# Influence of Technology on the Performance of Microfinance Institutions in Kitui County

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## ABSTRACT

The purpose of the study was to investigate the influence of technology in strategic planning on the performance of microfinance institutions in Kitui County. The study applied a correctional research design. The population for the study was 175 middle-level managers working for seven (7) microfinance institutions in Kitui County. Through stratified sampling techniques, the study obtained a sample of 122 participants for the study. The study applied questionnaires with five-point Likert questions to collect data through physical administration and electronic ways. The study also collected secondary data from the microfinance institutions, financial statements, magazines, and published and audited accounts of the company. Data gathered was analyzed by descriptive analysis using mean and standard deviation, whereas the inferential analysis was conducted by regression analysis. The study found a β of 0.610 which was associated with a t-value of 5.960 and a p-value of 0.001 between technology and performance of microfinance institutions in Kitui county. The study concluded that technology had a positive and significant influence on the performance of microfinance institutions in Kitui County. The study recommends continued investment in information security by regularly updating security protocols and staying ahead of the evolving threats to protect sensitive information. The study also recommends for organizations to leverage decision support systems in decision-making. The microfinance institutions in Kitui County should train and provide resources to their staff to maximize the benefits of these systems.

**Keywords:** Strategic planning, Technology, Microfinance Institutions, Kitui county, Performance.

## INTRODUCTION

To remain relevant in our present dynamic market and complex business world requires companies to adopt cutting-edge technologies with a major focus on enduring stability. Strategy planning, through adopting innovative technology constitutes crucial players that enhance organizational performance (Zaluchenova, & Aslbekov, 2020; Al-Shanfari, Lashin & Al-Ani, 2020). Their intricate relationship plays crucial functions in the growth and sustainability of businesses. Throughout the past decade, technology has transformed all areas and functions of the strategic management cycle, including strategic planning, strategy implementation, strategy control, and evaluation (Basrowi & Utami, 2020). The digital age has advanced new opportunities in the frontiers of information processing, system integration, automation and robotics, data analytics, and machine learning all of which enable an organization to make informed decision making, in particular at the strategic planning stage (Dzhamaldinova, Privalov & Menshikova, 20216).

At the point of strategic planning organizations organization are required to align their strategies with the overall goals of the organization by organizational visions and missions which can be actualized strategic planning has to be flexible and adaptable to the modern world in line with the ever-shifting landscape of modern times (Glushchenko, 2021). Organizations must therefore acknowledge the roles that technology serves in strategic planning such as gathering real-time data about market dynamics, regulatory demands, and customer preferences and sharing it with relevant departments for purposes of better decision-making

(Hermawan & Suharnomo, 2020). The demand for technology in strategic planning has increasingly become vital in our contemporary business landscape. The dynamic relationship between technology and strategic planning goes beyond operational efficiency to the core of business performance, which has revolutionized how business operates and also succeeds (Jagtap, Singh, Singh, Shinde, & Dixit, 2020).

The traditional strategic planning process was mainly manual and therefore time-consuming (Kudryashova, 2021). However, with new technologies, the process has been transformed with the approach becoming much easier. With artificial intelligence and data analytics, strategic planners have been able to access a wealth of information that informs the type of decisions they make. Organizations can detect trends in the market, and customers' preferences and therefore re-evaluate and re-strategize themselves to tap and seize any opportunity at hand (Kvint, Khvorostyanaya, S., & Sasaev, 2021). Technology is important in diverse areas such as optimal allocation of resources, and scheduling activities in the strategic planning process and also offers monitoring and control systems that are reassuring and flexible, through speed and precision (Levchaev, 2021).

Through the use of technology, organizations can gather a large pool of data, analyze and turn it into insights for decision-making, which is the lifeblood of strategic planning. Technology helps an organization assess the strengths, weaknesses, opportunities, and threats facing an organization which allows an organization to formulate strategies that are based on empirical evidence rather than intuition (Mayer & Martin, 2021). Data-driven strategies minimize uncertainties by providing coping methodologies that enhance strategy outcomes. Technology bridges the gaps between different stakeholders involved in strategic planning who could be in different locations or cross-functions within and outside the organization. Cloud systems enable sharing of documents and coordination among different participants (Moinzad & Akbarzadeh, 2022; Potts, 2020). Sharing of knowledge skills and skills is possible among different stakeholders through the use of technological platforms that are either formal or non-formal platforms to stimulate better planning efforts, by keeping every party abreast with the planning progress, employees and other stakeholders feel they are part of and parcel of the planning processes therefore can own it which could have the effect of enhancing the performance of an organization (Nadikattu, 2020)..

