# Effect of Innovation Strategy on Performance of Insurance Industry in Kenya

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## ABSTRACT

The study examined the effect of innovation strategy on performance of insurance industry in Kenya with firm size as the moderating variable. Innovation was operationalized by; product innovation, process innovation and business model innovation. The study was anchored on innovation diffusion theory and resource-based theory. The study employed descriptive cross sectional research design. The target population was 504 top and middle managers from all the 56 insurance companies licensed by insurance regulatory authority by year 2023. The study adopted stratified random sampling technique, with a sample size of 218. Primary data was collected using semi- structured questionnaires. Secondary data was collected on return on asset (ROA), return on equity (ROE), customer satisfaction index (CSI), total sales, total assets and market share. Pearson's correlation coefficient was used to indicate the direction of relationship between variables. Multiple regression analysis was used to explain the nature of relationship between variables, F- statistics was used to decide the suitability of the model and beta coefficients to for test hypothesis while $R^2$ was used to determine the model goodness of fit. The study findings indicated that innovation strategy had a positive significant effect on performance of insurance industry ($p< .05$). The study also revealed that inclusion of firm size as a moderating variable had a positive significant effect on relationship between innovation strategy and performance of insurance industry ($p< .05$). The study concluded that innovation strategy contributed to the industry performance. The study recommended the need for insurance companies to invest in innovative business model, processes and products, particularly through technology to simplify policy structures and improve customer service and accessibility.

**Keywords:** Innovation Strategy, Performance, Product Innovation, Process Innovation, Business model Innovation.

## BACKGROUND OF THE STUDY

According to Odinachi (2018) leading companies succeed not by battling competitors but by systematically creating new uncontested market space ripe for growth. Denning (2017) is of the opinion that most successful businesses and industries in the global economy are those that created new market based upon innovation and creativity, establishing products and services that appealed to new customers and redefined their entire industries.

Innovation is the application of new ideas to the products, processes, or other aspects of the activities of a firm that lead to increased value (Dearing & Cox, 2018). Innovation is the essential act for the growth and efficiency of any economic activity. Investment activities and their results are directly reliant on the kind of innovation that has been used (Timur & Maziliauska, 2017). Innovation is the creation of value by using relevant knowledge and resources for change of ideas into a new products, processes, or practice, or

improvements in an existing product, process, or practice. Innovation strategy is an organization's relative emphasis on different types of innovations and the associated pattern of resource allocation, in alignment with its strategy at the corporate and business unit levels. Moreover, Varadarajan (2018) argues that strategic innovation is the creation of value by using relevant knowledge and resources for conversion of an idea into a new product, process, or practice with the potential to have a major transformational effect on the evolution of markets and industries.

Insurance industry all over the world provide safety and stability to individuals, groups, institutions and businesses. Insurance activities such as high penetration rate, increased written premiums and density rates contribute to economic growth both in developed and developing economies (Uldin et al., 2017). The industry is slowly rebounding back after COVID 19 pandemic with estimated premium growth of 3.5% in year 2021, 3.3% in the year 2022 and 3.1% in the year 2023 (AKI, 2021). The insurance industry at global level is not an exceptional to challenges; the performance is affected by rising inflation, competition, reduced investment returns, loss in bond holding value, underwriting losses, falling premiums, rising interest rates, tight monetary policy leading to high cost on claims. The industry needs to be more innovative on understanding the supply chain risks and formulating innovative covers for non- physical damages and contingent business interruption (OECD, 2023).

Kenyan insurance industry is faced by low market penetration rates, complex products, high living and business costs, the slowdown of the economy, and inflation (AKI, 2021). The low penetration is driven by the fact that insurance uptake is seen as a luxury and only taken when necessary or as a regulatory requirement, lack of knowledge and awareness by general public about insurance products and benefits, negative perception, high cost of living and doing business, slowdown of the economy, cultural and religious beliefs in merry go round and harambee mentality, inappropriate and complex products and limited distribution channels has highly contributed to the low uptake (Njuguna & Kiarie, 2022). According to Association of Insurers (AKI) 2021 report, some of the insurance companies have turned to creating new markets and changing the status quo as a competitive advantage. The companies have adopted the strategy of automation of processes through use of artificial intelligence (AI), machine learning (ML), digitization and internet of things (IoT), inclusion and integration of sustainable green insurance products in their portfolio, solving clients' problems instead of imposing products, changing from product pushers to advisors, increased public awareness, improved regulations and new product development. These strategies reflect on blue ocean strategies as methods of improving performance and increasing the rate of insurance uptake.

