tanzania Co-operative Development

Commission (TCDC) should implement capacity-building programs that emphasise leadership engagement, financial preparedness, and board involvement. The government must prioritise reliable rural electrification and offer subsidised financing or grants to support these digital investments. Concurrently, universities should develop training modules on co-operative digitalisation and ICT leadership while advancing applied research that integrates financial readiness, leadership advocacy, and infrastructure development.

The socio-demographic characteristics of leaders also significantly influence compliance with the CSMIS. The study recommends that SACCOS promote inclusivity by supporting female leadership in digital transformation through mentorship and peer-learning initiatives, while prioritising the recruitment and training of staff with prior IT knowledge and digital exposure. Policymakers and TCDC should design gender-responsive digital inclusion strategies that address barriers faced by female leaders and recognise ICT competence as a key requirement for co-operative leadership. At the national level, the government should expand ICT-based educational and vocational training opportunities for co-operative leaders, with scholarships and grants specifically targeting women to reduce the gender gap in leadership positions. From an academic perspective, Universities should integrate digital system management into leadership curricula and strengthen outreach programs to enhance digital literacy and promote gender equity in co-operative management.

Regarding attitudinal factors, the study recommends that SACCO's leaders should cultivate positive attitudes by emphasising the benefits of CSMIS, such as increased transparency, efficiency, and expedited reporting, while minimising the focus on cost concerns. Policymakers and the TCDC should conduct awareness campaigns and workshops that highlight cost-benefit advantages and introduce incentive schemes, including recognition for compliant SACCOS, to encourage compliance. The government can support these efforts by enacting policies that reduce financial burdens through subsidies on license fees and tax incentives, and nationwide campaigns promoting transparency as a central principle of co-operative governance. Academic institutions should contribute by researching attitudinal barriers to compliance with ICT and developing evidence-based strategies for shifting

perceptions. Embedding behavioural change approaches into training programs will help ensure that future leaders embrace digital compliance with a constructive, forward-looking mind-set.

5.4. Recommendation for Further Studies

Based on the observed findings, future research should adopt longitudinal designs to more effectively capture the temporal dynamics of CSMIS compliance, particularly how leadership support, financial stability, and policy enforcement develop and influence compliance over time. The study, therefore, proposes a future research topic titled: “The Role of Regulatory Frameworks and Digital Literacy in Scaling Management Information Systems: A Comparative Study of Rural and Urban SACCOS in Tanzania.”

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1. Age _____
2. Gender: Male () Female ()
3. Kindly indicate your highest level of education
 - a) Primary ()
 - b) Secondary ()
 - c) Diploma ()
 - d) Bachelor and above ()
4. How many years has your SACCOS been in operation? _____
5. Where are your SACCOS located? a) Rural() b) Urban()
6. How long have you worked with SACCOS? _____
7. What is your current position in the SACCOS? _____

SECTION B: COMPLIANCE WITH CSMIS

1. Have you complied with the Co-operative Supervision Management Information System in your SACCOS? Yes () No ()

a) If not, what are the main reasons? (Select all that apply)

- i. Lack of technical skills ()
- ii. High implementation cost ()
- iii. Resistance to change ()
- iv. Lack of awareness ()
- v. Other (Specify) _____

b) Please explain your choice in (a) above

c) If yes, what were the key motivations for complying with CSMIS? (Select all that apply)

- i. Improved financial management ()
- ii. Enhanced efficiency in SACCOS operations
- iii. Regulatory requirements ()
- iv. Support from SACCOS leadership ()
- v. Other
(Specify) _____

SECTION C: ORGANIZATIONAL FACTORS

1. Does your SACCOS have a designated office for its operations?

Yes () No ()

2. Is your SACCOS financially liquid enough to meet its short-term obligations?

Yes () No ()

3. Is electricity reliably available at your SACCOS' office?

Yes () No ()

If no, please explain

4. Does your SACCOS have functional computers for official use?

Yes () No ()

5. Has the SACCOS manager attended training on digital systems or ICT tools?

Yes () No ()

If yes, what kind of training was received, and how has it impacted readiness for system compliance?

6. Does the SACCOS manager actively promote the use of digital systems in operations?

Yes () No ()

7. Does your SACCOS have an official ICT or digital systems policy in place?

Yes () No ()

8. Do the SACCOS board members support compliance with CSMIS?

Yes () No ()

If yes, explain your choice above

9. Does your SACCOS have additional resources (e.g., funds, staff, and time) to support system compliance?

Yes () No ()

10. How many active members does your SACCOS currently have?

11. Does your SACCOS have formal communication and reporting systems in place (e.g., documented roles, reporting lines)?

Yes () No ()

If no, explain your choice above

12. Does your SACCOS have the financial capacity to invest in CSMIS? Yes () No ()

If yes, how are these financial resources allocated or planned for system-related projects?

13. In your opinion, what are the measures to be taken to enhance compliance with CSMIS among SACCOS in Tanzania?

SECTION D: SOCIO-DEMOGRAPHIC FACTORS

1. In your view, does the age of SACCO's leaders influence decisions to comply with CSMIS?

Yes () No ()

If yes, explain

2. Does the gender of SACCO's decision-makers influence the probability of complying with CSMIS?

Yes () No ()

If yes, explain your choice above.

3. Does the education level of SACCO's leaders affect their compliance with CSMIS?

Yes () No ()

If yes, how does education level influence CSMIS compliance?

4. Does the experience of SACCO's leaders in the digital system help in making informed decisions to comply with CSMIS?

Yes () No ()

If yes, explain?

5. Does an employee's role in SACCOS affect decisions to comply with CSMIS?

Yes () No ()

If yes, explain?

6. Does the SACCOS staff's prior IT knowledge (e.g., mobile banking, accounting software, MIS) influence the decision to comply with CSMIS?

Yes () No ()

SECTION E: ATTITUDINAL FACTORS

1. Is complying with CSMIS a financial burden for your SACCOS?

Yes () No ()

a) If yes, which costs influenced your view?

2. In your view, can CSMIS make SACCOS operations more efficient?

Yes () No ()

Please Explain

3. Do you believe CSMIS can improve record management in SACCOS?

Yes () No ()

Please Explain

4. Can CSMIS help generate reports more quickly?

Yes () No ()

Please Explain

5. Can CSMIS support better decision-making in a SACCOS?

Yes () No ()

6. In your opinion, can CSMIS increase transparency in SACCO's operations?

Yes () No ()

If yes, explain

7. Is CSMIS easy for staff to learn and use with only basic computer skills?

Yes () No ()

8. Do you perceive compliance with CSMIS regulations as a risk for your SACCOS?

Yes () No ()

a) What types of risk concern you most?

