

# Collaborative Capability and Competitiveness of Local Pharmaceutical Manufacturing Firms in Kenya

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## Abstract

A thriving pharmaceutical sector contributes to economic development by creating employment opportunities, fostering local innovation, and reducing dependency on imports and thus, understanding collaborative capability dynamics can contribute to the sector's overall growth and its positive impact on Kenya's economy. This study was carried out to determine the influence of collaborative capability on the competitiveness of manufacturing firms in Kenya. The study used both descriptive and explanatory research designs. The population for this census study was all the 31 local manufacturing pharmaceutical firms in Kenya. The CEOs or managing directors, finance, human resource, marketing, operations and quality compliance managers were the target respondents. Data was collected using questionnaires. Statistical Package for Social Sciences (SPSS) aided in analysis where both descriptive and inferential statistics were conducted. Results showed that respondents agreed that collaborative capability had an impact on competitiveness of local pharmaceutical manufacturing firms in Kenya. Further, collaborative capability was significantly related to competitiveness of local pharmaceutical manufacturing firms in Kenya. The study ascertained the need for collaboration between pharmaceutical manufacturing firms its suppliers, researchers, and other experts in the pharmaceutical industry. The study recommended collaboration between pharmaceutical manufacturing firms and suppliers, researchers, and other experts in the pharmaceutical industry. This collaboration minimizes the risk of production disruptions, shortages, or delays, ensuring that quality pharmaceutical products are manufactured and delivered on schedule. There is need for undertaking in-depth case studies of successful collaborative initiatives among pharmaceutical firms in Kenya.

**Keywords:** Collaborative Capability, Pharmaceutical Manufacturing Firms, Kenya

## **Introduction**

### **Background to the Study**

Collaborative capability is increasingly crucial in the pharmaceutical manufacturing sector, given the complex and interdisciplinary nature of drug development and production. In an era marked by rapid technological advancements and evolving healthcare landscapes, pharmaceutical manufacturing firms are recognizing the value of collaboration to enhance their competitiveness (Zhang & Zhu, 2020). Additionally, collaborative networks play a significant role in the pharmaceutical supply chain and partnering with suppliers, contract manufacturers, and logistics providers enhances efficiency, ensuring a streamlined and reliable production process (Acur et al., 2010). This collaborative approach helps companies respond to market demands more effectively, especially in times of heightened global challenges such as pandemics. Firms that foster strong collaborative networks are better positioned to address the multifaceted challenges of the industry, ultimately enhancing their competitiveness in the global pharmaceutical market (Brinckmann & Hoegl, 2011)

Competitiveness and collaborative capability are intertwined elements critical for the success and resilience of organizations. In today's interconnected business environment, where complex problems often require multifaceted solutions, collaborative capability is a key driver of competitiveness (Jin et al., 2019). By working with partners, organizations can expand their reach, access new markets, and share the risks associated with innovation and market entry. Successful collaboration also contributes to organizational agility, allowing firms to respond more effectively to market changes and capitalize on emerging opportunities (Kogut & Zander, 2002). Whether through research consortia, joint ventures, or industry partnerships, collaborative capability is a strategic enabler that complements and reinforces an organization's overall competitiveness in the dynamic landscape of modern business (Hatch & Dyer, 2012).

### **Statement of the Problem**

There are serious challenges that manufacturing industry in Africa comes with; human resources availability is limited, failure in accessing technical know-how, significant cost involved in the appropriate development of new products, governments incoherence and underdeveloped supportive industries (AU, 2012). When the COVID-19 pandemic hit the country, reliance on the global supply chain for some medical supplies prevented a timely and effective response (KPIDR, 2020). The country joined others globally in seeking supplies of suddenly scarce medical equipment, diagnostic tools, medicines, and personal protective equipment (KPIDR, 2020). The implication of these challenges is the need to strengthen and expand local production of medical and pharmaceutical products in Kenya. Enhanced collaboration facilitates faster drug discovery, improves manufacturing efficiency, ensures compliance with regulatory standards, and accelerates time-to-market for new medications (Brinckmann & Hoegl, 2011). This collaborative approach fosters innovation, reduces costs, and ultimately contributes to advancements in healthcare. Development of the strategic capabilities is useful to the organizations in sustaining their business and achieving better performance and competitiveness, which is a challenge to most local pharmaceutical manufacturing firms. According to Wanjiku (2017), possessing strategic capabilities enables an organization to directly improve the value it is offering to the market or customers through their products or services resulting from possession of core competencies. The influence of

collaborative capability on competitiveness of pharmaceutical manufacturing in Kenya has not been fully established.