## Objectives Of the Study

1. To examine the extent to which innovation strategy affects performance of insurance industry in Kenya.
2. To evaluate the moderating effect of firm size on the relationship between innovation strategy and performance of insurance industry in Kenya

## Research Hypothesis

**$H_{01}$**: Innovation strategy has no statistical significance effect on performance of insurance industry in Kenya.

**$H_{02}$**: Firm size has no statistical significance moderating effect on the relationship between innovation strategy and performance of insurance industry in Kenya

## Theoretical Framework

### Innovation Diffusion Theory

According to Dearing and Cox (2018) innovation theory expound on how and after a certain period of time, an idea or a product increases momentum and spreads throughout a specified population or social setting. The stages through which a person adopts innovations and whereby diffusion is achieved are the awareness stage where the need for an innovation is identified, this is followed by the decision to accept or reject the

innovation, first use of innovation to try it is the third stage, and then continued use of innovation. The final result of diffusion is the specified population or social setting will adopt a new idea, behaviours, or products. Inside the various policies or practices of communities, there are usually individuals or organizations that pursue to accept new policies or ideas before they attain extensive approval. Some of them are understood as different hence they do not associate

well to others to spread their understanding. This theory is useful in this study since it explained the innovation process and its adoption, therefore it helped to analyze innovations such as new method of distribution, new products, new processes and new services embraced by insurance industry affected the performance.

**Resource based Theory**

Resource based theory was introduced by Penrose in the year 1959. The theory emphasizes how firm resources influence its growth and performance leading to competitive advantage. According to Barney (1991) a firm's resources comprise of assets, capabilities, organizational processes, firm attributes, information and knowledge that make it easier for the firm to develop good strategies to enhance its efficiency and effectiveness. Ongeti and Machuki (2018) argues that firms should focus towards encouraging resource acquisition, integration, configuration and combination that would lead to higher performance. Meaningful business strategic decisions are guided by the nature of the internal resources available in the firm, the resources of the firm determine the quality of firm activities and hence operational efficiency (Barney & Clark, 2023).

**Conceptual Framework**

A conceptual framework is a diagrammatical illustration of how the researcher conceptualizes the interaction of the study variables. In this study the independent variable of the study was innovation strategy characterized by, product innovation, process innovation and business model innovation while the dependent variable was performance characterized by return on equity (ROE), customer satisfaction index (CSI) and return on assets (ROA). The researcher perceives that the relationship between innovation strategy and performance was moderated by firm size.

