



Relationship between process innovation, entrepreneurial passion and performance of pharmaceutical manufacturing firms in Kenya

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ABSTRACT

The study explores the impact of entrepreneurial passion on process innovation and firm performance, based on self-efficacy theory. Relevant hypotheses were proposed, and the promotion mechanism of entrepreneurial passion on process innovation and enterprise performance was analyzed. A survey of 150 Kenyan firm owners/managers was conducted, and the results showed that process innovation has a significant positive effect on performance. Entrepreneurial passion is a significant moderator of the relationship between process innovation and performance, with firms with higher levels of passion achieving greater performance from implementing process innovation. This suggests that entrepreneurial passion can guide entrepreneurial persistence and promote enterprise performance by stimulating positive emotions and creativity. The study suggests that effective management of process innovation can enhance performance and encourage more entrepreneurial behavior in competitive business environments.

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Introduction

Pharmaceutical manufacturing companies largely contribute towards ensuring the production of drugs for numerous critical and emerging health issues worldwide. It is among the industries with a high rate of innovation and new product development due to intensive research and development in the pharmaceutical industry. A complex network of stakeholder contacts leads to successful pharmaceutical innovation. Pharmaceutical manufacturing in Kenya is an industry the Kenyan Government is interested in and committed to making successful. Kenya exports a significant percentage of its pharmaceutical products to its immediate neighbours, such as Tanzania, Uganda, and Rwanda. Despite the promising and enormous growth in Kenya's pharmaceutical business, the sector still faces numerous issues and difficulties. The industry is mostly focused on creating medications in the dosage form. Only a few pharmaceutical companies in Kenya have made the necessary investments in facilities and machinery to comply with World Health Organization (WHO) Good Manufacturing Practice (GMP) requirements, which is one of the key concerns. The majority of pharmaceutical companies significantly fall short of the needed GMP requirements.

Regardless of the perspective, entrepreneurial passion is considered an important and integral part of successful business ventures as it has a direct bearing on startup, longevity and profitability of business enterprises. For instance, entrepreneur passion is the basis for motivating company founders to innovate, work tirelessly in harnessing beneficial resources and driving employee turnover towards intended outcomes (Murnieks *et al.*, 2011). The complexity of contemporary business environment thus requires high levels of aptitude in the areas of thought, attitude, behavior, technicality, and management. Meaning, entrepreneurs must therefore possess particular passion for success in their innovative business ventures. The information, attitudes, behaviors, and abilities that enable an individual with the potential of turning his notions into reality so that they are able to achieve the intended results in a specific environment requires high level of passion (Kochadai, 2012). In a nutshell, an entrepreneurial passion portfolio enhances organizational effectiveness and positively impacts business performance and survival (Hauser *et al.*, 2017).

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Currently, researchers have used passion theory to explain entrepreneurial behavior. Entrepreneurial passion is a core trait that entrepreneurs must possess, which can encourage entrepreneurs to conduct entrepreneurial behaviors. When entrepreneurs face difficulties, entrepreneurial passion can be used as a support force to keep them going (Costa et al., 2018; Montiel-Campos, 2018). By persisting in entrepreneurial behavior, relentlessly pursuing established goals, and investing a lot of time and energy, entrepreneurs can achieve successful entrepreneurship and obtain economic benefits (Milanesi, 2018). Therefore, it is of theoretical and practical significance to study the influence of entrepreneurial passion on the process innovation and firm performance.

Schumpeter (1934) claimed that process innovation introduced a new production method that had not been tried in the industry. Reengineering and improving business processes' internal functionality and capacities is another definition of process innovation (Sidek & Rosli, 2013). These procedures entail production, technical design, management, and business operations. Process innovation puts a novel or significantly better manufacturing or delivery technique into practice. In their study, Gunday, Ulusoy, Kilic, & Alpkın (2011) found that process innovation is one of the key drivers of corporate performance, increasing the company's existing market share and giving it a competitive edge. Few researches have examined the connection between process innovation adoption and organizational performance among the numerous studies investigating process innovation (Koellinger, 2008).

Based on this, in this research, the influence of entrepreneurial passion on process innovation and performance of pharmaceutical manufacturing firms in Kenya was explored and a model of the relationship between entrepreneurial passion and process innovation and performance of pharmaceutical manufacturing firms was constructed according to the theories of entrepreneurial passion and self-efficacy (Deleuze et al., 2018). Discussion on process innovation in the area of administrative or business support is particularly limited. Studies of how pharmaceutical firms in Kenya are innovating their manufacturing or business processes are extremely scarce. In addition, through the questionnaire survey, the promotion mechanism of entrepreneurial passion on entrepreneurial behavior and enterprise performance was discussed, and the reliability of the questionnaire was analyzed. It is hoped that this study can reveal the relationship between entrepreneurial passion, self-efficacy, firm performance, process innovation and behavior of entrepreneur, and expand the application of entrepreneurial passion in the field of entrepreneurship.