Microfinance organizations support smallholders (local firms, micro-enterprises, and poor and limited individuals who find it difficult to access mainstream banking firms and asset-collecting agencies) by way of minimal lending options (Abrar, Hasan, & Kabir, 2021; Maurya & Jaiswal, 2021). This is accomplished by offering financing without collateral, cultivating an entrepreneurial spirit, disseminating company knowledge, and facilitating connections with institutions. Despite the growth of Microfinance organizations, Microfinance Institutions (MFIs) are unable to meet the current market demand requiring firms to identify workable methods that satisfy the organization's needs (Uddin, 2020; Karsh & Deek, 2019; Oshora, Fekete-Farkas, & Zeman, 2021). Microfinance institutions have faced performance challenges, for instance, debtors' average annual growth rate has been 2.8 %, way below the global average of 4.5% between the years 2009 and 2021. As a result of operational and finance expenses brought on by expensive lending methodologies and increased risk exposure, the sector's efficiency and sustainable development levels have fallen drastically. Operating costs increased to 26.7 percent, while fund costs increased to 8.6 percent between the years 2010 and 2020, resulting in a decline in profitability (Kauser & Zubairi, 2022).

Ahmed, Khuwaja, Brohi, Othman & Bin, (2018) investigated the effect of resource allocation strategy on Kenya's water service board performance. The study findings noted that strategic personnel improvement, competitive economic ability, effective infrastructure investment, and strategic technology installation boosted water Services Boards' performance. Other scholars, Lo, and Campos (2018). conducted a study on the influence of technology in strategic planning on the performance of the Kenya Wildlife Service where they revealed a significant positive correlation between the organization's success and the adoption of the Internet of Things. Nangih, Ofor, and Ven (2020) studied the relationship between financial management in strategic planning and the performance of large enterprises in Busia town. The association between the

parameters was determined using a regression model where interestingly no significant relationship was established between financial management practices and performance. The debate on strategic planning and its influence on organizational performance is ongoing. There is no existing study that can be used to generalize findings, different studies as noted above posited different and contradicting results which could be a result of the sector studied, the methodological scope, or the presenting gaps that need to be filled through a study that looks at different sectors. The available statistics on the performance of MFIs are worrying and alarming as noted by Bryson, (2018), which calls for an immediate study to investigate the influence that technology as a driver of strategic planning has on the organizational performance of the MFIs in Kenya, focusing on those in Kitui County.

## LITERATURE AND HYPOTHESIS

### Technology Diffusion Theory

Technology diffusion theory was first introduced by Everett Rogers in 1962. The theory explores the processes through which new ideas and innovations or even technologies are generated and are spread among a certain group of people. The theory propped a curve-like setup- showing a predictable pattern through which innovation takes place. The different stages through which adoption of technology takes place, include the early adopters, early majority, and laggards. The different stages show the pace at which the different groups adopt the technology with the early adopters quickly adopting the new technology whereas the laggards usually take the most time to accept a new technology. Organizations usually adopt technology or innovation that gives their companies relative advantages over their competitors. Organizations also apply technologies that are more aligned with their business goals as well as adopting technologies that are simple to apply and understand. To enhance the adoption of technology Rogers advocated for communication channels that disseminate information on the benefits of the innovation. An understanding of the social systems also plays a crucial function in the adoption of technology. The theory also underscores the importance of change agents in advancing technology diffusion which in effect shortens the time it takes to adopt.

Technology diffusion theory is an ideal framework for project planning in enhancing the business performance of microfinance institutions. By examining the intricate relationship between technology as a catalyst for strategic planning and its role in performance. Organizations can evaluate themselves on the position they fall in the technology diffusion curve which can help the organization to customize solutions that meet the specific needs of the customers they serve, in the digit financial technology (fintech). Training of staff at an early stage of technology diffusion becomes critical in a smooth transition for grooming staff at the microfinance to embrace new technological developments.