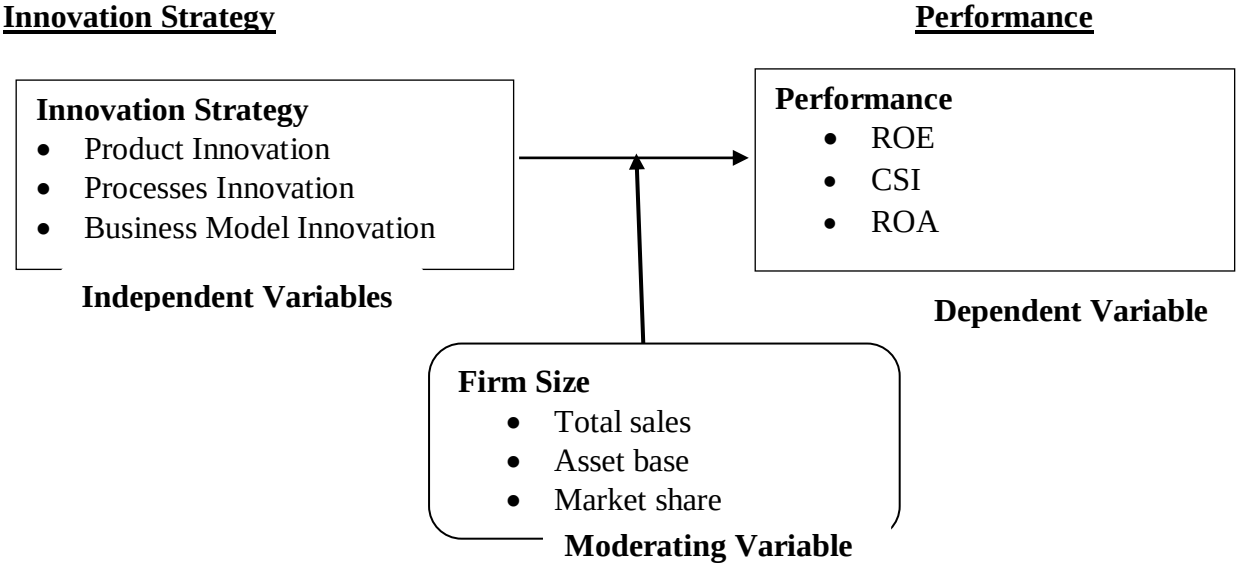


**Figure 1: Conceptual Framework**

**Theoretical Review on Variables**

**Innovation Strategy**

Innovation decisions are the most fundamental strategic decisions for every firm, since innovations today is the most fundamental instrument of firms to enter new markets, to increase current market shares, and to

strengthen the competitive edge (Bogetoft et al., 2024). Innovation can be conceived as the transformation of ideas, information and knowledge to increased competitiveness and sustained competitive advantage, overall constitutes an indispensable component of firm strategies. Innovation can be applied due to the need to offer improved or even new products, to apply more efficient production, and organization methods, to perform better in the critical markets, and to increase the perception among the customers of the firm's products (Agazu &Kero, 2024).

Product innovation is developing a product with better qualities or more functions than the current ones available in the market. The product should offer more benefits and utility to the consumers. A firm that is able to differentiate its products from the others by changing the product concept, design or services is able to gain a competitive advantage creating opportunities for growth and increased demand (Maier, 2018). Process innovation is introduction and implementation of new production methods or techniques the reduce production, distribution cost and improves quality leading to efficiency and flexibility of activities and reduced risks (Mooi, Rudd, & Jong, 2020). Firms can explore alternative business models through experimentation, open and disruptive innovations, changing business models involves modifying a single element, altering multiple elements simultaneously, or changing the interactions between elements in four areas of innovation; value proposition, operational value, human capital, and financial value (Ramdani, Binsaif & Boukrami, 2019).

### Firm size

Firm size affects the companies' competitive power; large firms enjoy more competitive advantage in the market compared to small firms because of their size (Too & Simiyu 2018). Size is measured by total assets which increase the competitiveness of the firm, therefore for the firms to improve performance, they should increase their assets (Kariuki, 2024). Firm size can be measured using different aspects, market capitalization is more market-oriented reflecting only the ownership of equity, while total assets measure the firm's total resources and total sales are more related to product market (Mwihaki, Irungu & Mutwiri, 2022).

### Performance

In modern business management, balanced score card (BSC) which is a management system is used to clearly measure both financial and non-financial aspects of performance: customer perspective, internal business processes, financial perspective, employee's growth, innovation and learning (Omar & Zineb 2019). BSC aspects are necessary for perception and implementation of a perfect performance measurement systems and formation of a general set of organization performance indexes for strategic investigation of all objectives and activities within organizations (Naknok, 2022). Organizational performance is measured based on quantitative (profitability, gross profit, return on asset (ROA), return on investment (ROI), return on equity (ROE), return on sale (ROS), revenue growth, market share, stock price, sales growth, export growth, liquidity and operational efficiency) and qualitative (job satisfaction, organizational commitment, and employee turnover) approaches which are approved by many researchers (Nguyen, Dung & Huyen, 2022).

