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Effect of Adaptive Capacity on Innovation Performance among Deposit Taking Savings and Credit Cooperative Organizations in Kenya

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Abstract

This study investigates the effect of adaptive capacity on innovation performance among Deposit-Taking Savings and Credit Cooperative Organizations in Kenya. Using Dynamic Capabilities Theory, the study adopted an explanatory research design and focused on a population of 176 DT-SACCOs in Kenya. A total of 366 respondents was selected using simple random sampling from the relevant strata within the sampled DT-SACCOs. Primary data was collected using structured questionnaires. A multiple regression analysis was conducted, revealing that adaptive capacity accounts for 45.5% of the variation in innovation performance, with a significant positive relationship between the two. The study concludes that fostering adaptive capacity within DT-SACCOs is critical for enhancing innovation performance and ensuring their long-term sustainability. The study recommends that DT-SACCOs focus on strengthening their adaptive capacity through continuous training, increase investment in digital technologies, develop flexible strategic plans, and foster collaborations with fintech companies and regulatory bodies.

Keywords: *Adaptive Capacity, Innovation Performance, DT-SACCOs, Strategic Flexibility, Dynamic Capabilities, Financial Inclusion.*

1. Introduction

The dynamic and turbulent business environment presents significant challenges for Deposit-Taking Savings and Credit Cooperative Societies (DT-SACCOs) in Kenya, which play a pivotal role in the country's economic development. These institutions are critical in fostering financial inclusion and supporting local economies. However, despite their central role, many DT-SACCOs face considerable operational hurdles that hinder their ability to innovate and remain competitive. As the financial landscape evolves, driven by technological advancements and shifting market conditions, DT-SACCOs must adapt their strategies to maintain relevance and achieve sustainable growth (Clauss et al., 2019; Fachrunnisa et al., 2020).

Strategic flexibility, particularly adaptive capacity, is essential for DT-SACCOs to respond effectively to internal and external changes. Adaptive capacity refers to an organization's ability

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to adjust its strategies, operations, and resources to align with evolving market conditions, customer needs, and regulatory changes (Kobylińska & Kusev, 2019). For DT-SACCOs, the ability to quickly adapt to emerging trends, such as digital banking and fintech innovations, is vital for enhancing innovation performance (Yin et al., 2022). Research suggests that organizations with high adaptive capacity are better equipped to innovate, capitalize on opportunities, and remain competitive in fast-changing environments (Felipe et al., 2020). DT-SACCOs must develop mechanisms that allow them to anticipate shifts in the market, enabling them to respond proactively rather than reactively (Rialti et al., 2020).

In Kenya, DT-SACCOs have shown remarkable growth in terms of assets, deposits, and capital reserves, with total assets increasing by 9.8% from KSh 807.1 billion in 2021 to KSh 886.2 billion in 2022 (Kenya National Bureau of Statistics, 2023). Despite this growth, many SACCOs still struggle with poor innovation performance, which undermines their effectiveness in meeting the needs of their members. This discrepancy highlights the importance of adaptive capacity as a strategic flexibility driver, particularly in fostering an environment conducive to innovation. The study aims to investigate the effect of adaptive capacity on innovation performance within DT-SACCOs in Kenya, seeking to provide empirical insights into how improving adaptive capacity can enhance their ability to innovate and thrive in a competitive financial environment (Awino, 2021).

Moreover, while DT-SACCOs in Kenya face various challenges in adopting innovation, the broader impact of their adaptive capacity in navigating these challenges remains under-researched. This study will explore how adaptive capacity influences innovation performance by examining the ability of DT-SACCOs to leverage their internal resources, adjust their strategies to market changes, and embrace new technologies. By focusing on the role of adaptive capacity, the study will contribute to a deeper understanding of how strategic flexibility can be used as a tool for driving innovation and improving the performance of financial cooperatives in Kenya (Shukla et al., 2019).

1.1 Research Problem

Deposit-Taking Savings and Credit Cooperative Societies (DT-SACCOs) in Kenya are facing an innovation crisis that is hindering their ability to remain competitive and provide optimal services to their members. Despite their significant role in promoting financial inclusion and contributing to economic stability, these institutions struggle to adopt new technologies and develop innovative products that can address the evolving needs of their members. According to Tsuma et al. (2021), DT-SACCOs are finding it difficult to maintain their competitive edge against more technologically advanced financial institutions, which limits their overall performance potential. This innovation gap has resulted in a significant portion of the population being excluded from essential financial services, as highlighted by the SASRA Reports (2023). This gap emphasizes the urgent need for DT-SACCOs to improve their reach and service effectiveness.

