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STRATEGIC MANAGEMENT

STRATEGIC RESPONSE AND COMPETITIVE ADVANTAGE OF TELECOMMUNICATION FIRMS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

Purpose of the study: The study examined the influence of strategic response on competitive advantage of telecommunication firms in Nairobi City County, Kenya.

Methodology: A descriptive research design was adopted. The target population consisted of 192 respondents comprising strategic managers, marketing managers, and information technology managers drawn from 64 telecommunication firms through a census approach. The data collection instrument was a structured questionnaire. A pilot study was conducted to test the reliability and validity of the research instrument using Cronbach's Alpha, content validity, face validity, and construct validity through Confirmatory Factor Analysis. Data were analyzed using descriptive and inferential statistics including correlation and multiple regression analysis.

Findings: The study found that process automation, product development, market development, and strategic alliances have positive influence on competitive advantage of telecommunication firms. Correlation results revealed strong positive associations between all strategic response variables and competitive advantage. Regression results indicated that product development, market development, and strategic alliances have significant positive relationships with

competitive advantage, while process automation showed a positive but non-significant relationship.

Conclusions: The study concludes that strategic response significantly influences competitive advantage of telecommunication firms in Nairobi City County, Kenya. Firms that effectively implement strategic response mechanisms through innovative processes, differentiated products, expanded market reach, and collaborative partnerships are better positioned to achieve sustainable competitive advantage.

Recommendations: The study recommends that managers of telecommunication firms should prioritize strategic response to improve competitive advantage by adopting process automation, product development, market development, and strategic alliances. Telecommunication firms should invest in automation technologies, develop differentiated products through innovation, engage in market penetration and customer segmentation, and establish strategic partnerships to enhance their competitive positioning in dynamic business environments.

Keywords: *Strategic response, competitive advantage, telecommunication firms, process automation, product development, market development, strategic alliances, Nairobi City County, Kenya*

BACKGROUND OF THE STUDY

In today's globalized and fast-evolving market, firms are continually faced with competitive pressures, technological advancements, and unforeseen disruptions. How organizations respond strategically to these challenges plays a significant role in determining their long-term success (Thi et al., 2023). The concept of competitive advantage, which is the ability of a firm to outperform its rivals, is closely linked to how well it adapts and responds to environmental shifts. According to Abdulwase et al. (2020) competitive advantage is defined as the ability of a firm to perform in a manner that allows it to outperform its competitors.

Competitive advantage encompasses the ability of a firm to perform in a manner that allows it to outperform its competitors through superior value delivery, operational efficiency, and strategic positioning that leads to sustained success and profitability (Zhang & Liang, 2023; Abdulwase et al., 2020; Farida & Setiawan, 2022). Competitive advantage can be determined by the strategic

response adopted, which represents a critical approach where firms adapt to internal and external environmental changes through proactive or reactive actions rather than maintaining status quo in dynamic business environments (Agazu & Kero, 2024; Thi et al., 2023; McCall, 2024).

Strategic response is a management framework that encourages businesses to adapt to environmental shifts through organizational actions triggered by changes in external factors such as competition, regulation, and technology, or internal conditions such as resources and capabilities. Unlike defensive strategies that emphasize merely surviving market pressures, strategic response seeks to create sustainable competitive advantage through innovation and adaptation. Thomran et al. (2022) outline the key principles of strategic response, including building dynamic capabilities, pursuing value innovation through process automation and product development, and exploring new market opportunities through strategic alliances. Strategic response fosters long-term growth by enabling firms to differentiate themselves through innovation and market positioning. Ardley and Naikar (2021) examine the influence of strategic response on competitive advantage and firm performance.

Businesses that successfully apply strategic response develop innovative processes, products, and services that capture market opportunities and respond to competitive pressures, leading to increased profitability and market leadership. In most developed countries, strategic innovations are implemented by firms to help increase their efficiency and profitability. By creating differentiated value propositions, firms can reduce competitive pressure, increase profits, and expand their customer base through innovation (Eiriz & Barbosa, 2022). These strategies help firms eliminate obsolete competitive approaches and create new value propositions that offer competitive edge to their business. By focusing on innovation and strategic adaptation, companies can better position themselves for long-term success in dynamic business environments.

The global telecommunications sector has undergone remarkable transformation in recent decades, moving from traditional voice communication to a landscape increasingly characterized by digitalization, technological disruption, and fierce competition. This shift reflects not just evolving economic realities but also the complex interplay of technological advancements including artificial intelligence, automation, and mobile money platforms (Uddin & Akhter, 2021). In this dynamic context, strategic response has become increasingly important as telecommunication

firms seek to create competitive advantages and respond effectively to rapidly changing market conditions.