Literature Review

Conceptual Background and Hypotheses Development

Self-Efficacy Theory

Self-efficacy is an individual's subjective judgment of his/her ability to accomplish a specific goal in a specific situation, including two parts: outcome expectation and efficacy expectation. Self-efficacy is not the skill itself that an individual possesses, but the degree of confidence that an individual can achieve a given goal by performing a certain behavior to himself. In different fields, self-efficacy varies according to an individual's abilities and skills. Entrepreneurial self-efficacy is the self-confidence manifestation of entrepreneurs' success in entrepreneurial behavior and their own capabilities. The higher the entrepreneurial self-efficacy, the more confident the entrepreneur is that they can influence the surrounding environment through their own abilities. Entrepreneurial self-efficacy can predict entrepreneurial psychology and behavior, representing the entrepreneur's ability to complete the assessment and perception of entrepreneurial behavior.

Process Innovation and Performance

Schumpeter (1934) claimed that process innovation introduced a new production method that had not been tried in the industry. Re-engineering and improving business processes' internal functionality and capacities is another definition of process innovation (Sidek & Rosli, 2013). These procedures entail production, technical design, management, and business operations. Process innovation puts a novel or significantly better manufacturing or delivery technique into practice. This covers significant adjustments to procedures, tools, and software (placement of new or enhanced production equipment, such as real-time process-adjusting sensors or automated machinery, computer-aided product development).

In their study, Gunday, Ulusoy, Kilic, & Alpkın (2011) found that process innovation is one of the key drivers of corporate performance, increasing the company's existing market share and giving it a competitive edge. It might improve the performance of the company in a number of ways. Notably, it has been noted in the literature that innovation has an effect on three major performance aspects. Financial performance, market performance, and customer performance make up these parameters (Kaplan & Norton, 1994; Gunday et al., 2011). Varis & Littunen (2016) found a positive association between process innovation and company performance in their research of SMEs in Finland. The performance of Malaysia's Small and Medium Manufacturing Enterprises was examined by Sidek & Rosli (2017). They demonstrated how process innovation improved corporate performance. The poll found that SMEs may employ innovation to raise their performance.

Therefore, the hypothesis about the connection between process innovation and firm performance is;

H₁: Process innovation will influence firm performance positively and significantly.

Entrepreneurial Passion Concept

Baron & Hannan (2002) indicate that entrepreneurial passion is the sense of self-identity and belonging that people have in new companies. Breugst, Domurath, Patzelt, & Klaukien (2012) suggest that entrepreneurs consciously engage in entrepreneurial activities because of that intense feeling, which is closely related to self-identity. Successful entrepreneurs' entrepreneurial passion is especially evident and drives them to approach their daily tasks with passion, much like "a fire of desire." Chen, Yao, & Kotha (2009) suggested that driven entrepreneurs have intensely positive feelings for desired goals, will not stop thinking and discussing their ideas, and are active, inspiring resources to turn their ideas into reality. Entrepreneurs passionate about what they do typically exhibit "cartoon-like" faces, energizing body language, and an abundance of it (Huyghe, Knockaert, & Obschonka, 2016).

From these perspectives, it is clear that entrepreneurial passion creates the ability of a company founder to harness beneficial resources, employee turnover, or workforce towards certain outcomes (Murnieks et al., 2011). It also creates a sense of self-identity and belonging that people have in new companies (Baron & Hannan, 2002) since it facilitates entrepreneurs to consciously engage in activities with intense feeling closely related to self-identity (Breugst et al., 2012). In this way, for successful entrepreneurs, entrepreneurial passion is clearly evident in their actions and drives them to approach their daily tasks with motivation and vigor (Chen et al., 2009).

Therefore, passion driven entrepreneurs have intensely positive feelings for desired goals and will not stop thinking and discussing their ideas, and are active, inspiring resources and others to turn their ideas into reality (Chen *et al.*, 2009). The current study argues that innovation being the primary function of an entrepreneur, its success can either be driven or derailed by the extent of enthusiasm exhibited by the entrepreneur. Meaning, process innovation is expected to be moderated by entrepreneurial passion. Based on the above explanation, this study fixes the second hypothesis as;

H₂: Entrepreneurial passion moderates the relationship between process innovation and performance of pharmaceutical manufacturing firms in Kenya positively and significantly.

