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**Open Innovation Strategies and Organization Performance of the Telecommunication  
Industry in Kenya**

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Strategy

## Open Innovation Strategies and Organization Performance of the Telecommunication Industry in Kenya

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### Abstract

**Purpose:** The purpose of this study was to evaluate the relationship between open innovation strategies and organization performance of the telecommunication industry in Kenya. The study was guided by the following objectives: to examine the effect of innovations and innovation strategies on organizational performance; to establish the effect of open innovation strategies on organization performance; to assess the role of organization factors in moderating open innovation strategies; and to identify the open innovation strategies adopted in the telecommunication industry in Kenya.

**Methodology:** The study relied on desktop research to address the existing gaps in the literature. Information for the research was obtained from published literature and information in the public domain. The information was critically reviewed, analyzed, synthesized, and conclusions were drawn.

**Findings:** The findings of this study revealed that collaboration between firms in the telecommunication industry and various stakeholders through open innovation strategies influences the performance of the organizations in the industry. These findings suggest that organizations in the telecommunication industry in Kenya, which adopt open innovation strategies, can effectively innovate and compete in the industry, despite the dominant position of one organization.

**Unique Contribution to Theory, Practice and Policy:** Utilizing the Open Innovation (OI) Theory and the Resource-Based View (RBV) Theory, the researcher explored the relationship between open innovation strategies and organization performance of the telecommunication industry in Kenya. The study deepened our understanding of RBV theory in explaining the dominance of one firm in the telecommunication industry. In addition, the study focused on how organizations are able to access talent and resources using the OI theory framework and therefore are able to innovate and compete. The various stakeholders including customers, suppliers and the Government of Kenya will benefit from this study by having additional insights into open innovation strategies and practices. A key recommendation is to the Communications Authority of Kenya, the regulatory body in the telecommunication industry in Kenya. The regulator should provide an enabling environment which facilitate innovations and collaboration using open innovation framework, benefitting all organizations and stakeholders in the industry.

**Keywords:** *Open Innovation Strategies, Organization Performance*

**JEL Classification:** *L1, L25, L96, O30, O32, O36*

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## INTRODUCTION

Telecommunication services are essential in our daily activities, and the telecommunication industry is recognized for its vital role in communication, connectivity and facilitating business transactions, and driving economic progress (GSMA Report, 2023). Mobile money, as noted in the GSMA Report (2023), is driving financial inclusion in the world and transforming large populations and contributing to social-economic growth. In 2022, mobile technologies and services accounted for 5% of the global Gross Domestic Product (GSMA Report, 2023). In Kenya, the Information and Communication Technology (ICT) sector output increased by 7.7% from Kshs. 564.8 billion in 2021 to Kshs 608.1 billion in 2022 and contributed 9.9% of the growth in Gross Domestic Product (GDP) as per the Economic Survey 2023 by the Kenya National Bureau of Statistics. According to Kenya's Vision 2030, the ICT sector is poised to be a key contributor to the Gross Domestic Product, reflecting its anticipated growth and significance in the economy.

The strategic alliances and collaboration between the telecommunication industry and Government of Kenya partly mitigated the problems caused by COVID-19 with the use of tracking contacts applications and addressing some of the logistical concerns. In addition, Safaricom PLC supported the government in the establishment and operation of a 24-7 COVID-19 Information Centre, leveraging on the capabilities of its Customer Contact Centre. Innovations within the industry and collaboration with various stakeholders has facilitated bank-to-mobile interoperable transactions, bill and merchant payments and international remittances. According to the Communications Authority of Kenya Strategic Plan 2023-2027, the Government of Kenya plans to enhance efficiency in the public sector by digitalizing government services and expediting Kenya's digital transformation. To create solutions for national security, logistics/transport, food, livelihoods, health, and the economy, the Government of Kenya plans to collaborate with organizations in the telecommunications industry. According to the ICT Authority, the Government of Kenya, through the Ministry of Information, Communications & Technology, scaled the building of National Optic Fibre Backbone Infrastructure in the country. This technology provides affordable and quality broadband infrastructure, in addition to promoting and facilitating open access to underserved areas through rural broadband coverage.

The global economy is increasingly defined by rapid and disruptive technological changes. Technological innovations from innovation strategies enable organizations access larger market share and different market segments in the telecommunication industry in Kenya, spurring their growth and profitability. Through effective and efficient innovation strategies and processes, organizations which innovate are able to create sustainable competitive advantage (Porter, 1985; Mugo & Macharia, 2021). These strategies will result in products and services that target the diverse needs and preferences of customers. By creating and implementing new knowledge and innovations using open innovation strategies, organizations are able to strategically position themselves in the telecommunication industry.