The telecommunications sector functions as a catalyst to change a nation's economic structure from basic infrastructure to one that is more dynamic and innovative. In Africa, the telecommunications sector has shown significant growth potential, yet firms face challenges including volatile markets, economic instability, political risks, and regulatory changes (Kgomotso & Akinlolu, 2021; Mufudza & Chileshe, 2020). African firms often navigate unique institutional challenges including regulatory changes, political instability, and weak governance structures, requiring strategic responses involving innovation, local adaptation, and strategic partnerships (Ogunyemi & Mbigi, 2022). This challenging environment has necessitated that firms adopt innovative business models and technologies as strategic responses to competition in local and global markets (Babatunde & Ibhagui, 2023).

In Kenya, the telecommunications industry has remained a highly innovative sector of the economy due to quick access to global markets and technological advancements. The industry contributes heavily to the Kenyan economy in terms of GDP returns, employment opportunities, and expanding tax revenue limits for the country. However, Kenyan firms face volatility due to factors such as political instability, economic uncertainty, and external shocks, requiring strategic responses involving risk management, cost reduction, and innovative business models (Munyua & Kagwe, 2022; Gathara & Mureithi, 2021). Kenyan telecommunication firms have adopted strategic innovations to remain competitive in a highly dynamic sector, using competitive strategies such as cost leadership, innovation, and market positioning to leverage competition (Ochieng & Aduda, 2021).

In this challenging context, strategic response represents a critical pathway for Kenyan telecommunication firms to create sustainable competitive advantages and improve their market positioning. Thus, the study examined the influence of strategic response on competitive advantage of telecommunication firms in Nairobi City County, Kenya. By investigating how these firms leverage process automation, product development, market development, and strategic alliances to enhance their competitive positioning, the research aimed to provide valuable insights for business leaders and policymakers in the telecommunications sector.

STATEMENT OF THE PROBLEM

The telecommunication sector has experienced significant growth with internet connections accessible to 54.4% of the global population and internet users rising from 0.4 billion in 2020 to 3.4 billion in 2022 (Internet World Stats, 2022). In Kenya, mobile penetration increased by 3.0% to reach 44.119 million subscribers between January and March 2019 (CAK, 2021), demonstrating substantial market expansion. However, despite these rapid developments in the mobile market, improved international connectivity, and increased competition, performance in Kenya's telecommunication sector remains minimal with only large companies such as Safaricom enjoying market dominance, indicating significant competitiveness challenges among firms in the industry (Ngugi & Murugi, 2022).

According to the CAK report (2020), innovative solutions such as disruptive technologies have intensified competition among telecommunication firms, yet significant disparities exist between top industry players and smaller firms in adopting strategic solutions. Strategic response among telecommunication firms is predominantly limited to large firms controlling significant market share, thereby constraining the growth potential of small and medium enterprises. Chang et al. (2020) emphasized that optimizing innovation requires building business synergies between telecommunication firms and industry players, while Huebner et al. (2021) found that innovation strategies reduce costs by eliminating financial intermediaries, highlighting the critical role of strategic response in maintaining competitive advantage.

Research on competitive advantage in Kenya's telecommunication sector has not adequately assessed strategic response dimensions such as process automation, product development, market development, and strategic alliances, presenting significant conceptual gaps. Additionally, most studies on innovation and competitive advantage have been conducted in developed countries, creating contextual gaps that limit understanding of strategic response dynamics in emerging markets like Kenya. This study therefore sought to fill these gaps by examining the influence of strategic response on competitive advantage of telecommunication firms in Nairobi City County, Kenya.

OBJECTIVE OF THE STUDY

i. To establish the influence of process automation on competitive advantage of telecommunication firms in Nairobi City County, Kenya.

ii. To determine the influence of product development on competitive advantage of telecommunication firms in Nairobi City County, Kenya.
iii. To find out the influence of market development on competitive advantage of telecommunication firms in Nairobi City County, Kenya.
iv. To assess the influence of strategic alliances on competitive advantage of telecommunication firms in Nairobi City County, Kenya.

THEORETICAL FRAMEWORK

The study was informed by four theories as discussed below.

Diffusion of Innovation Theory

Rogers (1962) developed the diffusion of innovation theory to explain how, why, and at what rate new ideas and technology spread through social systems. According to Rogers (2003), diffusion is the process by which an innovation is communicated over time among participants in a social system, influenced by four main elements: the innovation itself, communication channels, time, and the social system. The theory categorizes adopters into five groups: innovators, early adopters, early majority, late majority, and laggards, recognizing that adoption of new ideas does not happen simultaneously but rather as a gradual process where some individuals are more apt to adopt innovations than others (Wayne, 2016). This theory is applicable to the current study as it demonstrates the link between process automation and organizational competitiveness, suggesting that increased innovation in an organization through process automation is expected to enhance competitive advantage in the telecommunication sector.