Research and Methodology

Model Construction

In this research, the relationship model of process innovation, entrepreneurial passion, and firm performance was constructed, as shown in Figure 1.

The term process innovation encompasses the envisioning of new work strategies, the actual process design activity, and the implementation of the change in all its complex technological, human and organizational dimensions (Davenport, 1993). Sidek & Rosli (2017) outlines that process innovation improves how products or services are produced or delivered, resulting in better goods or services in terms of their functionality, features, or components. Shorter product life cycles, evolving consumer tastes, and improved technologies are the rational forces for business innovations. The idea of "creative destruction" highlights the importance of innovation in gaining a competitive edge over less inventive rival. New ideas for products and processes are a sustainable way to promote economic performance and growth.

Organizational performance can be evaluated at three different levels, starting with the functional level, where the emphasis is on individual performance in whole units. Second, is the business unit level where the focus is on the results of specific units with specific delivery outputs with the entire organization. The third level is the corporate level under the centralized corporate leadership (Pearce & Robinson, 2009). These measures can be financial or non-financial. Focusing primarily on financial measures of performance has been critiqued for being narrow and short term based.

This study adopted the corporate level approach and used of both financial and non-financial measures to evaluate overall corporate performance across the three different levels of the firm. The study used a composite of efficiency, profitability and growth measures index to assess performance. Efficiency measures were critical in establishing the functional units' ability to quickly and cost effectively convert resources into goods and services of value to the customers. Secondly, profitability measured how good are the strategic business units in creating shareholder value (profitability). Finally, growth measured the level of top leadership and management in creating overall firm growth and economic benefits.

Entrepreneurial passion is the strong psychological emotion that entrepreneurs show in the process of starting a business, and they have a positive tendency toward entrepreneurial behavior and pay a lot of energy and time for it. When entrepreneurs agree with the value of the target they pursue, they will stick to the pursuit of the target even if they lack the corresponding ability and skills. Entrepreneurial passion belongs to positive emotional experience, which also indicates that things are going well and there is no need to re-evaluate and change individual behaviors. Individuals with positive experiences choose to stick to their current behavior to maintain this state, thereby gaining firm performance (Zhao, Liu, Xie, & Fan, 2020). Drucker (1985) propose three role identities: an inventor identity, where the entrepreneur's passion is for actions related related to identifying, developing, and pursuing potential ideas; a founder identity, where the entrepreneur's passion is for actions associated with an enterprise for selling and identification of opportunities; and a developer identity, where the entrepreneur's passion is for actions related to nurturing, designing, and implementing new ideas.

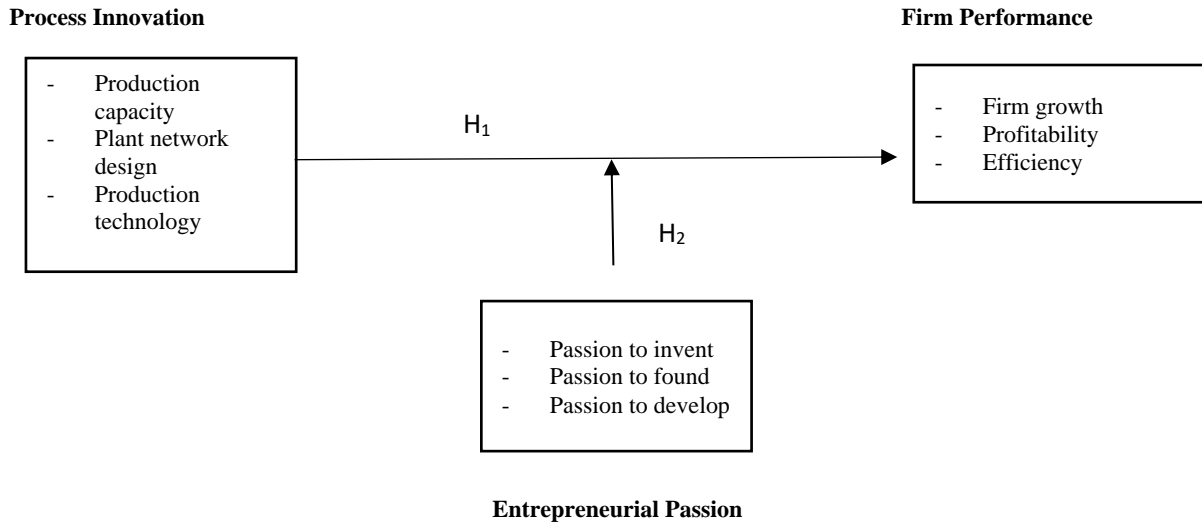


Figure 1: Integrated Research Model

Methodology

To gain an in depth understanding of the study constructs, the study adopted a convergent parallel mixed methods approach. This approach entailed concurrent collection of quantitative and qualitative data. The two data sets were weighed equally, analyzed independently but the results interpreted together. This was necessary for results’ corroboration, validation and triangulation by directly comparing the quantitative statistical results and qualitative findings (Demir & Pismek, 2018).