Due to the dynamic nature of the telecommunication industry and its heavy dependence on technology and innovations, research in the industry has focused on various aspects of the industry, organizations, strategies, technologies, innovations, and theories. Past studies have covered the telecommunication industry (Gachigo et al., 2019; Markus & Nan, 2020; Mugo, 2020; Mugo & Macharia, 2021), certain market segments (Kanyi & Kihara, 2022), technologies and innovations in the telecommunication industry including M-Pesa product (Mugo & Macharia, 2021; GMSA Report, 2023), innovation strategies (Gachigo et al., 2019;

Mutheu & Mwasiaji, 2023), geographical areas including Machakos County and Nairobi Metropolis (Gachigo et al., 2019; Mutheu & Mwasiaji, 2023), organizational factors and organizations in the telecommunication industry including Safaricom in Kenya (Gachigo et al., 2019; Markus & Nan, 2020). Therefore, the researches in the telecommunication industry have been grounded on several theories to address the diverse nature of studies and the various knowledge gaps, including time gap, geographical gap, contextual gap, and conceptual gap. Some of the theories used in the researches include Technology Acceptance Model (Mutheu & Mwasiaji, 2023), The Resource-Based View Theory (Yulianto & Supriono, 2023), Competitive Advantage Theory (Porter, 1985; Mugo, 2020; Mugo & Macharia, 2021), Knowledge-Based Theory (Yulianto & Supriono, 2023), Diffusion of Innovation Theory (Kanyi & Kihara, 2022), Disruptive Innovation Theory (Mugo & Macharia, 2021), and Market-Based Theory (Mutheu & Mwasiaji, 2023) among other theories. Use of several theories in a particular study is mainly to complement the main theory underpinning that study and address comprehensively the objectives of the study and all factors in the research.

Numerous researches using Open Innovation Theory (Ogink et al., 2023; Yulianto & Supriono, 2023), have been undertaken globally. In Kenya, the research by Gachigo et al. (2019) on exploration innovative strategy influence on the performance of the Telecommunication Industry was guided by three theories: Open Innovation Theory, Disruptive Innovation Theory and Jobs-to-be-done Theory. However, the study by Gachigo et al. (2019) focused on the contribution of the employees to innovations and the impact on organization performance. In addition, the study did not delve into how open innovation practices have been implemented in the telecommunication industry in Kenya.

Open innovation provides a framework for organizations to improve their innovation strategies as they have access to more diversified and creative technical ideas from different sources such as customers, supplies, competitors, regulatory authorities and internal stakeholders (The Economist Group, 2022; Ogink et al., 2023). In an increasingly digitally interconnected world, open innovation is easier and cheaper to implement (Economist Group, 2022).

Reviewed studies indicate that open innovation could be moderated by organizational factors such as organization size, organization structure, organization culture, organization's innovation absorption capacity, lack of managerial support, among others (Lam et al., 2021; Ovuakporie et al., 2021; The Economist Group, 2022). This study aimed to create awareness of this fact.

### **Statement of the Problem**

Several telecom organizations operate in the telecommunication industry in Kenya including Safaricom PLC, Airtel Networks Kenya Ltd., Telkom Kenya Ltd., Jamii Telecommunications Ltd., among others. However, Safaricom PLC holds a dominant position commanding a substantial market share of over 50% in the telecommunication industry. According to the First Quarter Sector Statistics Report for Financial Year 2023/2024 by Communications Authority of Kenya, Safaricom's market share in mobile (SIM) subscription stood at over 44 million of the total 66.75 million subscriptions, accounting for over 60% of the total market share. During the same period, Safaricom PLC had 61.9% market share in mobile services subscriptions, 64% in domestic mobile voice traffic and 89% in SMS traffic. The regulatory framework in Kenya stipulates a firm has a dominant position if it controls over 50% of the market.

Safaricom was licensed in 1999 and by the end of its financial year 2003, it had 54% market share according to the Safaricom PLC Annual Report and Financial Statements 2023. The dominant position of Safaricom PLC in the telecommunication industry has remained over the years. Safaricom PLC has augmented its revenues by creating new revenue streams through new innovations and leveraging on its extensive network and existing products such as M-Pesa. Other factors that have contributed to the rise in revenues are economies of scale, aggressive expansion, branding, having first-mover advantage for some of its innovations, notably M-Pesa. These factors have enabled Safaricom PLC to gain a competitive edge over its competitors and become dominant in the telecommunication industry despite the various laws and regulations of Kenya such as Competition Act of Kenya, Chapter 504 of the Laws of Kenya and Kenya Information and Communication Act, Chapter 411A of the Laws of Kenya including the Fair Competition and Equality of Treatment Regulations.

