
**MODERATION EFFECT OF STRATEGIC DECISION-
MAKING ON THE RELATIONSHIP BETWEEN
ENTREPRENEURIAL ORIENTATION AND THE
PERFORMANCE OF COMMUNITY PHARMACIES IN
KENYA**

Victor Achoka Mwandale
School of Business and Economics, Kabarak University, Private Bag 20157, Kabarak,
Nakuru, Kenya
E-mail: vachoka@kabarak.ac.ke

Publication Date: November 2025

ABSTRACT

Purpose of Study: This study investigated the moderating effect of strategic decision-making (SDM) on the relationship between entrepreneurial orientation (EO) and the performance of community pharmacies in Kenya.

Problem Statement: Despite high consumer demand, Kenya's community pharmacies exhibit widespread stagnation because their strategic choices are focused on operational survival rather than growth-oriented strategies.

Methodology: The research was theoretically based on the Entrepreneurial Personality System for addressing decision-maker traits. Using a quantitative cross-sectional design, data were collected from pharmacy operators (N = 222, response rate: 59.04%) via a structured questionnaire.

Result: SDM showed no statistically significant moderating effect (Proact \times SDM: $\beta = 0.114$, $p = 0.598$; Risk \times SDM: $\beta = -0.397$, $p = 0.087$), but was a potential direct predictor of firm performance (SDM: $\beta = 0.197$, $p = 0.065$). The study concluded that SDM cannot moderate the EO-performance relationship if the strategic mindset required to do so is absent among entrepreneurs.

Recommendation: Pharmacy regulators and other policy actors could add strategic training to licensing-related continuing education and help practitioners understand how to develop scalable business models.

Keywords: Entrepreneurial orientation, community pharmacy, risk-taking, innovative, proactive, performance

INTRODUCTION

Entrepreneurial orientation (EO) has become a force in entrepreneurial ventures by informing the necessary efforts for value creation (Clark et al., 2024). The EO concept emerged in the 1970s from the strategic management literature, which attempted to explain differences in firm performance (Chelliah et al., 2023). Early studies on EO focused mainly on large manufacturing firms in developed countries. In 1983, Danny Miller explored the function of entrepreneurship in different types of firms, operationalizing EO through innovation, risk-taking, and proactiveness (Miller, 1983). Previous studies have solidified EO as a strategic orientation (Chelliah et al., 2023; Clark et al., 2024). However, it is unclear whether entrepreneurs with the EO mindset are applying it strategically, which makes the current study significant.

Community pharmacies facilitate and enable public health centers by serving as patients' initial interaction with the healthcare system. In practice, pharmacies should address the rising customer needs by developing sustainable, scalable business models (Scahill & D'Souza, 2022). Yet this often fails to happen, even in markets with low entry barriers, because other forces like weak supplier power and intense rivalry can still restrict growth. Online pharmacy stores dominate the global supply chain, especially in developed economies. Community pharmacies partially construct these digital platforms, highlighting their innovative entrepreneurial capabilities. In the United States, approximately 96% of the population resides within a 10-mile radius of a community pharmacy, with accessibility varying from 68% in rural regions to 99% in metropolitan areas (Kessinger et al., 2022). These findings show a notable growth of community pharmacies in the developed world.

Over the last decade, EO research has extensively expanded in Africa, with studies examining how it enhances performance in small- and medium-sized enterprises across different industries (Chelliah et al., 2023). Smallholder pharmacies in Sub-Saharan Africa (SSA) operate in high-risk environments characterized by underserved rural or low-income markets with fragmented infrastructure (Steele et al., 2024). Still, the SSA market has seen increased entrepreneurial activity due to increased self-medication, healthcare privatization, and technological innovations (Moseray et al., 2024). However, the surge in entrepreneurship does not directly imply improved performance or sustainable growth. While EO is recognized globally as a growth driver, its application in Kenya's pharmaceutical sector is understudied. This study investigates SDM as a predictor to determine if it directly enhances firm

performance. SDM is further tested as a moderator to determine if it strengthens or weakens the effect of EO on performance in Kenya's pharmacy sector.