Resource-Based Theory

Barney's (1991) resource-based theory posits that organizations should look inside the company to find sources of competitive advantage through strategic use of their resources. The theory prescribes that organizations position themselves strategically based on their resources and capabilities rather than their products and services, distinguishing between tangible resources (property, equipment, and cash) and intangible resources (employee knowledge and skills, firm reputation, and organizational culture) (Cole, 2017). Resources play a major role in assisting companies to achieve higher organizational performance and competitive advantage, with executives needing to nurture and develop their firms' resources to achieve long-term competitive

advantages. This theory provides a deep understanding of the role of resources in product development, as firms possessing valuable resources such as information systems, finances, and production infrastructure are able to innovate and adapt to changes in the business environment, thereby supporting the product development variable under study.

Economic Entrepreneurship Theory

The economic entrepreneurship theory, rooted in classical and neoclassical economics and influenced by Joseph Schumpeter (1934), describes entrepreneurship as a driver of market-based systems where enterprises create something new that serves as impulses for the motion of market economy. Schumpeter contended that entrepreneurs are prime movers in economic development, with their function being to innovate or carry out new combinations, while Fiet (2002) argued that entrepreneurs are incentivized to use episodic knowledge to generate value. The theory firmly states that economy and entrepreneurial activity are intertwined, with entrepreneurs motivated by economic incentives such as technological market knowledge and associated resources, where availability or absence of markets can drive entrepreneurial growth through development of new markets and improvement of existing markets through innovation (Casson, 2005). This model demonstrates the link between market development and competitiveness of firms, suggesting that adoption of new ideas such as distribution channel innovations leads to improvements in products, processes, and services, thereby supporting the market development variable in this study.

Theory of the Innovative Firm

The theory of the innovative firm by Joseph Schumpeter (1984) posits that organizations benefit if their innovation is successful either in reducing overall cost of production or increasing demand for their products (Sledzik, 2013). According to Lazonick (1994), the function of a firm is to transform productive resources into goods and services that can be commercialized, with innovative firms having the ability to transform productive resources into higher quality, lower cost goods and services, translating to gains for customers and other participants in the economy. The theory suggests that firms can gain and sustain competitiveness to compete effectively in their industry through innovation rather than varying price and quantity, with innovative firms becoming competitive by investing in quality and quantity productive resources. This theory is relevant to the current study as innovative firms are able to use strategic alliances to develop new

and existing products, processes, and systems to meet consumer needs and increase their market share, thereby supporting the strategic alliances variable under study.

CONCEPTUAL FRAMEWORK

Conceptual framework is the graphical representation of variables, which are the dependent variable and the independent variables. The framework shows the dependent and independent variables utilized in a study. Hrebiniak (2021), defines it as a group of concepts, which are organized in a systematic manner to provide a tool for integrating and interpreting information. The conceptual framework provides a foundation for development of the variables under study.