Against this background, organizations in the telecommunication industry in Kenya require an effective strategy to innovate and compete in an industry which is dominated by one firm. Innovation is a powerful engine in the development of core competencies and competitive advantage in an organization and can positively influence its performance (Porter, 1985; Mugo & Macharia, 2021; The Economist Group, 2022). This is important in the telecommunication industry in Kenya, which is driven by technological innovations (Mutheu & Mwasiaji, 2023). The continuously changing technological landscape in telecommunication industry globally is highlighted in the November 2023 edition of the Ericsson Mobility Report (November 2023), which indicated Fixed Wireless Access (FWS) is emerging as a pivotal technology in meeting Africa's increasing broadband demands with several countries in Africa, such as Kenya having launched 5G FWA services.

It was therefore important to examine how innovation strategies, specifically open innovation strategies, influence the capability of organizations to innovate, grow market share and correspondingly increase revenues and profits. Organizations globally are increasingly utilizing open innovation strategies (Yusof & Ab Rahim, 2024). This is partly due to the main advantage of access to the best talent in the industry and globally (The Economist Group, 2022). Other advantages include spreading risk, lowering innovation costs, involvement of clients in the product innovation process, and opportunities for strategic partnerships and collaborations (Gachigo et al., 2019). In the context of the telecommunication industry in Kenya, the main open innovation strategy observed is the inbound open innovation strategy, especially in the co-creation of products. This strategy consists of strategic partnerships and collaborations with various stakeholders, for instance financial institutions, application developers and Government of Kenya.

Despite the earlier studies, there exists a gap in literature regarding the domestic application of open innovation strategies and relevance on performance in the telecommunication industry in Kenya. This study aimed to address this gap and focused on how companies in the telecommunication industry in Kenya can leverage on open innovation strategies and practices to compete effectively despite the dominance of one entity in the industry. In addition, this study contributes knowledge by informing various stakeholders in the telecommunications industry in Kenya on the impact of open innovation strategies on organization performance.

The open innovation theory underpins this study and provides important insights on the practical applications by the various stakeholders in the telecommunication industry in Kenya.

## LITERATURE REVIEW

### Theoretical Framework

This study is based on the Open Innovation Theory and Resource-Based View Theory.

### Open Innovation Theory

The term Open Innovation (OI), whose proponent is Henry Chesbrough, was developed in 2003 (Chesbrough & Euchner, 2011). The theory stipulates that organizations should make use of external ideas and technologies and allow unused ideas and technologies generated internally to be used externally (Chesbrough & Euchner, 2011). These technological innovations are the key drivers to growth in an organization's market share, revenue and profitability. Chesbrough and Euchner (2011) point out that OI is premised on the idea that knowledge of innovation is available widely in the economy. Spill overs from research and development are transformed into inflow and outflow of external ideas that can be purposely used (Chesbrough & Euchner, 2011). OI is achieved through three distinct approaches: coupled open innovation, which involves the exchange of knowledge between various parties involved in the process, outbound which involves the transfer of internal knowledge, and inbound which involves acquisition of external knowledge (Gachigo et al., 2019; Bigliardi et al., 2020; The Economist Group, 2022). In contrast, the closed innovation practice focuses on the innovation process within the organization (Chesbrough & Euchner, 2011).

The aim of OI is to accelerate innovation, faster time to market, reduced research and development costs, access to broader pool of ideas and expertise and enhanced competitiveness by leveraging on core competencies including knowledge and innovation and distinctive capabilities (Ogink et al., 2023; The Economist Group, 2022). The OI theory is applicable in this study as it provides a framework to investigate how organizations can compete in an industry dominated by a single entity.

To realize the benefits of open innovation techniques, organizations must adapt their culture, invest time and resources, and consistently improve procedures and practices (The Economist Group, 2022).

Several studies suggest that moderating factors such as organization size, structure, culture, capacity to absorb innovations within the organization, and lack of managerial support, may hinder the effectiveness of open innovation practices (Barney, 1986; Bigliardi et al., 2020; Lam et al., 2021; Ovuakporie et al., 2021; The Economist Group, 2022; Tsai et al., 2022; Yulianto & Supriono, 2023; Zhang et al., 2023). Organization culture is highlighted in numerous studies as a key success factor in innovation, achievement of sustainable competitive advantage and superior financial performance (Barney, 1986; Bigliardi et al., 2020; Lam et al., 2021; The Economist Group, 2022; Tsai et al., 2022; Zhang et al., 2023). The Economist Group (2022) established in their research that organization structure and lack of managerial support could be other moderating factors to the effectiveness of open innovation practices. Prior to restructuring in 1999, Kenya Posts and Telecommunication Corporation (KPTC), a state corporation, had posted poor performance in terms of innovation and financial performance over the years despite its monopolistic position in the telecom industry in Kenya. This was mainly due to its organization culture and organization structure. Eventually KPTC was restructured in 1999, its operations were split into three entities and shortly after that, the organization KPTC ceased to exist. Findings from other studies, indicate organization's capacity to absorb innovations and organization size are other factors which moderate open innovation strategies, especially inbound and coupled innovation strategies (Ovuakporie et al.,

2021; The Economist Group, 2022; Tsai et al., 2022; Yulianto & Supriono, 2023). Further research on moderating factors has been recommended.

