

STRATEGIC INNOVATIONS AND TELECOMMUNICATION MOBILE NETWORK OPERATORS IN MACHAKOS COUNTY, KENYA

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ABSTRACT

Telecommunications industry globally play a crucial role in not only facilitating societal communication, but also in enabling economic and social development through the provision of required infrastructure and digital services to entities for data transmission in a globalized business environment. In Kenya, the Communication Authority's 2021-2022 Annual report shows that it has promoted competition in the market and facilitated increased placement of 4G transceivers for mobile telephone service provision. Despite this, leading telecommunication firms in Kenya have most recently reported losses and or a large number of dormant customers. In its 2019-2020 annual report, the Kenya Communications Authority also indicated that Safaricom PLC which has the most subscribers in the country had a decline in its market share in June 2019. Given market challenges and importance of the telecommunications sector, some studies have recommended that strategic innovation is critical in adapting to changing circumstances, achieving a competitive advantage and superior organizational performance results. This study therefore sought to establish a link if any between strategic innovations and performance of telecommunication mobile network operators in Machakos County, Kenya. The balanced score card anchored the dependent variable. The unit of analysis was Airtel Kenya, Safaricom PLC and Telkom Kenya, while the unit of

observation was 45 management staff. A structured questionnaire was used to generate data that were analyzed using descriptive statistics, while regression analysis was conducted in examining the nature of relationship between the study variables. This study with an 82.22% response rate, established a positive relationship between functional integration, market focus, technological adoption and the performance of telecommunication mobile network operators in Machakos County, Kenya. The study's position is that effective adoption of the three strategic innovations leads to better organizational performance by telecommunication mobile network operators in terms of the four balanced score card dimensions. The study therefore recommends that there is need for telecommunication mobile network operators to undertake stakeholder management to support full integration of strategic innovations for continuous performance improvement. There is also need for additional studies on market focus in isolation from technological adoption and functional integration for having the least positivity. The expected study output is enhanced performance in support of overall growth of the telecommunication sector for social and economic development in Kenya.

Key words: Strategic Innovations, Performance, Telecommunication Mobile Network Operators.

INTRODUCTION

The global telecommunications industry has seen significant developments in technology and has expanded its range of product offerings through the 19th century (CAK, 2021; Nawal & Cherif, 2019). The Asia Pacific region and the United States account for the major share in the global telecommunications industry due to increased activity in retailer buy-in platforms, smartphone utilization, e-commerce and investments in 5G network technology (Gachigo, Kahuthia & Muraguri, 2019; Gachigo, Kahuthia & Muraguri, 2019; Kyengo, Ombui & Iraro, 2016). The telecommunication market in Africa and the Middle East is expected to experience robust growth by year 2025, mainly driven by the migration of existing 2G subscribers to 3G and 4G bandwidth and the adoption of 5G technology where applicable, which is projected to integrate communication means into a unified end-to-end system in residential and enterprise spaces, as well as public spaces (CAK, 2021). This transformation of the telecommunications industry is necessitated by the important role of the telecommunications industry within the Information Communication Technology (ICT) sector in the provision of the required infrastructure and digital services to entities for data transmission in a globalized and competitive business environment (Nwosu, & Emeka, 2015; Asikhia & Muritala, 2019; Mwasiaji, 2020). Telecommunications industry also plays a crucial role in facilitating societal communication, thus enabling social and economic development (Gachigo, Kahuthia & Muraguri, 2019; Kyengo, Ombui & Iraro, 2016; Ljubljana, 2015). Moreover, the telecommunications industry is expected to increase in importance and enabler of digitization as part of the industrialization processes because of organizations' need for mobile services and access to cloud services which is predicted to continue on an upward trajectory (Mwasiaji, 2019). The yearly data flows are projected to be ten times higher than in 2013, reaching about 100 trillion gigabytes in 2022 (CAK, 2021). Hence, dependable and secure connectivity will continue to be vital for the use of new technologies, including autonomous vehicles and drones (Asikhia & Muritala, 2019).