In this study, the model and hypothesis were empirically analyzed by means of questionnaire survey, and all variables were measured by relatively mature and widely used scales (Chen, 2019). The study was a census of all the 30 registered pharmaceutical manufacturing firms in Kenya. The unit of analysis was the 30 pharmaceutical manufacturing firms in Kenya, with the unit of observation being 150 employees. Thus, the units of observation were more than one in each entity forming a two-level hierarchical structure. Use of more than one observation in each entity made it possible to measure performance of the entities by making repeated measures on the variables as perceived by individual relevant employees of the entity (Bauer, Gottfredson, Dean, & Zucker, 2013). Purposive sampling was then used to select 5 departmental heads from 27 pharmaceutical firms resulting in 135 participants. By taking a heterogeneous approach in purposive sampling, it was possible to select individuals from diverse departments to achieve maximum variation by providing a diverse range of responses (Palinkas et al., 2015).

Empirical data was collected from the respondents using a semi-structured questionnaire which had both closed- and open-ended questions. The closed ended questions comprised of a 5-point Likert scale restricting the responses to options provided (Jarvenpaa, Tractinsky, & Vitale, 2000). Use of closed ended questions was preferred to reduce answer variability and boost response rate. Open-ended questions were used to provide room for respondents' comments and suggestions (Cooper & Schindler, 2003). The questionnaires were administered through the drop-and-pick later method to give the respondents time to go through them and appropriately respond to the questions therein.

In this study, software IBM Statistical Package for Social Sciences (SPSS) for windows 10 was used for data cleaning, specifically, for variable and case screening, missing data analysis and imputation for missing cases where applicable and software R-Gui (R 4.1.2 version) which is an open-source programming language for statistical calculations and graphic visualization were used for data analysis.

The data analysis technique used was a variance-base partial least squares structural equation modeling (PLS-SEM) technique with R packages *pls* and *semPLS* run in R-studio, an Integrated Development Environment (IDE) for R-Gui. PLS-SEM was considered better than the regression analysis because it shows the direct and indirect impact of the independent variables (Ramli, Latan, & Solovida 2019). Moreover, variants-based SEM or PLS was chosen because the research purpose was prediction and explanation of target constructs (Hair et al., 2017). The study used the R packages to analyze the data measurement model. Tests were conducted to first to check composite reliability (CR), average variance extracted (AVE), heterotrait–monotrait (HTMT) ratio and Cronbach’s alpha (CA). Second, this study analysed the theoretical model by testing correlation and discriminant validity (DV). Moreover, this study tested common method bias (variance inflation factor (VIF), F2, R2 (coefficient of determination) and model fits (standardized root means square residual (SRMR), Normed Fit Index (NFI), squared Euclidean distance (d_LS) and the Geodesic distance (d_G) and Goodness-of-Fit (GoF) . Lastly, PLS-SEM was performed in this study to test the proposed hypothesis.

Analysis and Findings

The study received 113 dully filled questionnaires from 23 companies. This translated into 76.6% response rate, which was considered adequate (Lund, 2021).

Measurement Model

Cronbach's alpha: CA was used to determine the reliability of the scales adopted in this study. The measurement scales' validity was significant, with values of 0.884 for Process innovation, 0.773 for Entrepreneurial Passion and 0.815 for performance (Table 1). The study met the CA threshold ranged from 0.7 to 0.9.

Composite reliability (CR) was presented using rhoC. The study found that CR(rhoC) values for construct were above the threshold 0.7 (Hair et al., 2019), with values of 0.882 for Process innovation, 0.868 for Entrepreneurial Passion and 0.889 for performance (Table 1).

Convergent validity (AVE): (Hair et al., 2019), suggested a convergent validity threshold of at least 0.50. AVE for the present study was significant, with values of 0.602 for Process innovatiuon, 0.687 for Entrepreneurial Passion and 0.727 for performance ranged from 0.602 to 0.810 (Table 1).