### **Resource-Based View Theory**

The origin of Resource-Based View (RBV) Theory can be traced back to the seminal work of Penrose (Penrose, 1959). According to Kioko et al. (2019), resources in a company comprise all its assets, competencies, internal procedures, characteristics, and information and expertise. Organizations strategically use their resources to create core competencies and distinctive capabilities for sustainable competitive edge and financial gains, in order to achieve strategic competitiveness (Kioko et al., 2019). However, for a firm to achieve a sustained competitive edge, its core competencies should be valuable, rare, not easy to copy, durable and superior to the competencies of other organizations, and difficult to replace (Mugo & Macharia, 2021; Porter, 1985). It is important that core competencies of an organization benefit customers (Porter, 1985). Core competencies can include innovations, strategic assets, or the reputation of the organization among others. Additionally, an organization can adapt or leverage upon its core competencies so that it supplies a wide variety of markets, and in turn increase its market share, revenue and profitability (Porter, 1985). This enables an organization to achieve sustainable competitive edge in the long term (Mugo & Macharia, 2021; Porter, 1985).

The RBV theory is applicable to this study as it provides important insights into the telecommunication industry in Kenya and performance of organizations in the industry. The study deepened our understanding of RBV theory in explaining the dominance of one entity in the telecommunication industry.

According to Bhandari et al. (2020), the RBV theory is insufficient on its own and needs to be combined with other theories, for instance the Attention-Based View Theory. This was demonstrated in their study on relative exploration and firm performance which revealed that applying the attention-based perspective enhances the RBV theory. This is mainly due to the decision-makers' attention which moderates sustainable competitive advantage in a dynamic environment. Freeman et al. (2020) also point out the deficiency of RBV theory and the need to combine with some elements of Stakeholder Theory. Attention-Based View Theory and Stakeholder Theory compliment the RBV theory in a dynamic industry such as the telecommunications industry in Kenya in addressing the sustainability aspect and how stakeholders including decision makers influence resource utilization (Bhandari et al., 2020; Freeman et al., 2020). In this study, RBV theory and Open Innovation Theory provide a theoretical framework for the research. Open Innovation Theory provides a roadmap on how organizations in the telecommunication industry in Kenya can effectively innovate, and acquire resources and core competencies in turn achieving sustainable competitive advantage.

### **Conceptual Framework**

Innovation strategies enable organizations to innovate effectively, thereby accessing larger market share and different market segments in the telecommunication industry in Kenya, spurring their growth and profitability. This study aimed to establish and assess the effects of open innovation strategies on the performance of organizations in the Kenyan telecommunication industry. The independent variable included the open innovation strategies (outbound, inbound and coupled), while the dependent variable was the performance of organizations in the telecommunication industry in Kenya. Performance is evaluated through the criteria of innovation, market share, revenue growth and profitability. The study further looked into the moderating variable, which focused on organization factors.

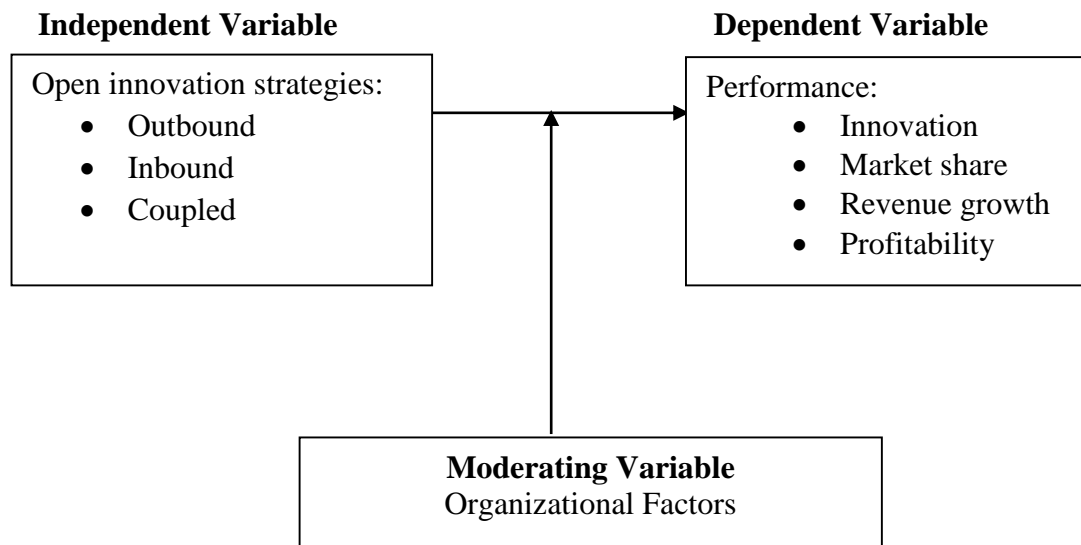


Figure 1: Conceptual Framework

### Empirical Review

To establish the effectiveness of open innovation on firm performance, particularly within Kenya's telecommunications industry, an analysis of existing studies was conducted. According to the First Quarter Sector Statistics Report for Financial Year 2023/2024 by Communications Authority of Kenya, Safaricom PLC holds a market share of over 60% in Kenya's telecommunications sector. Therefore, this study examined the operations and performance of Safaricom PLC to obtain deeper insights.

