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OPEN INNOVATION STRATEGY AND PERFORMANCE OF FAMILY-OWNED BUSINESSES IN NAIROBI, KENYA

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ABSTRACT
Family-owned businesses are a vital component of Kenya's economy, with Nairobi County serving as a key hub for their operations. Despite their economic significance, many face persistent performance challenges. Only 33% survive into the second generation, and a mere 15% reach the third. This decline is largely attributed to lack of open innovation, which limits competitiveness and responsiveness to market changes. The objective of the study was to determine the influence of open innovation strategy on the performance of family-owned businesses in Nairobi County, Kenya. The theoretical foundation of the study was the Strategic Choice Theory, adopted positivist philosophy and used ex post facto research design. The target population was top and middle managers from 226 family-owned businesses in Nairobi County. The sample size consisted of 399 respondents. Data was collected by structured questionnaires and analyzed through descriptive and inferential statistical methods. The findings show that open innovation significantly influences performance of family-owned businesses ($\beta = 0.613$, $p < .001$). It was concluded that open innovation is a transformative strategy for family-owned businesses seeking sustained performance and growth. The study recommended that financial institutions and development agencies should prioritize funding models that incentivize open innovation, enabling family firms to collaborate externally and enhance performance. Such innovation initiatives will empower smaller businesses to remain competitive and resilient in rapidly evolving markets.

KEYWORDS: *Strategic Choices, Open Innovation Strategy, Performance, Family-Owned Businesses*

INTRODUCTION
Organizational performance measures how effectively a business utilizes its resources to achieve strategic goals. High performance strengthens organizational competitiveness (Ozbun, 2022). It reflects how well financial, human, and informational resources are aligned with strategic objectives (Mani, 2022).

To sustain strong performance in today's volatile business environment, family firms must embrace strategic choices. These choices guide the firm's direction and actions (Harney, 2016). Among these, open innovation has emerged as a powerful strategy that complements traditional approaches like geographic diversification. By integrating external ideas, technologies, and partnerships, family firms can enhance their innovation capacity and remain competitive in dynamic markets (Bogers et al., 2019).

Open innovation enables family businesses to overcome internal resource constraints and access broader knowledge networks. This strategic openness supports continuity, legacy preservation, and long-term growth across generations (Bigliardi et al., 2020). It allows firms to tap into external expertise, co-create value with stakeholders, and respond effectively to shifting consumer demands and technological advancements. Such adaptability is crucial for sustaining performance and ensuring generational transitions (Micheni et al., 2017).

In Kenya, family-owned businesses form the backbone of the economy, representing 70% of registered SMEs and employing 60% of the small business workforce (Njoroge, 2019). Operating across diverse sectors, they contribute significantly to economic development and inclusive growth (Asoko Insight, 2020). However, many of these enterprises face challenges in maintaining long-term survival and realizing their full growth potential, especially in Nairobi County (Statistica, 2019).

Nairobi's family firms, though resilient and adaptable, often struggle with innovation due to limited internal capabilities and conservative management practices (Mwaniki, 2022). Open innovation offers a transformative pathway for these businesses to enhance performance by leveraging external resources and collaborative networks (Nandonde, 2020). This study investigates how open innovation strategies influence the performance of family-owned businesses in Nairobi County, aiming to uncover insights that can help future-proof these enterprises and support sustainable growth across generations.

STATEMENT OF THE PROBLEM

Family-owned businesses are a vital component of Kenya's economy, with Nairobi County serving as a key hub for their operations. These businesses account for 70% of SMEs and employ 60% of workers in the small business sector (Asoko Insight, 2020). Despite their economic significance, many face persistent performance challenges. Only 33% survive into the second generation, and a mere 15% reach the third (PwC, 2018). This decline is largely attributed to lack of open innovation, such as external collaboration, idea sourcing, and adaptive strategies, which limits competitiveness and responsiveness to market changes (Poza & Daugherty, 2020). The collapse of prominent family-owned firms like Nakumatt and Tuskys highlights the urgent need for innovative approaches to ensure sustainability. Although previous studies have examined aspects such as succession planning, governance, capital structure, and proactiveness in family firms (Hinga et al., 2022), there remains a notable gap in understanding how open innovation strategies influence performance. Open innovation, which involves integrating external ideas, partnerships, and technologies, offers a promising avenue for overcoming internal limitations and enhancing competitiveness. Nairobi's dominance in key economic sectors and its contribution of 21.7% to Kenya's GDP (KNBS, 2019) make it an ideal setting for exploring this relationship. This study seeks to investigate the impact of open innovation strategies on the performance of family-owned businesses in Nairobi, aiming to fill a critical gap in existing literature and provide actionable insights for improving their resilience and long-term success.