The SASRA Report (2022) indicates that while DT-SACCOs control a substantial share of the financial sector's total assets—85.76%, or KSh 763.50 billion—their innovation performance continues to lag in crucial areas such as developing customer-centric financial products and integrating advanced digital solutions. Even though there has been a 9.8% increase in asset growth from KSh 807.1 billion in 2021 to KSh 886.2 billion in 2022, poor innovation adoption persists as a major barrier, preventing DT-SACCOs from addressing the financial needs of underserved populations. The failure to innovate threatens the long-term sustainability of these cooperatives, especially as they face increasing competition from other financial institutions that have swiftly adapted to new technologies and service models.

In response to these challenges, scholars and government agencies have made efforts to address the innovation gaps in DT-SACCOs. Researchers have explored how strategic flexibility, including factors such as adaptive capacity, resource allocation, and strategic planning, can enhance the innovation performance of DT-SACCOs. These studies have provided frameworks to help cooperative financial institutions better leverage their existing resources and strategic capabilities to drive innovation beyond merely technological adoption (Awino, 2021; Waribu, 2019). Moreover, regulatory bodies like SASRA have worked to strengthen operational frameworks for DT-SACCOs, pushing for enhanced digital integration and better governance practices. Government initiatives, such as the National Financial Inclusion Strategy (KNFIS), aim

to foster digital financial services, enabling DT-SACCOs to expand their offerings and better serve underserved populations.

Despite these efforts, significant research gaps remain, particularly regarding how adaptive capacity, a key element of strategic flexibility, directly impacts innovation performance in DT-SACCOs, especially within the Kenyan context. While past studies have examined innovation in the cooperative sector, few have specifically linked adaptive capacity to the adoption of innovative financial products and customer service models. This study seeks to address this gap by investigating how adaptive capacity enhances the innovation capabilities of DT-SACCOs in Kenya, focusing on how their ability to respond to market changes, customer needs, and technological advancements can improve their innovation performance. By exploring these issues, the study will provide insights into how DT-SACCOs can better harness their adaptive capacity to improve service offerings and foster greater inclusivity.

1.2 Research Objective

i. This study investigates the effect of adaptive capacity on innovation performance among Deposit-Taking Savings and Credit Cooperative Organizations in Kenya.

2. Literature Review

2.1 Theoretical Framework

The Dynamic Capabilities Theory (DCT), developed by Teece, Pisano, and Shuen (1997), is a highly relevant framework for understanding how organizations adapt and innovate in response to changes in the business environment. At its core, DCT emphasizes the importance of dynamic capabilities—the organization's ability to sense emerging opportunities and threats, seize them by taking action, and reconfigure internal resources to meet the changing demands of the market. This theory is especially pertinent for organizations like Deposit-Taking SACCOs (DT-SACCOs) in Kenya, which operate in a rapidly evolving financial landscape marked by technological advancements, regulatory changes, and shifting customer needs.

A central aspect of DCT is the concept of adaptive capacity, which refers to an organization's ability to adjust its strategies, operations, and resource allocation in response to both internal and external shifts. For DT-SACCOs, developing adaptive capacity is crucial for their innovation

performance, as it allows these cooperatives to be responsive to changes in market conditions, adopt new technologies, and develop products that meet the evolving needs of their members. By building and enhancing adaptive capacity, DT-SACCOs can increase their ability to innovate, which is essential for staying competitive and fulfilling their mandate to provide inclusive financial services.

According to Teece (2007), dynamic capabilities can be broken down into three key processes: sensing, seizing, and reconfiguring. Sensing involves identifying new opportunities or potential threats in the external environment, while seizing refers to taking proactive action to capitalize on these opportunities. Reconfiguring involves adjusting internal resources and capabilities to integrate new technologies or strategies that enable the organization to respond effectively to market changes. For DT-SACCOs, these processes are critical to fostering innovation. Their ability to sense technological advancements, shifting customer preferences, and evolving regulatory requirements enables them to seize opportunities for new product development, such as mobile banking solutions or tailored financial products. Furthermore, reconfiguring internal resources—like upgrading IT infrastructure or training staff—ensures that these innovations are successfully implemented.