Data Security ()

System Failure ()

Financial Risk ()

Misuse of information ()

Other: _____

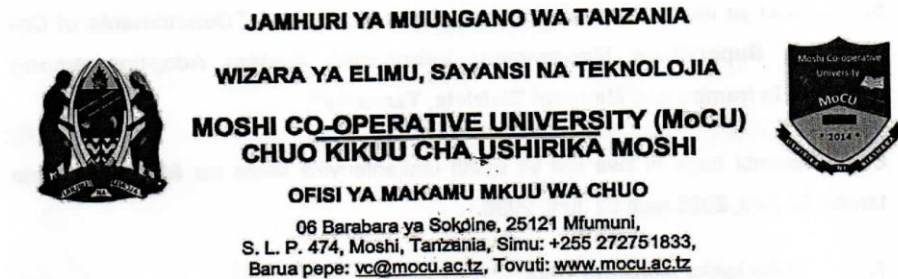
Appendix II: Key Informant Interview Guide

SECTION A: Personal Information

Tick where appropriate to your answer ()

1. Age
2. Highest level of education
3. How many years has your SACCOS been in operation?
4. Location of your SACCOS?
5. How long have you been a SACCO's member?
6. In your view, do the age, sex, education level, experience, and roles of SACCO's managers influence the willingness to comply with CSMIS?
7. What are the main benefits you expect or have experienced from CSMIS compliance?
8. How do the perceptions of SACCOS staff influence compliance with CSMIS?
9. What organisational challenges (e.g., infrastructure, staff skills, internal policies, resource availability) does your SACCOS face that may affect CSMIS compliance?
10. What kind of management support is needed to comply with CSMIS?
11. In your opinion, what measures should be taken to enhance the compliance rate of CSMIS among SACCOS in Tanzania?

Appendix III: Research Permit



Unapojibu tafadhali taja:

Kumb. Na. MoCU/MA-CCD/HD/361/23/10

Tarehe: 28 Mei, 2025

Katibu Mkuu,

Ofisi ya Rais Tawala za Mikoa na Serikali za Mitaa (TAMISEMI),

S. L. P. 923,

DODOMA

KUH: KIBALI CHA KUFANYA UTAFITI KWA WANAFUNZI WA CHUO KIKUU CHA USHIRIKA MOSHI (MoCU)

Tafadhali husika na kichwa cha habari hapo juu.

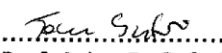
2. Dhumuni la barua hii ni kumtambulisha kwako **Ndugu Hermenegild Herman** mwanafunzi wa Chuo Kikuu cha Ushirika Moshi ambaye kwa sasa anatarajia kufanya utafiti katika eneo lako.

3. Maombi haya yamezingatia Waraka wa Serikali wenye Kumb. Na. MPEC/R/10/1 wa tarehe 7 Julai, 1980 pamoja na Hati Idhini ya Chuo Kikuu Cha Ushirika Moshi (MoCU). Moja ya majukumu ya Chuo ni kufanya tafiti na kutumia matokeo ya tafiti hizo katika kufundishia. Aidha, wanafunzi hufanya tafiti kama sehemu ya masomo yao wakiwa Chuoni.

4. Hivyo basi, tunakuomba umpatie mwanafunzi aliyetajwa hapo juu msaada atakaouhitaji ili kufanikisha utafiti wake. Gharama za utafiti atalipia mwenyewe. Msaada anaouhitaji ni kuruhusiwa kuonana na viongozi na wananchi ili aweze kuzungumza nao kuhusiana na utafiti wake. Aidha, endapo kuna maeneo yanayozuliwa kufanyika kwa shughuli hii, tunaomba ofisi husika imjulishe hivyo mwanafunzi tajwa.

General: Moshi Co-operative University, 06 Sokoine Road, 25121 Mfumuni, P. O. Box 474, Moshi, Tanzania, Tel: +255 272751833 Email: info@mocu.ac.tz, Website: www.mocu.ac.tz

5. Mada ya utafiti wa mwanafunzi aliyetajwa hapo juu ni: **"Determinants of Co-operative Supervision Management Information System Adoption among SACCOS in Iramba and Manyoni Districts, Tanzania"**.
6. Maombi haya ni kwa ajili ya utafiti utakaofanyika Mkoa wa **Singida** kuanzia tarehe 02 Juni, 2025 hadi 02 Juni, 2026.
7. Wako katika ujenzi wa Taifa,


.....
Prof. John G. Safari
Kny: Makamu Mkuu wa Chuo

Nakala kwa: Hermenegild Herman

Appendix IV: Proofreading certificate

MOSHI CO-OPERATIVE UNIVERSITY (MoCU)
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Date: 18th November 2025

**Director,
Postgraduate Studies,
Moshi Co-operative University (MoCU)
P.O.Box 474,
Moshi**

Dear Sir/Madam,

RE: EDITING AND PROOFREADING CHECKLIST

This letter is to verify that **Hermenegild Herman** has successfully completed the editing and proof-reading process of the Dissertation titled "*Determinants of Co-operative Supervision Management Information System compliance among SACCOS in Iramba and Manyoni Districts, Tanzania*". The editing process has been conducted under the supervision of the English Language and Academic writing experts from Moshi Co-operative University (MoCU) in the Communication Skills Unit. Kindly receive the track changes document attached with this letter,

With Co-operative Greetings,

Dr. Odax Manumbu Lawrence



*Vision: To become a Centre of Excellence in Co-operative Education and Practice
Centre of Excellence in Co-operative and Business Management Training of the East Africa Community (EAC)*

Appendix V: Plagiarism Report

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Appendix VI: Manuscript

INFLUENCE OF ORGANISATIONAL FACTORS ON CO-OPERATIVE SUPERVISION MANAGEMENT INFORMATION SYSTEM COMPLIANCE AMONG SACCOS IN IRAMBA AND MANYONI DISTRICTS, TANZANIA

By

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¹Department of Community Development and Gender, Faculty of Co-operative and Community Development, Moshi Co-operative University, Tanzania

Abstract

This study aimed to assess the organisational factors influencing compliance with the Co-operative Supervision Management Information compliance among Savings and Credit Co-operative Societies in Iramba and Manyoni Districts, Tanzania. Despite the increasing significance of digital platforms in enhancing co-operative governance and accountability, compliance with CSMIS among SACCOS remains low. This research addresses the empirical evidence gap on the organisational influence on CSMIS compliance, thereby contributing to the understanding of digital utilisation in societies. A cross-sectional research design was utilised, with the unit of analysis being the individual. Data were collected through questionnaires and key informant interviews, involving 167 respondents. The analysis employed thematic analysis, descriptive statistics, and a binary logistic model. The findings revealed that organisational factors significantly influenced CSMIS compliance among SACCOS. Organizational financial readiness ($\beta = 7.346$, $p = 0.000$), leadership advocacy ($\beta = 52.777$, $p = 0.000$), infrastructure such as operational offices ($\beta = 3.800$, $p = 0.014$), training ($\beta = 3.503$, $p = 0.018$), board support ($\beta = 3.412$, $p = 0.031$), and membership size ($\beta = 3.433$, $p = 0.021$) significantly promoted compliance, whereas unreliable electricity posed a major barrier ($\beta = 0.291$, $p = 0.037$). The study concludes that organisational factors are key in influencing compliance with CSMIS. Financial stability, especially liquidity and investment ability, plays a crucial role, showing that economic feasibility matters as much as strategic intent. Leadership commitment, particularly from top management, strongly drives compliance. Institutional factors such as infrastructure, board involvement, and SACCOS size support uptake, while issues such as unreliable electricity hinder progress. However, elements such as ICT policies or available computers had little impact on their own, underscoring the need for comprehensive institutional alignment and resource commitment. The study recommends that a holistic, multi-stakeholder approach is essential to strengthen leadership, promote gender inclusivity, enhance infrastructure, and build Trust in technology through training, policies, and investment.