### Empirical Literature

Hermawan and Suharnomo (2020), studied the intricate relationship between information technology and organizational change. The main focus of the study was to delve into the influence of information technology on the readiness for change through the mediating role of leadership and human capital. The study sample was 166 organizations within the fashion industry in Central Java, with 49 males and 117 females as units of observation working for the organizations. The study applied rigorous structural equation modeling where the study revealed that informational technology had a significant and indirect impact on the readiness to change, illustrating the significant moderating role of human capital. The main areas covered for information technology involve, the processing, transfer, and storage of knowledge. The study revealed that the application of information technology enhances the competitive advantage of the organization. The findings of the study and insights provide a deeper understanding of the intricate relationship between information technology and the readiness to change through human capital contribution. The study context within the fashions industry in Central Java adds value to the literature on

the relationship between information technology and readiness to change, however, the study context was outside the microfinance sector, and therefore the findings cannot be generalized.

Lo, et al. (2018) sought to conduct a study exploring the connection between technology innovation capabilities and business performance. Refinement capability, which includes enhancing the current investment portfolios, and reconfiguring capacity, which requires reorganizing the asset portfolio by having new assets, are the two main categories into which we classify technical innovation capabilities. According to the assessment of 304 small and medium-sized industrial companies in Japan, refining competence is more strongly correlated with productivity improvement than restructuring capacity, while reconfiguring functionality is more positively associated with successful implementation. The findings imply that companies with excellent refining ability frequently have better reconfiguration capacity. The results demonstrate that a business's refinement and reconfiguration capacities are highly influenced by internal and external variables, including company size, age, unpredictability, and inter-firm engagement. The companies under study were SMEs; therefore, the study's findings cannot be generalized to analyze the variables in MFIs in Kenya.

Kvint, Khvorostyanaya, and Sasaev (2021), conducted a study on the role played by technology in strategizing. The study's major focus was on unraveling the intricate relationship between the fundamental elements of strategy and advanced technologies in the achievement of strategic objectives. The study assumption was that technologies play significant roles in development strategies. The study also underscores the importance of technology transfer domains including intellectual and emotional domains. The study applied a range of research methods including, the overarching theory of strategizing which advances principles for the preparation of strategic documents, analysis, comparison, generalization, and deduction to unravel the intricate relationship between study variables. The study findings illustrated the pivotal role played by advanced technologies in enhancing the quality of life, and intellectual and emotional well-being. However, the study takes a meta-analysis approach with no specific empirical approach, the results of the study are not therefore applicable to any specific industry.

Basrowi and Utami (2020), conducted a study on the role played by digital technology in modeling strategic plans in the capital markets of Indonesia. The focus of the study was on digital planning among issuers listed in Islamic securities. The study was based on the construction of a development model based on the insights obtained from synthesizing existing empirical literature which can expedite the integration of technology in the planning among firms. The results of the study underscore the importance of crafting planning that is tailored to Islamic principles that accomplish a unique market positioning.

Results of the study also revealed that psychological factors, perception, and behavioral aspects play crucial roles in the integration of technology in planning in the Islamic capital market. The application of technology Islamic digital market is poised to have a transformative impact in building inclusivity, transparency, and deficiencies in Islamic finance among all players such as the issuers, investors, and other participants in the Indonesian financial markets. By elucidating the role played by tailored planning which is propelled by the behavioral approach and the integration of technology, the study envisions a future for the Islamic finance market that is accessible and adheres to Islamic principles while empowering all stakeholders.

Nadikattu (2020), examined the effect that strategic planning has in strategic planning. The study's major focus was to determine how the application of information technology in technology-based companies can bolster the performance of organizations by enhancing departmental and overall organizational success. The study applied a content analysis approach where it interviewed departmental managers in technology-based firms in Singapore. The findings of the study revealed that departments have diverse functions which requires innovative management in aligning departmental objectives with the overall business strategy.

Strategic planning plays crucial functions in allocating resources to a project to ensure its success with the main focus of ensuring that the goals within the department are in sync with the broader organizational goals, mission, and vision. By leveraging innovativeness approaches and technological advancements, departments can identify synergies, and streamline operations while exploring better ways to achieve common objectives. Technology is also applied in technological companies to achieve optimal resource allocation by scrutinizing the allocation of human, financial, and technology to ensure that they are channeled towards the initiatives that yield maximum value and also contribute to the overall goals of the organization.