Empirical studies have shown mixed results on the influence of collaborative capability and competitiveness of organizations. Hall (2013) explored the effect of collaborative capabilities on focal firm product results using a model that was based on the knowledge-and-dynamic capabilities opinions of the firms and found that there existed a correlation between focal-firm collaborative capabilities and supplier capabilities, and between supplier capabilities and product-market results. A study evaluating collaborative capability and organizational performance was done by Yao et al (2019) and indicated that while the differentiation strategy moderated the collaboration-performance linkage, counter-intuitive results linked with strategic purity were supported by strategic intensity. These studies have been carried out in different contexts and may not be generalized to a Kenyan context. The current study therefore sought to fill these gaps by establishing influence of collaborative capability on competitiveness of local pharmaceutical manufacturing firms in Kenya

### **Objective of the Study**

To ascertain the influence of collaborative capability on competitiveness of local pharmaceutical manufacturing firms in Kenya

### **Research Hypothesis**

The study sought to test the following null hypothesis:

**H<sub>01</sub>:** There is no significant influence of collaborative capability on competitiveness of local pharmaceutical manufacturing firms in Kenya

### **Literature Review**

#### **Theoretical Review**

This study was anchored on the LLL framework refers to linkage, leverage and learning (Mathews, 2006). Linkage refers to emerging MNEs' ability to identify and bridge gaps. Leverage refers to emerging MNEs' ability to take advantage of their unique capabilities, which may not be at the cutting edge, but may nevertheless possess comparative advantage relative to the capabilities of their global competitors (Sun et al., 2012). Learning refers to MNEs from developing countries going abroad to learn (Peng, 2012). This framework claims that MNEs develop specific capabilities by linking with local partners, leveraging the resources available across borders and learning to absorb and adapt to the local investment environment, in order to accelerate their expansion and catch-up.

Satta et al (2014) denoted that building linkages in foreign markets offer a viable option for MNEs to enter into a new market and catch up quickly. Thus, MNEs can build strong linking capability by extensive embedding into a network of local linkages in past investment (Satta et al., 2014). When MNEs possess a strong linking capability, they can reach out to extensive local networks to obtain local knowledge of markets. As a result, on the one hand, these local partners will help firms adapt to local rules and norms, and efficiently obtain knowledge about the local consumer behavior, culture and the legal system (Roy & Oliver, 2009). On the other hand, extensive linkages with local connections give MNEs a more legitimate image, which is an important intangible resource in overcoming liability of foreignness in the foreign entry. As a whole, these two advantages for MNEs with strong linking capabilities can reduce their

perceived risks and dependence on making joint venture partners when making a new foreign entry.

MNEs with strong leveraging capabilities have good access to global resources inside and outside their organizations and can mobilize different resources in a flexible fashion (Singh, 2008). If one subsidiary in a country lacks some kind of resources, such as technical employees or raw materials, MNEs can react quickly to these shortfalls and efficiently reallocate resources in order to balance the production and supply across borders (Chung & Isobe, 2010). Besides, leveraging capabilities can help MNEs to achieve economies of scale and scope in operations (Berry, 2014).