PROBLEM STATEMENT

Consumers' strong reliance on pharmaceutical products creates a growth opportunity for community pharmacies in Kenya. Yet, most of the country's pharmacies hardly expand beyond their initial business capacity (Kinuthia et al., 2025; Wafula et al., 2022). The growth in the number of small, independent community pharmacies is indicative of structural and market conditions that foster diffusion while inhibiting growth (Lalla-Edward & Venter, 2025). Kenya hosts multiple local chain stores like Haltons and Goodlife Pharmacy, which often shrink a few years after upscaling or struggle to sustain new outlets. Wafula et al. (2022) placed chain pharmacies' market share below 3% of licensed pharmacy sales in Kenya, most of which are small, operating about 1-3 chemist shops. Even though scaling strategies like franchising can address stagnation, local community pharmacies persistently rely on informal and fragmented business models (Steele et al., 2024). The stagnant growth reflects inadequate SDM.

RESEARCH OBJECTIVE

To investigate the moderating effect of strategic decision-making on the relationship between entrepreneurial orientation and the performance of community pharmacies in Kenya.

RESEARCH HYPOTHESIS

H₀: Strategic decision-making has no statistically significant moderation effect on the relationship between entrepreneurial orientation and the performance of community pharmacies in Kenya.

LITERATURE REVIEW

Theoretical Framework

Entrepreneurial Personality System (EPS), a psychological theory, delves into the cognitive and behavioral factors influencing individual entrepreneurs through applied and positive psychology (Obschonka & Stuetzer, 2017). While the founding date and authors of EPS remain unclear, Obschonka and Stuetzer (2017) are credited with their significant discussion. At its core, EPS depicts that psychological and behavioral traits shape entrepreneurs' choices.

EPS is a suitable theoretical construct for this study because it links individual (entrepreneurial) traits like confidence, persistence, and problem-solving to decision-making during uncertain times. This theory can explain why some entrepreneurs make bold and

innovative strategic choices while others exhibit strategic inertia (Wong et al., 2022), which is perceivable as the tendency of community pharmacies to persist with outdated models. Each entrepreneur is influenced differently when faced with difficult choices, opting for a specific route to safety. Though people are now seen as a mix of stable traits and flexible qualities that change over time based on intra-individual processes, entrepreneurship research about personality has not yet fully adopted this view (Obschonka & Stuetzer, 2017). As a relatively new scientific theory with limited testing and critical analysis, further research is needed to validate and refine EPS.

Empirical Review

Empirical evidence on the moderating effect of SDM on the EO-performance relationship is lacking. Community pharmacies struggle with strategic inertia due to financial pressures and underfunding for new services (Wong et al., 2022). Strategic inertia is rooted in outdated practices. Overcoming it requires an innovative, proactive, and risk-tolerant entrepreneurial approach to ensure adaptation. Sirén et al. (2017) analyzed the disadvantages of strategic inertia in traditional pharmacies, considering that they reflect low EO. Large firms face amplified inertia due to governance and operational structures that are deeply rooted; this explains why they require stronger EO to overcome resistance (Sirén et al., 2017). High EO can overcome strategic inertia.

Decision-making strategies can be assessed through partnerships, often grounded in expansion strategies. The partnership models exemplified in Kenya, such as the collaboration between Safaricom, PharmAccess, and UAP Insurance on the M-TIBA platform, demonstrate how innovativeness expands access to healthcare in emerging economies (Latif, 2025). Wafula et al. (2022) hinted that community chain pharmacies in Kenya and Nigeria succeed in partnerships but hardly through franchising due to management challenges and inadequate strategy execution. Ghani et al. (2022) pointed out that these community pharmacies are often based in affluent areas, predominantly targeting middle- or high-income groups.

Kenyan-based community pharmacies that expand often shrink in the long run (Taylor, 2023). For example, Haltons once expanded its footprint to 100 sites in newly developed real estate but later shrunk to 17 branches (Wafula et al., 2022). An organic chain like Dovey is operating way below its potential (5 stores), considering Kenya's estimated total of 15,000 pharmacies with only 5,000 currently licensed firms (Wafula et al., 2022). The stagnation of traditional community pharmacies like Haltons and Dovey aligns with low innovative EO due

to strategic inertia, evidenced by the reliance on outdated organic expansion (standalone shops) that ignore scalable models (Ghani et al., 2022). The underperformance of these pharmacies can be tied to risk aversion.

