

Does the Internal Control Environment Drive the Performance of Cooperatives? A PLS-SEM Perspective

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DOI: <https://dx.doi.org/10.47772/IJRISS.2023.70756>

Received: 25 June 2023; Accepted: 03 July 2023; Published: 05 August 2023

ABSTRACT

This study examined the relationship between the internal control environment and financial performance of deposits taking savings and credit cooperative societies (DT-SACCOs) in Kenya. Using the Agency theory as a framework, the study focused on integrity and ethical values, commitment to competence, organization's structure, management philosophy, and operating styles. The research utilized a quantitative approach and PLS-SEM as the main design, with data collected through a structured questionnaire from 110 DT-SACCO managers. The study revealed that the internal control environment positively impacts financial performance. Commitment to competence ($\beta = 0.441$, $p < 0.05$), the organization's structure ($\beta = 0.466$, $p < 0.05$), and management philosophy and operating styles ($\beta = 0.267$, $p < 0.05$), while integrity and ethical value had a negative impact ($\beta = -0.317$, $p > 0.05$). The study provides valuable insights for policymakers, regulators, and DT-SACCOs, emphasizing the importance of a strong internal control framework for effective risk mitigation and enhanced governance practices. By focusing on building a robust internal control environment, DT-SACCOs can optimize their financial performance. The study extends the literature on the link between internal control environment and performance in Kenya and provides a basis for future research.

Keywords: Internal control environment, Structural equation modelling, PLS-SEM, Financial performance, DT-SACCOs.

INTRODUCTION

Deposit-taking savings and credit cooperative societies (DT-SACCOs) play an important role in Kenya's financial system by facilitating financial access, mobilizing savings, and generating wealth (Gakenia, 2020). Following repeated complaints of mismanagement, misuse of members' funds, and poor financial performance, the Kenyan government enacted the SACCO Society Regulatory Authority (SASRA) legislation in 2008 to regulate operations in the SACCO sector (Buluma, 2017; Ouko & Atheru, 2022).

According to the SASRA (2021) report, the DT-SACCO system's impressive growth trend continued in 2020, with a 12.75 percent increase in total assets to reach Kshs 627.68 billion, compared to a 12.41 percent increase in 2019. Despite the adverse effects associated with the COVID-19 epidemic on the Kenya's economy, DT-SACCOs reported growth in all meaningful metrics. In particular, their total deposits increased by 13.41 percent from Kshs 380.44 billion in 2019 to Kshs 431.46 billion in 2020, representing an 11.27 percent increase compared to the same period in 2019. This indicates that DT-SACCOs were still able to mobilize deposits at a similar pace to the increase in their asset portfolios. However, recent instances of fraud involving cooperative society boards, high management, and cyber theft have raised concerns regarding the efficiency of the sector's internal control environment (Ouko & Atheru, 2022). Despite this, the DT-SACCO system remains an integral component of the country's financial services sector, contributing significantly to financial inclusion and economic growth.

The significant impact of an effective internal control environment on firm performance has repeatedly been highlighted (Olufunmilayo & Hannah, 2018). Information and communication, the control environment, assessing risks, control activities, and monitoring actions constitute the elements of internal control specified by COSO (2013) and KPMG (2013). These elements are integral to the updated internal control-integrated framework and are widely regarded as the best framework for establishing internal controls to achieve management-defined corporate objectives.

The control environment is comprised of the regulations, procedures, and practices that function as the foundation for the organization's internal control, helpful in minimizing and detecting risks, providing accurate and fair financial information, enhancing compliance, and enhancing operational efficiency (Anh, Tran Thi, Quang, & Thi, 2020; COSO, 2013; KPMG, 2013). The control environment, as per the COSO (2013) framework, plays a crucial role in measuring the general efficacy of an internal control system by establishing the tone of an organization. This environment comprises various components such as management philosophy and operating style, human resource policies, commitment to competence, authority and responsibility assignment, organizational structure, existence of board of directors or audit committee, integrity and ethical values (KPMG 2013; Rubino et al. 2017).

Integrity and ethics (IEV) are vital for controlling the environment, impacting design, administration, and monitoring. Integrity and ethical conduct are the outcomes of an organization's ethical and behavioral standards, their communication, and the actual application of these norms. They include activities undertaken by the management to eliminate or limit incentives and enticements that may lead employees to partake in deceitful, illegal or immoral conduct. In addition, they include conveying the entity's beliefs and behavioural norms to staff via policy statements and codes of conduct. (COSO, 2013). Commitment to competence (C2C) comprises management evaluating competence levels for specific activities and converting competence into requisite expertise. Competence refers to the knowledge and abilities required to perform the duties that characterize a person's job (COSO, 2013; Halim., Badruddin, Hidayat, & Maulamin, 2019; Rubino et al., 2017). Management philosophy and operating style (MPOS) includes the managerial strategy to adopt and monitor company risks, beliefs and behaviors regarding financial disclosure, conservative or aggressive accounting principles, and attitudes toward processing information, financial reporting, and employees (COSO, 2013; KPMG, 2013; Rubino et al., 2017). The firm organizational structure (OS) component offers a framework for planning, executing, coordinating, and monitoring operations to accomplish overall goals (COSO, 2013; Wamukota et al., 2018). Consideration is given to critical aspects of authority and responsibility, and adequate reporting lines when designing an organization's structure. The extent to which an entity's organizational structure is influenced by its size and activity (COSO, 2013; Koutoupis and Pappa, 2018; Rae et al., 2017).

The internal control environment has gained tremendous significance owing to a rising number of corporate failures and various well-known scandals and frauds (Al-Thuneibat, Al-Rehaily, & Basodan, 2015; Bariši? & Tušek, 2016; Ugwu, & Ochuba, 2021; Shabri, Saad, & Bakar, 2016). Generally, it is assumed that a properly implemented internal control environment increases reporting and provides credible reports that boost management's responsibility. A controlled environment forms the basis for an efficient internal control system. The Sarbanes-Oxley Act (SOX) of 2002 requires companies to establish and sustain strong internal controls. Section 404 of SOX mandates organization management to determine and report on the performance of internal financial reporting controls (Gupta, Sami, & Zhou, 2018). An internal control mechanism comprises the policies and procedures to accomplish a firm's objectives. The majority of well-known failures (including Enron and WorldCom, as well as governance failures that contributed to the 2008 financial crisis) were partially the outcome of an inadequate control environment. Without an effective control environment, no degree of "design and operational" efficacy of controls by enterprises can offer stakeholders significant assurance of the soundness of the internal control structure of an organization (Austin, Carpenter, Christ, & Nielson, 2021; Jahmani & Niranjana, 2015; The Institute of Internal Auditors, 2011).