## EMPIRICAL REVIEW

### Innovation Strategy and Performance

According to Njuguna and Kinyua (2024) innovation strategy had a positive influence on firm performance and therefore, firms should integrate their Innovation into the firm's culture together with processes, to enable continuous development for new products, services, and processes that will lead to improved performance and gain competitive edge. Kenea (2020) recommended that firms should embrace technology and automation systems in their product processes through innovation in order to enhance efficiency and effectiveness leading to overall organization performance.

Innovation strategy is a key contributor to the performance of the firm and should therefore be developed and executed as an integral part of the business strategy. Managers should recognize and manage the innovations in order to boost their operational performance. Having a clear understanding of the exact nature of innovations

will help firms to prioritize their market, production and technology strategies, to be followed by appropriate subsequent action plan (Raza & Tang, 2018).

(Bogetoft et al., 2024) studied effect of innovation on firm performance and found that, firms which combined product innovation with other types of innovations either process, organization or market innovations had the highest performance compared to those that only applied one type of innovation, this applied both in short term and long term. According to Agazu and Kero (2024) innovation strategy had a positive significant effect on firm competitiveness.

## RESEARCH METHODOLOGY

A positivistic study philosophy was adopted, to address the research objectives, based on a descriptive cross-sectional research design. The study comprised of 56 licensed insurance companies by the year 2023, with 218 respondents comprised of top management (CEOs/MDs) and Middle Management (Head of Departments) were engaged. Primary data was collected by use of questionnaire and data collection sheet was used to collect secondary data respectively. A Cronbach alpha above 0.7 validated the data collection tool. The analysis was done using Statistical Package for Social Sciences (SPSS) version 28.0, at 5% level of significance. The findings comprised of measures of central tendency and dispersion. Correlation analysis was used to ascertain linearity on the variables.

The composite scores for innovation strategy was defined as:

$$IS = \frac{x_1 + x_2 + x_3}{3}$$

Where $x_1$ is product innovation, $x_2$ is process innovation and $x_3$ business model innovation to create a composite score for innovation strategy (IS).

The performance variable was a conglomerate of return on assets (ROA), return on equity (ROE) and customer satisfaction index (CSI). The formula was given as;

For return on assets (ROA), the Z scores were given as;

$$Z_{\mathrm{ROA}} = \frac{\mathrm{x} - \bar{x}_{\mathrm{ROA}}}{\sigma_{\mathrm{ROA}}}$$

Where x: individual return on assets (ROA) for every insurance company

$\bar{x}_{ROA}$ : The average return on assets for all companies

$\sigma_{ROA}$ : The standard deviation of return on assets for all companies

For return on equity (ROE), the Z scores were given as;

$$Z_{\mathrm{ROE}} = \frac{\mathrm{x} - \bar{x}_{\mathrm{ROE}}}{\sigma_{\mathrm{ROE}}}$$

Where x: individual return on equity (ROE) for every insurance company

$\bar{x}_{ROE}$ : The average return on equity for all companies

$\sigma_{ROE}$ : The standard deviation of return on equity for all companies

For customer satisfaction index (CSI), the Z scores were given as;

$$Z_{\text{CSI}} = \frac{\text{x} - \bar{x}_{\text{CSI}}}{\sigma_{\text{CSI}}}$$

Where x: individual customer satisfaction index (CSI) for every insurance company

$\bar{x}_{CSI}$ : The average customer satisfaction index for all companies all companies

Since the resultant values for Z were between -3 and +3, we now merged them to get performance variable using mean to calculate each company's performance.

$$Performance = \frac{Z_{\text{ROA}} + Z_{\text{ROE}} + Z_{\text{CSI}}}{3}$$

The market share was also reconstructed using the z scores using the formula;

$$Z_{marketshare} = \frac{\text{x} - \bar{x}_{marketshare}}{\sigma_{marketshare}}$$

Where;

X: The individual market share observations for each company

$\bar{x}_{marketshare}$ : The average market share for all companies

$\sigma_{marketshare}$ : The standard deviation of market share for all companies

For the total assets, the Z scores were given as;

$$Z_{totalassets} = \frac{\text{x} - \bar{x}_{totalassets}}{\sigma_{totalassets}}$$

X : The individual total assets' observations for each company

$\bar{x}_{totalassets}$ : The average total assets for all companies

$\sigma_{totalassets}$ : The standard deviation of total assets for all companies