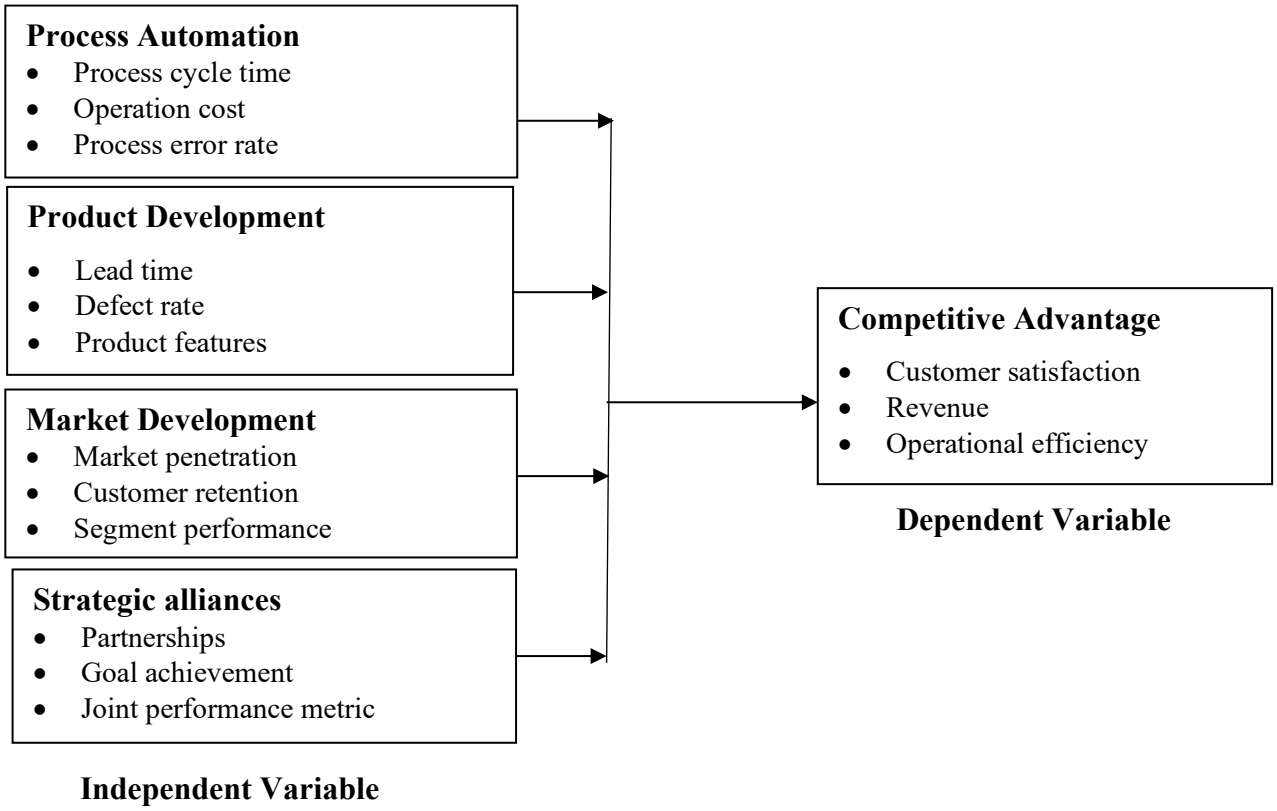

Figure 1: Conceptual Framework

EMPIRICAL REVIEW

Uddin and Akhter (2021) found that process automation and innovation strategies facilitated market penetration through increased distribution and marketing benefits while reducing market entry costs among firms in the United States. Karanja and Omondi (2024) established that organizational restructuring and innovation through process automation had significant effect on

performance of businesses in competitive environments in Kenya, recommending its adoption as an innovation strategy for achieving competitive advantage. Zhang and Liang (2023) found that product differentiation through quality improvement and increased market offerings enabled firms in China to achieve higher productivity and competitive advantage. Eiriz and Barbosa (2022) established that differentiation had positive and significant effect on performance of firms in Portugal, with product development through differentiation leading to increased productivity and higher market share. Mustafa and Latkovikj (2020) found that differentiation had the highest effect on firm performance and competitiveness, while Njoroge and Kaluyu (2020) established that business development strategies involving new and improved products positively affected competitiveness of firms in Kenya.

Abdulwase et al. (2020) found that market development had positive and significant effect on competitive advantage of firms in China. Alao et al. (2020) established that strategic marketing had positive and significant effect on competitive advantage of firms in Nigeria, while Muiruri and Njuguna (2023) found that market development and innovation had positive and significant effect on competitive advantage of firms in South Sudan, recommending increased utilization of market development to achieve competitive advantage. Thi et al. (2023) found that innovation strategies had positive and significant effect on sustainable competitive advantage of firms in Vietnam, recommending adoption of innovation strategies and partnerships.

McCall (2024) established that strategic response has positive and significant effect on competitive advantage, with technological innovation positively impacting firm performance and competitiveness. Agazu and Kero (2024) found that firms adopting innovative strategies in Ethiopia responded effectively to business environment changes and achieved higher productivity, while Farida and Setiawan (2022) established that business strategies including innovation, product and market development improved organizational competitive advantage in Indonesia. Thomran et al. (2022) found positive relationship between innovation and competitive advantage in Qatar, Onamusi (2020) established that response capability positively affected competitiveness in Nigeria, and Ardley and Naikar (2021) found that innovative strategies such as market development contributed positively to competitive advantage of firms in the United Kingdom.

RESEARCH METHODOLOGY

This study adopted a descriptive research design targeting 64 telecommunication firms in Nairobi City County, Kenya (CAK, 2023). A census approach was used to collect data from all 192 respondents comprising strategic managers, marketing managers, and information technology managers from the firms. Primary data was collected using structured questionnaires, while secondary data was obtained from reports and publications. Data was analyzed using SPSS version 28.0, employing descriptive statistics (means, frequencies, percentages, and standard deviations) and inferential statistics including correlation and multiple regression analysis to determine the relationship between strategic response variables (process automation, product development, market development, and strategic alliances) and competitive advantage of telecommunication firms.

RESEARCH FINDINGS AND DISCUSSION

This section presents the findings of the study, data analysis, data presentation, and data interpretation. The study sought to establish whether process automation, product development, market development and strategic alliances affect competitive advantage of telecommunication firms.