Previous studies indicate that a robust internal control environment and performance of entities are relevant to all parties concerned with economic growth and business survival. Although much of these research reinforce the favourable link between performance and internal control environment (Abu Hamour, Massadeh, & Bshayreh, 2021; Tetteh, Kwarteng, Aveh, Dadzie, & Asante-Darko, 2022; Quoc Trung, 2021; Adegboyegun, Ben-Caleb, Ademola, Oladutire, & Sodeinde, 2020; Channar, 2015; Ibrahim, Diibuzie, & Abubakari, 2017; Jacob & Oluwafemi Philip, 2016; Kabuye, Kato, Akugizibwe, & Bugambiro, 2019; Kinyua, Roselyn Gakure, Gekara, & Orwa, 2015); others show negative association (Chen, Chan, Dong, & Zhang, 2017; Li, Shu, Tang, & Zheng, 2019) or insignificant relationship on EPS and profit margin (Al-Thuneibat et al., 2015); financial performance (Bruwer, Coetzee, & Meiring, 2018; Mawanda, 2011).

Despite the wealth of literature available in the field, the link between the internal control environment and corporate success is far from definitive. First, more research is needed on the subject matter in Kenya, particularly in the context of DT-SACCOs. Furthermore, a comprehensive analysis of the linkage between the performance and elements of the internal control environment in DT-SACCOs in Kenya is required. Second, previous research identifying the five primary elements/principles of the internal control environment did not include these components in a model framework of financial performance using path analysis methodologies. Furthermore, there is a dearth of research on the nexus between organizational performance and internal control elements. Third, studies on the internal control environment have been conducted mainly in developed and emerging countries (Agyei-Mensah, 2016; Chalmers et al., 2019; Ershaid et al., 2017; Nalukenge et al., 2017), paying little attention to the sub-Saharan African region. However, the former tend to have legal, political, regulative, cultural, and economic systems distinct from the latter (Nalukenge et al., 2017), which may influence the internal control environment-performance nexus differently. Consequently, this study investigated the contribution of each element of the internal control environment to performance of DT-SACCOs using a PLS-SEM model that more precisely depicts how each component contributes to financial performance, using theoretical insights from the positivist perspective of agency theory.

Given the significant gaps in previous research, this study adds to the literature in various ways. This study provides new evidence on how internal control environment components influence performance by examining the influence of several under-researched internal control environment components. Furthermore, this study adds fresh insights from the positivist view of agency theory to better understand the influence of the internal control environment on financial performance. This study proposes that, in Kenya, the interaction between internal control environment components strengthens the nexus with performance of licenced DT-SACCOs. The proposed relationship can be effectively studied in the context and setting of Kenya owing to the increased interest in the effectiveness of the internal control environment following repeated complaints of mismanagement, misuse of members' funds, and poor financial performance among licenced DT-SACCOs. The DT-SACCOs attempt to align their operations by incorporating an appropriate internal control environment. Therefore, the implications of internal environmental control components within the performance context are yet to be well documented.

The paper is structured as: Section 2 includes a literature review, Section 3 details the study's methodology, Section 4 covers empirical findings, Section 5 draws conclusions and implications, and Section 6 presents limitations and recommendations for further research.

LITERATURE REVIEW

Theoretical Background

This paper responds to the need to extend agency theory using more current explanations of principal-agent research and positivist agency theory perspectives to critically examine the nexus between firm performance

and internal control environment. Agency theory defines the unit of analysis between the principals and agents. Principals assign work to agents with the expectation that agents would meet the expectations in the best interests of the principals (Bendickson, Muldoon, Liguori, & Davis, 2016; Jensen & Meckling, 1976.; Mitchell & Meacham, 2011).

Agency theory posits that agents may act opportunistically, especially when their interests conflict with those of their principals (Mitchell & Meacham, 2016). According to this theory, managers have better access to company information than owners, creating a knowledge advantage that can affect the owner's ability to protect their investment in the organization. The pursuit of different objectives by these two parties leads to agency problems, which require conflict resolution. However, these conflicts can be difficult to quantify and address, necessitating governance systems that facilitate alignment and shared risk.

Fama and Jensen (1983) assert that the board of directors bears the responsibility of minimizing agency costs and associated issues. Anh et al. (2020) and Chan, Chen, and Liu (2021) found that internal control actions undertaken by boards created by owners may lessen agency difficulties. A company's internal control system is critical to its overall governance. Protecting the firm's assets, establishing a clear line of authority and responsibility, and ensuring that the firm's existing records are not tampered with are among the objectives of the systems of internal control (Hassan, Abdulkarim, & Ismael, 2022). A firm's internal controls must be adequate to provide quality earnings (Ashbaugh-Skaife, Collins, Kinney, & LaFond, 2008).

Agency theory's viewpoint is often centred on the principal-agent issue (principal-agent research) or governance systems (positivist research). Principal-agent research reveals two potential agency issues: risk-sharing and agent monitoring. A divergence in the risk-sharing region generates information asymmetries, which diminish the principal's capacity to oversee agent behaviour. The apparent or real change in risk-sharing makes it fundamentally difficult for the principal and agent to negotiate an optimal contract. Positivist agency theory focuses on vital governing systems, such as executive compensation and governance structures, that restrict agents' self-serving behaviour (Eisenhardt & Eisenhardt, 2018). These processes should offer an appropriate alignment of the aims and objectives of principals and agents. Overall, the positivist perspective posits that institutional actors, including the governing board, may exert significant pressure on management to implement adequate internal controls in line with the standards, values, and expectations of the wider community, thereby legitimizing the operations of their organizations.

Given the aforementioned debate and the necessity to defend the interests of all stakeholders, corporate leaders have implemented several mechanisms, notably the internal control system. COSO outlines five essential components for examining internal controls (Adegboyegun, et.al, 2020; Anh, Tran Thi, Quang, & Thi, 2020; Chan, Chen, & Liu, 2021; COSO, 2013; Shabri, Saad, & Bakar, 2016). This framework highlights the need for an effective internal control environment that must be integrated into an institution's architecture. Using the agency theory of corporate governance, this study investigates the link between the DT-SACCOs performance and internal control environment in Kenya.

Hypotheses Development

Internal control environment components and financial performance

Internal control is by far the most commonly used term to describe an organization's techniques to attain its goals. This is regarded as the foundation of corporate governance. The control environment, as defined by COSO (2013), comprises the norms, procedures, and frameworks that establish the groundwork for executing internal control throughout the enterprise. The significance of internal control and the anticipated standards at all echelons of the company are instituted by the board of directors and senior management,

thereby establishing the tone. The control environment is a critical component of an entity's internal control system. It serves as the foundation for building and operating an effective internal control system in an organization that aims to achieve strategic objectives, provide reliable financial reporting to stakeholders, operate efficiently and effectively, comply with applicable laws and regulations, and safeguard assets (IIA 2011).