### Innovations and Innovation Strategies effect on Organizational Performance

Gachigo et al. (2019) examined the influence of exploration innovative strategy on performance of the Telecommunication industry in Kenya, with focus on Safaricom PLC in Nairobi Metropolis. The study used descriptive research design. The population in the research comprised 4167 employees of Safaricom PLC from the 58 outlets in Nairobi Metropolis. Stratified random sampling was employed, and utilizing Yamane's formula, the sample size of 365 employees was determined. Questionnaires were used to collect data. Data was analyzed using regression analysis. According to the results of this study, a unit change of innovation strategies leads to a 40.2% increase in organizational performance based on R-squared 0.402. From this study, it emerged that exploration innovation strategy has a significant effect on organizational performance.

In their study, Mugo and Macharia (2021) concentrated on the effects of innovation strategies on competitive advantage in telecommunication companies in Kenya. The study used an empirical approach and adopted positivist research. 26 licensed telecom firms were sampled, targeting 311 management professionals using descriptive design. Proportionate sampling in the study yielded 247 responses. Linear regression analysis results of this study demonstrate that innovation strategies, with a beta of 0.376 ( $\beta = .376$ ,  $t = 6.613$ ,  $p < .05$ ), statistically affect Kenyan telecom companies' competitive advantage.

Kanyi and Kihara (2022) carried out a study to investigate the influence of innovation strategies on performance of internet service provider companies in Nairobi, Kenya. The research employed descriptive survey design. The population of the study comprised of 228 managers from the 60 internet service provider companies licensed by Communications Authority of



Kenya and a sample size of 146 respondents was established using stratified sampling technique. The researchers used a multivariate linear regression model to determine the relationship between the dependent and independent variables. To analyze the data, inferential and descriptive statistics were employed. Among other findings, the research determined that there was growth of performance since 2018, with an increase in sales volume and return of investment. According to the research, on average between 2016 and 2020, performance growth has been 8.9362% (Kanyi & Kihara, 2022). The research revealed that innovation strategies have a positive and significant influence on performance of internet service provider companies in Nairobi, Kenya.

With reference to Safaricom, Yator and Kipchumba (2023) evaluated the effect of technological innovation strategies for both products and processes on the performance of organizations in the Kenyan communication sector. Utilizing secondary data from company publications, journals, periodicals, and the internet, the study employed an ex post facto research design to test the hypotheses. To investigate the sample firms over time, time series panel data was utilized. Data was presented through content analysis. To find the association between the variables of technical management practices and innovation and business survival, correlation analysis was employed. The regression results revealed there was a positive and significant correlation between product innovation strategy and performance ( $\beta = 0.701$ ,  $p = 0.000 < 0.05$ ). This study results further revealed insignificant relationship between process innovation and performance ( $\beta = 0.217$ ,  $p = 0.061 > 0.05$ ). Additionally, the study indicated that product innovation explained 62.1% of the variation of Safaricom (K) Limited performance.

Mutheu and Mwasiaji (2023) conducted research on mobile network providers and strategic innovations in Machakos County, Kenya. The aim of the study was to find out how the performance of the mobile network operators related to functional integration, market focus, and technological adoption. A descriptive research design was used for the investigation. A five-point Likert scale was employed in a structured questionnaire. The degree of significance of each variable's effect was tested using a 95% threshold of significance. The results of Cronbach's alpha coefficient value of 0.867 demonstrated a high reliability level. The research showed financial performance improved due to the employed strategic innovations with a mean of 4.51 and standard deviation at 0.51, and SA =51.4%. Further, an inferential analysis was undertaken. The relationship between independent and dependent viable was significantly positive. The independent variables included technological adoption, market focus, and functional integration can explain 96.6% of the dependent variable, based on R-squared 0.966. The study established there is positive relationship between functional integration, market focus, and technological adoption, and the performance of the telecommunication mobile network operators in Machakos County, Kenya.