**Conceptual Framework**

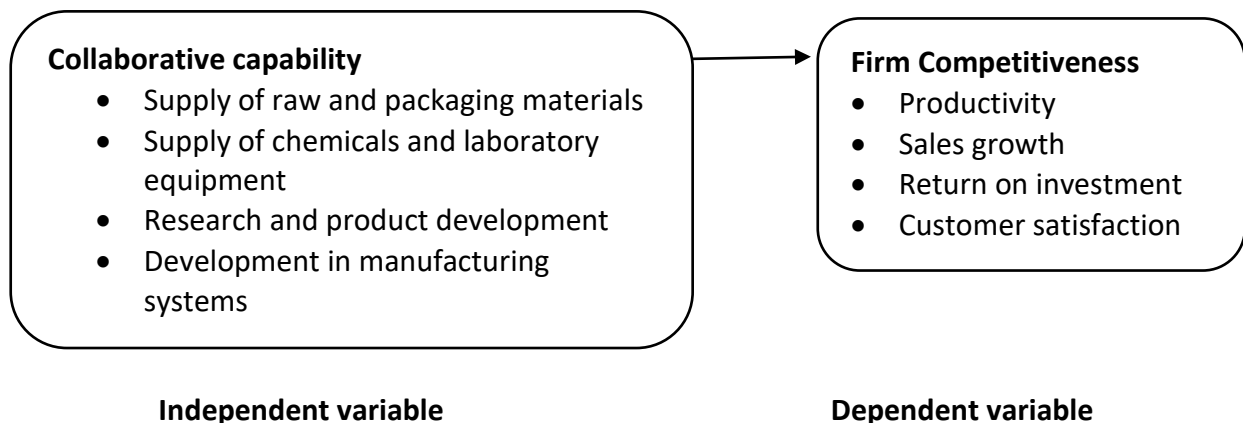


Figure 1: Conceptual Framework

**Empirical Literature**

A study evaluating collaborative capability and organizational performance was done by (Yao et al., 2019). The moderating role of strategic choice and strategic purity on the linkage of collaboration-performance was done. Constituency-Based and Organizational Conflict theories were used. Hypotheses testing using survey data collected from European supply chain managers and a multi-level model was done. Findings indicated that while the differentiation strategy moderated the collaboration-performance linkage, counter-intuitive results linked with strategic purity were supported by strategic intensity.

The emergence and maintenance of collaborative capabilities of teams in three different network organizations in Austria and Switzerland with a focus on traits of single actors and the organizational framework and work requirements was evaluated by (Ulbrich et al., 2009). Semi-structured interviews were carried out on administrators of partnering firms and network managers. Findings showed that capability was only built in instances where partners had the ability of creating an environment of confidence in collaboration which came about as an assurance the perceived quality of single contributions. There were long term collaborations in about 70% of the firms that were studied.

Hall (2013) explored the effect of collaborative capabilities on focal firm product results using a model that was based on the knowledge-and-dynamic capabilities opinions of the firms. Data was collected from a sample of managers from industries that produced comparatively complex final products. Results showed the existence of a correlation between focal-firm collaborative capabilities and supplier capabilities, and between supplier capabilities and product-market results.

**Methodology**

The study used both descriptive and explanatory research designs. These designs were significant as they helped in getting data that shaped the basis for more research in the subject of competitiveness of firms. This was a census study that targeted all the 31 local manufacturing pharmaceutical firms in Kenya. The CEOs or managing directors, finance, human resource, marketing, operations and quality compliance managers were the target respondents. Questionnaires were used in data collection. Data analysis was done using Statistical Software for Social Sciences (SPSS) where both descriptive and inferential statistics were conducted.

**Research Findings and Discussions**

**Response Rate**

Out of the 31 pharmaceutical manufacturing firms in Kenya, 22 of them participated in the study. In majority of the pharmaceutical manufacturing firms, results show that the 6 respondents that were targeted responded and filled the questionnaires. Out of a total of 186 questionnaires that were targeted, 127 returned fully filled implying a response rate of 68.2%. Nine pharmaceutical manufacturing firms in Kenya did not participate in the study

**Descriptive statistics on collaborative capability**

The study sought to determine the influence of collaborative capability on the competitiveness of manufacturing firms in Kenya. Results in Table 1 indicates that 81.9% of the respondents strongly agreed that there is sustained partnership between their firm and suppliers on the supply of raw and packaging materials (18.1% agreed). The mean was 4.82 and an SD of 0.39. Further, 78.0% of the respondents strongly agreed that sustained supply of active pharmaceutical ingredients (APIs) in collaboration with other firms has positively impacted their firm competitiveness. The mean for the statement was 4.76 and an SD of 0.50. A further 49.6% of respondents strongly agreed that collaboration in research with other stakeholders has contributed towards success of their product portfolio (44.9% agreed) (mean= 4.43, SD = 0.65) while 49.6% of the respondents strongly agreed that their manufacturing systems effectiveness has been positively influenced by collaboration with experts in this area (48.0% agreed). The mean was 4.46 and an SD of 0.57.

Table 1

*Level of agreement with statements on collaborative capability*

Collaborative capability	Frequency and Percentages					Mean	SD
	SD	D	N	A	SA		
There is sustained partnership between the firm and suppliers on the supply of raw and packaging materials				23 18.1%	104 81.9%	4.82	0.39
Sustained supply of active pharmaceutical ingredients (APIs) in collaboration with other firms has positively impacted the firm competitiveness		1 0.8%	1 0.8%	26 20.4%	99 78.0%	4.76	0.50

Collaboration in research with other stakeholders has contributed towards success of our product portfolio	2 1.6%	5 3.9%	57 44.9%	63 49.6%	4.43	0.65
The manufacturing systems effectiveness has been positively influenced by collaboration with experts in this area	1 0.8%	2 1.6%	61 48.0%	63 49.6%	4.46	0.57
Aggregate Mean					4.62	0.53

SD= strongly disagree; D= disagree; N= neither agree nor disagree; A= agree; SA= strongly agree