Integrity and ethical values and firm performance

IEV refer to the qualities of honesty and strong moral principles (Ferrell, Fraedrich, & Ferrell, 2011). They are produced by an entity's ethical and behavioural standards and are considered as an organization's culture (Elçi, Kitapçı, & Ertürk, 2007). Ethical values encourage management and employees to work in the best interests of the company, which is expected to increase its profitability (Engelbrecht et al., 2017; Susan et al., 2018) by mitigating conflicts of self-interest. Integrity-based ethics management combines legal considerations with managerial accountability for ethical conduct.

IEV are assessed in terms of whether management exhibits character, integrity, and ethical values through its attitudes and actions. Superior integrity and ethical principles, especially among senior management, are reinforced and serve as a benchmark for the organization's behavior and financial reporting (COSO, 2013). According to SASRA (2021), in order to emphasize the importance of IEV within microfinance, management should: i) set the tone by example, demonstrating integrity and practising ethical behavior consistently; ii) communicate to all the staff that the same behavior is expected of them and uphold each staff against high ethical and professional standards; and iii) minimize the incentives and temptations that may lead to dishonest behavior and illegal or unethical acts. Adegboyegun et al. (2020), Al-Thuneibat et al. (2015), and Anh et al. (2020) support the notion of the integrity hypothesis, which asserts that leaders with integrity can foster a culture of integrity within a corporation.

According to Susan et al. (2020), integrity is positively associated with firm performance because of: i) its positive impact on employees' trust in their leaders, which influences their work engagement, job satisfaction, and commitment, which may increase employee and organization performance (Engelbrecht et al., 2017); ii) firms with leaders viewed as fair, objective, and incorruptible are more likely to recruit, retain, and advance skilled and talented personnel who create competitive advantage and increase firm performance (Elenkov, Judge, & Wright, 2005); and iii) trust in the integrity of leaders may diminish organizational politics and deviant behaviour, which enhances firm performance by eliminating distrust, disconnection, and deviant behaviour (Avey, Palanski, Walumbwa, Walumbwa, & Avey, 2011; Kacmar et al., 2013)

Recent studies have produced mixed findings regarding the relationship between ethical values and financial performance. For example, Wei and Chen (2021) found a direct link between CSR and financial performance, with ethical values identified as an important component of CSR. Bhattacharya and Dey (2022) also found a positive influence of corporate ethical values on financial performance among Indian firms. Similarly, Goyal and Joshi (2022) found a favorable association between CSR and financial performance, with ethical values highlighted as a key factor driving this relationship. Lee and Hong (2022) found a positive association between ethical values and financial performance among South Korean firms, suggesting that firms with strong ethical values may be better equipped to navigate uncertain and turbulent business environments. Additionally, Fernandes et al. (2021) found that the adoption of sustainable and responsible business practices, including ethical values, positively impacted financial performance among Portuguese firms.

Empirical studies investigating the impact of IEV on financial performance yield varied and inconclusive findings (Berrone et al., 2007; Donker & Poff, 2008; Graham et al., n.d.; Guiso et al., 2013; Mohter & Fernando, 2020; R. Saha et al., 2020; Tetteh et al., 2022; Tuan Ibrahim et al., 2020). While some studies

report a positive association, such as Donker and Poff (2008) and Guiso et al. (2013), others find no association, like Berrone et al. (2007), or an insignificant association, as in the case of Mbuva et al. (2018) in Kenya. Based on mixed evidence from previous theoretical and empirical literature, we hypothesize the following:

H1: Integrity and ethical values are positively associated with firm performance

Commitment to Competence and firm performance

Competence refers to the knowledge and abilities required for an individual's work. Evaluating competence levels and transforming them into necessary skills and knowledge is called commitment to competence (COSO, 2013; Rubino et al., 2017). It means having the skills and knowledge necessary to ensure orderly, ethical, economic, efficient, and effective performance while recognizing individual internal control duties. Managers and staff should understand the importance of designing, implementing, and maintaining excellent internal controls to achieve general internal control goals and the entity's purpose (INTOSAI, 2016). The behavior agency perspective suggests that an appropriately motivated competent agent can ensure optimal performance (Pratt & Gore, 2015; Pratt & Zeckhauser, 1985).

Theoretically, personnel competency is the primary determinant of corporate success (Kaur, Shri, & Mital, 2018; Škrinjari?, 2022). Numerous studies have thus examined the effect of different personnel competencies, such as technical, marketing, intellectual, emotional, social, and integrative abilities, in enhancing organizational performance (Sabuhari et al., 2020; Škrinjari?, 2022; van Esch, Wei, & Chiang, 2018). However, competent staff do not guarantee excellent performance without a competency management system (Ariani, 2022). Several researchers argue that improving employee competencies is critical for organizational success, leading to improved employee functioning, increased efficiency, establishment of crucial firm competencies, and enhanced organizational performance (. Kaur & Kaur, 2018; Nana & Otoo, 2019; van Esch et al., 2018). For example, Van Esch, Wei, & Chiang (2018) found that high-performing HR practices are linked to firm performance through employees' competencies, based on their study of 189 firms in mainland China. By contrast, Wijaya & Irianto (2018) reported that managerial competence negatively impacts firm performance with weak ties for state-owned enterprises in Indonesia, while Salman et al. (2020) found that self-competence had an insignificant and adverse effect on firm performance. Using a sample of 223 small and medium-sized enterprise (SME) projects in Machakos County, Kenya, Mbuva et al. (2018) found no correlation between commitment to job competency values and financial performance. Given the above discussion, the following hypothesis is proposed:

H2: Commitment to competence is positively associated with firm performance

Management Philosophy and operating style and firm performance

MPOS include management's approach to taking and managing business risks and management's attitudes and behaviours regarding financial reporting (COSO, 2003). Management philosophy is a key internal governance tool for achieving corporate objectives and regulating management operations, particularly auditing, financial reporting, internal control, and risk management (Saha and Mondal, 2015; van Daelen and Van der Elst, 2010; Zengin-Karaibrahimoglu et al., 2021).

Senior management philosophy and operational styles may be influenced by an active and independent board of directors. According to Zengin-Karaibrahimoglu et al. (2021), the control environment includes management conduct as reflected in managerial philosophies and operational styles. Hence, the agency viewpoint suggests two contractual approaches for reconciling principals' (owners) and agents' (managers') interests. These include direct agent monitoring and incentives to align agent interests with the principals (Flood, 2015). Managerial conduct refers to how members of the management of a company organization

act while fulfilling their obligations, regulations and compliance Anh et al., (2020), as affected by their personal beliefs and ethics. Management behaviour has been argued to have a direct impact on a firm's operational performance (Zengin-Karaibrahimoglu et al., 2021).