METHODOLOGY

Research Design

This study adopted a quantitative cross-sectional design. This design is observational and used to analyze representative data from participants at a specific point in time (Creswell & Creswell, 2018). It works by measuring variables of interest across different cases simultaneously. Three variables were measured in this study, with EO dimensions (innovative, proactive, and risk-taking) as the independent variable. SDM was the moderating variable, and firm performance was the dependent variable. The selected research design was appropriate for examining the relationships between variables because it is useful for gathering data on a population's attitudes, opinions, and characteristics. The individual pharmacist who completed the survey served as the unit of observation, while the unit of analysis was the community pharmacy itself.

Population and Sampling

Pharmacists managing or operating specific community pharmacies across all 47 Kenyan counties were targeted. Pharmacists directly influence business strategies, resource allocation, and service delivery, making them ideal respondents (Wirtz et al., 2022). Based on the registry dataset released by the Pharmacy and Poisons Board (PPB), there were 5,245 registered pharmacies and chemists as of March 2024. This number (5,245) was treated as the target population size, assuming that all these retail outlets are community pharmacies.

The study used simple random sampling based on Cochran's formula (Sarmah et al., 2013) with finite population correction to determine the sample size for the targeted community pharmacies. A target sample size of 376 individuals (one per pharmacy) was obtained. Only licensed retail pharmacies were included. Non-community pharmacy settings like hospitals or informal outlets, and individuals who declined consent were excluded.

Data Collection and Analysis

A structured, closed-ended questionnaire was applied as the research instrument for data collection. The questionnaire uses a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) to quantify responses, ensuring consistency and ease of analysis. The study's five constructs (innovative EO, proactive EO, risk-taking EO, SDM, and firm performance) were

validated theoretically and linked to the research objective. They were grounded in established entrepreneurship and management theories that clearly justify their relevance, dimensions, and expected relationships. Cronbach’s alpha was used for instrument reliability, with an acceptable threshold of $\alpha \geq 0.70$.

The data collection process followed a structured, phased approach to ensure efficiency, accuracy, and ethical compliance. During recruitment, the investigator contacted the targeted participants via email and other available digital communication channels. Data was collected via only survey enabled by Google Forms. Participation was voluntary, and only consenting adults completed the survey.

All analyses were conducted using RStudio version 2025.05.1 (Build 513), paired with R version 4.5.1. Preprocessed data were analyzed using descriptive, correlation, and regression approaches. Descriptive analysis focused on mean, standard deviation (SD), skewness, and kurtosis. Pearson correlation (r) was used to measure the correlation between constructs. Regression analysis was conducted using a hierarchical multiple linear regression model (Model 1 – 1d), with Model 1 as the baseline. The baseline model (Model 1) accounted for SDM’s independent contribution to firm performance beyond the effects of EO dimensions. The equation for Model 1 was (symbols defined below):

$$FP = \beta_0 + \beta_1IEO + \beta_2PEO + \beta_3REO + \beta_4SDM + \epsilon$$

A parsimonious final model (Model 1’) was derived from the hierarchical regression model (Model 1 – 1d) and used to assess the moderation effect of SDM. Table 1 describes the hierarchical modelling for the moderation effect.

Table 1: Hierarchical modelling for the moderation effect

Model	Purpose	Predictors
Model 1	Moderator main effect	IEO, PEO, REO, SDM
Model 1a	Test (IEO × SDM)	Model 1 + (IEO × SDM)
Model 1b	Test (PEO × SDM)	Model 1 + (PEO × SDM)
Model 1c	Test (REO × SDM)	Model 1 + (REO × SDM)
Model 1d	Test H ₀ ; joint moderation	Model 1 + all three interactions

ANOVA model comparisons helped evaluate model improvement (ΔR^2 and F-change at $p < 0.05$). The strategy was that if only one or two interactions are significant in Models 1a, 1b, and 1c, a parsimonious final Model 1’ would be reported, containing only the significant interaction(s). Parsimony reduces model complexity and avoids multicollinearity in

regression models (Arum et al., 2023). The moderator's effect was tested against the baseline model. Building from Model 1, the regression equation for the full model (Model 3d) was:

$$FP = \beta_0 + \beta_1 IEO + \beta_2 PEO + \beta_3 REO + \beta_4 SDM + \beta_5 (IEO \times SDM) + \beta_6 (PEO \times SDM) + \beta_7 (REO \times SDM) + \epsilon$$

Where:

- FP: Firm Performance (dependent variable).
- IEO: Innovative EO (direct predictor).
- PEO: Proactive EO (direct predictor).
- REO: Risk-Taking EO (direct predictor).
- SDM: Strategic Decision-Making (moderating variable).
- β_0 : Intercept.
- $\beta_1, \beta_2, \beta_3$: Coefficients for main effects of EO dimensions.
- β_4 : Coefficient for the direct effect of SDM.
- $\beta_5, \beta_6, \beta_7$: Coefficients for interaction terms (moderation effects).
- ϵ : Error term.