**Collaborative Capability and Competitiveness of Pharmaceutical Manufacturing Firms**

**H<sub>01</sub>:** There is no significant influence of collaborative capability on competitiveness of local pharmaceutical manufacturing firms in Kenya

Regression analysis was carried out to determine the impact of collaborative capability on the competitiveness of manufacturing firms in Kenya. The linear regression model analysis results are shown in form of model summary, ANOVA test and regression coefficients. The model summary showed that the coefficient of determination (R square) of 0.314 indicated that the model explained 31.4% of the variation or change in the dependent variable with the remainder of 68.6% being explained by other factors other than collaborative capability. The Analysis of Variance (ANOVA) of the relationship between collaborative capability and competitiveness of pharmaceutical manufacturing firms in Kenya is presented in Table 3. The results with a p-value of 0.000 indicates that the model was statistically significant in explaining the relationship between collaborative capability and competitiveness of pharmaceutical manufacturing firms in Kenya. Therefore, there is significant positive relationship between collaborative capability and competitiveness of pharmaceutical manufacturing firms in Kenya

The regression coefficients shown in Table 4 presents the regression results of collaborative capability on competitiveness of pharmaceutical manufacturing firms in Kenya. With a constant (p-value = 0.065) of 0.723 and the gradient coefficient of 0.537 indicated the extent to which a unit change in collaborative capability causes a change in competitiveness of the pharmaceutical manufacturing firms. Collaborative capability was significant (p-value = 0.000) in positively influencing the competitiveness of the pharmaceutical manufacturing firms. Therefore, the collaborative capability and competitiveness model can now be presented as:  
 $Y = 0.723 + 0.537 X_3 + \epsilon$

Table 2  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.538 <sup>a</sup>	.314	.307	.35475

a. Predictors: (Constant), Collaborative capability



Table 3  
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.029	1	2.029	16.126	.000 <sup>b</sup>
	Residual	15.731	125	0.126		
	Total	17.760	126			

a. Dependent Variable :Competitiveness

b. Predictors: (Constant), Collaborative capability

Table 4  
Model Coefficients

	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	.723	.389		1.859	.065
Collaborative capability	.537	.284	.538	4.016	.000

a. Dependent Variable: Competitiveness

### Discussion of Findings

From the results of the descriptive analysis, 81.9% of the respondents strongly agreed that there is sustained partnership between their firm and suppliers on the supply of raw and packaging materials. A sustained partnership with suppliers of raw and packaging materials establishes a reliable supply chain network which helps in maintaining a consistent flow of materials, reducing the risk of shortages, and ensuring continuous production to meet market demand. By developing a sustained partnership, firms can establish a closer relationship with suppliers, enabling better control over the quality of materials and this includes regular quality audits, compliance monitoring and the implementation of quality management systems. The partnership allows both parties to align on quality standards, specifications and testing protocols, minimizing the risk of substandard materials entering the manufacturing process. Access to low-cost raw materials and laboratory chemicals can provide a competitive advantage to businesses, as it enables them to produce goods at a lower cost, potentially leading to more competitive pricing in the market. Using high-quality raw materials can result in a final product with superior performance, durability, and reliability which can enhance customer satisfaction and brand reputation. Collaboration in research and product development leads to faster commercialization of new molecules while collaboration in manufacturing processes allows firms to produce in bulk and allow others to package nearer to the consumer thereby meeting customer needs precisely. From the inferential statistics, it was clear that there was a significant relationship between collaborative capability and competitiveness of local pharmaceutical manufacturing firms in Kenya.

### Conclusion and Recommendations

#### Conclusions of the Study

The study concluded that Collaborative capability influenced competitiveness of pharmaceutical manufacturing firms in Kenya. Collaborative capability enables effective communication and collaboration between different stakeholders, ensuring smooth

information flow, alignment of goals, and coordinated efforts. Cross-functional teams can also work together to address challenges, optimize processes, and deliver high-quality products. The study showed that collaborative capability is significantly related to competitiveness of pharmaceutical manufacturing firms and ascertained that there is need for collaboration between pharmaceutical manufacturing firms, its suppliers, researchers, and other experts in the pharmaceutical industry

### **Recommendations of the Study**

The study recommends for collaboration between pharmaceutical manufacturing firms and suppliers, researchers, and other experts in the pharmaceutical industry. Fostering sustained and long-term partnerships with suppliers, firms can establish a consistent and uninterrupted flow of input such as active pharmaceutical ingredients, raw materials, packaging materials, laboratory equipment, reagents manufacturing machinery and processes. This stability minimizes the risk of production disruptions, shortages or delays thereby ensuring that pharmaceutical products are manufactured and delivered on schedule.

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