Operating styles are management strategies for planning, organizing, leading, and controlling an organization. Several distinct management styles exist, including democratic, autocratic, persuasive, paternal, and laissez-fair. Management operating style is a functional representation of corporate governance (Haque, Fernando, & Caputi, 2019; Maak, Pless, & Voegtlin, 2016; Rae et al., 2017), as it influences operation and sustainability (Bruwer et al., 2018; Hassan, 2020; Opoku, Ahmed, & Cruickshank, 2015).

Previous empirical studies explored the relationship between management philosophy and firm performance (Bruwer et al., 2018; Huarng & Chen, 2002; Ismail, et.al., 2021; Kinyua et al., 2015; and Mbuva et al., 2018) with mixed results. For example, Ismail et al. (2021) report a statistically positive moderating effect on the relationship between selective hiring and firm performance in a sample of 372 managers in Nigerian firms. This result signifies that management philosophies positively fortify the effect of selective hiring on firm performance. By contrast, using a sample of 100 South African SMMEs in the fast-moving consumer goods industry, Bruwer et al. (2018) found no statistically significant relationships between the general management skills of SMMEs and the purported reputational sustainability (suppliers and competitors) of their corresponding business enterprises. Based on mixed evidence from previous theoretical and empirical literature, we hypothesize the following:

H3: Management philosophy and operating style are positively associated with firm performance

Organizational Structure and firm performance

Organizational structures are a critical internal governance method for controlling management activities, particularly regarding auditing communication, financial reporting, internal control, and risk management (Boubakri, 2011; Deliu, 2020). An entity's organizational structure offers the foundation for planning, executing, controlling, and monitoring entity-wide operations. An organization's structure relies on its size and activity, as it specifies responsibilities and authority (COSO, 2003; Rubino et al., 2017; Wamukota et al., 2018) by serving as a mechanism for implementing internal control activities (Wang, 2009). Creating a meaningful organizational structure involves examining the power, responsibility, and reporting lines.

Organizations that are highly integrated both internally and externally are more likely to conduct regular performance evaluations than those that are less integrated. This is because they have more frequent interactions with external partners, which provide them with regular feedback. Moreover, such organizations are better positioned to identify customer needs as they have greater exposure to them. COSO (2013b) states that an organization's objectives, internal control components, and organizational structure are interrelated.

Extensive empirical research on the impact of organizational structure on performance (Ali, Malik, Ahsan, & Kathia, 2017; Ezejiofor & Ezekwesili, 2021; Hao, Kasper, & Muehlbacher, 2012; Kakande, 2020; Njiru & Nyamute, 2018; Wamukota et al., 2018) produces mixed findings. For instance, Hao et al. (2012) report an indirect and direct relationship between organizational structure and performance by examining their influence on organizational learning and innovation based on evidence from a sample of approximately 90 Austrian and 71 Chinese samples. In contrast, using a sample of South African construction companies, Oyewobi, Windapo, Cattell, & Rotimi (2013) found that organizational structure has a moderating and explanatory influence on performance via strategies. Nonetheless, this does not have a direct effect on the performance. Awino (2015) reported that their structure does not positively influence large manufacturing companies' organizational performance in Kenya. Given the findings of prior studies, the following hypothesis is postulated.

H4: Organizational structure is positively associated with performance of cooperatives

Figure 1 shows the hypothesized associations between internal control environment and performance.

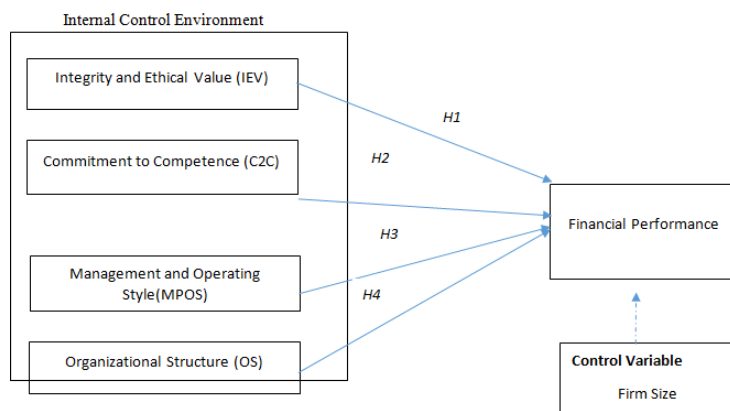


Fig 1: Conceptual framework

RESEARCH METHODOLOGY

3.1. Survey setting and data collection

This study used a cross-sectional research design. Primary data for this study were collected through a mail survey using a structured questionnaire. Questionnaires are most often employed in survey scenarios when the goal is to gather data from a large number of individuals because they allow respondents to think independently (Rowley, 2014). The questionnaire and the design and development of the measuring items were constructed following the criteria often discussed in previous research. Based on a thorough examination of the relevant literature, the elements of the COSO integrated framework were used to develop the independent variables, resulting in 32 items addressing the four dimensions of internal control environment and ten constructs addressing financial performance (Ibrahim et al., 2017; Kabuye et al., 2019; Tetteh et al., 2022).

Thornhill's (2018) approach was used to determine the content validity of the measures used in this study. In-depth interviews with four chief internal auditors in Kenya were conducted to gather their perspectives on the internal control environment. The survey questionnaire was then amended with the help of academic specialists and pre-tested with seven business professionals to ensure it was informative, concise, and well-structured. To increase the external validity and generalizability of our survey results, we employed specific criteria to select SACCOs from various clusters of membership in Kenya. The selected SACCOs had to be licensed as DT-SACCOs, have a minimum core capital of KES 10 million, and have been continuously operating for at least three years. SACCOs that did not meet these criteria were excluded from the sample frame as they were likely to lack the necessary resources to invest in robust internal control systems and applications. Survey participants were specifically chosen to be senior and executive managers, or mid-level managers with a comprehensive understanding of the internal control environment, following the criteria detailed in the survey cover letter. Respondents who did not meet these requirements were excluded, similar to prior research (Kabuye et al., 2019; Kinyua et al., 2015; Tetteh et al., 2022).

The sample frame was obtained from the SASRA which contained 360 licensed SACCOs. After eliminating SACCOs that did not fulfil the selection criteria, we purposively selected 175 DT-SACCOs from this database. Following two waves of data collection between September and December 2022 and one

reminder, 124 questionnaires were returned, 110 of which were usable, giving an effective response rate of 88.7%. Owing to missing values and double and improper respondents, the remaining 14 surveys were eliminated.