Diagnostic Testing and Error Mitigation

Two diagnostic tests were conducted. Firstly, the Breusch-Pagan (χ^2) test was applied, rejecting the null hypothesis at 5% threshold ($\alpha = 0.05$). After detection, HC3-robust coefficient estimates were addressed via heteroskedasticity-consistent (HC) standard error (SE) correction (Jochmans, 2022). The HC3 estimator was used for conservative bias correction in Model 1'. Secondly, a multicollinearity test was applied to the hierarchical model (entire Model 1). Multicollinearity was assessed in multi-degree-of-freedom terms, using adjusted groupwise Variance Inflation Factor (GVIF) based on the formula $GVIF^{1/(2 \times Df)}$ (Burns et al., 2025). This operation yielded comparable VIF scores across all predictors. Results were interpreted using a $GVIF < 2.5$ threshold.

RESULTS

Descriptive Statistics and Correlations

The response rate was 59.04%. Table 2 shows the study's descriptive and correlation results based on the five constructs: innovative EO (IEO), proactive EO (PEO), risk-taking EO (REO), strategic decision-making (SDM), and firm performance (FP). While the distributions are slightly flatter and sometimes slightly left-skewed, these departures are unlikely to violate normality assumptions for most parametric tests like regression and ANOVA.

Table 2: Descriptive statistics and correlations

Variable	Mean	SD	Skew	Kurtosis	IEO	PEO	REO	SDM	FP
IEO	3.21	0.98	-0.30	-0.63	1.00				
PEO	3.34	0.99	-0.53	-0.37	0.74	1.00			
REO	2.96	1.01	-0.05	-0.66	0.60	0.78	1.00		
SDM	3.44	0.90	-0.57	-0.25	0.70	0.83	0.70	1.00	
FP	3.46	0.91	-0.39	-0.27	0.46	0.50	0.44	0.50	1.00

Note. N = 222. All reported correlations are significant at $p < .01$.

The overall mean for SDM (mean = 3.44, SD = 0.90) indicates moderate to high strategic activity levels in the study population. SDM’s descriptive profile indicated partnerships with suppliers and distributors (mean = 4.06) and cost savings through inventory optimization (mean = 3.89) as the highest indicators of strategy. There was a moderate score for business model replication (mean = 3.32) and partnership protocols that can be replicated (mean = 3.22). However, all these mean scores were relatively high compared to the customer loyalty program (mean = 2.69).

Following a Pearson correlation test, results showed that all variables are positively and significantly correlated. The association between proactive EO and SDM ($r = 0.83, p < .001$) is the strongest significant correlation of all. The association between innovative EO and SDM was also large and significant ($r = 0.70, p < .001$). There is a high intercorrelation among EO dimensions. Table 2 shows that firm performance correlates positively with all predictors: the three EO dimensions and SDM. Firm performance most strongly correlates with proactive EO ($r = 0.50, p < .001$) and SDM ($r = 0.50, p < .001$), followed by innovative EO ($r = 0.457, p < .001$) and risk-taking EO ($r = 0.44, p < .001$). Higher innovative, proactive, risk-taking SDM levels are associated with better performance.

Diagnostic Testing

After fitting the hierarchical Model 1, the Breusch-Pagan test was conducted, assuming homoskedasticity (constant variance of errors). The full model (Model 1d) exhibited strong heteroskedasticity scores ($\chi^2(7) = 56.75, p < .001$). These test results led to the application of HC3-robust coefficient estimates to address heteroskedasticity.