According to Communications Authority of Kenya (CAK, 2021), AT&T, Verizon Communications and Vodafone Group PLC are among the top-performing telecommunications companies globally. According to Gachigo, Kahuthia & Muraguri (2019), Safaricom PLC in Kenya, MTN in Ghana and Nigeria, and Vodacom in South Africa have the most active customers among telecommunication industry operators in the Sub-Saharan region. In Kenya, incoming mobile voice traffic from other countries to Kenya increased by 4.9% to reach 112.1 million minutes during the first quarter of the year in 2021, while incoming mobile SMS declined by 11.6% to 8.4 million (CAK, 2021). Within the East African Community (EAC), which includes Tanzania, Uganda, Rwanda, Burundi, and South Sudan, the total inbound roaming traffic for voice was 44.1 million, with 17.9 million for SMS and 1.4 million for data services (CAK, 2021). For other international countries, the inbound summary on roaming for voice was 1.1 million minutes, 10.3 million for SMS, and 69.4 million in volume of megabytes for data services (CAK, 2021). Despite this, many Telecommunication mobile network operators around the world however continue to face numerous operations and regulatory challenges that hinder the companies in their endeavor to achieve enhanced organizational performance, despite implementing various corporate and business level

strategies (Bensecilas, Ombui & Andai, 2016; EYGM, 2019; Asikhia & Muritala, 2019). Some studies have therefore concluded that strategic innovation is a critical component in adapting to environmental changes leading to competitiveness and superior organizational performance results (Olson, Walker & Ruckert, 2015; Kuratko, 2015; Kyengo, Ombui & Iraro, 2016; Mutie, 2018; Mwasiaji, 2019).

According to Dharmadasa (2019), Innovation entails putting new concepts into practice to produce tangible and unique changes in the relevant domain. In Kenya and indeed globally, the COVID-19 pandemic caused significant economic losses, necessitating companies to rely on innovations to build their desired futures as the world becomes more unpredictable and chaotic (Mwasiaji, 2020). Effective strategic innovations require imaginative approaches to understanding and influencing future circumstances, such as technological adoptions that generate new knowledge for products and services, enabling businesses to grow (Yongan & Umair, 2019; Segal-Horn, 2018; Kelly, Davila & Perez, 2016). To meet changing consumer needs, a company's global competitiveness is heavily dependent on strategic innovation technology (Hoffman, 2010; Wheelwright & Clark, 2012; Madsen & Stenheim, 2015; Nawal & Cherif, 2019). In the current study, strategic innovation was operationalized to mean the implementation of functional integration, technological adoption and market focus strategies and assessment of their influence on organization's performance amongst telecommunication mobile network operators in Machakos County, Kenya.

Problem Statement

Telecommunications industry globally is critical in enabling societal communication through the provision of required infrastructure and digital services for data transmission in support of social and economic development (Arifiani, Budiastuti & Erika, 2019; Abdul, 2016; Kyengo, Ombui & Iraro, 2016; Mwasiaji & Iloka, 2021). According to Sitdikova *et al.*, (2015), the objective of every enterprise in a competitive and globalized business environment is to have enhanced organizational process efficiency, consumer satisfaction, increased market share and fulfillment of contractual obligations, which leads to financial as well as nonfinancial achievements. Many Telecommunications mobile network operators around the world however continue to face challenges in achieving the desired level of organizational performance, despite implementing various strategies to enable appropriate market position for competitiveness (Bensecilas, Ombui & Andai, 2016; Asikhia & Muritala, 2019; EYGM, 2019). In Kenya, the Communication Authority in its 2019-2020 Annual report on Mobile Cellular operations indicated that it has facilitated the distribution of 4G services in the country, leading to an increase in market competition in voice and data service provision (CAK, 2021). Despite this, telecommunication firms such as Airtel Kenya and Telkom Kenya have for some time been recording losses as published in their recent financial reports, continuing to cite previously identified challenges such as shifting client loyalty, technological advancements and operational hurdles (Arifiani, Budiastuti & Erika, 2019; Gituma, Gachunga, Gituma & Gachunga, 2016). The Communications Authority of Kenya also reported that Safaricom PLC, which has the most subscribers in the country, saw its market share decline in June 2019 (CAK, 2021). As of 30th June 2020, overall count of active mobile subscriptions within Kenya stood

at about 57 million (CAK, 2021). Airtel Networks registered the highest growth of 19.2 percent, translating to 15 million subscriptions, while Safaricom PLC had a growth of 10.5 percent, resulting in about 36 million subscriptions. On the other hand, Telkom Kenya Limited had a decline of 9.9 percent, closing at 3 million subscriptions (CAK, 2020). However, in a business environment where most customers own more than one SIM card from these three carriers, an increase in subscriptions does not necessarily translate to improved performance (Kyengo, Ombui & Iraro, 2016). That may explain why despite Airtel's growth in subscription numbers, the Kenyan arm of India's Bharti Airtel suffered a loss of KES 4.45 billion in 2019 (Business Daily, 2021).