We employed the method introduced by Armstrong and Overton (1977) to investigate the potential presence of non-response bias. The survey responses of early responders were compared with those of late respondents, and no statistically significant differences were identified ($p > 0.05$). Furthermore, because of the relatively high response rate of 62.8 per cent, respondent SACCOs were more likely to offer a good representation of the overall sample (Toepoel & Schonlau, 2017).

Measurement of the variables

This study used a five-point Likert scale to evaluate the main and control variables. Previous research in the internal control literature has also used this scale, which has yielded satisfactory results. It was chosen due to its appropriateness for achieving higher mean scores, reliability, clarity, and improving response rate and quality (Aydiner, Tatoglu, Bayraktar, & Zaim, 2019; Dawes, 2008; Krosnick & Fabrigar, 1997; Madawaki, Ahmi, & Ahmad, 2022).

Main constructs

Four constructs were used to assess the model's internal control environment. Following the existing literature on internal control, these were recognized as IEV, C2C, MPOS and OS. The IEV consists of several items that were taken from earlier studies conducted by Ibrahim et al. (2017), Koutoupis and Pappa (2015, 2018), Rae et al. (2017), and Wanjala and Riitho (2020). The items considered in promoting an ethical organizational culture include adherence to ethical values, board commitment, implementation of a code of conduct, whistleblower policy, continual compliance procedures, tone at the top, ethical business conduct guidelines, conflicts of interest, discussion of ethics with new employees, and alignment of compensation with ethical values.

The components of the C2C were selected from previous research conducted by Asree, Zain, and Razalli (2010), Bachmid (2018), COSO (2003), Halim et al. (2019), Hastuti et al. (2021), Schandl and Foster (2019), and The Institute of Internal Auditors (2011). These components include: ensuring personnel possess the necessary skills and training for their assigned tasks, providing cross-training to enable personnel to understand the impact of their duties on other company areas, ensuring management possesses broad functional experience, providing personnel access to relevant training programs, using formal job descriptions or other methods to define job tasks, and maintaining adequate staffing levels to perform tasks effectively.

The MPOS construct items were derived from existing literature (Channar, 2015; COSO, 2003; Schandl & Foster, 2019; Shabri et al., 2016; The Institute of Internal Auditors, 2011). analyzing risks, monitoring turnover, maintaining contact with employees, emphasizing appropriate behavior, adopting accounting policies that reflect economic realities, and reviewing audit recommendations to take corrective action as necessary. These dimensions aim to promote a sound control environment and commitment to ethical values.

The OS of a company should be clearly defined in organizational charts, job descriptions, and reporting lines to ensure its health and effectiveness. The scale for measuring this construct was drawn from existing literature, including sources such as COSO (2003, 2013), Kinyua et al. (2015), Rae et al. (2017), and Tetteh et al. (2020). The OS construct includes various items such as ensuring executives understand their responsibilities and authority in business activities, establishing appropriate reporting lines based on the company's size and activities, facilitating timely and reliable information flow, segregating incompatible duties, assigning responsibilities and delegating authority, and formalizing policies and procedures for major

company operations.

The firm performance items were adapted from the extant literature (Ibrahim et al., 2017; Kabuye et al., 2019; Kinyua et al., 2015; Tetteh et al., 2020). These include “market share,” “asset base,” “total deposits,” “gross loans,” “return on investment,” “administrative expense,” “comprehensive income,” “customer loyalty,” “staff cost,” and “share capital.”

Control Variables

Consistent with previous studies (Alabdullah, 2021; Aydiner et al., 2019; Tetteh et al., 2020), the effects of firm-specific factors on financial performance were addressed by controlling for the effect of organizational size.

Organization size (SIZE) was measured based on the total asset size. DT-SACCOs can be broadly classified into three categories: large, medium, and small tiers. Large-tiered DT-SACCOs included those whose total assets were more than Kshs 5 billion, medium-tiered DT-SACCOs whose total assets were between Kshs 1 billion and Kshs 5 billion, and small-tiered DT-SACCOs whose total assets were below the Kshs 1 billion thresholds. The large-tiered group included 21 DT-SACCOs, the medium-sized group included 36 DT-SACCOs, and the small-tiered group consisted of DT-SACCOs. This definition is consistent with Kenyan Sacco Societies Regulatory Authority peer grouping. Peer grouping is critical for enabling the authority to supervise the risk assessment of DT-SACCOs and their relative degree of compliance with required prudential standards based on their similarities or commonalities. (SASRA, 2021).

Common Method Bias (CMB)

The possibility of CMB was also tested using a full collinearity assessment approach to determine its impact on structural results. Common method bias is the implicit social desirability inherent in responding to questionnaire questions in a specific manner, leading indicators to share a certain level of common variation (Kock, 2015). By inflating or deflating the variance, CMB may lead to incorrect inferences regarding the connections between variables. The exogenous and endogenous variables were assessed for collinearity using VIF values, and VIF values greater than five did not exclusively indicate collinearity issues. As reported in Table 4, all VIF values were < 5 , so CMB was ruled out (Hair et al., 2021; Kock & Lynn, 2012).

Data analysis

Structural equation modelling using variance-based approaches is a fitting method for evaluating the impacts of complex conceptual models and higher-order constructs (Chin, 1998; Hair et al., 2017; Henseler, Ringle, & Sarstedt, 2015). PLS-SEM was used to estimate the cause-effect relationships between latent variables in this study. This approach is suitable for modeling complex relationships and has been widely used in social sciences. Due to the sample size of more than 100 participants ($n = 110$), the PLS-SEM technique through SmartPLS 3.3 was deemed appropriate for testing the causal-effect relationships in the proposed study model. This approach necessitates minimal assumptions concerning the sample size, normality of data and residual distributions (Chin, 1998; Hair, et al., 2021; Henseler et al., 2015).

The data analysis phase involved descriptive statistics, a measurement assessment model, and a structural assessment model. To establish construct reliability and validity, the measurement model assessment was conducted. Confirmatory factor analysis was utilized to validate the measurement models.

Model construct reliability and validity were assessed using Cronbach's alpha, composite reliability values, convergent and discriminant validity. Additionally, the potential for common method bias (CMB) was explored to validate the model. Finally, hypotheses were tested using a path coefficient test and a structural

assessment model. The subsequent section provides a comprehensive explanation of the data analysis phase.

RESULTS AND DISCUSSION

4.1. Descriptive Results

Table 1 shows the descriptive information for the study variables. The minimum and maximum scores for each variable are presented along with the mean and standard deviation. Financial performance (FP) had the highest mean score (4.34), followed by IEV (4.29). C2C and OS had similar mean scores of 4.24, whereas MPOS had a mean score of 4.22. The organization size variable had the lowest mean score (4.18). The standard deviation values for all variables were relatively low, indicating that the responses were clustered around the mean score, and the mean values for all variables range from 4.18 to 4.34, indicating that the respondents generally perceived their organizations to have high levels of IEV, C2C, MPOS, OS and FP. The standard deviations range from 0.74 to 0.83, indicating that the responses for each variable are relatively dispersed around their mean values. This suggests that there is some degree of variability in respondents' perceptions of the variables. The results indicate that the mean values for all six variables are relatively high, indicating that the organizations surveyed place a high importance on IEV, C2C, MPOS, OS and FP. The relatively low standard deviation values suggest that the responses were consistent across the surveyed organizations.