### **Open Innovation and Organization Performance**

Bigliardi et al. (2020) examined the influence of open innovation on firm performance. This study used a systematic literature review which involved identification, appraisal and synthesis of relevant studies. The study further employed bibliometrics, content analysis and meta-analysis to identify articles and reviews published between 2007 and August 2020, resulting in a sample size of 81. Data was analyzed using restrictions on the field of interest to the management discipline. These techniques ensured uniformity, homogeneity, and consistency in the analysis. Through content analysis and text reading of the reviewed articles, five macro

trends came to light: organization, technologies, human resources, strategies and performance. From this study, it emerged that open innovation has a positive influence on firm performance.

### **Organizational Factors and Organization Performance**

The Economist Group (2022) conducted research under the title "The Open Innovation Barometer." 500 top executives from five industries including the telecom industry were surveyed specifically for the study. A review of the literature and expert interviews was also undertaken. Three significant markets were covered by the study: Germany, the United Kingdom, and the United States of America. Through survey questions, the study investigated 65 parameters, with an emphasis on the organization's level of adoption of open-source technologies, open innovation processes, and staff and budget allocated. The findings of the study revealed that, on average, the barometer score for all industries was 62.9%. Barometer scores, which provide information about the extent and breadth of open innovation practices and their general progress, show that the application of open innovation varies according to industry and size of company. Organizations reported that using advanced open innovation techniques gave them a competitive edge as well as a major benefit in important performance areas including financial performance and developing novel goods and services. For organizations to achieve the financial benefits, including return on investment, they need to invest time, money, and sustained changes to processes, practices and culture.

Yulianto and Supriono (2023) study titled "Effect of open innovation on firm performance through type of innovation: Evidence from SMES in Malang City, East Java, Indonesia" reached a number of findings. The study used both qualitative and quantitative methods to collect data, to test objective theory and to consider the relationships between the variables. Additionally, the study used the Slovin formula and an online sample size solution to select a research sample of 107 SMEs from a population of 457. Each type of innovation and firm performance variables were measured on a Likert scale. The study used Smart-PLS a non-parametric multivariate approach to estimate pathway models with latent variable. Statistical analysis provided descriptive and inferential statistics. The model measurements were assessed to determine internal consistency reliability, convergent reliability, and discriminant validity. The study had several findings based on the results. Open innovation has a direct, positive and significant effect on product innovation ( $\beta = 0.853$ ; p-value  $<0.05$ ), process innovation ( $\beta = 0.863$ ; p-value  $<0.05$ ), and service innovation ( $\beta = 0.859$ ; p-value  $<0.05$ ). According to Yulianto and Supriono (2023), the degree to which the type of innovation influences organization performance depends on SMEs' capability of knowledge management and innovation capability.

Other studies suggest that moderating factors such as organization size, structure, culture, capacity to absorb innovations within the organization, and lack of managerial support, may hinder the effectiveness of open innovation practices (Barney, 1986; Bigliardi et al., 2020; Lam et al., 2021; Ovuakporie et al., 2021; The Economist Group, 2022; Tsai et al., 2022; Zhang et al., 2023). However, the effects of these factors can partly be mitigated by strategic partnerships and collaboration with external partners through joint ventures, alliances, collaborative patents, partnership agreements, and special purpose vehicles among others (The Economist Group, 2022). By mitigating these moderating factors, organizations are then able to improve the results from the open innovation strategies and practices.

### **Case: Safaricom PLC**

**Collaborations and Strategic Partnerships:** Over the years, Safaricom has strategically partnered with Financial Institutions, Fintech Ecosystems, Govtech Ecosystems and Large & Small Enterprises, and the Government of Kenya, including the ongoing efforts in digitizing Kenya. Some of the notable partnerships with banks and the Government of Kenya have resulted in the following products: M-Shwari, one paybill number in E-Citizen platform, M-Pesa, M-Akiba, M-TIBA, Digifarm, Biashara Smart, Fuliza, Hustler Fund, Halal Pesa (the first Sharia-compliant digital financing product in partnership with Gulf Bank), among others. Notably, Safaricom, in partnership with World Food Programme, was able to leverage on M-Pesa through its product Chakula Chap to digitize food delivery for over 100,000 households. The company partnered with Government of Kenya to roll out Women Enterprise Fund on M-Pesa in 2023. These collaborations and partnerships, which result into innovations, are part of open innovation strategies (He et al., 2020).

**Technological Innovation:** Safaricom PLC has continued investment in technology. In its financial year ending 2023, Safaricom PLC achieved 97% coverage of its 4G network and increased its Fibre-optic footprint by 28.7% Year on Year (YoY) to 14,000 km across Kenya. The company's strategic focus for the financial year 2024 is to upscale technological solutions according to the Safaricom PLC Annual Report and Financial Statements 2023.

**Organization Performance - Market Share, Revenue Growth and Profitability:** Safaricom's market share in mobile (SIM) subscription stood at over 44 million of 66.75 million subscriptions (over 60% of total market share) according to the First Quarter Sector Statistics Report for Financial Year 2023/2024 by Communications Authority of Kenya. During the same period, Safaricom PLC had 61.9% market share in mobile services subscriptions, 64% in domestic mobile voice traffic and 89% in SMS traffic.