The second diagnostic test was on multicollinearity. Initially, it was conducted before addressing heteroskedasticity (on the hierarchical model) using $VIF < 5$. Results showed heteroskedasticity in Model 1d ($VIF \leq 8.77$). Later, the study addressed heteroskedasticity

using the HC3 estimator (on the parsimonious final Model 1'). The adjusted GVIF results showed no problematic multicollinearity in Model 1', as shown in Table 3. The raw VIF values for PEO and REO show problematic multicollinearity ($VIF > 20$) due to their inclusion in interaction terms (PEO x SDM, REO x SDM) and correlation with other EO dimensions. The adjusted GVIF values were modest ($VIF \leq 1.70 < 2.5$).

Table 3: Adjusted GVIFs for predictors for Model 1'

Variable	Raw VIF	df	Adjusted GVIF ^{1/(2*df)}	Interacts With
IEO	2.44	1	1.56	--
PEO	21.43	3	1.67	SDM
REO	24.33	3	1.70	SDM
SDM	2.44	5	1.09	PEO, REO

Regression Analysis

Model Fit

Table 4 illustrates the model fit summary for hierarchical regression models leading to Model 1d. The table indicates the proportion of variance explained and indicates that each of the tested models (Model 1 – 1d) is statistically significant ($p < .05$). This significance is shown by presenting the determination coefficient (R^2), adjusted R^2 , and the overall F-statistic, based on F-tests, for each linear regression model.

Table 4: Model fit summary for hierarchical regression models

Model	R	R ²	Adj. R ²	F-statistic
Model 1	0.536	0.2869	0.2737	F(4, 217) = 21.82, $p < .001$
Model 1a (IEO × SDM)	0.547	0.2989	0.2827	F(5, 216) = 18.42, $p < .001$
Model 1b (PEO × SDM)	0.578	0.3344	0.3190	F(5, 216) = 21.70, $p < .001$
Model 1c (REO × SDM)	0.608	0.3699	0.3553	F(5, 216) = 25.36, $p < .001$
Model 1d (All interaction terms)	0.629	0.3950	0.3752	F(7, 214) = 19.96, $p < .001$

Table 4 shows that the baseline model (Model 1) was statistically significant ($F(4, 217) = 21.82, p < .001$) and explained a notable variance of 28.69% in firm performance. Interaction terms were added individually to test the moderating hypothesis (H_0). Adding the innovative EO interaction term (IEO × SDM) to create Model 1a showed only a modest gain to the 29.89% ($\Delta R^2 = 0.0121, p < .001$) explained variance. Model 1b showed a substantial improvement, as it had a higher change in R-squared ($\Delta R^2 = 0.0475, p < .001$). Model 1c showed an even greater improvement ($\Delta R^2 = 0.0830, p < .001$), with Model 1d recording the highest improvement ($\Delta R^2 = 0.1081, p < .001$) by explaining 39.50% of the variance.

Hierarchical ANOVA Tests

After adding the interaction terms to Model 1, it was necessary to determine the statistical test that proves which steps in that hierarchical regression model were truly meaningful, as this would help determine the reliable moderating effect of SDM. Table 5 shows results for the hierarchical ANOVA test.

Table 5: Hierarchical ANOVA results showing change in model fit

Comparison	Res. df (Base/New)	RSS (Base/New)	Δdf	ΔSS	ΔF -statistic	p-value
Model 1 – 1a	217/216	129.343/127.154	1	2.189	F(1, 216) = 3.72	0.055
Model 1 – 1b	217/216	129.343/120.723	1	8.620	F(1, 216) = 15.42	< .001
Model 1 – 1c	217/216	129.343/114.280	1	15.063	F(1, 216) = 28.47	< .001
Model 1 – 1d	217/214	129.343/109.738	3	19.605	F(3, 214) = 12.74	< .001

Table 5 shows Δdf , ΔSS , and ΔF , which describe what changed when moving from the smaller to the larger model. Results confirmed that the improvements based on the proactive interaction term (Proact \times SDM: $\Delta R^2 = 0.0475$, $p < .001$) and risk-taking interaction term (Risk \times SDM: $\Delta R^2 = 0.0830$, $p < .001$) were statistically significant. The improvement from the innovative interaction term was not only the least compared to other terms, but also not statistically significant (IEO \times SDM: $\Delta R^2 = 0.0121$, $p = 0.055$). A parsimonious final model (Model 1') was estimated, containing only the significant interaction terms; this meant dropping the innovative interaction term.