Keywords: Co-operative supervision management Information system and SACCOS

1.0. Introduction

1.1. Background to the Study

Savings and Credit Co-operative Societies (SACCOS) are financial institutions that prioritise collectivism and responsibility (Messabia *et al.*, 2023). These member-owned organisations offer lending services at more favourable rates than traditional banks. Mary (2024) observed that SACCOS contribute significantly to economic development by facilitating members' savings and access to credit. They channel individual savings into productive ventures, thereby stimulating economic activities. The Co-operative Supervision Management Information System (CSMIS) is a specialised system designed to enhance the effectiveness, transparency, and accountability of SACCOS by leveraging technology to improve processes such as data management, loan administration, and financial documentation (Opuko *et al.*, 2022). Its implementation enhances decision-making, reduces operational expenses, and improves service delivery. In contrast to conventional management information systems used in banks, CSMIS is specifically tailored for SACCOS and offers features that promote member participation and transparency, such as automated profit-sharing and member-centric account management, making it a crucial tool for improving competitiveness and ensuring regulatory compliance (TCDC, 2023).

The integration of Information and Communication Technology (ICT) has been instrumental in enhancing efficiency and operational growth within financial co-operatives (Mary, 2024). Nations such as India and the Philippines have successfully implemented ICT-driven systems, resulting in improved operational performance and increased member satisfaction (Mauliddiyah, 2021). However, the implementation of Management Information Systems (MIS) varies across regions, particularly in developing nations where SACCOS encounter challenges such as limited financial resources, inadequate infrastructure, and insufficient technical expertise (Gichuki & Mumbi, 2021).

This disparity is particularly significant given that SACCOS serve as essential financial resources for underserved populations in these areas (Millan *et al.*, 2023). While research has demonstrated the benefits of ICT in improving SACCOS operations (Messabia *et al.*, 2023; Chelangat, 2018), there is a paucity of comprehensive studies examining the specific factors, such as socio-demographic characteristics and organisational attitudes, that influence CSMIS compliance in SACCOS.

Countries such as Kenya, Uganda, and Ghana have made significant strides in adopting ICT-driven systems to enhance SACCOS operations (Phineas, 2021; Mbaya *et al.*, 2020). In Ghana, initiatives led by the government and private sector have enhanced digital transformation in SACCOS, enabling better financial reporting and regulatory compliance (Gaichuru, 2023). In Kenya, the SACCOS Societies Regulatory Authority (SASRA) has been instrumental in promoting the adoption of MIS among SACCOS (Chelangat, 2021). However, challenges such as high implementation costs and resistance to change hinder MIS compliance among SACCOS (Mwita, 2022; Mugendi, 2023). Research in Uganda highlights that while some SACCOS have successfully integrated ICT systems, others struggle due to limited technical expertise and financial resources (Benard, 2019).

Tanzania's Savings and Credit Co-operative Societies (SACCOS) have long struggled with operational inefficiencies, poor record-keeping, and inadequate financial management systems, which undermine their governance and transparency (Lupia & Kagata, 2024; Erasto, 2018). To address these challenges, the Tanzania Co-operative Development Commission (TCDC) introduced the Co-operative Supervision and Management Information System (CSMIS) in 2022 (TCDC, 2023). This digital platform was designed to streamline operations by automating key processes, such as registration and licensing, and to improve governance and enhance transparency (Boaz *et al.*, 2024).

Research has demonstrated that SACCOS adopting technology systems achieve better financial performance, improved record-keeping, and greater member satisfaction, highlighting the system's potential benefits (Lasse, 2020). However, compliance with CSMIS has been slower than anticipated, raising concerns about the system's implementation and SACCOS's ability to transition effectively. By the end of 2022, a total of 2,047 SACCOS had been registered manually. However, with the introduction of the co-operative supervision management information system, only 1,283 SACCOS had re-registered by the end of 2023, leaving 764 unregistered.

Rural and peri-urban Savings and Credit Co-operative Societies (SACCOS), which make up the majority of Tanzania, face several challenges, including insufficient oversight, financial constraints, and a lack of Trust in digital systems. Despite the direction of the Tanzania Co-operative Development Commission (TCDC) mandating all SACCOS to comply with a web-based co-operative supervision Management Information System (CSMIS) to enhance record keeping, financial management, transparency, service delivery efficiency, and accountability, most SACCOS in underserved areas have not complied with the system, hence complicating oversight and restricting accountability (TCDC, 2023).

In Iramba and Manyoni Districts, SACCOS play a significant role in driving economic development and improving financial inclusion and livelihoods. However, their compliance with CSMIS remains minimal, resulting in inefficiencies in service delivery and poor financial management. Studies by Aryani (2023) and Erasto (2024) have identified factors such as lack of technical skills, resistance to change, insufficient infrastructure, and limited financial capacity as key barriers to CSMIS compliance. These studies, however, focus largely on urban SACCOS, leaving a critical gap in understanding the unique challenges faced by peri-urban and rural SACCOS. In light of this, the study intended to assess the determinants of co-operative supervision management information system compliance among Savings and Credit Co-operatives in Iramba and Manyoni Districts, Tanzania.

1.2. Statement of the Problem

For SACCOS to effectively comply with ICT standards, it is crucial to understand their operational context and the key factors that influence their ability to meet regulatory requirements (Reuben *et al.*, 2019). Despite the benefits of the Co-operative Supervision Management Information System (CSMIS), a significant number of SACCOS in Tanzania have neither complied with it nor integrated it into their operations. Statistics indicate that of the 2,047 SACCOS registered manually by the end of 2022, only 1,283 (62.7%) had complied with CSMIS by the end of 2023, leaving 764 (37.3%) unregistered. Singida region has 66 SACCOS; however, only 19

(28.8%) have successfully complied with CSMIS, while the remaining 47 (71.2%) continue to operate manually (TCDC, 2023). Iramba District has 13 SACCOS, while Manyoni has 16 SACCOS. Among these SACCOS, only 2 in Iramba District and 6 in Manyoni District had complied with CSMIS, totalling 8 (27.6%), compared to those that have not complied, 21 (72.4%).