Table 1: Measurement Model

Second order Construct	First order construct	order	Items	Loadings	Alpha (CA)	rhoC (CR)	AVE	rhoA	
<i>Process Innovation</i>					<i>0.884</i>	<i>0.882</i>	<i>0.602</i>	<i>0.889</i>	
	Production Capacity		PC1	0.944	0.912	0.9	0.704	0.937	
			PC2	0.889					
			PC3	0.578					
			PC4	0.503					
			PC5	0.909					
	Plant Design	Network	PND1	0.815	0.882	0.878	0.695	0.896	
				PND2					0.948
				PND3					0.637
				PND4					0.629
	Production Technology		PT2	0.862	0.859	0.856	0.605	0.878	
			PT3	0.562					
			PT4	0.892					
			PT5	0.862					
<i>Entrepreneurial Passion</i>					<i>0.773</i>	<i>0.868</i>	<i>0.687</i>	<i>0.776</i>	
	Inventing		INV2	0.902	0.903	0.904	0.758	0.908	
			INV3	0.915					
			INV4	0.789					
	Founding		FOU1	0.748	0.87	0.871	0.628	0.874	
			FOU2	0.83					
			FOU3	0.727					
			FOU4	0.856					
	Development		DEV1	0.829	0.932	0.922	0.696	0.933	
			DEV2	0.804					
			DEV3	0.879					
			DEV4	0.788					
			DEV5	0.844					
			DEV6	0.858					
<i>Performance</i>					<i>0.815</i>	<i>0.889</i>	<i>0.727</i>	<i>0.839</i>	
	Efficiency		EFF1	0.845	0.938	0.937	0.714	0.938	
			EFF2	0.801					
			EFF3	0.818					
			EFF4	0.911					
			EFF5	0.846					
	Growth		GR1	0.847	0.884	0.88	0.599	0.892	
			GR2	0.656					
			GR3	0.828					
			GR4	0.767					
	Profitability		PR1	0.87	0.893	0.893	0.679	0.905	
			PR2	0.848					
			PR3	0.761					
			PR4	0.809					

Discriminant validity was assessed using Heterotrait–monotrait (HRMR) ratio: Scholars suggest using HTMT to assess the multicollinearity issue in the data, which should not be higher than 0.9 (Hair et al., 2010). This study met the threshold, as exhibited in Table 2.

Table 2: Discriminant Validity

Performance	Process Innovation	Entrepreneurial Passion
Performance		
Process Innovation	0.411	
Entrepreneurial Passion	0.536	0.265

Assessment of Structural Model

Model's predictive power (R²): Sarstedt et al. (2014) suggested that the R² measures model's predictive power.

Effect size (F²): Aiken & West's (1991) suggested values of 0, 0.02, 0.15, and 0.35 depicting none, small, medium, and large effect sizes of moderation, respectively. As suggested, if the value of F² is less than 0.02.

Variance inflation factor (VIF): the present study dealt with collinearity and standard method bias through VIF, which is defined as the reciprocal of tolerance. This study was considered bias-free with no values equal to or greater than 3.3. As suggested by the scholars Kock (2015), this study was considered bias-free with no values equal to or lower than 3.3 (Table 3).

Table 3: Variance Inflation Factor (VIF)

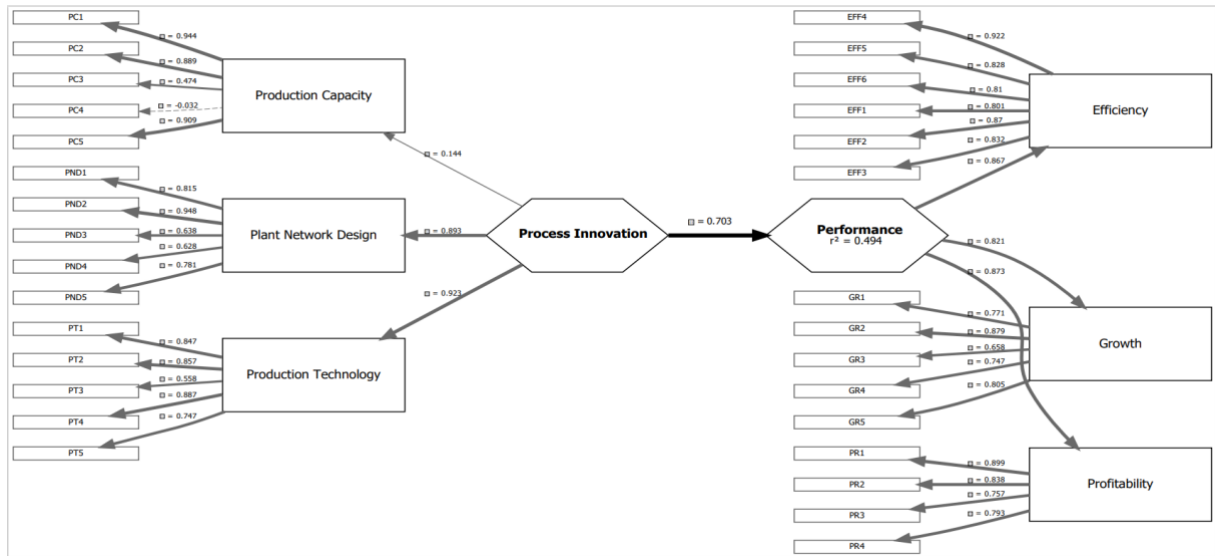
Second order construct	First order construct	VIF
<i>Process innovation</i>		<i>1.576</i>
	Production Capacity	1.761
	Plant Network Design	1.898
	Production Technology	1.546
<i>Entrepreneurial Passion</i>		<i>1.227</i>
	Inventing	1.219
	Founding	2.174
	Development	1.56
<i>Performance</i>		<i>2.009</i>
	Efficiency	1.484
	Growth	2.085
	Profitability	1.707