Hypothesis Testing

Table 6 below shows the HC3-robust coefficient estimates for final Model 1'. This study hypothesized that SDM has no statistically significant moderation effect on the relationship between EO and the performance of community pharmacies in Kenya (H_0). Before assessing its moderating effect, SDM was analyzed as a direct predictor using the baseline model (Model 1). It showed no direct statistically significant effect on firm performance ($\beta = 0.197$, $p = 0.065 > .05$). SDM's moderating effect was investigated using the parsimonious final Model 1', which contained only the significant interaction terms (Proact \times SDM and Risk \times SDM). Model 1' showed that neither Proact \times SDM ($\beta = 0.113$, $p = 0.598$) nor Risk \times SDM ($\beta = -0.397$, $p = 0.087$) reached significance under HC3-robust SEs. Since there is no statistical evidence that strategic decision-making moderates the relationship between EO and firm performance in this sample, H_0 is not rejected.

Table 6: HC3-robust coefficient estimates for final Model 1'

Predictor	β (Estimate)	Robust SE	t-value	p-value	95% CI
(Intercept)	3.6717	0.0581	63.1443	0	[3.558, 3.786]
IEO	0.0457	0.0858	0.5322	0.5952	[-0.122, 0.214]
PEO	0.0004	0.1267	0.0029	0.9977	[-0.248, 0.249]
REO	0.2931	0.1323	2.2159	0.0279	[0.034, 0.552]
SDM	0.1305	0.1317	0.9912	0.3229	[-0.128, 0.389]
PEO x SDM	0.1135	0.2148	0.5283	0.5979	[-0.308, 0.534]
REO x SDM	-0.3973	0.2306	-1.7229	0.0865	[-0.849, 0.055]

CI = confidence interval

After robust estimation and parsimony were applied, Model 1' reported the non-significant moderating effect of SDM. The initial hierarchical model (Model 1 – 1d) showed incremental gains in explained variance, like when SDM interacted with proactive EO ($\Delta R^2 = 0.0475$) and risk-taking EO ($\Delta R^2 = 0.0830$). These effects seemed to have weakened under HC3-robust testing, hence the statistical non-significance.

Discussion of Results

Results indicated moderate to high strategic activity levels in the study population. The SDM of local retail pharmacies prioritizes operational survival strategies like inventory optimization (mean = 3.89) and supplier partnerships (mean = 4.06) over growth-oriented techniques like business model replication (mean = 3.32). SDM cannot moderate the EO-performance relationship if the strategic mindset required to do so is absent among pharmacy entrepreneurs.

SDM is strongly correlated with EO and performance ($r = 0.496$, $p < .001$), yet it does not have a statistically significant effect on the EO-performance relationship (Proact \times SDM: $\beta = 0.113$, $p = 0.598$; Risk \times SDM: $\beta = -0.397$, $p = 0.087$). These findings show that SDM may be a manifestation of EO itself, thereby challenging its presumed role as a moderator in Kenya's community pharmacy sector. For instance, the high correlation between proactive EO and SDM ($r = 0.825$, $p < .001$) suggests that the proactive process of anticipating future needs cannot be separated from making strategic choices.

Kenya's pharmacy sector faces structural constraints and fragmented value chains (Steele et al., 2024), which collectively hinder the strategic enhancement of EO processes. Local pharmacy entrepreneurs rely on fragmented business models in an industry that exhibits strategic inertia (Steele et al., 2024; Wong et al., 2022). While the literature affirms that these pharmacies are often informal and rely on outdated organic expansion (Steele et al., 2024;

Wafula et al., 2020), the descriptive mean for risk-taking EO (mean = 2.96) implies an underlying risk aversion that seems deeply rooted in the market. Findings align with Sirén et al.'s (2017) argument that strategic inertia in smaller or resource-constrained firms can limit proactive behavior, even where strategic plans exist on paper. In essence, entrepreneurs end up reacting to changing market forces.

As an emerging theme from the findings, SDM may not be a standalone performance driver, but rather a mechanism that potentially enables or enhances the impact of other performance drivers like innovative EO and proactive EO. SDM's potential predictive role warrants further investigation, considering that it exhibited a marginal, direct, significant effect on firm performance ($\beta = 0.197$, $p = 0.065$), with no statistically significant moderation effect. The non-significance implies that in Kenya's community pharmacy sector, SDM may not be an enhancer of EO but rather a powerful determinant of firm performance.