Despite its strengths, DCT does present challenges, particularly when it comes to measuring dynamic capabilities. These capabilities are often intangible, embedded within organizational routines, and difficult to assess directly (Ambrosini & Bowman, 2009). For DT-SACCOs, especially smaller ones with limited resources, developing and leveraging dynamic capabilities may be a challenge, as they might not have the internal flexibility or the capacity to reconfigure resources in response to rapid changes. This can hinder their ability to innovate and adopt new technologies, placing them at a competitive disadvantage compared to larger, more resource-rich financial institutions.

Nevertheless, DCT provides a valuable lens through which to understand how DT-SACCOs can improve their innovation performance by enhancing their adaptive capacity. In the context of this study, the theory helps explain how DT-SACCOs can develop dynamic capabilities that enable them to respond effectively to the financial sector's challenges. These capabilities are essential not

only for identifying and capitalizing on new opportunities but also for adjusting their organizational structures and resource allocations to integrate these innovations. By focusing on adaptive capacity, this study aims to contribute to a deeper understanding of how strategic flexibility can enhance innovation within DT-SACCOs and ultimately improve their service delivery and operational efficiency.

Dynamic Capabilities Theory offers a comprehensive framework for understanding how organizations like DT-SACCOs can develop and leverage adaptive capacity to drive innovation. Through its focus on the processes of sensing, seizing, and reconfiguring, the theory provides critical insights into how DT-SACCOs can enhance their innovation performance by adapting to changing market conditions. As DT-SACCOs in Kenya face increasing competition and evolving regulatory environments, this theory helps explain how the ability to adapt to these changes can lead to better innovation outcomes, ultimately ensuring long-term sustainability and competitiveness in the cooperative financial sector.

2.2 Empirical Review

Adaptive capacity refers to an organization's ability to quickly adjust its strategies, operations, and products to meet changing market conditions, regulatory frameworks, and customer expectations. Ngatno (2019) explored the relationship between adaptive capacity and firm performance, noting that smaller firms with greater adaptability performed better, as they were more agile in responding to environmental changes. This suggested that for DT-SACCOs, especially those in the early stages of growth or in rural areas, adaptive capacity is critical in navigating market shifts and technological innovations. While adaptive capacity has been linked to firm performance in other sectors, there is limited research on its specific application within Kenyan DT-SACCOs. Most studies focus on larger, urban financial institutions. This study aimed to investigate how adaptive capacity in Kenyan DT-SACCOs influences their innovation performance, especially in response to regulatory changes and technological shifts that are particularly relevant in the cooperative sector.

Mweu and Mung'ara (2021) found a positive relationship between adaptive capability and the organizational performance of Kenyan tier-two commercial banks, emphasizing the importance of

being responsive to customer needs and market trends. For DT-SACCOs, maintaining strong adaptive capacity enables them to adjust to external disruptions, such as regulatory changes or technological innovations, which are common in the financial sector. This study's findings on commercial banks are not directly applicable to DT-SACCOs, as the latter face unique challenges related to membership-based governance, limited resources, and rural-based operations. Thus, the study focused on how adaptive capacity specifically influences innovation performance in DT-SACCOs in Kenya, considering these unique organizational characteristics.

However, adaptive capacity is not without its challenges. Rangaswamy and Chaudhary (2022) identified a potential "success trap" in firms that have succeeded in the past, where complacency can stifle future innovation. In the context of DT-SACCOs, those that have established a traditional business model may struggle to adapt to the digital transformation in the financial services sector, thus hindering innovation performance. Complacency in established DT-SACCOs, particularly in rural areas or those with long-standing traditional models, is underexplored. This study examined how historical success and traditional practices might lead to complacency and hinder innovation in Kenyan DT-SACCOs, which have to adapt to the digital transformation in the financial sector.

2.3 Conceptual Framework

The conceptual framework highlighted the connection between the dependent and the independent variables of the study. The dependent variable in this case was the innovation performance among DT-SACCOs in Kenya, independent variable was the adaptive capacity. Figure 1 showed the conceptual framework.