Numerous studies have however concluded that strategic innovation is an essential component in adapting to changing circumstances and achieving a competitive advantage, leading to superior performance results (Olson, Walker, & Ruekert, 2015; Chepkoech, 2015; Kyengo, Ombui & Iraro, 2016; Mwasiaji, 2020). For instance, Njoroge *et al.*, (2016) argue that mobile network organisations must leverage innovative expertise to improve performance. Mutai and Ngugi (2014) concluded that innovation positively impacts on the growth of mobile telephony in Kenya. Mwasiaji (2020) emphasized the importance of innovation as a strategic objective in view of the emergence of new consumer demands for products and services. In response, telecommunication companies have adopted various competitive strategies such as cost leadership and differentiation (Kyengo, Ombui & Iraro, 2016). In Malasia, Taghizadeh, Jayaraman, Rahman and Quazi (2017) study on the effects of service innovation management and pricing practices on performance, concluded that operators should consider pricing as an innovation strategy. In Kenya, Gachigo, Kahuthia and Muraguri, (2019) study suggested that Safaricom PLC should invest more in market research diversification, while Abdul (2016) in his study on the correlation between innovation and organisational performance in the telecommunications sector, reported that process and product innovation positively influence organizational performance. In the Kenyan context however, there is inadequate studies and no empirical unanimity on the influence of strategic innovations on the performance of telecommunication mobile network operators in Machakos County, being the chosen location for Kenya's Silicon Savannah of innovation in Africa, hence the need for the current study.

LITERATURE REVIEW

Balanced Scorecard Business

Kaplan and Norton (1990) introduced the balanced scorecard (BSC) as a comprehensive performance management tool that measures multiple factors, beyond financial statements. The balanced scorecard helps organisations to evaluate past performance, status and future direction. The BSC has since then evolved into a strategic communication and management tool that includes finance, customer, internal, and learning and growth perspectives. These four perspectives represent three major stakeholders of any corporation, namely shareholders, customers and employees (Oracle, 2013). The BSC model is therefore a uniquely packaged accomplishment procedure that focuses on the internal procedures of a business to support management in evaluating their businesses effectively (Oracle, 2013). According to Madsen

and Stenheim (2015), the analysis and use of BSC varies widely among scholars and practitioners. Due to these interpretive and practice differences, different businesses have used it to achieve various goals, such as improving performance and management, helping executives focus on strategy, structure, and vision, and guiding strategy implementation. In the current study, the BSC model was judged to be useful because it was established that it has been successfully employed in a similar study by Munuve (2014) on how using M-Pesa affects performing of Small and Medium Enterprises (SMEs) in Nakuru, Kenya. In the Munuve (2014) study, the BSC model was used to analyze both the independent and dependent variables used by telecommunication mobile network operators to achieve superior performance through strategic innovations. The improved support services resulted in increased usage of mobile currency and mobile internet services.

The Technology Acceptance Model

The Technology Acceptance Model (TAM) is based on the principle of rational action, which is used to foresee the appropriateness of information system (Davis *et al.*, 2012). TAM's main objective is to forecast a tool's acceptability and to identify the changes that need to be made to the system for it to be appropriate to users. The model posits that the acceptability of an information system is depended on two primary factors: perceived utility and perceived simplicity in usage (Davis *et al.*, 2012). TAM therefore clarifies how consumers accept, understand and decide to use a new product or service. The model asserts that when presented with an alternative innovation, consumers consider several factors, such as the perception on application and supposed utilization to determine how and when to be used. TAM also incorporates a causal chain of genuine behavior beliefs, intention and attitude, which is based on the theory of reasoned action developed by social psychologists. Davis *et al.* (2012) identifies two critical components of the model: apparent use and observed ease of use. The current study utilized TAM to determine how technology adoption can improve the automation of marketing operations and its impact on organizational performance.