RESEARCH OBJECTIVE

To determine the influence of open innovation strategy on the performance of family-owned businesses in Nairobi County, Kenya.

RESEARCH HYPOTHESIS

H0: Open Innovation strategy has no statistically significant influence on the performance of family-owned businesses in Nairobi County, Kenya.

LITERATURE REVIEW

This section presents the theoretical review, empirical review and conceptual framework that underpins the study.

THEORETICAL REVIEW

The theoretical foundation of the study on open innovation strategy and performance of family-owned businesses is the Strategic Choice Theory. The theory is highlighted in this section.

Strategic Choice Theory

Strategic Choice Theory, developed by John Child in 1972, emerged as a response to deterministic organizational theories that overlooked managerial agency. It emphasizes the critical role of top management in shaping organizational outcomes through strategic decisions (Child, 1972). The theory posits that organizational performance is not solely dictated by external environmental factors but is significantly influenced by the choices made by leaders (Whittington, 1989). Key tenets include the adaptability of organizations, the importance of human agency, and the influence of managerial attributes, such as tenure, international exposure, and demographic diversity, on strategic decision-making (Jahanshahi & Brem, 2017).

The strength of the theory lies in its recognition of the dynamic interplay between structure, strategy, and leadership, allowing organizations to respond proactively to changing environments (Jewer & McKay, 2012). It contributes to organizational theory by highlighting how strategic decisions, including innovation, are shaped by leadership discretion and internal capabilities (Bonsu et al., 2023). In the context of family-owned businesses in Nairobi, Strategic Choice Theory is highly relevant to understanding the influence of open innovation strategies on performance. Family firms often face challenges such as succession issues, limited access to capital, and resistance to change, which hinder their ability to innovate (Kiilu & Ntale, 2018). The theory underscores the importance of leadership in navigating these challenges by making informed decisions that align with environmental demands and organizational goals.

Strategic leadership is essential for sustaining innovation and competitiveness. The involvement of Boards of Directors and separation of roles such as CEO and Chairman further enhance governance and innovation potential (Bolton & Park, 2020). By applying Strategic Choice Theory, this study explores how managerial discretion and strategic decision-making influence the adoption of open innovation strategies, ultimately impacting the performance longevity of family-owned businesses in Nairobi County.

EMPIRICAL REVIEW

The empirical review section highlights past related studies to open innovation strategy and performance of family-owned businesses. The focus is on findings from both global and local contexts.

Open Innovation strategy and performance of family-owned businesses

Belitski and Rejeb (2022) conducted a longitudinal study on open customer innovation in family firms, examining the effect of open innovation on performance. Using stakeholder theory and a sample of 21,140 observations from 17,859 U.K. firms, they found that family-owned businesses benefit most from customer-driven innovation within regional markets. Data analysis revealed that proximity to customers enhances innovation returns. The study highlights a gap in understanding how open innovation affects performance and success in family firms.

Bigliardi et al. (2020) reviewed literature on inbound open innovation and organizational performance. The study focused on how firms integrate external knowledge, guided by absorptive capacity theory. Findings show that combining internal and external knowledge requires strategic planning to avoid inefficiencies. The review emphasizes the need for system integration and relationship management. A gap exists in applying these insights to family-owned businesses in Nairobi, where internal systems may be less formalized.

Bogers et al. (2019) explored strategic management of open innovation through literature review. Anchored in open systems theory, the study found that successful innovation requires flexible business models and integration of external knowledge. The authors argue that value lies in combining diverse knowledge sources. However, the study lacks empirical data on family-owned firms in Nairobi, leaving a gap in understanding how such firms adapt structurally to open innovation.

Hameed et al. (2021) examined open innovation and performance in the Pakistani Hotel Industry. Using resource-based theory and a sample of 285 hotel managers, data was collected via questionnaires and analyzed using partial least squares. Findings show that external knowledge and internal innovation drive service innovation and business performance. The study suggests a gap in exploring similar dynamics within Nairobi's family-owned service businesses.

Liao et al. (2020) studied functional capabilities and open innovation performance in 238 Chinese high-tech firms. Using structural equation modeling and regression analysis, they found that technological competence and market-related management skills enhance innovation outcomes. The study supports the need for internal communication and reward systems. A gap remains in assessing whether Nairobi's family firms possess such capabilities to benefit from open innovation.

Micheni et al. (2017) investigated open innovation adoption in SACCOs in Nyeri County. Using a stratified random sample of 63 managers and SPSS for analysis, the study found that technology, top management commitment, and competitor actions influence adoption. The study recommends embracing technology and leadership support.