Table 1: Descriptive Statistics

Variables	Min	Max	Mean	Std. dev.
Integrity and ethical values	1.50	5.00	4.29	0.83
Commitment to competence	1.38	5.00	4.24	0.79
Management philosophy and operating style	1.63	5.00	4.22	0.74
Organization structure	1.00	5.00	4.24	0.81
Financial performance	1.50	5.00	4.34	0.79
Organization Size	1.14	5.00	4.18	0.76

Measurement model assessment

The measurement model assessment evaluated construct and indicator reliability, as well as convergent and discriminant validity. To assess the internal consistency of the constructs, Cronbach's alpha (CA) and composite reliability (CR) were used. CR is a contemporary approach to assess the consistency of construct items in their measurement of the constructs (Hair et al., 2021). A CR value of more than 0.7 is considered adequate for construct reliability (Hair et al., 2021). The results of the measurement model are presented in Table 3, indicating CR values exceeding 0.7, suggesting sufficient construct reliability as the internal consistency of each construct was reasonably reliable.

The study assessed the convergent validity of the constructs using the average variance extracted (AVE) and factor loading. The AVE values of all constructs exceeded the recommended threshold of 0.5, indicating good convergent validity. The factor loading of all constructs was also good, falling within the range of very good to excellent factor loadings. This provides a reliable measure for the constructs. Hence, the measures used in the study were deemed reliable and valid for further analysis. The results of this analysis instill confidence in the study's measures, indicating that the constructs were well-defined and accurately measured. Table 2 and Figure 2 present the results of the measurement model.

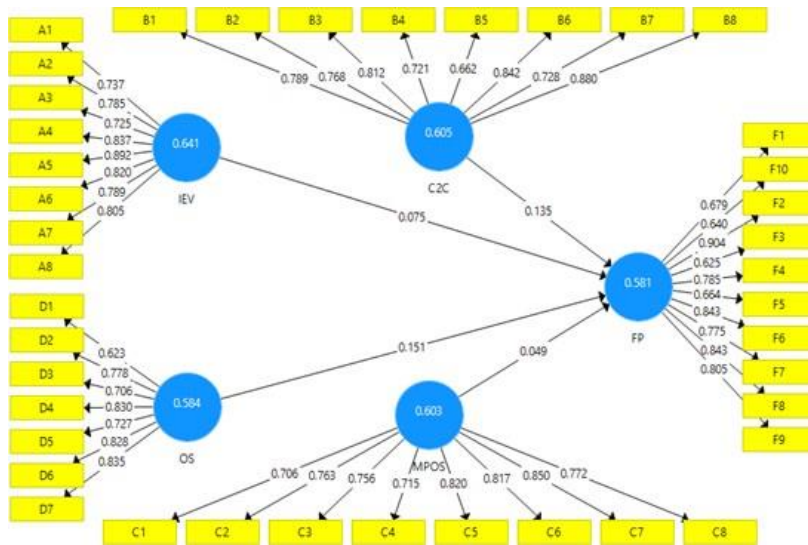


Figure 2. Measurement Model.

Source: Results from Smart PLS software 3.3.1

To ensure that each latent construct in the study was different from the others, discriminant validity was measured. The degree to which a particular latent construct differed from other latent variables was estimated using the Heterotrait-Monotrait Ratio (HTMT) composite reliability since the Fornell-Larcker criterion has been criticized in recent literature. The HTMT value should not exceed 0.85 to maintain discriminant validity. Although some of the HTMT values exceeded the criteria, all other model fitness criteria were met, and the measurement model was of good quality (presented in Table 3). Discriminant validity was established for all constructs, as their loadings were found to be higher than those of other constructs. Multicollinearity was absent, as indicated by the VIF values below 5. Full collinearity diagnostics were conducted on all independent variables in the study, and a VIF score of less than five confirmed that the single-source data was free of bias.

Table 2 displays the CR, CA, and AVE values for all blocks, which were found to be positive. This confirms that the measurement model has high quality in terms of predictive validity, as indicated by the communality values (H²)

Table 2: Measurement Model Assessment

	CA	CR	AVE	HTMT					H ²	FL
				C2C	FP	IEV	MPOS	OS		
C2C	0.91	0.92	0.61	–					0.49	>.66
FP	0.92	0.93	0.58	0.513	–				0.48	>.62
IEV	0.92	0.93	0.64	0.956	0.336	–			0.52	>.72
MPOS	0.91	0.92	0.60	0.463	0.819	0.381	–		0.48	>.70
OS	0.88	0.91	0.58	0.485	0.865	0.387	0.987	–	0.44	>.62

Note: IEV: integrity and ethical values; C2C: commitment to competence; MPOS: management philosophy and operating style; OS: Organizational structure; FP: financial performance; CA: Cronbach’s alpha; CR: composite reliability; AVE: average variance extracted; FL: Fornell–Larcker; H²: values of communality; HTMT: Heterotrait–Monotrait Ratio; VIF: variance inflation factors.

Source: Author’s data analysis

Structural Model Assessment

The structural assessment model assessed the proposed hypotheses using a bootstrapping procedure with 500 subsamples in 110 cases (Hair et al. 2021). The structural model assessment included (i) examining the potential collinearity among constructs; (ii) measuring the model’s ability to predict each endogenous set using cross-validated redundancy index (CVRI: Stone-Geisser’s (Q^2), coefficient of determination (R^2), and goodness of fit (GOF).; (iii) assessment of effect size F^2 ; and (iv) significance of the path coefficients.

Collinearity Assessment

According to Hair et al. (2021), multicollinearity can lead to inflated bootstrap standard type II errors or result in the failure to detect an effect. To evaluate the level of collinearity between the endogenous construct and the preceding constructs, the variance inflation factor (VIF) was calculated. A VIF value of five or more is considered indicative of pathological collinearity (Hair et al., 2021). The structural model is deemed a good fit as per Table 4, which reveals no collinearity issues among the latent variables.