For total sales, the Z scores were given as;

$$Z_{totalsales} = \frac{\text{x} - \bar{x}_{totalsales}}{\sigma_{totalsales}}$$

X : The individual total sales' observations for each company

$\bar{x}_{totalsales}$ : The average total sales for all companies

$\sigma_{totalsales}$ : The standard deviation of total sales for all companies

**Regression Analysis**

To assess direct effect of innovation strategy on performance of insurance industry in Kenya as stated in the objectives (1), the study utilized simple linear regression analysis. The slopes of the equations was used to determine the operations strategy with greater influence on the performance of insurance industry. In this respect, the study assumed a linear relationship among the study variables, followed the regression model in the form:

Equation without a moderator: $P = \beta_0 + \beta_1 X_1 + \varepsilon$, …….. *equation* 3.1

Equation with a moderator: $P = \beta_0 + \beta_1 X_1 + \beta_2 M + \varepsilon$, …….. *equation* 3.2

Where:

P = Performance

$\beta_0$ = Constant

$\beta_1$ = Regression Coefficients for IS variable.

$X_1$ = Innovation Strategy (IS)

M = Moderator (firm size)

$\varepsilon$ = Error term.

Each individual regression coefficients (β) was tested for significance at 95% confidence level using a two tailed ***t***-test, with significant differences recorded expected at $p < 0.05$.

## RESEARCH FINDINGS AND DISCUSSIONS

**Table 1: Descriptive statistics for Innovation Strategy sub-constructs**

| **Descriptive Statistics** | | | |
|---|---|---|---|
| | N | Mean | Std. Deviation |
| Product Innovation | | | |
| The firm has developed new products that are competitive in the market. | 169 | 3.67 | .871 |
| Business development department is continuously improving the quality of products. | 169 | 4.12 | .858 |
| Through innovation, the firm has come up with unique, differentiated products | 169 | 4.11 | .780 |
| Process Innovation | | | |
| The firm has automated customer services. | 169 | 4.18 | .687 |
| The firm has adopted digitization of its operations to enhance efficiency and effectiveness. | 169 | 4.24 | .742 |
| The use of IOT and AI by the firm has shortened the processing period data conservation. | 169 | 4.17 | .802 |
| Business model Innovation | | | |
| Our R&D department is able to create new models of doing business that has contributed to gaining new market. | 169 | 4.15 | .794 |
| The management is able to align resources, financial and human capital with its processes leading to value delivery. | 168 | 4.24 | .821 |
| The firm is able to use AI and mobile systems as a channel of distribution. | 169 | 4.29 | .719 |

The development of new products was crucial for maintaining competitiveness in the market. The statement "The firm has developed new products that are competitive in the market" has a mean of 3.67 (M=3.67, SD = 0.87), indicating moderate agreement among respondents. This suggests that while the firms were seen as competitive, there may still be room for improvement in its product offerings.

On the other hand, the continuous improvement on quality of products by the business development department (the firm has developed new products that are competitive in the market) was highly regarded, with a mean score

of 4.12 (M=4.12, SD = 0.86). This reflected strong agreement that the firm's focus on product development is a significant strength. Additionally, the firms' strategy to continuously innovate by developing unique, differentiated products (the firm has a strategy to continuously innovate unique, differentiated products) also scored a high mean of 4.11 (M=4.11, SD = 0.78), showing that respondents perceive innovation as a core part of the firms' competitive edge. The relatively low standard deviation in these two items suggests consistency in these positive views across the respondents.

Automation played a key role in enhancing customer service and operational efficiency. The statement "The firm has automated customer services" scored a mean of 4.18 (M=4.18, SD = 0.69), indicating a high level of agreement that automation has improved customer interactions. The relatively low standard deviation reflects a consensus among respondents on the effectiveness of these automated processes.

Moreover, the impact of technology on business operations is strongly acknowledged, with the statement "the firm has adopted digitization of its operations to enhance efficiency and effectiveness" scoring a mean of 4.24 (M=4.24, SD=0.74). This highlights the firms' ability to leverage technology to access a broader customer base. Additionally, the use of IOT and AI to shorten the processing period and data conservation, was highly rated, with a mean of 4.17 (M=4.17, SD = 0.80). This shows that respondents agree the firms had effectively digitized processes, which likely contributes to improved performance and customer satisfaction.