Market-Based Theory

In accordance with the market-based view (MBV) theory, the attainment of an institution's goal is not really determined by its internal characteristics, but rather depends more on the environment in which it operates (McGrath, 2013; Leahy & Montagna, 2008). The three foundations of market power were identified as barriers to entry, monopoly and bargaining power (Leahy & Montagna, 2008). A firm's strategic position is determined by the way comparable tasks are carried out in relation to other businesses in the same industry. The prospects for a persistent competitive advantage lie within a group of businesses producing a similar product or service with the underlying assumptions that resources are homogeneous and seamlessly mobile. Thus, a company's performance is uniquely decided with dependency on how the business it works in is set up and how competitive it is (Mwasiaji, 2020; McGrath, 2013). In the current study, the MBV was used to anchor the market focus independent variable, in seeking to establish its contribution to the performance of the telecommunication mobile network operators in Machakos County Kenya.

Game Theory

Economists have variously used Game Theory to analyze a wide array of economic phenomena, including actions (Faruk, 2008). A player's strategy in game theory is any of the options chosen in a setting where the outcome depends on their action and that of the other players in the industry. Therefore, strategy in a game is a complete algorithm that instructs the player on what to do for every possible situation throughout the game. In both organizational and industry contexts, game theory is key in instilling discipline among stakeholders. Nash equilibrium, a concept in game theory, states that the optimal outcome of a game is where there is no incentive for the players to deviate from the initial strategy, outlining their approach as their most effective effort in relation to actions of others. In the current study, game theory was judged useful as a pointer in analysis and decision-making in the telecommunication industry in terms of financial returns, customer satisfaction and internal processes.

EMPIRICAL REVIEW

Functional Integration Strategic Innovation And Organizational Performance

Functional strategy is reportedly advantageous in a market where price is a critical factor, such as the telecommunications industry, whose products comprise mainly of voice, short message services and data services (Kyengo, Ombui & Iraro, 2016; Muchiri, 2016). Price in this case is the currency paid by consumers for a product or service, while the expenses incurred by an industrial player in bringing a product to the market are referred to as the cost. The low-cost leadership strategy which is the mechanics of instituting a viable and sustainable lead by having the lowest cost of procedure in the business has also been found to be useful in supporting competitiveness (Mwasiaji, 2020). This is because an organization that successfully adopts low-cost leadership and becomes the lowest cost producer compared to its competitors not only gains profit, but eventually the market size as well for that particular product. However, obtaining quality raw materials at the lowest price is a basic requirement of a low-cost leadership strategy. Employee involvement in offering and delivering quality labor is crucial in the delivery of valuable goods to the consumer (Libby, Salterio & Webb, 2004). This then requires that an organization analyzes its work processes to ensure operationalization of a combination of cost leadership, quality labor, collaboration across functional areas and communication within departments, which is essential in workflow tracking in functional integration strategy (Mwasiaji, 2020; Muchiri, 2016; Kyengo, Ombui & Iraro, 2016). This helps in identifying possible complications that may affect the eventual product market positioning (Libby, Salterio & Webb, 2004). According to Kowo (2017), the effect of process innovations on organizational performance concluded that process inventions have a significant impression on how a business performs with a noteworthy correlation between service variation and sales capacity. Kyengo, Ombui & Iraro (2016) were able to establish that cost leadership strategies had much significance on the performance of telecommunication companies. For this study, Functional integration strategic innovation was an independent variable operationalized as Quality labor, Collaboration and communication within

departments, Post service checks on customers, Workflow tracking, Low-cost leadership, that was measured using a 5 Point Likert Scale