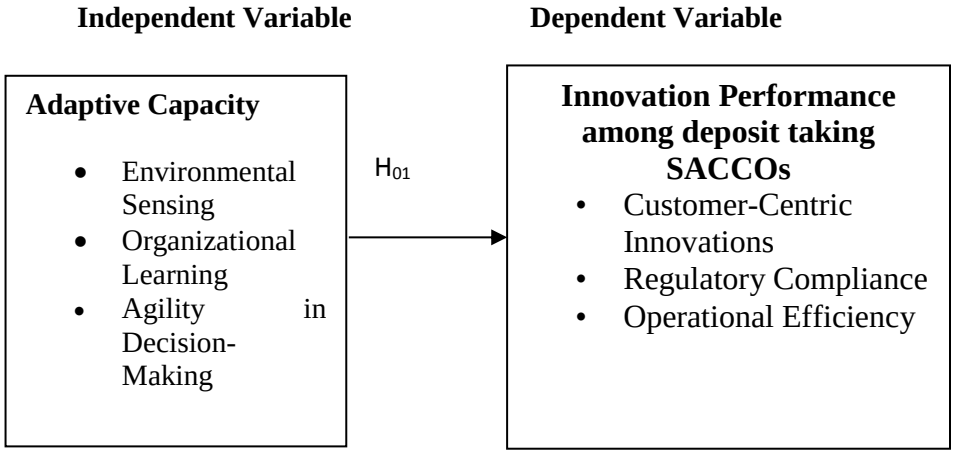

Figure 1: Conceptual Framework

3. Research Methodology

Positivism is an epistemological philosophy rooted in the belief that knowledge should be derived from observable and quantifiable facts. For this study, positivism was adopted as the research philosophy. This decision was driven by the nature of the research, which aimed to gather quantitative data through surveys and statistical analysis. For this study, an explanatory research design was chosen. The explanatory design was ideal for answering the "why" question, allowing the study to explore how these factors influence innovation performance and to what extent each factor contributes to the outcomes observed. By using this design, the study was able to establish causal links between the variables, providing a deeper understanding of the underlying mechanisms that drive innovation performance.

This study targeted 176 DT-SACCOs in Kenya. The unit of observation was managers of the DT-SACCOs including deputy CEOs, operations managers, and customer relations managers. The sample size was attained using Yamane (1967) simplified formula. Stratified random sampling was employed to ensure that all categories of the population are adequately represented in the sample. The DT-SACCOs were stratified based on the roles of the management team members to ensure each category is represented. From each of the 122 sampled DT-SACCOs, stratification ensured inclusion from each relevant stratum — deputy CEOs, operations managers, and customer relations managers. Simple random sampling was then used to select 3 respondents from each DT-SACCO, which ensures that each individual has an equal chance of being chosen. This method was preferred as it aided in mitigating sampling bias, thus providing a more representative cross-section of the population. The total number of questionnaires distributed were 366 (122 DT-SACCOs x 3 respondents per SACCO). This distribution ensures that there was a comprehensive gathering of insights across different management levels within the SACCOs, which was critical for obtaining nuanced understanding of the sector's dynamics.

Primary data was obtained using questionnaires which will be emailed to the respondents. Once the project was approved by the University academic panel, the researcher started the data collection process by obtaining an introduction letter from the university which was presented to

each respondent so as to be allowed to collect the necessary data from them. The drop and pick method was used in administering questionnaire.

Data that was collected from the field was filtered, sorted and cleaned in line with research objectives. The data was coded, and entered into and analyzed using statistics software (SPSS, Version 28.0). This study adopted both descriptive and inferential statistics. Descriptive statistics including frequencies, percentages, mean scores, and standard deviation was produced for all the quantitative data. The results were presented using tables. Inferential statistics was done using the multiple linear regression which shows the significance of each independent variable. Multiple linear regression is a statistical technique for quantifying the relationship between the independent variables and the dependent variable based on observations.

4. Results and Discussion of the Findings

4.1 Response Rate

A total of 366 respondents were targeted in this study, selected from a population of managers and staff within the Deposit-Taking Savings and Credit Cooperative Organizations (DT-SACCOs) in Kenya. These respondents included deputy CEOs, operations managers, and customer relations managers, among others. Of the targeted sample, 288 completed and returned the survey, resulting in a response rate of 78.7%. The overall response rate for the study was 78.7% which is within what Doss, Rayfield, Burris and Lawver (2021) recommended that a response rate of above 60% was appropriate for the study.