However, it does not address family-owned businesses in Nairobi, leaving a gap in sector-specific application of open innovation strategies.

Saidi et al. (2020) conducted a qualitative study on transition from closed to open innovation in SMEs. Using semi-structured questionnaires in two industrial firms, they found that CEO traits, stakeholder engagement, and innovation activities determine success. The study highlights the role of leadership in innovation adoption. A gap exists in applying these findings to Nairobi's family-owned businesses, where leadership structures may differ.

Singh et al. (2021) examined top management knowledge and open innovation in SMEs. Using a sample of 404 manufacturing firms and structural equation modeling, they found that knowledge value and sharing practices influence innovation and profitability. The study emphasizes the role of leadership in fostering innovation. A gap remains in understanding how these dynamics play out in Nairobi's family-owned enterprises.

Usman et al. (2018) conducted a systematic review on open innovation in SMEs, analyzing 118 articles, 8 book chapters, and 6 books. The study found that SMEs adopt open innovation based on strategic needs like competitiveness and crisis management. The review highlights the need for tailored innovation mechanisms. However, it lacks specific insights into family-owned businesses in Nairobi, suggesting a gap in localized application.

CONCEPTUAL FRAMEWORK
Figure 1: Conceptual framework

Open Innovation Strategy
- New product development
- Inbound Open Innovation
- Outbound Open Innovation
- Cost Reduction
- Innovation speed

Performance of Family-Owned Businesses
- Market share
- Customer satisfaction
- Employee satisfaction
- Number of new products/services
- Revenue growth
- Profit

Independent variable **Dependent variable**

METHODOLOGY

This study adopted a positivist philosophy and employed an ex post facto research design. The target population included top and middle managers from 226 family-owned businesses in Nairobi County, each operating for over ten years. A stratified random sampling technique was used to categorize the population, followed by simple random sampling within each stratum. The sample size was determined using Yamane's formula, ensuring statistical representativeness and precision.

$$n = \frac{N}{1 + N(e)^2}$$

Where:
n = sample size, N = population size, and e = acceptable sampling error
using the formula, $n = \frac{226}{1+226(0.05)^2}$ -a total of 399 respondents were selected
Data collection was conducted using a structured questionnaire comprising both open-ended and closed-ended questions. To ensure the reliability of the instrument, Cronbach's alpha was employed. Additionally, a pilot study involving 39 family-owned businesses in Nakuru County was conducted to enhance the validity of the research tool. The collected data was sorted, coded, and analyzed using Statistical Package for Social Sciences (SPSS) version 28. Both descriptive and inferential statistical methods were applied. Descriptive statistics included frequencies, percentages, and cross-tabulations, while inferential analysis utilized binary logistic regression to examine the relationship between independent variables and a binary outcome variable.

To validate the binary logistic regression model, several assumptions were tested: linearity of the logit using the Box-Tidwell test, independence of errors through the Durbin-Watson test, multicollinearity using the Variance Inflation

Factor (VIF), with values above 10 indicating concern, homoscedasticity via residual plots, and outlier detection using leverage values and Cook's distance. The study findings were clearly presented using tables and figures for enhanced clarity and interpretation.

RESULTS AND DISCUSSION

The section presents the descriptive and inferential results of open innovation strategy and performance of family-owned businesses.

Descriptive Results

The results on how open innovation strategy influence the performance of family-owned businesses is provided. This was measured using the Likert scale of 1=Strongly Disagree 2= Disagree 3= Neutral 4=Agree 5=Strongly Agree, and the results, expressed as percentages and mode.

Table 1 Descriptive results of open innovation strategy

Open Innovation Strategy	D (%)	N (%)	A (%)	Mode
We allocate sales revenue annually for product development	14	8	78	4
External technologies and ideas enhance our organizational knowledge	11	7	82	5
Internal resources hinder pursuit of external innovation opportunities	52	1	47	2
Partnering externally for innovation remains a significant challenge	28	19	53	4
We share innovations externally, including through licensing agreements	73	14	13	2
External innovation sharing contributes to organizational revenue generation	68	12	20	2
External technologies influence our research and development costs	6	13	81	4
External ideas accelerate our new product development process	6	8	86	4

The statement "We allocate sales revenue annually for product development: had 78% of respondents agreeing their organization allocates sales revenue for innovation annually, indicating broad recognition of innovation's value. This supports Bigliardi et al. (2020), who emphasize consistent innovation funding as key to performance.

The statement "External technologies and ideas enhance our organizational knowledge"82% affirmed that accessing external technologies provides new knowledge, reinforcing the role of external sources in organizational learning. This aligns with Bogers et al. (2019), who found that partnerships with suppliers and institutions enhance creativity and expand firms' knowledge bases.