Model Fits:

The study employed the following model fitness indices, normed fit index (NFI) whose threshold should be greater than 0.9, goodness of fit (GoF), and Standardized Root Mean Square Residual (SRMR) which should be less than 0.08, dULS and dG < than the 95% bootstrapped quantile (HI 95% of dULS and HI 95% of dG) (Henseler et al., 2016).

Hypothesis Testing

PLS-SEM results showed the R² was 0.494 stipulating that process innovation explained 49.4% of the variance in performance as shown in figure 2. Therefore, it is important for pharmaceutical manufacturing firms to invest in modern production technologies to enhance their process innovation capabilities, which can lead to improved overall firm performance. The SRMR value was 0.031 (< 0.08) and the NFI was 0.955 (> 0.90) and the dULS < bootstrapped HI 95% of dULS and dG < bootstrapped HI 95% of dG indicating that the data fits the model well. The GoF of the model was 0.567, which shows that empirical data fits the model satisfactory and has substantial predictive power in comparison with baseline value as shown in figure 2.



$\chi^2 = 1683.93$; NFI = .955; SRMR = .031; $d_{ULS} = 1.059$; $d_G = .925$; GOF=.567

Figure 2:Effect of Process Innovation on Performance

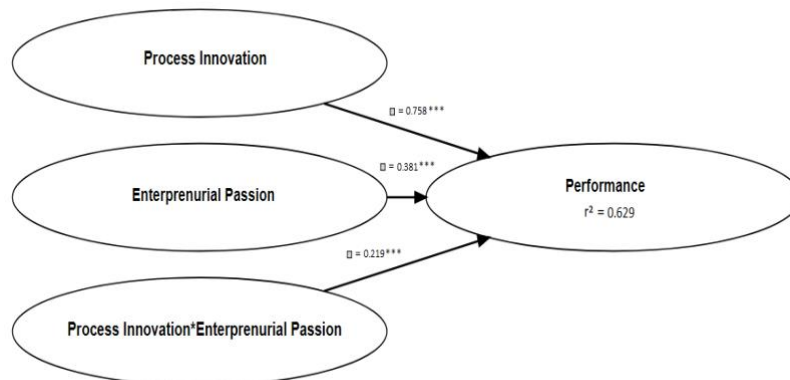
As shown in table 4, process innovation ($\beta = 0.703$, $p < 0.05$) was positively related to firm performance. The beta coefficient of 0.703 indicates a moderately strong positive relationship between process innovation and firm performance. The p-value of less than 0.05 indicates that the relationship is statistically significant. Thus, H_{01} was rejected.

Table 4: Regression Coefficients for Process Innovation

Hypothesis	Path	Std Beta	Std Error	t-values	P values	2.5% CI	97.5% CI
H1	Process innovation - > Performance	0.703	0.153	4.595	0.000	0.462	1.029

Moderation of Entrepreneurial Passion

The study sought to assess the effect of process innovation and the moderating role of entrepreneurial passion on the relationship between process innovation and performance. The study showed that the effect of process innovation on performance was 0.758. The SRMR value was 0.041 (< 0.08) and the NFI was 0.926 (> 0.90) and the $d_{ULS} <$ bootstrapped HI 95% of d_{ULS} and $d_G <$ bootstrapped HI 95% of d_G indicating the data fits the model well. The GOF of the model was 0.525, which shows that empirical data fits the model satisfactory and has substantial predictive power in comparison with baseline value.