The ability of the R and D department to create new models of doing business contributed to gaining new markets was rated positively, with a mean of 4.15 (M=4.15, SD=0.79). This suggests that the firm has invested in research in order to understand the market trends and discover new markets. The support on new business models by the management through financial and human capital which led to value delivery to customers scored highly, with a mean of 4.24 (M=4.24, SD=0.819). This highlights a positive change in service delivery, where the firms were perceived as being customer centric rather than simply selling products. Additionally, the use of AI and mobile systems as a way of conducting business was rated the highest in this category, with a mean of 4.29 (M=4.29, SD = 0.71). This suggests that the firms were able to reach their customers and ensures that essential product details were accessible to potential customers, which likely enhances trust and market penetration.

The data reflected a strong agreement that the firms excel in developing new products, automating processes, and new business models. The firms' continuous innovation and use of technology to enhance customer service and reach new markets were seen as major strengths. The high average values across the variables indicate that respondents believe these aspects contribute significantly to the firms' success, with relatively low standard deviations pointing to consistency in these perceptions. However, the lower mean score for new product competitiveness suggests an area where the firms could improve further to strengthen its market position.

**Hypothesis Testing**

**Innovation Strategy and Performance of Insurance Industry**

The objective of the study was to examine the extent to which innovation strategy affected performance of insurance industry in Kenya. The study had hypothesized that innovation strategy had no statistical significance effect on performance of insurance industry in Kenya.

***$H_{01}$**: Innovation strategy has no statistical significance on performance of insurance industry in Kenya*. Aggregate mean score for innovation strategy and performance of insurance industry were used to test the hypothesis and answer the objective.

**Table 2: Innovation Strategy and Performance Model Summary**

| **Model Summary[b]** | | | | | |
|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
| 1 | .722 | .521 | .519 | 2.03394 | 1.859 |
| a. Predictors: (Constant), Innovation Strategy | | | | | |
| b. Dependent Variable: Performance | | | | | |

The coefficient of determination between innovation strategy and performance was 0.722 indicating a positive effect of innovation strategy on performance. The R-Square value was 0.521, this implies that 52.1% of performance was explained by innovation strategy while 47.9% of change in performance of insurance industry was accounted for by other factors other than innovation strategy.

**Table 3: Innovation Strategy and Performance Model ANOVA**

| **ANOVA[a]** | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 35.129 | 1 | 35.129 | 8.492 | .000 |
| | Residual | 690.868 | 167 | 4.137 | | |
| | Total | 725.997 | 168 | | | |
| a. Dependent Variable: Performance | | | | | | |
| b. Predictors: (Constant), Innovation Strategy | | | | | | |

According to the model ANOVA, it was noted that the resultant regression model was considered statistically significant at 5% level of significance ($F(1,167) = 8.492$, $p<.05$). The outcome showed that the model was appropriate for explaining the effect of innovation strategy (IS) on performance of insurance industry.

**Table 4: Innovation Strategy and Performance Model Coefficient**

| **Coefficients[a]** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 10.997 | 1.296 | | 8.487 | .000 | | |
| | Innovation Strategy | 4.155 | 0.312 | 4.114 | 12.997 | .000 | 1.000 | 1.000 |
| a. Dependent Variable: Performance | | | | | | | | |

The model for innovation strategy alone impacting on performance of the insurance firms was defined by the equation;

Performance = 10.998 + 4.155* Innovation strategy.

The analysis indicated that Innovation Strategy had a positive effect on performance of the insurance industry (β=4.155). The findings revealed that a rise in the ratings associated with innovation strategy measures translated to improvement in performance of insurance industry. The results further indicated that the parameter was considered statistically significant at 5% level of significance (t=12.997, p<.05), informing that it was desired for predicting changes in performance. The hypothesis criteria was to reject hypothesis one if p-value is less than 0.05 and $\beta \neq 0$ or else don't reject $H_{01}$ in case p- value >0.05. Based on the study results, $\beta \neq 0$ and p-value < 0.05, the study rejected $H_{01}$ and stated that innovation strategy had an effect on performance of insurance industry in Kenya.