Predictive Power

To evaluate the predictive power of the structural model, several measures were used, including the coefficient of determination R^2 , Stone-Geisser Q^2 , and goodness of fit (GOF) criteria. The coefficient of determination assesses the prediction accuracy of a model and the overall effect size, and $R^2 \geq 0.1$ is recommended (Suhan et al., 2018). The results in Table 4 are more significant than the minimum threshold $R^2 \geq 0.1$, with integrity and ethical values at $R^2 = 0.8$, commitment to competence at $R^2=0.823$, management philosophy and operating style and satisfaction at $R^2 = 0.791$); organizational structure at $R^2=0.815$, and financial performance at $R^2=0.677$; therefore, our model has substantial predictive power for R^2 . A Q^2 value greater than zero ($Q^2 > 0$) for an endogenous latent variable indicates the predictive relevance of the PLS path model for the construct, as per the rule of thumb (Hair et al., 2021). The predictive relevance of the constructs was confirmed by the Q^2 values greater than zero, as presented in Table 3, which displayed the results of the structural model.

The GOF was evaluated by integrating the effect size and convergent validity, as suggested by Tenenhaus et al. (2005), with a range of acceptability from 0 to 1. The results in Table 3 indicate that the GOF values are acceptable, confirming the overall fitness of our structural model.

Effect Size f^2 .

The impact of individual constructs on the endogenous latent variables was measured using the effect size f^2 , as suggested by Suhan et al. (2018). Cohen (1988) proposed effect size values of 0.02, 0.15, and 0.35 as indicating small, medium, and large effect sizes. To estimate the effect size of each independent variable, the R^2 value, p-values, t-values, and bootstrap confidence intervals were computed. The study also analyzed F^2 , as recommended by Cohen (1988), which showed that the changes in effect size were small to medium (0.050 – 0.151). Therefore, it can be concluded that all variables significantly contributed to the overall explanation of financial performance, as presented in Table 3 and 4.

Table 3: Structural Model Assessment

Variables	Q^2	R^2	AVE	GOF	Maximum VIF
IEV	0.493	0.8	0.641	0.716	4.718
C2C	0.483	0.823	0.605	0.706	4.975
MPOS	0.466	0.791	0.603	0.691	4.999
OS	0.456	0.815	0.584	0.690	4.963
FP	0.363	0.677	0.581	0.627	4.461

Note: IEV: integrity and ethical values; C2C: commitment to competence; MPOS: management philosophy and operating style; OS: Organizational structure; FP: financial performance; Q^2 : stone–Geisser’s value; R^2 : coefficient of determination; AVE: average variance extracted; GOF: goodness of fit (GOF); VIF: variance inflation factors.

Path Coefficients, Significance and Relevance

Bootstrapping was used to create subsamples from the original dataset by randomly selecting observations with replacement, while keeping the same sample size as the initial sample, which had 110 cases. To enhance the robustness of the findings, a considerable number of sub-samples were generated. The normalized path coefficients were evaluated for significance through a bootstrap resampling process of 5000 samples, which was considered optimal by Hair et al. (2021). The validity of the measures was assessed by evaluating the significance of the path coefficients, their p-values, and the significance level. The standardized path coefficients presented in Figure 3 were found to be significant at the 5% level, which was further supported by the results presented in Table 4.

Table 4: Hypotheses Testing Results

Path	β	t	p	R^2	F^2	Result
IEV à FP	-0.317	2.086	0.048	0.677	0.077	H1: Not Supported
C2C à FP	0.441	2.140	0.036		0.137	H2: Supported
MPOS à FP	0.267	2.005	0.041		0.050	H2: Supported
OS à FP	0.466	3.025	0.002		0.151	H2: Supported

Source: Results from SmartPLS software 3.3.3.

All hypotheses were based on a direct effect regression. Table 5 shows that the relationship between IEV and FP is negative and significant ($\beta = -0.317$, $t = 2.086$, $p = 0.048$); hence, Hypothesis 1 is not supported. Table 5 also shows that C2C positively and significantly impacts FP ($\beta = 0.441$, $t = 2.140$, $p = 0.036$), supporting Hypothesis 2.

Similarly, it can also be noted from Table 5 that MPOS has a significant and favourable effect on FP ($\beta = 0.267$, $t = 2.005$, $p = 0.041$), so we can conclude that Hypothesis 3 is also supported. Organizational structure (OS) also has a positive and significant impact on financial performance ($\beta = 0.466$, $t = 3.025$, $p = 0.002$), confirming Hypothesis 4 (Table 5). IEV, C2C, MPOS, and OS collectively explain a variance of 67.7% in financial performance. Following Cohen (1988), we also analyzed F^2 , which showed that the changes in effect size were small to medium (0.05 – 15.1), so all variables had significant contributions (effects) to the overall explanation of financial performance.

The findings regarding the influence of control variables on financial performance are in line with previous literature. The positive and significant coefficient of organization size indicates that it is important in determining DT-SACCOs financial performance. The factor loadings and corresponding p-values of the outer model, as well as the path coefficients and p-values of the inner model, are presented in Figures 2 and 3, respectively. The thickness of each arrow in Figure 2 represents the absolute value of a path, and all links between constructs are statistically significant at a 95% confidence level, thereby supporting the initial hypotheses.

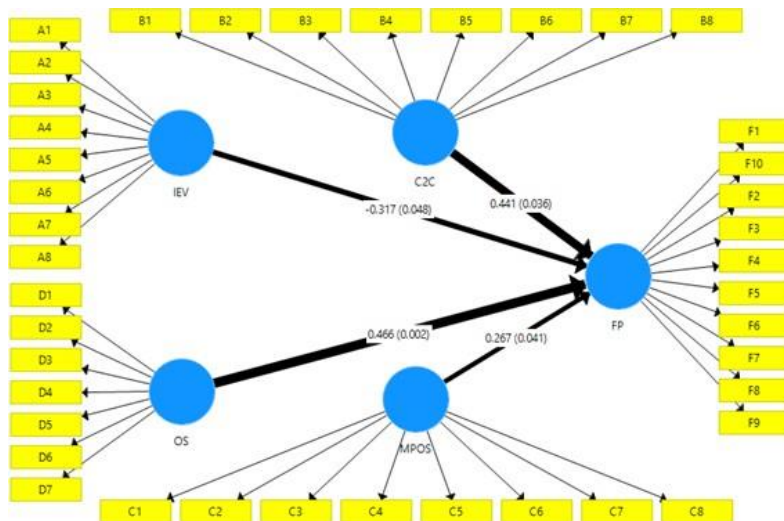


Figure 3. Model results

Source: Results from SmartPLS software 3.3.3.

DISCUSSION OF RESULTS

The relationship between firm performance and internal control environment has been extensively studied in the last two decades. This study responds to the need to extend agency theory by using path analysis to investigate the collective influence of IEV, C2C, MPOS, and OS on DT-SACCOs financial performance.