Market focus strategic innovation and Organizational performance

Several studies have been undertaken seeking to examine the nature of relationship between market focus and organizational performance. Some of these studies have concluded that Market focus strategy has a significant influence on organisational economic performance (Sidek *et al.*, 2013). Some studies have also reported that Market focus strategic innovation plays an important role in accomplishing marketplace prerequisites and improving marketplace prospects. Letangule and Letting (2012) study for instance sought to examine the relation between market innovation and performance of telecommunication companies. According to Sidek *et al.* (2013), such market innovations are formulated and aligned towards meeting consumers demand and service preference. In this case, product innovation was found to have enabled companies to deliver a wider variety of goods that matched and fulfilled customer excellence expectations using conduits that lessen the time it takes to get a service or produce to the end user. Mugo (2015) also carried out a study seeking to establish if any a relationship between innovation and performance in the wine business. The study findings revealed that market review, reception of product conception which is motivating, progressive, and offering superior rewards are necessary for market innovation. Karanja (2011) also conducted research at United Bank of Africa Limited in Kenya (UBA) on the relation between innovation strategies and competitive advantage. According to Karanja (2011) study findings, UBA was found to have provided tailored monetary amenities to various consumer segments as a result of successful implementation of the strategy. In the same vein, Simiyu (2013) established that commercial banks tend to use business innovation techniques such as developing and strengthening brands, generating worth through offer valuing, consumer retention and happiness, aggressively countering competition in promotion campaigns, and ecological reaction in analysing changes in commercial banks study. Another study by Senguo and Kilango (2015) explored the link between market innovation and improvement in consumer satisfaction index in Vodacom in Tanzania. This study reported that telecommunication companies tend to use market innovation strategies to increase business efficiency and gain a competitive edge. Similarly, Soi (2016) explored how the innovative strategies affected performing of telecommunications companies in Kenya. The study findings were that business performances have a positive relationship with firm performance (Soi, 2016). Another study by Rosli and Sidek (2013) explored the effect of inventions on the performing of Malaysian manufacturers in small and medium businesses. The study established that dimensions of product innovation in relation to value and efficiency was significant as well as connected to performing of wineries. For the current study, Market focus strategic innovation was an independent variable operationalized as Analytical marketing , penetrating new markets, Product, and service ease of usage, Attracting more customers with Existing and enhanced product and services, that was measured using a 5 Point Likert Scale.

Technological adoption strategic innovation and Organizational Performance

Technological adoption strategy has been reported as an essential component of competitiveness, enabling innovations such as business process re-engineering, new commerce models, and on-time inventory supply chain through e-procurement (Yann *et al.*, 2004). E-procurement is a telecom expense management platform that offers a single, integrated system for purchasing equipment and services, improving data quality and connecting buyers and sellers with clear workflows for goods and services in transit (Daniels, 2002). Technological innovation competency greatly impacts an organization's performance, enhancing both consumer and technological competency (Yann *et al.*, 2004). According to Galende and Fuente (2003), technological innovation also impacts commercial and organizational resources and objectives, as well as the industry, suppliers, and consumers. Technological change has been said to require more efficient management methods to match the effects of globalization, which have brought a shift in the way of working. Therefore, companies can improve their performance by forming a technology portfolio, emphasizing organizational learning, forming performance partnerships, and rethinking conventional strategies and control structures (Yann *et al.*, 2004; Galende & Fuente, 2003). In another study, Gerstenfield and Wortzel (2017) examined the relationship between internet-based innovation technology, different types of innovation and firm financial results. The study findings were that there is a positive correlation between turnover and job growth and all forms of innovation examined, containing internet-capable and non-capable internet produce or technical performances (Gerstenfield & Wortzel, 2017). Gerstenfield and Wortzel (2017) study also revealed that creative practice is often associated with increased profitability. In the same vein, Mutie (2018) investigated the impact of technical innovations on organizational performance in selected government agencies in Kenya, and established that there is a strong positive association between digital tools and resources and performance of government agency, with favorable and important relationship between information technology-based innovations and government agency structural performance. For this study, Technological adoption strategic innovation was an independent variable operationalized as e-learning, e-procurement, Investment in modern equipment and facilities, Online working, and remote working, Automation of marketing operations, that was measured using a 5 Point Likert Scale.

Organizational performance was the dependent variable operationalized as Financial Perspective, Customer perspective, Innovation and learning perspective, Internal business perspective. It was anchored on the balanced scorecard model by Kaplan & Norton (1996).

RESEARCH METHODOLOGY

Descriptive research design was adopted for this study, guided by the interpretivist philosophy which posits that it is only through their own experiences can one truly understand another person's world because that person's unique experience could be impacted by their historical or social circumstances (Kothari, 2004; Ogula, 2005; Kombo & Tromp, 2013; Collis & Hussey, 2014). On variables, the dependent one of interest was organizational performance while the independent variables were Functional integration strategic innovation, Market focus strategic

innovation and Technological adoption strategic innovation from Procurement, Technology, Finance, Human Resource, Marketing departments.

The unit of analysis was Airtel Kenya, Safaricom PLC and Telkom Kenya, while the unit of observation was 45 management staff selected using stratified sampling method. The managerial staff were considered because they were judged to be appropriate for this study as they had a better understanding of operations in the workplace and made decisions on strategic innovations to be adopted by the organization in their respective jurisdictions. A structured questionnaire with a 5point Likert Scale (Strongly agree (SD), disagree (D), neutral (N), agree (A) and strongly agree (SA) measurement criteria was used through drop and pick method to generate data (Bryman & Bell, 2015). A trial test was carried out using 10% of the complete set of questionnaires to establish the instrument reliability for the investigation. While evaluating the dependability of instruments, Cronbach's Alpha was utilized (Mugenda & Mugenda, 2003; Burns & Grove, 2003; Bryman & Bell, 2015).