According to Safaricom PLC Annual Report and Financial Statements 2023, customers of Safaricom Kenya increased by +3.1% Year on Year to 43.75 million (2022: 42.44 million). Across all its operations, Safaricom was able to increase its customers, including M-Pesa customers which increased by +5.2% Year on Year (YoY) to 32.11 million (2022: 30.53 million), M-Pesa global customers by +5.7% YoY, M-TIBA customers by 8.3% YoY, Fixed Income customers by +17.9% YoY, Active M-PESA agents by +0.1% YoY, and LNM active merchants by +23.1% YoY.

During its financial year ending 2023, Safaricom continued increasing its service revenue by 5.2% Year on Year to Kshs. 295.69 billion in its financial year ending 2023 (2022: Kshs 281.11 billion) and total revenue increased to Kshs 310.09 billion from Kshs 298.08 billion during the same period. Safaricom remained profitable during the same period despite the impact of its new operations in Safaricom Ethiopia and increase in the effective tax rate. Profit after Tax declined to 52.483 billion in its financial year ending 2023 (2022: Kshs 67.496 billion) according to the Safaricom PLC Annual Report and Financial Statements 2023.

**Impact on UN Sustainable Development Goals (SDGs).** Safaricom PLC Annual report and Financial Statements 2023, highlighted its impact on many of the UN Sustainable Development Goals (SDGs), including SDG 3 on Good Health, SDG 4 on Quality Education, SDG 7 on Clean Energy, SDG 8 on Decent Work & Economic Growth, SDG 9 on Innovation & Infrastructure, SDG 10 on Reduced Inequalities, SDG 12 on Responsible Consumption, SDG 16 on Peace & Justice, and SDG 17 on Partnerships for the Goals.

## Research Gaps

Researches in the past have focused mostly on innovations especially M-Pesa product (GSMA report, 2023), effects of innovations on the organizations including Safaricom in Kenya (Markus & Nan, 2020) and the benefits of innovations especially in the third world (GSMA report, 2023).

Studies have also looked into several theories impacting innovations including The Technology Acceptance Model (Mutheu & Mwasiaji, 2023; Kanyi & Kihara, 2022), The Resource-Based View Theory (Penrose, 1959), Open Innovation Theory (Bigliardi et al., 2020; Ogink et al., 2023; Yulianto & Supriono, 2023), Competitive Advantage theory (Porter, 1985; Mugo & Macharia, 2021), Knowledge-Based Theory (Yulianto and Supriono, 2023) and Disruptive Innovation Theory (Gachigo et al., 2019; Mugo & Macharia, 2021).

Inspite of other studies undertaken in the past, there is a gap in literature in the domestic application of open innovation theory in Kenya and relevance on performance of organizations in the telecommunication industry in Kenya.

## METHODOLOGY

The study employed desktop research. Information for the research, which was obtained from published literature available in the public domain, was critically reviewed, analyzed, synthesized and conclusions were drawn. The methodology used in this study has been used in other studies in the telecommunication industry and on open innovation research areas, including a study by Calderon and Ribeiro (2023) on the role of digital technologies in business and management. A study by Ogink et al. (2023), used a similar methodology, and investigated the mechanisms in open innovation by reviewing and synthesizing literature. Mugo (2020) also conducted a desktop research on how Porter's five forces influenced the competitive edge in telecommunication industry in Kenya.

This study used desktop research because of its suitability in the face of limited resources, time constraints and the easy access to the required information. The information was critically reviewed, analyzed, and synthesized in order to draw conclusions.

Further studies are recommended using primary research methods as they will provide additional and in-depth insights on open innovation strategies influence on organization performance in the Kenyan telecommunication industry.

## FINDINGS

The purpose of this study was to establish how the open innovation strategy affected the organization performance in Kenya's telecommunication industry. Open innovation strategies were the independent variables and organizational performance was the dependent variable in this study, which employed the desktop research method. The study also highlighted several organizational elements that affect the efficacy of the open innovation strategy.

Drawing on the examined literature, this study demonstrated that innovations, when paired with appropriate innovation strategies, have a favorable impact on the performance of an organization. Innovation strategies specifically exploration innovative strategy have been shown by Gachigo et al. (2019) to influence the organization performance of the Telecommunication industry in Kenya. This is further supported in the study by Kanyi and Kihara (2022), which established innovation strategies have an impact on the performance of internet service provider enterprises in Nairobi, Kenya. Product innovation, according to the study by Yator and Kipchumba (2023), accounted for 62.1% of the variation in Safaricom (K)

Limited performance. In addition, a study conducted in 2023 by Mutheu and Mwasiaji titled "Strategic innovations and telecommunication mobile network operators in Machakos County, Kenya" found a favorable correlation between the performance of these operators and functional integration, market focus, and technological adoption.