Response Rate

The study sought to determine the response rate of the study. The total number of questionnaire forms that were administered was 173. A total of 129 forms were filled. This represented an overall successful response rate of 75% as shown in Figure 2. According to Render et al (2012), a response rate of 50% or more is adequate for a descriptive study. Therefore, a response rate of 75% was good for the study.

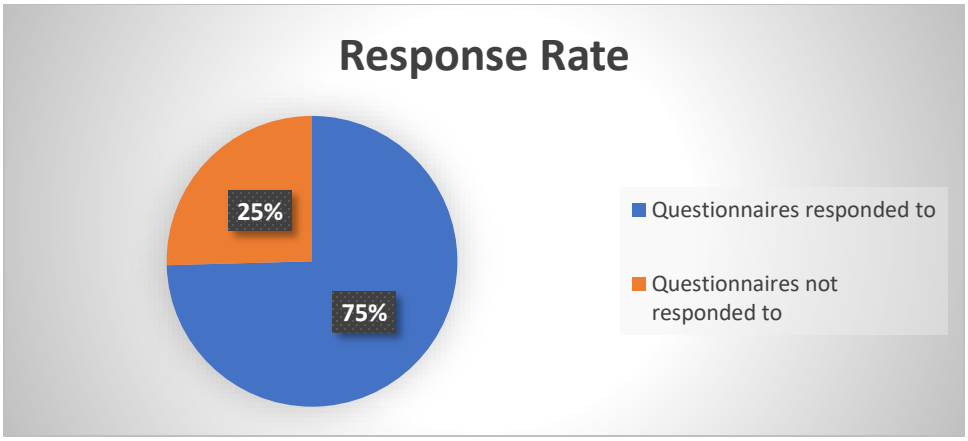

Figure 2: Response Rate

Descriptive Findings and Analysis

This part provides the results of the descriptive analysis carried out by the study consisting percentages, mean and standard deviation. The findings were presented as per each objective.

Process Automation

The first objective was to establish the influence of process automation on competitive advantage of telecommunication firms in Nairobi City County, Kenya. The respondents were asked to indicate the extent to which the agree with the statement on process automation based on a Likert scale where Strongly agree -5, Agree -4, Moderate -3, Disagree -2, Strongly disagree -1. The results of the study were as shown in table 1. From the results, the respondents agreed that the organization has implemented process automation systems. This is supported by a mean of 4.27 (std. dv = 0.827). In addition, as shown by a mean of 3.61 (std. dv = 1.092), the respondents agreed that the organization uses artificial intelligence tools. Further, the respondents agreed that the organization uses robotic process automation.

This is shown by a mean of 3.16 (std. dv = 1.221). The respondents also agreed that the organization has implemented machine learning. This is shown by a mean of 3.78 (std. dv = 0. 946). With a mean of 3.68 (std. dv = 1.046), the respondents agreed that the organization had adopted frontend automation. The respondents agreed that the organization has adopted backend automation. This is supported by a mean of 3.92 (std. dv = 1.013). In addition, as shown by a mean of 4.40 (std. dv = 0.702), the respondents agreed that process automation has improved organizational competitiveness. Majority of the respondents agreed with the statements on process

automation as shown by a mean of 3.83. The responses given by the respondents had little variation (standard deviation=0.978).

Table 1: Process Automation

	Mean	Std. Deviation
The organization has implemented process automation systems	4.27	.827
The organization uses artificial intelligence tools	3.61	1.092
The organization uses robotic process automation	3.16	1.221
The organization has implemented machine learning	3.78	.946
The organization had adopted frontend automation	3.68	1.046
The organization has adopted backend automation	3.92	1.013
Process automation has improved organizational competitiveness	4.40	.702
Aggregate	**3.83**	**.978**

Product Development

The second objective was to determine the influence of product development on competitive advantage of telecommunication firms in Nairobi City County, Kenya. The results of the study were as shown in table 2. From the results, the respondents agreed that organizational processes have improved. This is supported by a mean of 4.43 (std. dv = 0. 758). In addition, as shown by a mean of 4.26 (std. dv = 0. 734), the respondents agreed that improved processes have led to improved products. Further, the respondents agreed that the organization has introduced new products. This is shown by a mean of 4.31 (std. dv = 0. 855).

With a mean of 4.12 (std. dv = 0. 949), the respondents agreed that organizational products are innovative. The respondents agreed that the organization uses advanced technology in product development. This is supported by a mean of 4.14 (std. dv = 0. 882). In addition, as shown by a mean of 4.34 (std. dv = 0. 755), the respondents agreed that use of modern operations systems have improved product quality. Further, the respondents agreed that product development has improved organizational competitiveness. This is shown by a mean of 4.55 (std. dv = 0. 572). Majority of the respondents agreed with the statements on product development as shown by a mean of 4.31. The responses given by the respondents had little variation (standard deviation=0.787).