$\chi^2 = 1825.02$; NFI = .926; SRMR = .041; $d_{ULS} = 1.783$; $d_G = 1.001$; GOF=.525

Figure 3:Moderation Effect of Entrepreneurial Passion on the Relationship Between Process Innovation and Performance

Table 5 shows that the interaction term (process Innovation*Entrepreneurial Passion) has a positive and significant effect on Performance of 0.219 ($p < 0.05$). Further, the effect of process innovation had a significant positive effect on Performance (0.758, $p < 0.05$). The confidence interval of 95% also did not show any intervals straddling a 0, thus confirming our findings.

Table 5: Regression Weights of Moderation of Entrepreneurial Passion on the Relation Between Process Innovation and Performance

Path	Std Beta	Std Error	t-values	P values	2.5% CI	97.5% CI
Process innovation -> Performance	0.758	0.071	10.676	0.000	0.601	0.871
Entrepreneurial Passion -> Performance	0.381	0.068	5.603	0.000	0.19	0.504
E_Passion*Process -> Performance	0.219	0.072	3.042	0.003	0.06	0.339

Table 6 shows the testing of goodness of fit. The findings indicate that the inclusion of the interaction term resulted into an R^2 change of .135, [$F(1, 113) = 3.154, p < 0.05$], showing presence of significant moderating effect. That is, the moderating effect of Entrepreneurial Passion gained 13.5% variance in the Performance, above and beyond the variance by process innovation. The R-Sq excluded comprises the effect of Process innovation on Performance. Based on Aiken & West's (1991) proposition, 0, 0.02, 0.15, and 0.35, respectively, constitute none, small, medium, and large effect sizes of moderation. The results indicate a medium effect size.

Table 6: Goodness of Fit-Regression of Moderated Process Innovation and Performance

Measure	Included	Excluded	F-squared	Effect size
R-squared	0.629	0.494	0.3639	Medium
R-squared change	0.135			
F-squared change	3.154			
P value	0.002			

The findings suggest that entrepreneurial passion has a significant moderating effect on the relationship between process innovation and performance, with a medium effect size of 13.5%, therefore the null hypothesis of no effect is rejected. The results indicate that for an average level of entrepreneurial passion, the relationship between process innovation and performance is 0.758. However, when considering the moderating effect of entrepreneurial passion, the positive and significant effect on performance is increased to 0.977 ($0.758 + 0.219$). This suggests that firms with higher levels of entrepreneurial passion may experience even greater benefits from implementing process innovation.

Figure 4 shows that for higher levels of Entrepreneurial passion (i.e., for every standard deviation unit increase of entrepreneurial passion), the relationship between process innovation and Performance increases by the size of the interaction term (i.e., $0.758 + (+0.219) = 0.977$). On the contrary, for lower levels of entrepreneurial passion (i.e., for every standard deviation unit decrease of entrepreneurial passion), the relationship between process innovation and Performance decreases the size of the interaction term (i.e., $0.758 - (+0.219) = 0.539$).

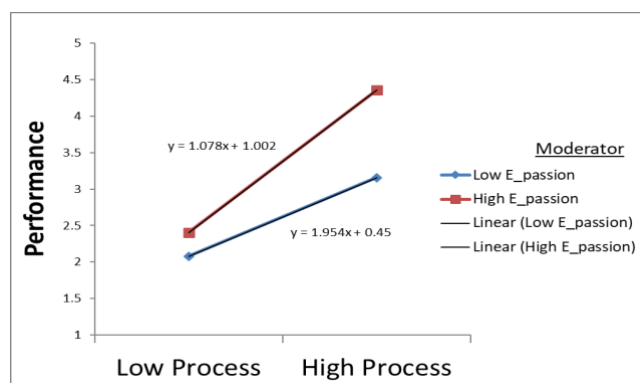


Figure 4: Slope Analysis for the Moderation of Entrepreneurial Passion on the Relationship Between Process Innovation and Performance

The findings concur with other findings in literature. A study by Schenkel et al. (2019) established a positive significant indirect effect of entrepreneurial passion on process suggestions via time spent innovating. This effect, however, was not significant when creative self-efficacy was low but was significant only when creative self-efficacy was high. Additionally, a study by Tierney & Farmer (2002) indicate that creative pursuits require "some internal, sustaining energy that motivates individuals to continue in the face of adversity." For instance, "being creative" calls for the capacity to test pre-existing mental schema sets as well as a sense of comfort with one's capacity to handle the related difficulties and ambiguities that may develop (Amabile, 1988). In companies, it's also necessary to have the self-assurance to support concepts that pose fresh challenges to long-standing issues, which might need openly acting in a nonconformist manner. The aversion of employees to engage in creative action is cited by Tierney & Farmer (2002) as evidence for the applicability of these motivational foundations.