The low compliance with CSMIS hampers effective financial management, record-keeping, and member service delivery, thereby threatening the sustainability and competitiveness of SACCOS (URT, 2022). To successfully develop and integrate information systems into organisations, it is essential to assess the factors that influence SACCOS' compliance with their mandatory requirements (Elias, 2024). This highlights the importance of exploring the motivations behind compliance with and the use of CSMIS, especially given significant changes in the system's format and reduced implementation costs (Nnko & Haule, 2023).

Government initiatives, such as the National Financial Inclusion Framework (2018–2022), aimed to promote digital adoption by financial institutions to enhance efficiency and accountability (BOT, 2022). Likewise, the 2002 Co-operative Development Policy and the 2019 SACCOS Regulations called for the modernisation of technology (URT, 2022). In 2022, the Tanzania Co-operative Development Commission introduced CSMIS, a web-based external system designed to improve transparency and oversight within SACCOS to facilitate their digital transition. Despite these efforts, the compliance rate remains low. Existing studies (Ngongo, 2019; Rwechunura, 2024) have primarily focused on internal ICT adoption, with limited attention to regulatory compliance among SACCOS in rural and peri-urban contexts. This study addresses that gap by assessing the determinants of CSMIS compliance among SACCOS in Iramba and Manyoni Districts.

2.0.Theoretical Literature Review

2.1. Technology acceptance model (TAM)

The Technology Acceptance Model (TAM), introduced by Davis (1989), continues to serve as a fundamental framework for comprehending user interactions with information systems. Central to the model are two constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), which influence users' attitudes and behavioural intentions, ultimately determining system usage. PU represents the belief that a system enhances job performance, while PEOU denotes the degree to which a system is perceived as easy to operate. Over time, TAM has been rigorously tested and applied across various domains, from taxation to healthcare, establishing it as a pertinent theoretical foundation for analysing complex institutional systems (Wulandari & Dasman, 2023).

TAM posits that cognitive evaluations underpin behavioural outcomes. Within this framework, individuals form compliance intentions based on rational judgments about a system's utility and ease of use. It further suggests that external factors, such as training, technical support, and system quality, indirectly influence compliance by shaping perceptions of PU and PEOU (Rosli *et al.*, 2022). Another core assumption is the strong link between behavioural intention and actual behaviour. In the context of the Co-operative Supervision Management Information System (CSMIS), this implies that favourable attitudes toward the system should translate into compliance behaviours, such as accurate reporting and timely data entry (Alsyouf *et al.*, 2023).

While this assumption is compelling, critics argue that compliance is not always voluntary and may be influenced by external enforcement mechanisms and institutional norms, areas where TAM is comparatively weak.

The strengths of TAM lie in its simplicity, predictive ability, and adaptability. Studies consistently demonstrate that PU and PEOU account for significant variation in compliance-related behaviours across e-government, taxation, and healthcare contexts (Sun *et al.*, 2020). Its simplicity allows researchers to construct robust baseline models, while its flexibility enables the inclusion of context-specific variables such as Trust, perceived security, cost, and organisational (Alsyounf *et al.*, 2023; Mageria, 2018). However, TAM has been criticised for failing to account for contextual and institutional drivers. By focusing heavily on individual cognition, it risks overlooking structural factors, such as organisational or corporate governance policies and cultural influences, which are often central to compliance (Saghafian *et al.*, 2021). This limitation has led to widespread extensions of TAM to better capture the institutional realities of compliance behaviour.

Recent studies underscore TAM's adaptability to compliance-oriented contexts. For instance, Wulandari and Dasman (2023) found that PU and PEOU significantly influenced taxpayer compliance, with internet literacy mediating this relationship. Similarly, research on Tanzania's upgraded tax portal confirmed TAM's utility in predicting compliance among business entrepreneurs (Badi & Maliganya, 2025). In healthcare, Alsyounf *et al.* (2023) demonstrated that incorporating Trust and system quality into TAM improved its explanatory power for compliance with electronic health systems. Building on these insights, the present study extends TAM by integrating organisational analysis of CSMIS among SACCOS in Iramba and Manyoni districts.

2.2. Unified theory of acceptance and use of technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh *et al.* (2003), integrates constructs from eight earlier models to explain variations in behavioural intention and system usage. UTAUT identifies four main constructs: performance expectancy (the belief that using the system will improve job performance), effort expectancy (the perceived ease of use), social influence (the perceived social pressure to use the system), and facilitating conditions (the technical and organisational). Together, these constructs predict intention and actual usage, with their effects moderated by age, gender, experience, and voluntariness (Saptono *et al.*, 2023). The model's simplicity and predictive power have made it a widely used framework in information systems research, including studies on compliance with institutional technologies.

UTAUT is based on the premise that instrumental and social evaluations drive behavioural intention, and that intention, when supported by facilitating conditions, leads to actual behaviour. In the context of compliance, this implies that users' perceptions of the usefulness of CSMIS in simplifying reporting (performance expectancy), its ease of operation (effort expectancy), and social or organisational influence. Shape compliance intentions. These intentions, along with facilitating conditions such as ICT infrastructure and training, determine whether compliance behaviour occurs, such as the production of timely and accurate reports. Evidence from e-government and e-taxation studies supports that UTAUT constructs predict

compliance-related outcomes, especially when mediated by factors like infrastructure availability and digital literacy (Airawaty *et al.*, 2023)

The strength of UTAUT is its explanatory breadth. Meta-analyses and applied reviews confirm that the model's four core constructs consistently account for substantial variance in intention and usage across contexts such as taxation, healthcare, and e-learning (Akinnuwesi *et al.*, 2020). Its adaptability further enhances its utility; researchers have successfully extended UTAUT by incorporating Trust, perceived cost, system quality, and digital literacy, thus tailoring the framework to sector-specific realities (Blut *et al.*, 2022). However, criticisms of UTAUT point to reduced parsimony when multiple moderators and extensions are included, potential overfitting in original validations, and limited attention to institutional enforcement mechanisms and cultural norms that often shape compliance (Chipeta & Lipunga, 2025). Therefore, while UTAUT remains a robust baseline model for explaining intention and use, it requires targeted extensions to capture the coercive, normative, and structural drivers underlying compliance (Saptono *et al.*, 2023)

Empirical studies demonstrate how UTAUT can be tailored for compliance contexts. For instance, performance expectancy and system quality have been associated with compliance intentions in digital taxation, especially when digital literacy and facilitating conditions are considered (Airawaty *et al.*, 2023; Saptono *et al.*, 2023). In the healthcare sector, UTAUT extensions that incorporate Trust, privacy, and security have enhanced the model's ability to explain compliance with mandatory electronic health records (Akinnuwesi *et al.*, 2020). Similarly, research on e-learning during COVID-19 highlighted the significance of social influence and facilitating conditions in maintaining mandated system use (Korsah, 2025). These findings indicate that for CSMIS, UTAUT can be effectively utilised if it includes domain-specific factors such as system quality, Trust/security, digital skills, and enforcement expectations. Consequently, performance expectancy aligns with the perceived usefulness of CSMIS for supervisory functions, effort expectancy reflects its ease of operation, social influence represents peer and regulatory pressures to comply, and facilitating conditions encompass training and ICT support. By integrating extensions such as Trust, perceived cost, and enforcement expectations, along with organisational T, one can better explain compliance with CSMIS reporting.