Application of innovative-based technology also bolsters the strengths of the individual departments by encouraging the development of specialized expertise, and creativity in problem-solving and inculcating a culture of continuous learning and improvement. The sum goal is to promote an environment that is conducive to innovation and adaptability. The synergy between innovative management and strategic planning overcomes the challenges of harmonizing departmental with the organizational goals which in effect ensures the holistic success of the organization. In the technological industry whose market is rapidly trending synergy is crucial for sustained competitive advantage and growth.

Levchaey (2021), examined the challenges encountered while coming up with strategic plans under the technology-based setting. The study applied a systems analysis, comparison, and generalization which supported the study by providing a holistic view and understanding of the transition in the technological economy and its effects on strategic planning. The results of the study revealed that organizations are faced with challenges in formulating strategies in the digital era. The study proposes a model to be adapted that accommodates the external environment while leveraging the internal strengths. The study application of digital technologies in planning enables organizations to have real-time monitoring of expenses and revenues. The study recommended an alignment of the strategic planning with the regulatory framework.

## DATA AND METHODS

The study applied a correctional research design because it provides a snapshot of the data collected at a specific point. In this case, helps in understanding the current situation of technology adoption and its influence on the performance of MFI in Kitui County. Besides, the use of cross-sectional research design is more cost-efficient resource-wise compared to other research designs such as longitudinal research therefore allowing the researcher to gather insights with available resources. Lastly, the choice of cross-sectional research design allows the researcher to conduct a hypothesis, in this case, whether there is a significant relationship between technology and the performance of MFIs in Kitui County (Zhao, Liang & Dang, 2019). The population for the study was 175 middle-level managers working for seven (7) microfinance institutions in Kitui County. Through stratified sampling techniques, the study obtained a sample of 122 participants for the study, stratified sampling was applied because the target respondents were from diversified departments which display a picture of the entire population, therefore, increasing sampling precision and reducing biasness (Wang & Cheng, 2020). The study applied questionnaires with five-point Likert questions to collect data through physical administration and electronic ways. The study also collected secondary data from the microfinance institutions, financial statements, magazines, and published and audited accounts of the company. Data gathered was analyzed by descriptive analysis using mean and standard deviation, whereas the inferential analysis was conducted by regression analysis.

## FINDINGS AND DISCUSSIONS

The study was able to reach 106 participants who provided data for the study, representing a response rate of 86.88%.

**Descriptive Statistics on Technology practices of Microfinance institutions in Kitui County**

Findings in Table 1 show that respondents agreed with the first statement, 'We have information security systems' as shown by a mean score of 4.09. For the second statement, 'We have decision support systems', a mean score of 4.13 was obtained, which implied the respondents agreed with the statement. On the third statement, 'We have an online feedback mechanism', the mean for this statement was 4.13 which implied that the respondents agreed with the statement. On the fourth statement, 'We have electronic organization operations like mailing', the mean for the statement was 3.90, which indicates that the respondents agreed with the statement. On the last statement, 'We have come up with new products through technological innovations; a mean score of 3.95 was obtained which implied that the respondents agreed with the statement given.

**Table 1: Descriptive Statistics on Technology**

| Statement on Technology | Mean | Std. Dev |
|---|---|---|
| We have information security systems | 4.09 | 0.594 |
| We have decision support systems | 4.13 | 0.663 |
| We have an online feedback mechanism | 4.13 | 0.852 |
| We have electronic organization operations like mailing | 3.90 | 0.872 |
| We have come up with new products through technological innovations | 3.95 | 1.081 |

Source: Primary data (2023)

**Descriptive Statistics on Performance of Microfinance Institutions in Kitui County**

Findings in Table 2 show that respondents agreed with the statement, 'We have achieved high profits' through a mean of 4.31. On the second statement, 'We have achieved improved market share', a mean of 4.27 was revealed which indicated that the respondents agreed. On the third statement, 'We have new business innovations' the study found a mean of 4.43 which implied that respondents agreed with the statements. In the fourth statement, 'Higher attained high sales volume' respondents revealed a mean of 4.37 which implied that respondents agreed with the statement. Finally, the respondents agreed with the statement that 'We have had good cash flows as shown by a mean of 4.031. The study findings concur with the findings by Damanpour and Schneider (2016), revealing that common themes on the performance of organizations indicators include profits, market share, sales volume, and cash flows in assessing organizational performance. A high rating among these indicators suggests a better performance of the organization. The scholar also argued that organizational performance is multifaceted and covers both financial and non-financial metrics; therefore, other dimensions such as customer satisfaction, employee growth, and innovation capacity of products are also important components of organizational performance.