Bigliardi et al. (2020) found that open innovation strategies have a positive and significant effect on firm performance. This was supported by the barometer ratings of The Economist Group's (2022). "The Open Innovation Barometer" report by The Economist Group's (2022) established that open innovation has a favorable and significant impact on organizational performance. The survey also indicated that sophisticated open innovation processes provide firms with competitive benefits, as well as considerable advantages in key performance areas such as financial performance, product innovation and service innovation. The Economist Group (2022) outlined the main advantage of open innovation is access to the best talent locally and globally.

Organizational factors, such as size, structure, culture, ability and capacity to absorb innovation, and lack of managerial support, among others, seem to have a moderating effect on the relationship between open innovation and firm performance, according to a number of studies (Bigliardi et al., 2020; Lam et al., 2021; Ovuakporie et al., 2021). According to the research by The Economist Group (2022) in the published "The Open Innovation Barometer" report, the utilization of open innovation differed by industry and size of company. The study underscored that in order to innovate and reap the financial benefits, including return on investment, firms must invest time and resources, and continuously improve procedures, policies, and organization culture (The Economist Group, 2022). In addition, the degree to which open innovation influences innovations is dependent on the ability of organizations to increase knowledge and utilization of the flow of knowledge in adopting innovations, as demonstrated by Yulianto and Supriono (2023).

In the case of collaborations, it was established that Safaricom PLC, had formed strategic partnerships and collaborations over the years with financial institutions, Fintech organizations and ecosystems, Govtech ecosystems, large and small enterprises, and the Government of Kenya. The strategic partnership with Government of Kenya includes the ongoing efforts in digitizing Kenya. These collaborations and strategic partnerships, which are part of open innovation strategies, have opened new markets for Safaricom, increased its innovations, products and service range leading to increased revenues over the years. With diversified and increased revenue streams, Safaricom has remained profitable over the years despite external factors such as the introduction and increase of taxes and internal factors such as the heavy capital outlay in its geographical diversification into Ethiopia. Additionally, Safaricom has had positive impact on sustainable development goals (SDGs) due to its operations and some of its collaborations with various stakeholders.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Summary**

In summary, this study concluded innovations and innovations strategies including open innovation strategies have a positive relationship with organization performance. However, this performance could be moderated by various organizational factors. The findings from this study further revealed that collaboration between the firms in the telecommunication industry in Kenya and various stakeholders using open innovation strategies had positive effects in the society. The findings suggest organizations in the telecommunication industry in Kenya which

adopt open innovation strategies can effectively compete in the industry despite the dominant position of one organization.

### **Conclusion**

Based on the literature reviewed, collaboration and strategic partnerships between the firms in the telecommunication industry and various stakeholders using open innovation strategies have influenced the performance of the organizations in the telecommunication industry in Kenya. Post COVID 19, the Government of Kenya has sought private sector partnerships with organizations in the telecommunication industry in providing innovative solutions for health, the economy, food security, livelihoods, logistics/transport and national security. These partnerships which are part of open innovation practices are likely to be instrumental in the growth and profitability of organizations in the Telecommunication Industry. This is of importance, as the ICT sector in the Kenya's vision 2030 is expected to grow and contribute approximately 10% of the Gross Domestic Product of the Kenyan Economy.

### **Recommendations**

This study makes several recommendations to several stakeholders. The first recommendation is to customers, suppliers and the Government of Kenya, who strategically partner with organizations in the telecommunication sector. These stakeholders would benefit by having more insights into open innovation strategies.

Secondly, the study is likely to assist Communications Authority of Kenya, the regulatory body in the telecommunication industry, as they facilitate innovation in the industry through open innovation strategies and practices. This is of importance, especially the spill overs from research and development which are not used internally by organizations could be transformed into outflow of external ideas that will be purposely used by other organizations in the Telecommunication industry in Kenya.

Thirdly, the study could inform organizations in the Telecommunication Industry in Kenya on how to innovate, increase their market share and improve their financial performance by using open innovation strategies in an industry where there is a dominant player.

Fourthly, the study may assist consultants and management in organizations on managing and mitigating various moderating factors with negative influence on the effectiveness of open innovation strategies.

Lastly, the study could inform areas for further research in the area of open innovation. Further research is recommended on internal factors in the organization and external factors within Kenya which moderate the impact of open innovation strategies. The proposed research will provide an in-depth and holistic understanding on open innovation strategies in the telecommunication industry in Kenya. Primary research should also be carried out on organizations which are not publicly listed, giving a holistic view of the whole telecommunication industry. Surveys and interviews of managers in the telecommunication industry would further give insight into what informs strategic decisions on innovation strategies.

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