Table 2: Product Development

	Mean	Std. Deviation
Organizational processes have improved	4.43	.758
Improved processes have led to improved products	4.26	.734
The organization has introduced new products	4.31	.855
Organizational products are innovative	4.12	.949
The organization uses advanced technology in product development	4.14	.882
Use of modern operations systems have improved product quality	4.34	.755
Product development has improved organizational competitiveness	4.55	.572
Aggregate	**4.31**	**.787**

Market Development

The third objective was to find out the influence of market development on competitive advantage of telecommunication firms in Nairobi City County, Kenya. The results of the study were as shown in table 3. From the results, the respondents agreed that the organization partners with other market players. This is supported by a mean of 4.33 (std. dv = 0. 782). In addition, as shown by a mean of 4.19 (std. dv = 0. 858), the respondents agreed that the organization has well established markets for its products. Further, the respondents agreed that the organization has increased its market share. This is shown by a mean of 4.40 (std. dv = 0. 754). The respondents also agreed that the organization uses customer segmentation to sell products. This is shown by a mean of 4.40 (std. dv = 0. 754). With a mean of 4.44 (std. dv = 0. 636), the respondents agreed that the organization has adequate information sharing platforms. The respondents agreed that advertising on online platforms has increased sales. This is shown by a mean of 4.43 (std. dv = 0. 768). The respondents also agreed that market development has improved competitive advantage. This is shown by a mean of 4.59 (std. dv = 0. 581). Majority of the respondents agreed with the statements on market development as shown by a mean of 4.40. The responses given by the respondents had little variation (standard deviation=0.733).

Table 3: Market Development

	Mean	Std. Deviation
The organization partners with other market players	4.33	.782
The organization has well established markets for its products	4.19	.858
The organization has increased its market share	4.40	.754
The organization uses customer segmentation to sell products	4.40	.754
The organization has adequate information sharing platforms	4.44	.636
Advertising on online platforms has increased sales	4.43	.768
Market development has improved competitive advantage	4.59	.581
Aggregate	**4.40**	**.733**

Strategic Alliances

The fourth objective was to assess the influence of strategic alliances on competitive advantage of telecommunication firms in Nairobi City County, Kenya. The results of the study were as shown in table 4. From the results, the respondents agreed that the organization has adopted partnerships for innovation. This is supported by a mean of 4.28 (std. dv = 0. 875). In addition, as shown by a mean of 4.19 (std. dv = 0.911), the respondents agreed that the organization has embraced new alliances to improve its operations. Further, the respondents agreed that the organization has partnered with other firms to adopt advanced technology. This is shown by a mean of 4.22 (std. dv = 0. 912). The respondents also agreed that the organization has increased production innovations through strategic alliances. This is shown by a mean of 4.22 (std. dv = 0. 721).

With a mean of 4.26 (std. dv = 0.832), the respondents agreed that the organization has well-established relationships with partners in the industry. The respondents also agreed that the organization has incorporated process optimization. This is shown by a mean of 4.22 (std. dv = 0.721). The respondents also agreed that strategic alliances have improved organizational competitive advantage. This is shown by a mean of 4.23 (std. dv = 0.825). Majority of the respondents agreed with the statements on strategic alliances as shown by a mean of 4.23. The responses given by the respondents had little variation (standard deviation=0.828).

Table 4: Strategic Alliances

	Mean	Std. Deviation
The organization has adopted partnerships for innovation	4.28	.875
The organization has embraced new alliances to improve its operations	4.19	.911
The organization has partnered with other firms to adopt advanced technology	4.22	.912
The organization has increased production innovations through strategic alliances	4.22	.721
The organization has well-established relationships with partners in the industry	4.26	.832
The organization has incorporated process optimization	4.22	.721
Strategic alliances have improved organizational competitive advantage	4.23	.825
Aggregate	**4.23**	**.828**

Competitive Advantage of Telecommunication Firms

The study sought to establish the competitive advantage of telecommunication firms in Nairobi City County, Kenya. The results of the study were as shown in table 5. From the results, the respondents agreed that innovation strategies have increased organizational market share. This is supported by a mean of 4.40 (std. dv = 0.754). In addition, as shown by a mean of 4.64 (std. dv = 0.481), the respondents agreed that strategic response has led to improved customer satisfaction. Further, the respondents agreed that strategic response has led to operational efficiency. This is shown by a mean of 4.43 (std. dv = 0.705). Majority of the respondents agreed with the statements on competitive advantage as shown by a mean of 4.49. The responses given by the respondents had little variation (standard deviation=0.647).