3.0. Research Methodology

3.1. Research Design

This research employed a cross-sectional design, in which data were collected at a single point in time (Saunders *et al.*, 2019). Given their cost-effectiveness and brevity, cross-sectional designs allow researchers to swiftly complete data collection and proceed to analysis and reporting, avoiding the attrition concerns associated with tracking participants over time (Adinan *et al.*, 2019).

3.2. Description of the study area

This study focused on two districts in Singida Region: Manyoni and Iramba. Manyoni District covers 28,620 km² and has a population of 205,478, whereas Iramba District spans 4,571.4 km² with 328,912 residents (Census, 2022). There are 29 Savings and Credit Co-operative Societies (SACCOS) registered under the Co-operative Society Act in districts (Iramba District 13 and Manyoni District 16), but only 8 SACCOS (two in Iramba District and six in Manyoni District) have complied with Co-operative

Supervision Management Information Systems, despite their recognised importance in enhancing efficiency and transparency (TCDC, 2023). Iramba and Manyoni districts were chosen for this study due to their rural nature, active involvement in microfinance activities and the significant variation in compliance with CSMIS among their SACCOS (Rodríguez & Velastequí, 2019).

3.3. Population, Sample and Sampling Procedure

3.3.1. Population

According to TCDC (2023), Iramba and Manyoni districts have 29 SACCOS in total. For this study, the target population included all 29 SACCOS.

3.3.2. Sampling frame

The unit of observation comprised 174 participants drawn from the 29 Savings and Credit Co-operative Societies that constitute the intended population. The sampling frame included the Information Technology Manager, Credit Manager, Internal Auditor, Finance Manager, General Manager, and Chairperson of the Board from each SACCOS in the districts. This is based on the assertion that managers are primarily responsible for technology-related decisions (Ngongo, 2019).

3.3.3. Sample size

The study involved all 29 Savings and Credit Co-operative Societies (SACCOS) operating within the selected districts, which served as the units of analysis, thereby ensuring comprehensive representation of the entire population under investigation. These SACCOS are distributed across two districts: Iramba and Manyoni. In Iramba District, 13 SACCOS were included, with nine (9) situated in rural areas and four (4) in urban areas. Similarly, in the Manyoni District, 16 SACCOS participated, comprising thirteen (13) rural and three (3) urban SACCOS. A total of 174 respondents were sampled from these SACCOS to serve as the units of observation. These respondents were key decision-makers and stakeholders within SACCOS, including the Information Technology Manager, Credit Manager, Internal Auditor, Finance Manager, General Manager, and Chairperson of the Board. By involving representatives from all operational SACCOS and capturing a broad spectrum of roles within each SACCOS, the study was able to gather detailed and reliable data, offering a comprehensive understanding of the factors influencing compliance with the Co-operative Supervision Management Information System across both rural and urban settings in the two districts.

3.3.4. Sampling procedure

Ngongo (2019) posited that conducting a census is appropriate for populations of fewer than 200. Thus, this study undertook a census of all identified Savings and Credit Co-operative Societies in the Districts. In each of the 29 SACCOS, respondents were purposively selected based on their organisational responsibilities. This selection process yielded 174 participants, including key decision-makers and managerial personnel such as Information Technology Managers, Credit Managers, Internal Auditors, Finance Managers, General Managers, and Board Chairpersons. Choosing individuals in these strategic positions enhanced the data's reliability and contextual relevance, as it captured insights from those directly responsible for governance and operational management within the SACCOS.

3.4. Data and data collection Methods

3.4.1. Types of data

To gain an understanding of the research problem, both quantitative and qualitative data were utilised. While utilised, data provided contextual depth and meaning; quantitative data yielded quantifiable, generalisable results (2020).

3.4.2. Data sources

To meet the study's objectives and answer its questions, this research used both primary and secondary data sources. Primary data were collected from the Information Technology Manager, Credit Manager, Internal Auditor, Finance Manager, General Manager and Chairperson of the Board of each SACCOS using a survey questionnaire. Gathering primary data directly from respondents enhanced the reliability of the information, as it is specifically aligned with the study's objectives. Secondary data were gathered from literature on the co-operative supervision management information system, including articles, books, magazines, and websites. This approach ensured a comprehensive analysis of both primary and secondary data to fulfil the research objectives (Nyang *et al.*, 2021).

3.4.3. Data collection instruments

A semi-structured questionnaire and interview guide served as the central mechanism for acquiring primary data from study participants. Individuals with in-depth knowledge of the CSMIS compliance were purposively chosen to provide valuable insights (Moser & Korstjens, 2018). Additionally, the study used a documentary review, collecting secondary data from journals, SACCOS reports, magazines, research papers, SACCOS-related books, and websites. Before further analysis, the response rate was calculated to establish the number of responses. Of the 174 questionnaires distributed, 167 were returned, representing a 95.98% response rate. Boyer *et al.* (2021) suggest a response rate of at least 50% for further analysis. Based on this, a response rate of 95.98 % was considered adequate for further analysis.

3.5. Validity and Reliability of the Data

3.5.1. Validity of data

The extent to which a measurement tool accurately assesses the intended concept is called validity. As stated by Scott *et al.* (2020), the validity of an instrument is established by the degree to which it effectively captures the construct it was developed to measure. The validation process consisted of two phases: instrument development and data evaluation. The instrument's validity was assessed using both quantitative and qualitative methods, with input from at least 5 experts. Subsequently, the Content Validity Index was employed to quantify content validity. Experts were asked to evaluate the relevance of each item within the instrument using a five-point rating scale, which was then used to calculate the Content Validity Index. The Content Validity Index (CVI) was then calculated to quantify the degree of consensus among the experts regarding the relevance of each item. The CVI is computed as the ratio of the number of items deemed valid by the experts to the total number of items in the instrument. Out of the 41 items included in the instrument, 34 were judged to be valid by the expert panel. Therefore, the overall CVI was:

$$CVI = \frac{\text{Number of items declared valid}}{\text{total number of items in questionnaire}} = \frac{34}{41} = 0.83$$

A CVI score of 0.83 indicates a high level of content validity, suggesting that the majority of the items included in the instrument were considered appropriate and relevant for measuring the intended constructs. This outcome provides strong evidence of the instrument's validity.