4.2 Descriptive Statistics

The study aimed to establish the effect of adaptive capacity on innovation performance among Deposit Taking SACCOs in Kenya. Table 1 presents an analysis of the responses from the survey conducted within Deposit-Taking Savings and Credit Cooperative Organizations (DT-SACCOs) in Kenya, specifically focusing on the organization's adaptive capacity.

Table 1: Descriptive Statistics on the Effect of Adaptive Capacity on Innovation Performance among DT-SACCOs in Kenya

	Mean	Std. Dev.
The organization actively monitors changes in its external environment.	3.285	1.444
The organization effectively identifies emerging trends in the industry.	3.951	1.845
The organization demonstrates a keen awareness of market shifts.	4.208	2.157
The organization encourages continuous learning among its members.	4.233	1.189
Knowledge gained from past experiences is well-utilized for future decision-making.	3.726	1.408
There is a culture of adaptability and learning from mistakes within the organization.	4.052	1.227
Decision-making processes in the organization are flexible and responsive.	4.021	1.335
The organization can quickly adjust strategies in response to external changes.	3.521	1.361
Decision-makers in the organization are agile and open to new ideas.	4.431	0.989

As per the Table 1, the respondents agreed with the statement, "Decision-makers in the organization are agile and open to new ideas," as shown by the mean of 4.431 and a standard deviation of 0.989. This demonstrates that decision-makers are generally perceived as agile and receptive to new ideas, which is essential for organizational flexibility and fostering innovation. Similarly, the respondents agreed with the statement, "The organization encourages continuous learning among its members," with a mean of 4.233 and a standard deviation of 1.189. This suggests that continuous learning is actively promoted within the organization, helping members adapt to evolving demands and stay competitive in the industry. The respondents also agreed with the statement, "The organization demonstrates a keen awareness of market shifts," as shown by the mean of 4.208 and a standard deviation of 2.157. This indicates that the organization is generally aware of changes in the market, which allows it to stay competitive and make timely decisions based on market developments. These aspects of adaptive capacity are crucial for fostering an environment that supports innovation. In particular, the ability to rapidly adjust strategies and decisions in response to external changes, as highlighted by the respondents, aligns well with the Dynamic Capabilities Theory (DCT). This theory emphasizes the ability of firms to sense opportunities and threats, seize them, and reconfigure resources to maintain competitiveness (Teece, Pisano, & Shuen, 1997).

The respondents agreed with the statement, "Decision-making processes in the organization are flexible and responsive," as shown by the mean of 4.021 and a standard deviation of 1.335. This suggests that decision-making in the organization is perceived as adaptable and capable of responding to new opportunities and challenges effectively. The respondents agreed with the statement, "There is a culture of adaptability and learning from mistakes within the organization," as indicated by the mean of 4.052 and a standard deviation of 1.227. This demonstrates that the organization fosters a culture where adaptability and learning from mistakes are valued, contributing to resilience and continuous improvement. The respondents agreed with the statement, "Knowledge gained from past experiences is well-utilized for future decision-making," as shown by the mean of 3.726 and a standard deviation of 1.408. This suggests that while respondents generally agree that the organization utilizes past experiences for decision-making, there is room for improvement in fully leveraging those experiences to make more informed decisions in the future. In line with Resource-Based View (RBV), the focus on learning can be viewed as an internal resource that enhances the organization's ability to adapt and innovate. This is particularly important for DT-SACCOs, as they operate in a sector that requires constant adaptation to regulatory changes, technological advancements, and shifting member needs. As emphasized by Ngatno (2019), adaptive capacity in smaller firms is critical for navigating such environmental changes and leveraging available resources for competitive advantage.

The respondents agreed with the statement, "The organization can quickly adjust strategies in response to external changes," with a mean of 3.521 and a standard deviation of 1.361. This suggests that while there is some recognition of the organization’s ability to adjust strategies, respondents feel that this adaptability could be quicker and more consistent, pointing to an area that requires further enhancement.

Further, the respondents were not sure about the statement, "The organization actively monitors changes in its external environment," as shown by the mean of 3.285 and a standard deviation of 1.444. This suggests mixed opinions on whether the organization consistently monitors changes in the external environment. While some respondents believe the organization does this well, others feel it may not be as proactive or thorough, indicating a potential gap in the organization’s ability to stay ahead of external shifts. which resonates with Rangaswamy and Chaudhary’s (2022)

concept of the "success trap." This phenomenon refers to organizations that, after experiencing success, may struggle with adapting to new changes due to complacency or over-reliance on past successes. This finding is relevant to the challenges faced by DT-SACCOs in Kenya, where some have not yet fully embraced digital transformation and innovation in response to changing market dynamics, as identified by the literature (Maina, 2021).