Table 5: Competitive Advantage of Telecommunication Firms

	Mean	Std. Deviation
Innovation strategies have increased organizational market share	4.40	.754
Strategic response has led to improved customer satisfaction	4.64	.481
Strategic response has led to operational efficiency	4.43	.705
Aggregate	**4.49**	**.647**

Further, the respondents were asked to indicate the extent to which they thought process automation, product development, market development, strategic alliances, influenced competitive advantage of telecommunication firms. The results as shown in table 6 showed that respondents agreed that process automation influenced competitive advantage of telecommunication firms to a great extent (Mean=4.32). The results also revealed that respondents agreed that product development influenced competitive advantage of telecommunication firms to a great extent (Mean=4.35). Moreover, results indicated that respondents agreed that market development influenced competitive advantage of telecommunication firms to a great extent (Mean=4.19). Further, results showed that respondents agreed that strategic alliances influenced competitive advantage of telecommunication firms to a great extent (Mean=4.30). The results agree with findings by McCall (2024) study, which found that strategic response has a positive and significant effect on competitive advantage of organizations.

Table 6: Competitive Advantage

	Mean	Std. Deviation
To what extent has process automation influenced competitive advantage of telecommunication firms?	4.32	.673
To what extent has product development influenced competitive advantage of telecommunication firms?	4.35	.692
To what extent has market development influenced competitive advantage of telecommunication firms?	4.19	.846
To what extent has strategic alliances influenced competitive advantage of telecommunication firms?	4.30	.680
Aggregate	**4.29**	**.723**

Correlation Results

The study conducted Pearson correlation tests to determine the relationship between strategic response variables and competitive advantage of telecommunication firms in Nairobi City County. Process automation showed a strong positive association with competitive advantage ($r = 0.686$, $p < 0.05$), consistent with Uddin and Akhter (2021) who found that process automation facilitated market penetration through increased distribution and marketing benefits. Product development demonstrated a strong positive association with competitive advantage ($r = 0.795$, $p < 0.05$), aligning with Zhang and Liang (2023) who established that product differentiation had positive and significant impact on competitiveness of firms. Market development exhibited the strongest

positive association with competitive advantage ($r = 0.857$, $p < 0.05$), agreeing with Abdulwase et al. (2020) who concluded that market development had positive and significant effect on competitive advantage. Strategic alliances showed a strong positive association with competitive advantage ($r = 0.847$, $p < 0.05$).

Table 7: Correlation Analysis

		Process automation	Product development	Market development	Strategic alliances	Competitive advantage
Process automation	Pearson Correlation	1.000				
	Sig. (2-tailed)					
	N	129				
Product development	Pearson Correlation	.640**	1.000			
	Sig. (2-tailed)	.000				
	N	129	129			
Market development	Pearson Correlation	.600**	.693**	1.000		
	Sig. (2-tailed)	.000	.000			
	N	129	129	129		
Strategic alliances	Pearson Correlation	.698**	.700**	.813**	1.000	
	Sig. (2-tailed)	.000	.000	.000		
	N	129	129	129	129	
Competitive advantage	Pearson Correlation	.686**	.795**	.857**	.847**	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	129	129	129	129	129

**. Correlation is significant at the 0.01 level (2-tailed).

Regression Results

The multiple linear regression analysis was carried out to determine the relationship between strategic response and competitive advantage of telecommunication firms in Nairobi City County, Kenya. Multiple regression analysis helped to find out the best predictor variable or the strength of relationship of each independent variable (process automation, product development, market development, strategic alliances) on the dependent variable thus resulting into an optimal model. The results from the regression model were used to establish the coefficient of determination analysis, model fitness analysis and model coefficients.

Model Summary

The model summary was used to test the amount of variation in the dependent variable (competitive advantage of telecommunication firms in Nairobi City County, Kenya) resulting from the changes in the independent variables (constructs of strategic response). The R-Squared value of 0.846 indicates that approximately 84.6% of the variation in the competitive advantage of telecommunication firms in Nairobi City County is explained by the combined effect of process automation, product development, market development and strategic alliances. The remaining 15.4% is explained by other factors not part of this model. The regression results show that R was 0.920 which shows that the correlation between the independent variables and the dependent variable is positive. The adjusted R-square of 0.841 indicates that model retains its predictive power even when the number of predictors and sample size are adjusted. Thus, the model incorporating process automation, product development, market development and strategic alliances provides a reasonably good fit for predicting the competitive advantage of telecommunication firms in Nairobi City County.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.920[a]	.846	.841	1.47051

a. Predictors: (Constant), Strategic alliances, Process automation, Product development, Market development

Analysis of Variance

Analysis of variance was to assess the significance of the model in predicting the influence of strategic response at 95% confidence interval. The results confirmed that the model incorporating the four aspects of strategic response exhibits the desired level of statistical significance to explain the variation in the competitive advantage of telecommunication firms in Nairobi City County ($F = 170.672$; $p = 0.00$; $p < 0.05$). Therefore, the model is statistically significant in explaining the influence of strategic response on the competitive advantage of telecommunication firms in Nairobi City County.