3.5.2. Data reliability

Taherdoost (2018) defined reliability as the degree to which findings remain constant over time and accurately reflect the entire population under study. If similar approaches yield the same results, the instrument is considered reliable. The reliability of an instrument is assessed based on its ability to consistently and precisely generate data. Using Cronbach's alpha, several reliability tests were conducted to assess the reliability of the results. As recommended by Saunders *et al.* (2019), a value exceeding 0.7 is considered acceptable; otherwise, the instrument must be revised. The results of the reliability analysis are presented in Table 2

Table 1: Reliability Test

Variable	Cronbach's Alpha	N of Items
Likelihood of Adoption	0.792	2
Organizational	Organisational	12

All variables demonstrated satisfactory internal consistency, with Cronbach's alpha values exceeding the recommended threshold of 0.70. Specifically, the compliance variable yielded a Cronbach's alpha of 0.792 across 2 items, indicating acceptable reliability. The Organisational Factors variable, comprising 12 items, yielded the highest alpha value of 0.818, further confirming strong internal consistency. These results suggest that the instruments used to measure the study variables were reliable and suitable for further analysis.

3.6.Data analysis

To analyse qualitatively and increase depth, the study used thematic analysis. Information gathered from Key Informant Interviews was transcribed, coded, categorised, and contextualised in relation to the study's specific objectives (Guzik & Więckowska, 2023).

The study used descriptive statistics to evaluate participants' socio-demographic traits and to provide a thorough summary of the research variables, ensuring all study objectives were met. The results were presented using metrics such as frequency distributions, means, standard deviations, and percentages. A Binary Logistic Regression model was applied to assess the relationship between the dependent variable (1 = compliant; 0 = otherwise) and the independent variables. The Organisational model was selected for this study because the dependent variable was binary. The dependent variable was CSMIS compliance, with two possible outcomes (1 = probability of compliance, 0 = otherwise). The equation of Binary logistic regression is shown below:

$$P_i = \exp^{Z_i} / 1 + \exp^{Z_i} \dots \dots \dots (1)$$

In this context, P_i represents a random variable that predicts the likelihood of CSMIS compliance, while Z_i serves as an index linearly associated with a range of organisational factors influencing CSMIS compliance. The relationship between these variables and Z_i can be further specified as follows:

$$Z_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \dots + \beta_n X_{ni} \dots \dots \dots (2)$$

The model specification was summarised in the equation below.

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots \dots + \beta_n X_n + \varepsilon \dots \dots \dots (3)$$

Where:

Z = Dependent variable

X₁, X₂, X₃..... X_n Predicting variables

E= Error term

3.6.1. Diagnostic Testing and Model Validation for Binary Logistic Regression Analysis

Before conducting binary logistic regression analysis, diagnostic tests were performed to ensure the models' validity and robustness. The Hosmer-Lemeshow test was used to evaluate the model's goodness-of-fit, and multicollinearity among the independent variables was assessed using the Variance Inflation Factor (VIF). The Hosmer-Lemeshow test yielded a p-value of 0.341, which exceeds the conventional 0.05 threshold, indicating robust goodness-of-fit. This result confirms that the logistic regression model is appropriate and valid for evaluating the organisational CSMIS compliance. For multicollinearity, the analysis indicates that all organisational variables have VIF values below 5, confirming the absence of severe multicollinearity and supporting the reliability of the model inputs.

Table 2: Operational Definition of Variables and their Measurement Levels

Variables	Definition	Type of variable	Measurement of variables	Source
CSMIS compliance	Compliance with CSMIS	Nominal	1 If Probability to comply, 0 otherwise	Reuben <i>et al.</i> (2019)
Sex	Biological attributes that classify the respondent as male, female, or intersex	Nominal	1 if Male, 0 if otherwise	Mageria (2018)
Age	Age of the respondent in years	Ordinal.	Years of the respondent	Erasto (2024)
Education level	The highest level of education attained by the respondent	Ordinal	1 if certificate or diploma, 2 if degree, 3 if postgraduate degree	Mageria (2018)
Experience	Number of years of operation of the respondent	Ratio	Average number of years of experience of the respondent.	Kustepeli <i>et al.</i> (2020)
Organisational factors	size of organisation, informal linking structures, Top management support, financial resources	Dummy	1 if yes, 0 if otherwise	Ngongo (2019)

4.0.FINDINGS AND DISCUSSION

4.1.Respondents' Profile and SACCOS Characteristics

This section provides a detailed description of the socio-demographic characteristics of the respondents who participated in the study. Variables, such as age, gender, level of education, years of operation of the SACCOS, Location of SACCOS, working experience of the respondents, and the position of the respondent in the SACCOS, were examined in relation to the CSMIS compliance decision among SACCOS in Iramba and Manyoni districts. Table 3 summarises these socio-demographic variables and their association with CSMIS compliance.

Table 3: Respondents' profile and SACCOS Characteristics (n=167)

Variables	Category	CSMIS compliant (48)		CSMIS Non-compliant (119)	
		Freq	Per cent (%)	Freq	Per cent (%)
Age of respondent	21-30	5	3.0	6	3.6
	31-40	18	10.8	35	21.0
	41-50	19	11.4	55	32.9
	51+	6	3.6	23	13.8
Gender of the respondent	Male	17	10.2	60	35.9
	Female	31	18.6	59	35.3
Education level of the respondent	Primary	6	3.6	22	13.2
	Secondary	13	7.8	62	37.1
	Cert/Diploma	17	10.2	26	15.6
	Degree & above	12	7.2	9	5.4
SACCOS years of operation	1-10	10	6.0	12	7.3
	11-20	15	9.0	47	28.1
	21 +	23	13.8	60	35.9
Location of SACCOS	Urban	13	7.8	29	17.4
	Rural	35	21.0	90	53.9
Experience of the respondent	1-10	28	16.7	44	26.3
	11-20	15	9.0	65	38.9
	21+	5	3.0	10	6.0
Position of the respondent	IT Manager	9	5.4	14	8.4
	Credit Manager	5	3.0	24	14.4
	Internal auditor	6	3.6	23	13.7
	Finance	8	4.7	21	12.6
	Manager	12	7.2	17	10.2
	General	8	4.8	20	12
	Manager				
	Board chairperson				

The age distribution reveals a predominance of middle-aged leaders, particularly those aged 41–50 years, in both compliant and non-compliant groups, with a higher representation in the latter. Younger respondents (21–30 years) are underrepresented in both categories, suggesting a limited generational impact on compliance. Supporting literature (Esamah *et al.*, 2023; Kusuma *et al.*, 2020) suggests that older managers often adhere to traditional routines, which may hinder technological adoption, whereas younger managers exhibit greater digital literacy and adaptability. Gender analysis indicates a higher prevalence of female leaders in compliant SACCOS, aligning with research associating female leadership with greater accountability and openness to reform (Martinez-Leon *et al.*, 2020). Conversely, non-compliant SACCOS are predominantly male-led, suggesting a resistance linked to an attachment to legacy systems.