**Table 2: Descriptive Statistics on Performance of Microfinance Institutions in Kitui County**

| Organizational Performance | Mean | Std. Dev |
|---|---|---|
| We have achieved high profits | 4.31 | .667 |
| We have achieved an improved market share | 4.27 | .868 |
| We have new business innovations | 4.43 | .805 |
| Higher attained a high sales volume | 4.37 | .919 |
| We have had good cash flows | 4.03 | .037 |

Source: Primary data (2023)

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**Descriptive Statistics on Performance Panel Data**

Table 3 revealed net profits, an average profit of Kshs 647,582,165, the maximum net profit among the seven micro finances was 910,876,196.20 Kshs whereas the minimum net profit was Kshs 348,044,821. On the revenues, the average revenue registered by the seven-microfinance institution was Kshs 2,072,871,666, the minimum revenues attained was Kshs 1,044,134,463 whereas the maximum revenue was v3,643,504,785. The study also sought to determine the descriptive statistics on new products, the study established that the minimum average number of products by the company was 2 whereas the maximum number of products over the seven years by a single company was 6. The study finally revealed that the microfinance with the least market share was 8% whereas the microfinance with the highest market share was 25%.

**Table 3: Descriptive Statistics on Performance Panel**

| Descriptive statistics | Net profits (KES) | Revenues (KES) | New products (KES) | Market share (%) |
|---|---|---|---|---|
| Mean | 6,475,82164.8857 | 2072871665.5714 | 3.7143 | 14% |
| Minimum | 348,044,821.00 | 1,044,134,463.00 | 2.00 | 8% |
| Maximum | 910,876,196.20 | 3,643,504,785.00 | 6.00 | 25% |

Source: Secondary Data

**Regression Analysis**

Table 4 revealed an r-square of 0.255, which implied that technology explained 25.5% of the changes in the performance of microfinance institutions in Kitui county, the table also shows an F-ratio of 35.517 which was associated with a p-value of 0.001, which implied that the model was statistically significant in predicting performance because the observed p-value of 0.001 was less than the chosen significance of 0.05. Lastly, the table revealed a β of 0.610 which was associated with a t-value of 5.960 and a p-value of 0.001, which suggested that technology had a positive and significant influence on the performance of microfinance institutions in Kitui County. The findings of the study concur with those of Lo, et al. (2018) who sought to conduct a study exploring the connection between technology innovation capabilities and business performance. Results of the study revealed that companies with excellent refining ability frequently have better reconfiguration capacity.

**Table 4: Regression Output**

| **Model Summary** | | | | | |
|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | |
| 1 | .505[a] | .255 | .247 | .48004 | |
| **ANOVA[a]** | | | | | |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 8.184 | 1 | 8.184 | 35.517 | .000[b] |
| | Residual | 23.965 | 104 | 0.230 | | |
| | Total | 32.149 | 105 | | | |
| **Coefficients** | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.654 | .444 | | 3.728 | .000 |
| | Technology | .61 | .102 | .505 | 5.96 | .000 |

1. Dependent Variable: Performance of Microfinance institutions in Kitui County
2. Predictors: (Constant), Technology

# CONCLUSIONS AND RECOMMENDATIONS

## Conclusions

The study concluded that microfinance institutions in Kitui County safeguard sensitive information from the security systems in place, the study also concluded that organizations have tools in place to inform decision-making, further, the study concluded that decisions made by the organizations put into consideration the feedback given by the stakeholders. Besides the study concluded that microfinance institutions in Kitui County are capable of coming up with new products to serve their customers better. Finally, the study concluded that technology had a positive and significant influence on the performance of microfinance institutions in Kitui County.

## Recommendations

The study recommends continued investment in information security by regularly updating security protocols and staying ahead of the evolving threats to protect sensitive information. The study also recommends for organizations to leverage decision support systems in decision-making. The microfinance institutions in Kitui County should train and provide resources to their staff to maximize the benefits of these systems. Managers of microfinance institutions should enhance feedback mechanisms by actively listening to feedback from different stakeholders and using it to improve their services and products. Microfinance institutions should also foster a culture of innovation where staff explores new innovative ideas while allocating resources for research and development. Finally, the organization needs to monitor and benchmark its technological capabilities to ensure that they are current to remain competitive within the industry.

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