The study focuses on DT-SACCOs in Kenya, as most studies lump SACCOs under financial institutions, ignoring subsector heterogeneity. The first objective was to examine the influence of IEV on the FP of DT-SACCOs in Kenya. The findings show that the influence of IEV on financial performance was negative and significant, contrary to the assumption that higher integrity and ethical values lead to improved financial performance. This inverse relationship may arise from opportunistic agents operating under a bonus system engaging in income smoothing and earnings management, which damages the long-term value and returns of the organization. The findings of this study are contrary to previous research that suggests a substantial positive association between IEV and financial performance.

The influence of C2C on the FP of DT-SACCOs in Kenya was also investigated in this study. The results confirmed the assumption that the higher the level of commitment to competence, the higher the financial performance. Thus, the study's results are consistent with prior research confirming a substantial and favorable relationship between C2C and financial performance.

The study's third objective was to examine the relationship between MPOS and FP. The results showed a positive and significant relationship, indicating that management's attitudes and actions regarding the organization's goals, techniques to reduce business risks, and attitudes toward financial reporting internal controls collectively influence DT-SACCO performance in Kenya. In the context of DT-SACCOs in Kenya, the study's findings suggest that the management engages in risk analysis and evaluates potential benefits of business ventures. They also monitor turnover in management and supervisory personnel and evaluate reasons for significant turnover. Senior management maintains regular contact with operating personnel and emphasizes appropriate behavior. Additionally, the management demonstrates a commitment to maintaining a strong control environment and ethical values, exemplified through attitudes and actions such as appropriate resolution of disputes related to accounting treatments in financial reporting.

The study also examined the influence of OS on the FP of DT-SACCOs in Kenya. The results showed that the relationship between OS and FP was not significant. This finding contradicts past research showing a favorable association between organizational structure and financial performance. For instance, Binks and Vale (1993) found that organizational structure affects the performance of firms positively. Other studies have also found that organizational structure can affect performance by enhancing innovation, improving communication, and facilitating decision-making (Eisenhardt & Galunic, 2000; Hall, 2008). However, the current study's findings suggest that in the context of Kenya's DT-SACCOs, other factors such as commitment to competence and management philosophy and operating style have a more significant impact on financial performance than organizational structure.

Overall, the study's findings suggest that C2C and MPOS have a positive impact on the financial performance of DT-SACCOs in Kenya, while IEV and OS do not have a significant impact. These findings have important implications for DT-SACCOs in Kenya, as they suggest that efforts to improve financial performance should focus on developing a strong commitment to competence and adopting a sound management philosophy and operating style. Additionally, the findings highlight the need for DT-SACCOs to adopt effective internal control systems that are aligned with their specific needs and context. Future research can build on these findings by exploring the specific internal control systems and management practices that are most effective for improving the financial performance of DT-SACCOs in Kenya.

CONCLUSION AND IMPLICATIONS

In conclusion, this study provides evidence that the internal control environment is crucial in determining the financial performance of DT-SACCOs in Kenya. The findings suggest that a suitable internal control environment incorporating the COSO framework positively influences the financial performance. Additionally, the study found that commitment to competence, management philosophy, operating style, and organizational structure values positively impact financial performance, whereas integrity and ethical values negatively affect it. These results have significant theoretical and practical implications for SACCOs, regulatory agencies, and Kenyan policymakers. This study recommends that SACCOs invest in creating competence, capacity, integrity, and tacit competencies to obtain a competitive advantage with superior financial performance in local and global markets. This study recommends developing prudential guidelines and regulations for regulatory agencies to address the internal control risks associated with financial performance. Finally, policymakers should use these findings to develop internal audit policies that emphasize competencies, integrity, values, management philosophy, and organizational structure to improve financial outcomes of Kenyan SACCOs.

This study offers significant insights into the nexus between the financial performance and internal control environment of DT-SACCOs in Kenya. The findings highlight the importance of having a robust internal control environment, including C2C, MPOS and OS, to improve financial performance. However, this study also identifies the negative impact of IEV on financial performance, indicating the need for training and support on integrity and ethical related issues to develop technical skills and cultivate of a strong ethical culture to achieve long-term financial success. By investing in training and support for IEV, DT-SACCOs can ensure that their employees are equipped with the necessary skills and values to make ethical decisions and drive sustainable growth.

The implications of these findings are significant for Kenyan policy makers, regulators, and SACCOs. For example, the Central Bank of Kenya and the Sacco Societies Regulatory Authority can use the study results to develop prudential guidelines and regulations that address the risks associated with internal and management controls. SACCOs can also use these findings to enhance their internal control environments, including developing employee competencies, integrity training, and establishing ethics committees. This

study also has theoretical implications for agency theory and internal control research by extending the existing knowledge on internal control environment in an emerging market context. This study suggests that organizations in emerging markets should invest in creating competence, capacity, integrity, and tacit competencies to obtain competitive advantage and superior financial performance in local and global markets.

Overall, the findings of this study suggest that improving the internal control environment is critical for enhancing the financial performance of DT-SACCOs in Kenya, highlighting the need for ongoing efforts to develop and implement effective internal control systems.

LIMITATIONS AND FURTHER RESEARCH

This study used the PLS-SEM model to propose several new insights and crucial empirical findings in the internal control area. Nevertheless, care should be taken when interpreting the results because of the following limitations. First, the choice of Kenya as the survey location limited the generalizability of the study results. Although Kenya is a significantly rising market, its social, historical, and institutional factors may limit the generalizability of the results from a broader perspective. Future studies could explore the influence of the internal control environment on financial performance in developing and emerging countries by allowing comparisons thereby enhancing the generalizability of findings across different contexts and providing a more robust understanding of the topic.

Secondly, the relevance of these findings is likely significant for DT-SACCOs in Kenya, as only 110 out of the identified 175 DT-SACCOs were included in the study. Therefore, future research should consider larger sample sizes and potentially include authorized non-withdrawable deposit-taking SACCOs that proactively establish internal controls to provide more substantial evidence.

Third, the research relied on a single respondent from each organization; a similar study may be conducted with more than one respondent to better understand the behaviors of various persons and departments regarding internal control know-how and avoid CMB bias. A longitudinal approach may ascertain differences before and after the adoption of an internal control environment.

In conclusion, it is important to note that this study did not consider other variables such as the human resource policies and assignment of authority and responsibility that may affect the internal control environment and financial performance. Therefore, it is recommended that future research examines the impact of these variables and other internal control mechanisms, such as the mediating effect of information technology on the internal control environment on financial performance. Moreover, the PLS-SEM model utilized in this study can be improved through further research by inclusion of additional variables. Despite its limitations, this study offers a valuable starting point for future research in this field. The empirical investigation of the internal control environment in financial performance is crucial, as agency theory suggests.

Disclosure statement

The authors declare no potential conflicts of interest.

Funding Statement

This study was not supported by any grant.

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