Educational attainment and institutional characteristics further influence compliance outcomes. Leaders with higher education (degree or higher) are overrepresented in compliant SACCOS, highlighting the role of education in enhancing digital literacy, regulatory understanding, and adaptability to innovation (Santos *et al.*, 2024). Similarly, newer SACCOS exhibit greater compliance than long-established ones, as the latter often retain entrenched manual processes (Martinez *et al.*, 2020). Rural SACCOS face infrastructural and technological barriers, which account for lower compliance rates than those of their urban counterparts (Atsiaya & Bwire, 2024). Regarding professional experience, compliance is more prevalent among less

experienced leaders, as longer tenures may reinforce resistance to change. Finally, organisational: general managers emerge as key drivers of compliance, while credit managers and auditors are predominant in non-compliant groups. This observation aligns with the Unified Theory of Acceptance and Use of Technology (UTAUT), which emphasises influence and performance expectancy in driving digital adoption (Esamah *et al.*, 2023).

4.2. Influence of Organisational Compliance with Co-operative Supervision Management Information System

This study examined 12 organisational-dependent variables to evaluate their influence on compliance with CSMIS among SACCOS in Iramba and Manyoni districts. These factors included: presence of a designated office for operations, financial liquidity to meet short-term obligations, reliability of electricity at the office, availability of functional computers for official use, whether the SACCOS manager has received training on digital systems or ICT tools, whether the manager actively promotes the use of digital systems, existence of an official ICT or digital systems policy, board support for CSMIS compliance, availability of extra resources such as funds, staff, or time, number of active members, existence of formal communication and reporting systems, and financial capacity to invest in CSMIS. Each variable was measured through structured questionnaires using binary (yes/no) response options. The dependent variable, CSMIS compliance, was also measured as a binary outcome, with SACCOS that complied with the system coded as 1 and those that did not coded as 0. Binary logistic regression was used to assess the extent to which each independent variable influenced the likelihood of compliance with CSMIS. Table 4 presents the results of the logistic regression model, including estimated coefficients, odds ratios (Exp(B)), and p-values for each organisational organisation included in the analysis.

Table 4: Estimates of the Logit Model on Organisational Factors and Compliance with CSMIS

Variables	B	S.E.	Wald	Sig.	Exp(B)
Designated office for operations	1.335	.544	6.031	.014	3.800
SACCOS's financial liquidity to meet short-term obligations	1.994	.573	12.117	.000	7.346
Availability and reliability of electricity	-1.233	.590	4.364	.037	.291
Availability of functional computers for official use	-.904	.676	1.791	.181	.405
Manager Training on Digital Systems	1.254	.531	5.578	.018	3.503
Manager's Promotion of Digital Systems	3.966	.984	16.261	.000	52.777
Official ICT/Digital Systems Policy	-.971	.584	2.769	.096	.379
Board Support for CSMIS compliance	1.227	.571	4.627	.031	3.412
Resource slack	.255	.503	.258	.611	1.291
Membership Size of SACCOS	1.233	.534	5.327	.021	3.433
Availability of formal communication and reporting systems	1.034	.707	2.138	.144	2.813
Financial Capacity to Invest in CSMIS	1.904	.633	9.044	.003	.149
Constant	-6.760	1.334	25.676	.000	.001

The presence of a designated operations office significantly and positively impacts compliance with CSMIS ($\beta = 3.800$, $P = 0.014$) at the 5% level. This finding indicates that SACCOS with such an office are 3.8 times more likely to comply with CSMIS than those without one. The positive correlation suggests that having a dedicated operational space increases the likelihood of compliance with CSMIS. This aligns with the UTAUT model, particularly the facilitating conditions construct, which asserts that organisational infrastructure supports technology compliance. A designated office provides a more structured, well-equipped environment conducive

to integrating new systems. This result corroborates findings by Tavana *et al.* (2021), who highlighted the importance of organisational technology adoption. A designated office likely provides the necessary physical and administrative framework to support compliance with CSMIS, including dedicated staff, equipment, and operational procedures. It also reflects a SACCOS' commitment to professionalisation, modernisation, and a culture more open to technological advancements. This finding implies that SACCOS, aiming to comply with CSMIS, should prioritise a dedicated operations office. Such an office could serve as a centralised hub for centralised management, training, and troubleshooting, thereby facilitating compliance and ongoing use of CSMIS.

Regarding SACCOS' financial liquidity to meet short-term obligations, findings revealed that financial liquidity significantly and positively affects compliance with CSMIS ($\beta = 7.346$, $P = 0.000$) at the 1% level. The odds ratio indicates that financially liquid SACCOS are more than 7 times more likely to comply with CSMIS than financially strained SACCOS. This observation supports the UTAUT model's facilitating conditions construct, suggesting that access to financial resources enables the practical adoption of technology. Liquidity directly influences an organisation's ability to absorb innovation costs. In line with Erasto (2024), financially capable organisations tend to adopt innovation more readily. This strongly supports UTAUT's assertion that performance expectancy and an enabling environment critically drive adoption behaviour. This implies that without liquidity, even the most capable systems will remain underutilised. Underutilised, therefore, build financial buffers not only for operational sustainability but also to remain digitally competitive. Sector regulators could also consider linking CSMIS rollout with financial readiness indicators. The findings suggest that unless this structural condition improves, digital transformation efforts may be futile.

For the electricity availability variable, the findings indicate that both availability and reliability significantly and negatively affect compliance with CSMIS ($\beta = 0.291$, $P = 0.037$) at the 5% level. This suggests that the likelihood of complying with CSMIS is approximately 71% lower in SACCOS where electricity is unreliable. This finding aligns with the UTAUT model by underscoring the importance of facilitating conditions. The UTAUT posits that technology adoption depends on existing infrastructure, a claim strongly supported by this result. Additionally, research by Matsepe and Van der Lingen (2022) on rural African financial institutions similarly identified electricity reliability as a core determinant of technology adoption, thereby reinforcing external validity. This was also expressed by KII 8, who said:

“One big challenge we face is the lack of reliable electricity at our office. Often, power outages disrupt our daily operations, making it difficult to run any digital systems smoothly. Without consistent electricity, even if we had the right computers or software, using CSMIS effectively becomes almost impossible for us right now” (KII8, 17 June 2025).

The finding implies that regardless of enthusiasm or training, if systems cannot be consistently powered, compliance falters. Unreliable electricity is a significant bottleneck, explaining the lag in digital compliance in rural and peri-urban co-operatives.