The study findings concur with the results of a study conducted by Ojenike (2024) on the study innovation strategy and performance of selected small and medium enterprises in Lagos state. The findings were that product and process innovation strategies had significance influence on performance of SMEs in Lagos and therefor they should focus on adopting innovativeness in order to experience good performance. These findings support the argument by Xiao et al., (2022) that product innovation was positively and significantly related to performance, the results indicated that product innovation contributed 15.75% variation on performance of manufacturing firms in China, they argued that firms should develop an environment that cultivates product innovation for better performance.

The study is aligned to that of Bogetoft et al., (2024) whose findings indicated that firms that combine innovation strategies such as product innovation, and other innovations have high performance not only in short run but also in the long run and companies that adopt only one type of innovation lack higher performance. According to Naqbia et al., (2020) innovation strategy leads to improved firm performance through customer satisfaction, internal business processes, learning and growth performance. This supports the study findings where automation of processes, new products and knowledge sharing significantly contributed to insurance performance.

**Moderated Summary Model**

H02: Firm size has no statistically significant moderating effect on the relationship between innovation strategy and performance of insurance companies in Kenya.

The analysis entailed a multiple regression model:

$$P = \beta_0 + \beta_1 X_1 + \beta_2 M + \varepsilon$$

**Table 5: Moderated model coefficients (Innovation Strategy and Performance Model summary)**

| **Model Summary[b]** | | | | | |
|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
| 1 | .832 | .692 | .687 | 2.12568 | 1.968 |
| a. Predictors: (Constant), Innovation Strategy, Moderator (Firm size) | | | | | |
| b. Dependent Variable: Performance | | | | | |

The analysis informed that the moderated model had a higher model R-Squared of 69.2% that the unmoderated model. This informed that the moderated model with 69.2% predictive power was a better model for predicting performance of insurance industry, than the unmoderated model with 52.1%.

**Table 6: Moderated model coefficients (Innovation Strategy and Performance Model ANOVA)**

| **ANOVA[a]** | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 33.886 | 2 | 16.943 | 4.642 | .000 |
| | Residual | 605.854 | 166 | 3.649 | | |
| | Total | 639.74 | 168 | | | |
| a. Dependent Variable: Performance | | | | | | |
| b. Predictors: (Constant), Innovation Strategy, Moderator (Firm size) | | | | | | |

The model ANOVA revealed that the F-calculated was higher than F-critical (4.642>F(2,166)=3.05). This indicated that the model was statistically significant at 5% level of significance.

**Table 7: Moderated model coefficients (Innovation Strategy and Performance Model Coefficient)**

| **Coefficients[a]** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| (Constant) | | 9.564 | 1.104 | | 8.663 | .000 | | |
| Innovation Strategy | | 5.241 | 0.748 | 5.24 | 7.007 | .000 | 1.000 | 1.000 |
| Moderator (Firm Size) | | 4.322 | 0.984 | 4.321 | 4.392 | .000 | 1.000 | 1.000 |
| a. Dependent Variable: Performance | | | | | | | | |

The moderated model is defined by the equation:

$P = 9.564 + 5.241X_1 + 4.322M$

When the moderator (firm size) is zero, the performance is +9.564. A unit increase in firm size (moderato) increases the firm performance by 0.432. Beta for the moderated model was 5.241 while that for the unmoderated model being 4.155 on innovation strategy, informing that introduction of the moderating factor increased performance. The moderator had a significant moderating effect on firm performance (t=4.392, p<.05). Based on the study results, $\beta \neq 0$ and p-value < 0.05, the study rejected $H_{02}$ and stated that firm size had a moderating effect on relationship between innovation strategy and performance of insurance industry in Kenya.