The analysis using descriptive statistics made use of SPSS version 25.0. The degree of significance of each variable's effect on the dependent variable was tested using a 95% threshold of significance on analyzing the variance (Burns & Grove, 2003; Kombo & Tromp, 2013). Data was exhibited in tables and charts as per the scholar's analysis. Multilinear regression equation model was used in assessment of the connection between the dependent and independent variables of the quantitative information as shown herein (Kothari, 2004; Ogula, 2005; Kombo & Tromp, 2013; Collis & Hussey, 2014).

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots + \beta_nX_n + \varepsilon$$

Where Y= Organizational performance

X₁= Functional integration strategies

X₂= Market focus strategies

X₃= Technological adoption Strategies

β₀ = y- Intercept

β₁, β₂, and β₃ are coefficients of determination

ε is the error term.

RESEARCH FINDINGS

Response Rate

The questionnaires handed out for this study were 45 in total and 37 of them were fully completed, indicating a response rate of 82.22%. Thus, the response rate was higher than the acceptable questionnaire return rate of 70% as suggested by Nulty (2008). The findings reveal that 40.5% of the participants were working in Marketing, Procurement had 16.2%, Technology was at 18.9%, while Human Resource was at 10.8 % and finance at 13.5%.

Reliability Results

The variables were assessed using a series of items, with internal consistency of the items investigated by use the of Cronbach's alpha coefficient (Bryman & Bell, 2015). Functional integration, measured using five items, had Cronbach's alpha coefficient value of 0.867, demonstrating a high reliability level. Market focus and technological adoption, which were also measured using five items each, gave a value of 0.869 and 0.872, respectively, indicating similarly high levels of reliability. Organizational performance was assessed using four items, resulted to a coefficient of 0.854. Though still considered a relatively high level of reliability, it is slightly lower than the coefficients for the other variables. Overall, these reliability results indicate on the internal consistency and reliability of the selected items to measure the research variables (Owens, 2002; Ogula, 2005; Bryman & Bell, 2015; Teddlie & Yu, 2017).

Descriptive Statistics

Measures of variance or dispersion and measurements of central trends (means) were used to display the results (standard deviations). The evaluation of the information gathered was in line with the following five-point Likert scale in capturing their agreement level ;strongly disagree (SD), disagree (D), neutral (N), agree (A) to strongly agree (SA). Results are displayed including assessments of variance or dispersion, the mean (M), as well as measurements of central tendency (Std.D). Descriptive statistics for the study variables have been presented in Tables 5.3.1, 5.3.2, 5.3.3 and 5.3.4 as follows.

Table 5.3.1: Effect of Functional Integration Strategic Innovation

Item Description	SD	D	N	A	SA	Mean	Std.D
Collaboration enhances coordination and information sharing and eliminates bureaucracy for efficient response.	0.00%	0.00%	0.00%	67.60%	32.40%	4.32	0.475
Post service checks on customers ensures their retention and loyalty.	0.00%	0.00%	0.00%	48.60%	51.40%	4.51	0.507
Collaboration varies because of different strategic innovations by competitors.	0.00%	0.00%	13.50%	43.20%	43.20%	4.3	0.702
To attain organisational performance, the organisations should strive for overall low-cost leadership.	0.00%	0.00%	13.50%	32.40	54.10%	4.41	0.725
Communication among departments helps achieve organisational performance.	0.00%	0.00%	2.70%	40.50%	56.80%	4.54	0.558

Table 5.3.1 shows that respondents agreed that in order to achieve organisational performance, Collaboration enhances coordination and information sharing and eliminates bureaucracy for efficient response with a standard deviation of .48 and a mean of 4.3. The study found that collaboration varies because of different strategic innovations by competitors impacting performing, with mean being 4.3 and standard deviation at .70. These findings concur with research by Nyambura and Kamara (2017) on impacts of functional integration strategy’s on performing in Kenyan public universities and a study by Lyria (2013) on the influence of strategic functions on the performing of companies listed in Nairobi Securities Exchange.