Conclusions

The study sought to assess the effect of process innovation on performance and the moderating role of entrepreneurial passion on the relationship between process innovation and performance. The study established a significant positive effect of process innovation on performance and significant moderating effect of entrepreneurial passion on the relationship between process innovation and performance of pharmaceutical manufacturing firms in Kenya. The relationship is such that for higher levels of entrepreneurial passion the effect of process innovation on performances positively increases in size and for lower levels of entrepreneurial passion, the effect of process innovation on performance decreases in size.

Hence, the results suggest that firms should prioritize not only process innovation but also the cultivation of a strong entrepreneurial passion among their employees. This could involve creating a positive work environment that fosters a sense of purpose and meaning in the work, encouraging employees to take ownership of their tasks and responsibilities, and providing opportunities for professional development and growth. By fostering a strong entrepreneurial passion among employees, firms can create a culture of innovation, creativity, and continuous improvement, which can enhance the effectiveness of process innovation initiatives. Additionally, entrepreneurial passion can help firms to remain resilient and adaptable in the face of changing market conditions, technological advancements, and other external factors.

Finally, entrepreneurial passion is likely to inspire people to spend time privately considering and experimenting with novel ideas, especially in the context of creative self-efficacy. By doing this, they are able to freely grow their knowledge's depth and breadth, avoiding problems like having their thoughts exposed to the emotional embeddedness of others' jealousy of their professional success (Biniari, 2012). Along with centrality effects related to pre-existing information and decision-making networks, it also helps avoid problems posed by others adopting more subjective (e.g., sentiments, tastes) and too pragmatic criteria in the early phases of knowledge generation. Collectively, entrepreneurial passion makes it possible to take the time and space necessary to consider the economic value each one represents before deciding to openly offer what is seen to be an innovative concept.

Theoretical Implications

This study makes two primary contributions to the existing literature. First prior research has predominantly adopted founder/owner led perspective in investigating the effect of entrepreneurial passion on firm performance. Though this is insightful, this view does not consider the unique conditions where medium to large firms such as the case of most manufacturing pharmaceutical companies. For this category of firms, entrepreneurial concepts are embedded on the institutional frame work rather than an individual and the founder/owners are most likely not involved in day to day operation of the firms. The study provides a conceptualization of passion by considering how entrepreneurial passion within the framework of institutional entrepreneurship moderates the relationship between process innovation and performance.

Secondly, the study utilizes data from an emerging sub-Saharan economy (Kenya). Entrepreneurship in emerging economies remains extremely under researched. The contextual difference between developing economies and developed economies means data from developed economies may not completely apply across board. Cultural difference also plays a significant role in differentiating entrepreneurial behaviors. It is imperative for studies to be conducted examine entrepreneurial passion in these contexts as many African countries are taking initiatives to improve their economic conditions.

Recommendations

Based on the results, the study makes the following recommendations for practice;

The study, first, suggests that manufacturing firms in the pharmaceutical industry should incorporate both process innovation and entrepreneurial passion to enhance their performance. This could involve encouraging and supporting their employees to develop a strong passion for their work, as well as investing in new and innovative processes to improve efficiency and effectiveness.

Secondly, manufacturing pharmaceutical firms should also track and measure the impact of entrepreneurial passion on process innovation and firm performance. This can be achieved through metrics such as the number of innovative projects initiated, the success rate of those projects, and the impact on overall firm performance. Another strategy is to promote collaboration and cross-functional teamwork, as this can facilitate the sharing of ideas and expertise and lead to the development of more innovative solutions.

Additionally, firms can incentivize employees to pursue innovative projects and reward those who demonstrate entrepreneurial passion and drive. To fully evaluate the impact of entrepreneurial passion on process innovation and firm performance, it is also important for firms to consider the long-term sustainability of their innovation efforts.

Limitations and Future Research

The study relied on a cross-sectional survey data. Nonetheless, factor like Entrepreneurial passion is generally dynamic in nature. Therefore, a longitudinal study is recommended as it could provide a more comprehensive view of the moderating effect of entrepreneurial passion on firm performance in Kenya.

Studies should also be done to further investigate the role of entrepreneurship passion in enhancing process innovation and firm performance in other industries beyond the pharmaceutical industry globally. More exploration on the specific components of entrepreneurship passion that are most effective in driving process innovation and firm performance, and how they can be cultivated within an organization should be done.

Comparative studies between firms with high levels of entrepreneurship passion and those without, should be conducted to identify the key factors that differentiate successful firms in terms of process innovation and performance. Future researchers should consider conducting a qualitative study to gain a deeper understanding of the role of entrepreneurship passion in driving process innovation and firm performance, and to identify specific strategies that can be used to cultivate passion within manufacturing firms.

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