## CONCLUSIONS OF THE STUDY

The study revealed that Innovation strategy had statistically significant effect on performance of insurance industry in Kenya. The analysis reported explanatory power of 52.1%, when using business model innovation, products innovation, and process innovation as key drivers. This metric informed the significance of innovations in shaping performance of insurance companies, hence addressing the existing stronger relationship between innovation strategy and performance of insurance firms. Firm size as a moderating

variable also had a positive effect on the relationship between innovation strategy and performance of insurance industry.

The findings indicated that effectiveness on business model innovation was associated with discovery of new methods of conducting business by focusing not only on the wealthy class but also low-income markets and new distribution channels such as partnering with mobile money transfer platforms. The ability of the different companies to innovate and launch newer products customized to specific customer needs such as micro-insurance products; serving motorcycles, taxi drivers, SME and agricultural products policies led to firm's competitive advantage, though majority of the firms are yet to embrace environmental, social and governance (ESG) products. Process automation led to efficiency, effectiveness and better customer service and reduced cost though with challenges of inadequate technological infrastructure and adoptability. Companies with limited innovation strategy have been associated with limited growth, in terms of their performance. Innovation strategies retained a strong positive effect on performance regardless of firm size. Larger firms leverage their extensive networks and financial capabilities to scale market creation efforts and adopt advanced innovations. Smaller firms, though limited in resources, can remain competitive through focused innovation and targeted market strategies.

The Kenyan insurance industry operates in an environment characterized by rapid technological advancements, changing consumer preferences, macroeconomic shifts, and stringent regulatory requirements. In response to these dynamics, adopting innovative strategies has become essential for enhancing competitiveness and performance. Innovation strategy, encompassing information sharing, new product development, and automated processes, serves as a critical pillar in driving operational efficiency, customer satisfaction, and financial sustainability.

**Practical Case Studies**

The findings indicated that insurance firms have applied innovation in their operations for better performance. Companies such as AAR, CIC, Sanlam, Cooperative, ICEA Lions, Kenya Orient, Madison, Metropolitan, UAP & Old Mutual to mention but a few has embraced digitization to a moderate extent in their operations to enhance customer service. Britam holdings insurance has integrated digital platforms and mobile solutions to streamline policy management and claim processing by launching "beta lab" that nurtures emerging "insurtech" (insurance technology) and "fintech" (financial technology). "Britam connect" which targets low income markets such as moto cycle riders and tax drivers has a big impact on the firm performance. Micro-insurance such as "kinga ya mkulima" and 'malkia" has enabled the firm to penetrate new markets. The technology has promoted customer centric products characterized by convenience, transparency, personalization, simplicity and streamlined claim processes. Use of AI (artificial intelligence) analytics and tools has led to revolution of customer experience through pricing strategies, underwriting processes, claims management and distribution channels that meet tailored solutions for unique needs and risks profiles for individual customers. Insurance as a service (IAAs) has enabled customers to insure items only when in use meeting customer preferences and personalized solutions.

Jubilee Insurance has introduced "Julie" a digital virtual assistant that enable clients to access services, purchase insurance products and receive support in real time without human intervention, showcasing their commitment to AI_ driven customer service. The introduction of "jubicare" and "jubiagent" has improved service to customers through self- service using smartphones. The company has also introduced J-care bundles health insurance packages that offer several levels of coverage for patients at different prices allowing the individuals and families to choose a plan that best suits their budget and requirements. APA Insurance has pioneered bancassurance models in Kenya, integrating insurance services with banking to offer comprehensive financial solutions. Through "bima lab" the company is able to offer innovative insurance solutions through technology focusing on low cost insurance products for middle and low income markets.

**Contribution To Theory And Existing Knowledge**

The study contributes in bridging the research gap by providing empirical evidence on specific innovation factors that contribute to performance of insurance industry. The study explains the advanced methodological

approach of measuring the study variables as well as the contextual factors such as specific economic and environmental situations that affect the adoption and implementation of innovation strategy which contributes to theoretical models. The study contributes to new knowledge by providing additional information on innovation strategy and performance of insurance industry.

The study provide insight on how firms could adopt and implement different types of innovation in their operations to attain better performance. Firm size as a moderating factor also provides highlights on how firms could utilize their resources to improve performance. Insurance sector policy makers and professionals could adopt to the study recommendations and guidelines to improve the firms' operations.

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