Regarding manager training on digital systems, the findings revealed a statistically significant and positive relationship between manager training and system compliance ($\beta = 3.503$, $P = 0.018$) at the 5% level. This means that SACCOS with trained managers are 3.5 times more likely to comply with the system than those without trained management. This result aligns with both TAM's "perceived ease of use" and UTAUT's "performance expectancy," where training not only enhances competence but also increases perceived value and reduces resistance. Studies such as Ghobakhloo *et al.* (2022) have shown that management training acts as a catalyst for ICT uptake in co-operative and community settings. This finding suggests that capacity building at the leadership level is crucial for digital transformation. Trained managers are more likely to champion innovation, address challenges, and allocate resources strategically. This result implies that human capital development is foundational to technological progress. Managerial training enhances both confidence and technical ability to navigate new systems. Trained managers are also more likely to support team learning, effectively supervise implementation, and articulate the value of digital integration across their organisations. The results show a very strong, statistically significant positive relationship between managerial promotion and compliance ($\beta = 52.777$, $P = 0.000$) at the 5% level. This indicates that where managers actively advocate for digital systems, the odds of compliance are over 52 times higher than where such advocacy is absent. This result aligns with the UTAUT construct of "social influence," which highlights leadership's role in shaping organisational technology. This finding aligns with empirical research by Maroufkhani *et al.* (2022), who emphasised support as a key driver of technology diffusion. The KII9 added by expressing that:

"Well, from my experience as board chair, the strongest support we needed was the manager's active promotion of digital systems. You see, when the manager is enthusiastic and leads by example, attending trainings, encouraging the team, showing how it works, it really motivates everyone. It is like having a captain who believes in the ship; the crew naturally follows" (KII 9, 16 June 2025).

The findings imply that managerial commitment is not just helpful but transformative. It has the potential to overcome structural limitations and foster a culture of digital optimism. Managerial vision can act as a force multiplier, accelerating digital reform. It reiterates the need to target leaders as change agents in co-operative modernisation. Support exerts a statistically significant and positive effect on compliance ($\beta = 3.412$, $p = 0.031$) at the 5% level. This suggests that when boards are supportive, SACCOS are 3.4 times more likely to comply with CSMIS. The results underline the role of governance and organisational facilitation of digital change. In relation to UTAUT, this aligns with social influence and facilitating conditions, in which broader organisational governance directly shapes compliance behaviour. According to Tavana *et al.* (2021), board support can establish legitimacy, reduce resistance, and prioritise budprioritisetions for ICT projects. The board's role is crucial in approving investments, setting strategic direction, and legitimising organisational decisions. The board actively supports digital initiatives, resource allocation becomes easier, implementation resistance diminishes, and accountability structures for system performance are instituted. This implies that leadership from the top, especially from the governing board, is a vital component in ensuring that digital transformation through systems such as CSMIS is prioritised effectively.

Regarding the size of the SACCOS, the findings revealed that a larger membership size significantly influenced compliance with CSMIS positively ($\beta = 3.433$, $p = 0.021$). This implies that SACCOS with larger memberships are 3.4 times more likely to comply with the system than those with smaller memberships. This result supports the performance expectancy component and perceived usefulness of TAM. Larger SACCOS are likely to experience higher transaction volumes and complex operations, necessitating digital systems to streamline operations. Studies such as those by Ahmad (2024) also support this, noting that larger co-operatives are more inclined to comply with innovation to maintain efficiency. The findings were further supported by KII7, who said that:

"In our case, the size really matters. You see, we are still a small SACCOS with limited active members, so we have been focusing on just staying afloat and meeting basic needs. With our numbers, investing in a big system like CSMIS feels like a luxury. Maybe once we grow bigger, it will make more sense financially and operationally" (KII7, 6 June 2025).

This shows that digital solutions are both more necessary and feasible for large-member SACCOS. This also suggests a scalability incentive: as co-operatives grow, their need for CSMIS increases, making compliance a matter of survival. This implies that scale acts as a natural driver of digitisation, driving SACCOS toward systems that can efficiently handle their growing administrative and financial workloads.

The financial capacity to invest in the Co-operative Supervision Management Information System emerged as a statistically significant and robust positive predictor of compliance with it ($\beta = 7.346$, $p = 0.003$). An odds ratio of 7.346 indicates that SACCOS with sufficient financial resources are over 7 times more likely to comply with the CSMIS than those with limited financial capacity. This considerable effect suggests that financial readiness is not merely a peripheral factor but a crucial strategic enabler of digital transformation in co-operatives. This finding aligns with the Unified Theory of Acceptance and Use of Technology, particularly the constructs of facilitating conditions and external variables. The UTAUT highlights that enabling resources, including financial capital, determine the extent to which an organisation sustains digital systems. This observation is consistent with empirical evidence from Luiten Van Zanden (2022), who noted that financial constraints significantly impede ICT uptake in African financial co-operatives. This has two implications. First, financial stability directly empowers technological progress by facilitating investments in infrastructure, software licensing, staff training, and ongoing system maintenance. Second, it suggests that even when attitudes toward technology are positive, compliance is likely to stall without adequate funding. This result indicates that access to technology is not merely a function of will or awareness, but also of affordability and structural investment capacity.

5.0.CONCLUSION AND RECOMMENDATIONS

5.1.Conclusion

Organisational is a critical enabler or constraint in CSMIS compliance. Financial stability, particularly in terms of liquidity and investment capability, was fundamental, highlighting that technological transitions are not solely guided by strategic will but also by economic feasibility. Equally decisive was leadership commitment, particularly when top managers actively promoted digital systems, reinforcing the

idea that executive endorsement is a transformative catalyst. Institutional features such as operational infrastructure, board engagement, and SACCOS size also positively contributed to system uptake. Conversely, structural constraints, such as an unreliable electricity supply, significantly undermined compliance, demonstrating that infrastructural fragility can neutralise even innovation strategies. Variables traditionally associated with digital preparedness, such as the presence of an ICT policy or functional computers, lacked independent influence, suggesting that without holistic institutional alignment and dedicated resources, such assets remain underutilized.

5.2. Recommendations

To enhance effective compliance with the Co-operative Supervision Management Information System, a comprehensive approach involving government agencies, development partners, ICT providers, and SACCOS federations is imperative. This approach should address both technical capacity and structural or behavioural barriers. SACCOS should initiate internal transformation by appointing digital champions, fostering leadership commitment, and integrating compliance objectives into strategic and budgetary plans. Policymakers must establish clear compliance benchmarks linked to licensing and oversight mechanisms, while governments should prioritise infrastructure such as electricity and ICT, particularly in rural areas. Members of SACCOS should advocate for transparent resource allocation toward digital initiatives and support leadership efforts that advance technological progress. Furthermore, academic institutions should collaborate with SACCOS to design and evaluate CSMIS tools, generating evidence on organisational compliance with influence and providing insights into sustainable digital transformation in co-operative finance.

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