Table 5.3.2: Effect of Market Focus Strategy

Item Description	SD	N	A	SA	Mean	Std. D
Analytical marketing strategy helps in addressing the customer needs better.	0.00%	0.00%	24.30%	75.70%	4.76	0.435
Customer loyalty and satisfaction is based on Product and service ease of usage.	0.00%	2.70%	10.80%	86.50%	4.84	0.442
Product and service enhancement plays a crucial role in responding to market opportunities.	0.00%	2.70%	22.80%	74.50%	4.74	0.342
Market focus strategy helps in maintaining a competitive advantage against other firms.	0.00%	0.00%	32.40%	67.60%	4.68	0.475
The number of customers an organisation attracts determines its performance.	0.00%	2.70%	29.70%	67.60%	4.65	0.538

Table 5.3.2 shows that the highest mean score was for customer loyalty and satisfaction is based on Product and service ease of usage (SA=86.5%, Mean=4.84, Standard Deviation=.42, followed by analytical marketing strategy helps in addressing the customer needs better mean of 4.76, SA =75.7%, and, Product and service enhancement plays a crucial role in responding to market opportunities, mean at 4.74,SA=74.5%, market focus strategy helps in maintaining a competitive advantage against other firms with mean at 4.68,std dev, 0.48, SA=67.6% .The lowest mean score was for an organisation's performance is determined by the number of clients it attracts. at 4.65,SA=67.6%, indicating that while still important, it may not be as crucial as the other factors. These results are consistent with earlier research, such as the study by Rukhmani, Ramesh & Jayakrishnan (2010) which concluded that market focus is a key element that has an impact on organisational performance. The study by Muchiri (2016) conducted in the hospitality industry also revealed that market survey enables the organisation to expand its market and achieve high performance. The average mean on effect of market focus on performance of telecommunication mobile network operators was at 4.30. This shows that market focus strategy has a substantial impact on expanding the market thus high organisations performance. The organisations should therefore fuse on market to help in boosting organisational productivity. These results are consistent with that of Muchiri (2016) which was conducted to ascertain how market focus strategies impact on employee performance in the hospitality sector which revealed that, market survey enables the organisation to expand its market thus high performance.

Table 5.3.3: Effect of Technological Adoption

Item Description	SD	D	N	A	SA	Mean	Std. D
Automated marketing operations.	0.00%	5.40%	10.80%	29.70%	54.10%	4.32	0.884
e-learning enhances organisation performance.	0.00%	0.00%	8.10%	35.10%	56.80%	4.49	0.651
The company has adopted the new technologies in the field of communication like remote working to harness human resources.	8.10%	2.70%	37.80%	51.40%	0.00%	3.32	0.884
e-procurement has helped the organisation have a competing edge over rivals.	2.70%	5.40%	0.00%	54.10%	37.80%	4.19	0.908
The company has a culture of technological innovation.	2.70%	5.40%	0.00%	32.40%	59.50%	4.41	0.956

Table 5.3.3 shows that the respondents concurred that e-learning enhances organisation performance, SA=56.8%, mean at 4.49 and the organisation has automated its marketing operations with mean at 4.32; std dev .88, SA=54% and that the business has a culture of technological innovation, SA=59.5%, mean at 4.41; std dev .97. Additionally, the company has embraced e-procurement to assist the organisation in having a competing edge over rivals, its mean at 4.19; std dev <0.91, A=54%. The respondents also indicated that the company has adopted the new technologies in the field of communication like remote working to harness human resources, A=51.4%, mean at 3.32; std dev <0.88. The results are consistent with those of Stephan and Dorfman (2014) in their paper "Administrative and Developmental Functions in Technological Adoptions," which found that technological adoption leads to improved employee performance accuracy.

Table 5.3.4: Organizational Performance of TMNOs

Item Description	SD	D	N	A	SA	Mean	Std.D
The Customer perspective has improved due to the three employed strategic innovations	5.40%	2.70%	8.10%	51.40%	32.40%	4.03	1.013
The financial perspective has improved due to the three employed strategic innovations	0.00%	0.00%	0.00%	48.60%	51.40%	4.51	0.507
Internal business perspective has improved due to the three employed strategic innovations	0.00%	0.00%	8.10%	40.50%	51.40%	4.43	0.647
Innovation and learning perspectives have improved due to the three employed strategic innovations	0.00%	0.00%	5.40%	43.20%	51.40%	4.46	0.605

Table 5.3.4 shows that financial performance improved due to the three employed strategic innovations with a mean of 4.51 and std dev at 0.51, SA=51.4%. The results also

shows that innovation and learning perspectives improved due to the three employed strategic innovations with mean at 4.46 and std at .61, SA=51.4%. The three employed strategic innovations contributed to internal business perspective improvement with mean at 4.43, std dev at .65 and SA=51.4%. The adoption of the three strategic innovations therefore enhances performance with a significance customer perspective improvement as well with mean at 4.03 and std dev >1.00. This finding is consistent with Jermias and Setiawan's (2018) study which concluded that strategic innovation is an important driver of organisational performance.