CONCLUSION

The study sought to measure the moderating effect of SDM on the relationship between EO and the performance of community pharmacies in Kenya. The stagnation in the pharmacy industry does not really depict that entrepreneurial vigor is lacking. Instead, the SDM practiced by the pharmacies involves inertia, whereby businesses focus on operational survival rather than growth-oriented strategies. It is challenging to create scalable business models if entrepreneurs cling to daily operational fixes and survival tactics. Although Kenya's community pharmacy market exhibits a significant growth potential, a missing strategic EO mindset among entrepreneurs may be the real challenge that causes stagnation. The missing piece in the causal chain itself might be SDM, implemented as a factor that exhibits both moderating and predictive roles.

This study presents significant insight for pharmacy regulatory bodies. Key policymakers like Kenya's PPB should equip pharmacists with the skills needed to run scalable enterprises. This can be done by creating mainstem capacity building programs on strategic management, while facilitating scalable business models through policy and grants.

RECOMMENDATIONS

Pharmacy regulators and other policy actors could add strategic training to licensing-related continuing education and help practitioners understand how to develop scalable business models. On the other hand, pharmacy entrepreneurs could create peer-led "scale-up clinics,"

which allow them to craft multi-year growth plans. Such plans could transform innate EO dimensions into growth strategies that rise beyond operational survival.

Further studies should examine the causal processes of EO and strategic choices through a qualitative approach. This study concluded that SDM may not be a mere enhancer but a core driver (direct predictor). Further research could explore this suggestion using a grounded theory design, which explores the unique lived experiences of participants. It can help determine how and why SDM is a predictive factor through which entrepreneurial spirit is transformed into real growth.

ACKNOWLEDGEMENT

I acknowledge Dr. Ezra Ronoh and Dr. Makori Onkware, my academic supervisors, for their dedicated guidance and constructive feedback. I also extend my gratitude to my colleagues at the Pharmaceutical Society of Kenya for their invaluable encouragement and support throughout this research.

REFERENCES

- Arum, K. C., Ugwuowo, F. I., Oranye, H. E., Alakija, T. O., Ugah, T. E., & Asogwa, O. C. (2023). Combating outliers and multicollinearity in linear regression model using robust Kibria-Lukman mixed with principal component estimator, simulation and computation. *Scientific African*, *19*, e01566. <https://doi.org/10.1016/j.sciaf.2023.e01566>
- Burns, P., Kaszta, Z., Cushman, S. A., Brodie, J. F., Hakkenberg, C. R., Jantz, P., Deith, M., Luskin, M. S., Ball, J. G. C., Mohd-Azlan, J., Burslem, D. F. R. P., Cheyne, S. M., Haidir, I., Hearn, A. J., Slade, E., Williams, P. J., Macdonald, D. W., & Goetz, S. J. (2025). The utility of dynamic forest structure from GEDI lidar fusion in tropical mammal species distribution models. *Frontiers in Remote Sensing*, *6*. <https://doi.org/10.3389/frsen.2025.1563430>
- Chelliah, M. K., Aravindan, K. L., & Muthaiyah, S. (2023). Entrepreneurial orientation and open innovation promote the performance of services SMEs: The mediating role of cost leadership. *Administrative Sciences*, *13*(1), 1. <https://doi.org/10.3390/admsci13010001>
- Clark, D. R., Pidduck, R. J., Lumpkin, G. T., & Covin, J. G. (2024). Is it okay to study entrepreneurial orientation (EO) at the individual level? Yes! *Entrepreneurship Theory and Practice*, *48*(1), 349–391. <https://doi.org/10.1177/10422587231178885>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.
- Ghani, M. F. A., Hizam-Hanafiah, M., Isa, R. M., & Hamid, H. A. (2022). A preliminary study: Exploring franchising growth factors of franchisor and franchisee. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(3), 138. <https://doi.org/10.3390/joitmc8030138>