4.3 Regression Analysis

This section presents the findings from the regression model, which aims to quantify how each of these adaptive capacity influences the innovation performance of DT-SACCOs.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.674	0.455	0.452	1.245

The results in Table 2 show that the adjusted R-Square value is 0.452, meaning that adaptive capacity explains 45.2% of the variation in innovation performance. This suggests that adaptive capacity plays a significant role in influencing the innovation performance of DT-SACCOs, with a strong relationship between the ability to adapt and innovation outcomes.

Table 3: Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	584.045	1	584.045	158.736	1.22E-25
Residual	698.186	286	2.448		
Total	**1282.231**	**287**			

The F-statistic for the model is 158.736, with a corresponding p-value of 1.22E-25, which is far below the standard significance level of 0.05. This indicates that the regression model is statistically significant, confirming that adaptive capacity has a meaningful and positive effect on innovation performance in DT-SACCOs. The model provides strong evidence that organizations

with higher adaptive capacity are more likely to innovate effectively, which is vital for their growth and competitiveness.

Table 4: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	15.250	7.215		2.114	0.035
Adaptive capacity	0.689	0.314	0.674	2.194	0.029

In terms of the specific impact, the regression coefficient for adaptive capacity is 0.689, which means that for every one-unit increase in adaptive capacity, innovation performance increases by 0.689 units. This is statistically significant, with a p-value of 0.029, indicating that the relationship is not due to random chance. The standardized coefficient (Beta) of 0.674 further reinforces the strength of the relationship, demonstrating that adaptive capacity is a major driver of innovation performance compared to other factors in the model.

These findings align with the Dynamic Capabilities Theory, which emphasizes the importance of an organization's ability to sense and adapt to changing environments in order to remain competitive. In the context of DT-SACCOs, this adaptability is crucial for responding to shifting customer needs, regulatory pressures, and the rapid evolution of financial technologies. By enhancing their adaptive capacity, DT-SACCOs can improve their ability to innovate, leading to better financial products and services that are more aligned with the demands of their members.

5. Conclusion

The research concluded that adaptive capacity had a significant effect of the innovation performance in Deposit-Taking Savings and Credit Cooperative Organizations (DT-SACCOs) in Kenya. The study concluded that organizations with higher adaptive capacity are better able to navigate changes in the marketplace, thus fostering a culture of continuous innovation. However, it was deduced that while many DT-SACCOs understand the importance of adaptive capacity, the extent to which this capacity is applied across the board is uncertain. This suggests that further

development of adaptive learning systems and processes may be required for some organizations to realize their full innovation potential.

5.2 Recommendations

Based on the findings of this study, several recommendations are made to enhance the innovation performance of Deposit-Taking Savings and Credit Cooperative Organizations (DT-SACCOs) in Kenya. DT-SACCOs should work to enhance their adaptive capacity by developing and nurturing a culture that emphasizes learning from past experiences and responding proactively to market changes. The study suggests that organizations implement regular feedback loops within the organization, allowing both employees and customers to contribute insights into operational challenges and opportunities. This can improve organizational agility and responsiveness to market dynamics. Furthermore, DT-SACCOs should invest in training programs that build employees' skills to adapt quickly to changes in the regulatory environment and shifting customer needs, thereby fostering an environment where adaptability becomes a key driver of innovation.

In addition, government policy plays a crucial role in supporting DT-SACCOs' innovation efforts. The government should incentivize digital infrastructure development by offering subsidies or grants for adopting fintech solutions, as well as creating regulatory sandboxes to allow DT-SACCOs to test innovative products in a controlled environment. Capacity-building programs, focusing on leadership, technology adoption, and strategic planning, should be promoted in partnership with educational institutions. The government can also foster strategic collaborations between DT-SACCOs, fintech companies, and academic institutions by offering incentives for such partnerships. Moreover, the government should continue to support financial inclusion initiatives that expand access to services, particularly in underserved areas, and focus on reducing regulatory burdens to enable DT-SACCOs to allocate more resources toward innovation and capacity building.

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