Inferential Analysis

Analysis of regression was applied in modelling and investigation of the associations among the three independent and one dependent variable of the study. This was judged necessary so as to establish how changes in one or more variables interacted with changes in other variables. A regression coefficient for each independent variable was to indicate the strength and direction of the relationship between that independent variable and the dependent variable. Using SPSS version 25.0, the model summary, analysis of variance, ANOVA and regression coefficients were created.

Effect of Determinants of Organizational Performance of TMNOs

The study ascertained the effect of functional integration, market focus and technological adoptions on performance of telecommunication mobile network operators.

Table: 5.4.1.1: Model Summary

Model	R	Adjusted R Square	Std. Error of the Estimate	Change Statistics		F	df1	df2	Sig. F Change
				R Square	F				
	.983 ^a	0.966	0.963	0.12404	0.966	315.435	3	33	0

a. Predictors: (Constant), Technological Adoption, Market Focus, Functional Integration

Table 5.4.1.1 shows that the relationship between independent and dependent variable was significantly positive. The R-squared value was 0.966, greater than 0, a sign that the three independent variables (Technological adoption, Market focus, Functional integration) can explain 96.6% of the dependent variable.

Table: 5.4.1.2: Analysis of Variance for the Independent variables

The linear connection between the variables under consideration was determined using Analysis of Variance (ANOVA). This approach allowed for the calculation of degrees of freedom, df, mean square, estimated value of F, and its level of significance.

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.56	3	4.853	315.435	.000b
	Residual	0.508	33	0.015		
	Total	15.068	36			

a. Dependent Variable: Organisational Performance

b. Predictors: (Constant), Technological adoption, Functional Integration, Market Focus

The model significance value, ($p < 0.05$) between the study's variables, which indicates a 95% probability, which is less than $\alpha = 0.05$ hence statistically significant in predicting how numerous factors impact the organisational performance of TMNOs in Machakos county, Kenya.

Table: 5.4.1.3: Coefficient Estimates for the Variables

Coefficients^a

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	T	Sig.
	B		Beta		
(Constant)	-0.352	0.184		-1.916	0.064
Functional Integration	0.706	0.082	0.588	8.661	0
Market Focus	0.157	0.073	0.166	0.784	0.043
Technological Adoption	0.326	0.064	0.374	5.099	0

a. Dependent Variable: Organisational Performance

Table 5.4.1.3 shows that the predictors are significant as determined by the beta values and $\alpha < .05$. These are Functional integration ($P=0$, $T=8.66$) and Technological adoption, ($P=0$, $t=5.09$) while Market focus is at ($P < 0.05$, $T=.78$). The constant in this model is represented by -0.352, which is the anticipated value of achievement on organisational performance of

TMNOs in Machakos Count, Kenya. Of the three independent variables, Functional Integration was shown to be the most important. The resulting regression formula for the independent variable on the dependent variable in the analysis is $Y = -0.352 + 0.706X_1 + 0.157X_2 + 0.326X_3$.

Summary, Conclusion and Recommendations

This study sought to establish a link if any between strategic innovations and their influence on the performance of telecommunication mobile network operators in Machakos County, being Kenya's proposed equivalent of Silicon Valley in the United States of America.

This study established that there is a positive relationship between functional integration, market focus, technological adoption and the performance of telecommunication mobile network operators in Machakos County, Kenya. The study therefore recommends that there is need for telecommunication mobile network operators to undertake stakeholder management to support full integration of strategic innovations for continuous performance improvement. In this case, strategic innovations should be geared towards enhanced product or service with major scientific difference from previous versions pursued by the organisation including e-learning, e-procurement, Investment in modern equipment and facilities, Online working and remote working and automation of marketing operations. There is also need for additional studies on market focus in isolation from technological adoption and functional integration for having the least positivity. The expected study output is enhanced performance in support of overall growth of the telecommunication sector for social and economic development in Kenya.

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