- Jochmans, K. (2022). Heteroscedasticity-robust inference in linear regression models with many covariates. *Journal of the American Statistical Association*, 117(538), 887–896. <https://doi.org/10.1080/01621459.2020.1831924>
- Kessinger, H., Landis, E., Mager, N. D., & Kier, K. (2022). Community pharmacist provision of non-dispensing services in health professional shortage areas. *INNOVATIONS in Pharmacy*, 13(4), 5. <https://doi.org/10.24926/iip.v13i4.4859>
- Kinuthia, F. M., Muchara, M., & Kihara, A. (2025). Technological factors and competitive advantage in retail pharmacies in Nairobi County, Kenya. *African Journal of Business and Development Studies*, 2(1), 441–457. <https://doi.org/10.70641/ajbds.v2i1.156>
- Lalla-Edward, S. T., & Venter, W. D. F. (2025). Feasibility and impact of community pharmacy and novel pick-up points for antiretroviral therapy pre-exposure prophylaxis initiation and continuation in low and middle-income countries. *Current HIV/AIDS Reports*, 22(1), 2. <https://doi.org/10.1007/s11904-024-00710-3>
- Latif, L. (2025). *Regulating digital health and health apps in Kenya: Lessons learnt* (SSRN Scholarly Paper No. 5122386). Social Science Research Network. <https://doi.org/10.2139/ssrn.5122386>
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), 770–791. <https://doi.org/10.1287/mnsc.29.7.770>
- Moseray, A., Fatoma, P., & Kamara, A.-B. (2024). Assessing the reasons and adverse effects of self-medication in the context of the COVID-19 pandemic in Sierra Leone. A case study of Moriba Town section. *Risk Management and Healthcare Policy*, Volume 17, 1–13. <https://doi.org/10.2147/RMHP.S444658>
- Obschonka, M., & Stuetzer, M. (2017). Integrating psychological approaches to entrepreneurship: The Entrepreneurial Personality System (EPS). *Small Business Economics*, 49(1), 203–231. <https://doi.org/10.1007/s11187-016-9821-y>
- Sarmah, H. K., Hazarika, B. B., & Choudhury, G. (2013). An investigation on effect of bias on determination of sample size on the basis of data related to the students of schools of Guwahati. *International Journal of Applied Mathematics and Statistical Sciences*, 2(1), 33–48.
- Scahill, S. L., & D'Souza, N. J. (2022). The pharmacist as entrepreneur: Whether, how, and when to educate? *Currents in Pharmacy Teaching and Learning*, 14(1), 5–12. <https://doi.org/10.1016/j.cptl.2021.11.006>
- Sirén, C., Hakala, H., Wincent, J., & Grichnik, D. (2017). Breaking the routines: Entrepreneurial orientation, strategic learning, firm size, and age. *Long Range Planning*, 50(2), 145–167. <https://doi.org/10.1016/j.lrp.2016.09.005>
- Steele, P., Otieno, L., Opon, S., Graham, M., & Wharton, B. (2024). *Localization of pharmaceutical manufacturing in Sub-Saharan Africa* (pp. 1–22). Pamela Steele Associates Ltd. https://www.pamsteele.org/wp-content/uploads/2024/09/Localization-of-Pharma-Manufacturing-in-Sub-Saharan-Africa_PSA-V2-1.pdf
- Taylor, P. (2023). *Increasing access to basic medicines through the private sector supply chain in Kenya and Tanzania* [Thesis, Harvard University]. https://www.hks.harvard.edu/sites/default/files/SYPA_2023_Taylor_A.pdf
- Wafula, F., Onoka, C., Musiega, A., Okpani, A., Ogira, D., Ejughemre, U., Miller, R., Goodman, C., & Hanson, K. (2022). Healthcare clinic and pharmacy chains in Kenya

- and Nigeria: A qualitative exploration of the opportunities and risks they present for healthcare regulatory systems. *The International Journal of Health Planning and Management*, 37(6), 3329–3343. <https://doi.org/10.1002/hpm.3560>
- Wirtz, V., Kaplan, W., & Cellini, C. (2022). *Use of retail pharmacies as a source of essential medicines, including family planning products, for public sector clients in low- and middle-income countries: A thought leadership paper*. USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program. <https://www.ghsupplychain.org/sites/default/files/2022-07/Use-of-retail-pharmacies-for-public-procurement-in-LMICs.pdf>
- Wong, L. S., Ram, S., & Scahill, S. (2022). Community pharmacists' beliefs about suboptimal practice during the times of COVID-19. *Pharmacy*, 10(6), 140. <https://doi.org/10.3390/pharmacy10060140>