The statement "Internal resources hinder pursuit of external innovation opportunities" had 52% disagreeing, indicating that resource limitations remains a barrier to external innovation for many organisations (47%). This supports Usman et al. (2018), who found that SMEs often struggle with funding, staffing, and managerial support when pursuing open innovation strategies.

The statement "Partnering externally for innovation remains a significant challenge" had 53% agreement that finding suitable external partners is a challenge, with varied responses indicating inconsistent experiences. This reflects Belitski and Rejeb (2022), who found family firms often prefer familiar, local collaborators due to trust and proximity concerns in open innovation.

The statement "Most organizations share innovations externally", had 73% disagreeing. This aligns with Vidales et al. (2019), who found that outward innovation like licensing has limited impact on profitability and performance in many family firms.

The statement "External innovation sharing contributes to organizational revenue generation" registered 68% disagreement. This differs with Bogers et al., (2019) who view innovation as a monetizable asset.

The statement that external knowledge impacts the organisations research and development costs had 81% in agreement. This aligns with Liao et al., (2020) who found that external innovation reduces duplication of efforts

The statement "External technologies influence the speed of new product development had 81% reporting that external technologies accelerate product development. This confirms Liao et al. (2020), who found that external collaboration improves time-to-market and responsiveness, especially in fast-paced, innovation-driven industries.

Inferential Results

This section presents the correlation and regression results derived from hypothesis testing of open innovation strategy and performance of family-owned businesses.

Correlation Results

Table 2 Correlation analysis

	Performance of family-owned businesses	Open innovation strategy
Performance of Family-Owned Businesses	1	.678**
Open innovation strategy	.678**	1

The results show that open innovation strategy ($r = 0.678$) had significant and positive correlation with performance of family-owned businesses. The strong correlation supports findings by Vidales et al. (2019), who link external collaboration and innovation to profitability, service innovation and enhanced performance.

Regression Analysis

This section used binary logistic regression to analyze the influence of open innovation strategy on performance of family business. Key outputs included model significance, explanatory power, and predictor strength, direction, and statistical relevance.

Table 3 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	257.643	1	0.000
	Block	257.643	1	0.000
	Model	257.643	1	0.000

The Chi-square value of 257.643 ($p < .001$) confirms the model's statistical significance, showing that open innovation improves performance prediction in family-owned businesses. This aligns with Dahlander and Wallin (2020), who found open innovation boosts creativity and adaptability in dynamic markets.

Table 4 Model Summary

Step	−2 Log Likelihood	Cox & Snell R^2	Nagelkerke R^2
1	270.535	0.491	0.655

The model's −2 Log Likelihood of 270.535 indicates strong fit, while Cox & Snell R^2 (0.491) and Nagelkerke R^2 (0.655) show it explains 49.1% to 65.5% of performance variance in family-owned businesses robust by social science standards. Supporting Juarez and Vergara (2020), the results confirm that open innovation significantly contributes to superior performance, highlighting its strategic importance in differentiating successful firms from their peers.

Table 5 Variables in the Equation

Predictor	B	S.E.	Wald	df	P-Value	Odds Ratio
Open Innovation Strategy						
Don't engage in open innovation strategy (RC)						1.000
Engage in open innovation strategy	0.613	0.301	4.148	1	0	1.846

The regression results show that open innovation significantly influences performance in family-owned businesses ($\beta = 0.613$, $p < .001$). Firms practicing open innovation are 1.85 times more likely to perform better. This supports findings by Chege and Wang (2019) and Bigliardi et al. (2021), emphasizing that external collaboration enhances

competitiveness. In Nairobi's dynamic market, open innovation is a strategic necessity, not a choice, for sustained growth and superior business outcomes in family enterprises.
H0: Open innovation strategy has no statistically significant influence on the performance of family-owned businesses in Nairobi County, Kenya.

Conclusion
It was concluded that open innovation is a transformative strategy for family-owned businesses seeking sustained performance and growth. Through adoption of external collaboration, knowledge exchange, and co-creation, these enterprises can unlock new product development, enhance adaptability, and strengthen competitive advantage.

Recommendations
Financial institutions and development agencies should prioritize funding models that incentivize open innovation, enabling family firms to collaborate externally and enhance performance. Such innovation initiatives will empower smaller businesses to remain competitive and resilient in rapidly evolving markets.

Area For Further Research
Future research could explore how digital tools and platforms such as crowdsourcing and innovation hubs can influence the effectiveness of open innovation strategies in enhancing performance among Nairobi's family-owned businesses.

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