Table 9: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1476.249	4	369.062	170.672	.000[b]
	Residual	268.139	124	2.162		
	Total	1744.388	128			

a. Dependent Variable: Competitive advantage

b. Predictors: (Constant), Strategic alliances, Process automation, Product development, Market development

Coefficients

Regression analysis revealed that the constant value of the model was 4.870, indicating that competitive advantage of telecommunication firms in Nairobi City County accounted for by other factors is positive even without considering strategic response. Process automation showed a positive but non-significant relationship with competitive advantage ($\beta = 0.062$, $p = 0.138$), contrasting with Karanja and Omondi (2024) who established that process automation had significant effect on business performance in competitive environments. Product development demonstrated a positive and significant relationship with competitive advantage ($\beta = 0.234$, $p < 0.05$), agreeing with Eiriz and Barbosa (2022) who found that differentiation led to increased productivity and higher market share. Market development exhibited the strongest positive and significant relationship with competitive advantage ($\beta = 0.353$, $p < 0.05$), consistent with Alao et al. (2020) who established that strategic marketing had positive and significant effect on competitive advantage. Strategic alliances showed a positive and significant relationship with competitive advantage ($\beta = 0.208$, $p < 0.05$).

Table 10: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.870	1.068		4.558	.000
	Process automation	.062	.041	.077	1.494	.138
	Product development	.234	.045	.280	5.204	.000
	Market development	.353	.058	.385	6.086	.000
	Strategic alliances	.208	.050	.284	4.119	.000

a. Dependent Variable: Competitive advantage

Optimal Regression Model

Competitive advantage of telecommunication firms = 4.870+ 0.353 (Market development) + **0.234** (Product development) + **0.208** (Strategic alliances) + **0.062** (Process automation)

CONCLUSION

The study concludes that strategic response significantly influences competitive advantage of telecommunication firms in Nairobi City County, Kenya. Specifically, the findings revealed that process automation, product development, market development, and strategic alliances each have positive effects on competitive advantage of telecommunication firms. These results indicate that telecommunication firms that effectively implement strategic response mechanisms through innovative processes, differentiated products, expanded market reach, and collaborative partnerships are better positioned to outperform their competitors and achieve sustainable competitive advantage in the dynamic telecommunications sector. The study demonstrates that firms adopting strategic responses to environmental changes are more likely to navigate competitive pressures, technological disruptions, and market volatility successfully.

The study further concludes that strategic response is a critical determinant of firm competitiveness in Kenya's telecommunications industry. Product development, market development, and strategic alliances demonstrated particularly strong relationships with competitive advantage, while process automation also showed positive influence on organizational competitiveness. Therefore, telecommunication firms in Nairobi City County should prioritize market development strategies through partnerships with market players and customer segmentation, continuous product innovation through quality improvement and new product introduction, and strategic alliances through collaborative partnerships and joint ventures to enhance their competitive positioning. Firms should also consider process automation as a complementary strategic tool for operational efficiency and long-term competitiveness in increasingly volatile and technologically-driven business environments.

RECOMMENDATIONS

The study recommends that telecommunication firms in Nairobi City County should adopt process automation through organizational restructuring and reduced operational cycles to enhance

organizational efficiency and overall competitiveness. Firms should implement artificial intelligence tools, robotic process automation, machine learning, and both frontend and backend automation systems to facilitate efficient processes and improve market penetration through increased benefits in distribution and marketing. Additionally, telecommunication firms should prioritize product development through product diversification and differentiation with innovative features, as firms that differentiate their products through quality improvement and increase their market offerings achieve higher productivity and remain competitive. Organizations should utilize advanced technology in product development, implement modern operations systems to improve product quality, and continuously introduce new and improved products to meet evolving customer needs and maintain competitive advantage in the dynamic telecommunications sector.

The study further recommends that telecommunication firms should engage in market development through market penetration strategies, effective information sharing platforms, and new customer acquisition initiatives to improve their competitive advantage. Firms should partner with other market players, utilize customer segmentation strategies to sell products effectively, establish well-developed markets for their products, and leverage online advertising platforms to increase sales and market share. Moreover, telecommunication firms should utilize strategic alliances through partnerships and joint ventures to improve organizational competitiveness, as collaborative arrangements enable firms to share resources, adopt advanced technology, and increase production innovations. Organizations should embrace new alliances to improve operations, establish well-developed relationships with industry partners, incorporate process optimization, and adopt joint goal achievement strategies to achieve competitive advantage in highly volatile and competitive markets.

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