

The Role of Innovation Strategies in the Globalization of Agribusinesses in Kiambu County, Kenya

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Abstract: This study investigated the impact of innovation strategies on the globalization of agribusinesses in Kiambu County, Kenya. Using a quantitative research design, data were collected through structured questionnaires administered to owners and managers of 55 agribusinesses operating within the region. Stratified random sampling was used to select the sample. Descriptive statistics revealed a high level of agreement among respondents that their firms engage in innovation practices such as market research, adaptation to global trends, and adoption of new technologies. Inferential analysis using Pearson correlation ($r = 0.403$, $p = 0.004$) indicated a moderate and statistically significant positive relationship between innovation strategies and globalization. Regression analysis confirmed that innovation strategies significantly predict the globalization of agribusinesses ($\beta = 0.374$, $p < 0.05$). These findings underscore the strategic role of innovation in enhancing international market presence and export performance. The study contributes to the growing literature on innovation-led globalization in emerging markets and recommends policy and capacity-building initiatives to support agribusinesses in scaling their innovations for global competitiveness.

Keywords: Innovation strategies, globalization, agribusiness, export performance

I. Introduction

The increasing globalization of markets has presented both significant opportunities and formidable challenges for agribusinesses, particularly in developing countries. Globalization refers to the interconnectedness and interdependence of economies, cultures, and production systems across national borders [1]. Globalization has transformed how agribusinesses operate by exposing them to new markets, technologies, competitors, and consumer preferences. In response, agribusinesses must adopt strategic management practices that enable them to remain competitive and adaptive in this dynamic global environment [2].

One such critical strategic management practice is the use of innovation strategies. Innovation strategies can be defined as dynamic, proactive approaches organizations employ to respond to changes in their internal and external environments, leverage new opportunities, and overcome emerging challenges [3]. In the context of agribusiness, these strategies include technological advancements in production, the adoption of sustainable farming methods, the development of new product lines, improvements in logistics and supply chains, and novel marketing techniques that cater to evolving global consumer demands [4].

As global agricultural value chains become increasingly complex, agribusinesses must not only produce efficiently but also innovate continuously to meet standards around quality, traceability, ethical sourcing, and environmental sustainability [5]. Moreover, unpredictable factors such as climate change, volatile market prices, and shifting consumer tastes towards organic, health-conscious, and ethically produced goods are forcing agribusinesses to rethink their traditional operating models and incorporate innovative thinking [6].

In Africa, and more specifically in Kenya, agribusiness plays a critical role in driving economic development and ensuring food security [7]. Kenya's agricultural sector contributes significantly to employment and exports, with counties like Kiambu standing out as agricultural powerhouses due to their favourable climatic conditions, fertile soils, and proximity to urban markets like Nairobi [8]. Kiambu County produces tea, coffee, dairy, and horticultural products, making it strategically positioned for both domestic growth and global expansion [9]. However, agribusinesses in this region often

face barriers such as limited access to financing, lack of innovation infrastructure, and weak linkages to global value chains [10]. These challenges underline the urgency for firms in Kiambu to adopt innovation strategies to unlock their globalization potential.

The application of innovation strategies allows agribusinesses to create unique value propositions, differentiate themselves from competitors, and align their operations with the demands of international markets. Through the introduction of new technologies, digital platforms, improved farming techniques, and enhanced product development, agribusinesses in Kiambu can enhance productivity, improve quality standards, and gain access to high-value export markets. Moreover, the integration of innovation into strategic planning fosters resilience, enabling businesses to adapt to global disruptions such as climate shocks, supply chain bottlenecks, and economic fluctuations [11].

Despite the recognized importance of innovation in global market competitiveness, there is limited empirical research on how innovation strategies influence the globalization of agribusinesses within the Kenyan context. This study therefore sought to fill that gap by assessing the role of innovation strategies in the globalization of agribusinesses in Kiambu County, Kenya. By focusing on innovation as a key enabler of globalization, this study contributes to our understanding of strategic management practices in agribusiness and provides evidence that could inform policy, investment, and capacity-building efforts for sustainable agricultural development.

1.1 Statement of the Problem

Despite the increasing importance of globalization as a driver of growth and competitiveness, many small and medium-sized agribusinesses in Kiambu County encounter significant challenges in expanding into global markets. These challenges are often linked to limited resources, inadequate strategic capacity, and underutilization of innovation strategies. While innovation is widely recognized as a key enabler of international competitiveness, there are no studies that have examined its specific role in supporting the globalization of agribusinesses in Kenya. Existing literature focuses broadly on strategic management and globalization, yet fails to provide targeted insights on how innovation strategies can help agribusinesses overcome structural and operational barriers to global integration. To address this research gap, the study set out to investigate how innovation strategies contribute to the successful globalization of agribusinesses in Kenya, with specific focus on Kiambu County.

1.2 Objective of the study

The objective of the study was to establish how innovation strategies contribute to the international growth and market integration of agribusinesses in Kiambu County, Kenya.

II. Literature Review

Innovation strategies have become a key driver of competitiveness and global market integration for agribusinesses in emerging economies. At their core, these strategies represent systematic approaches that firms employ to enhance productivity, differentiate products, and access new markets [12]. The agribusiness sector faces unique challenges such as climate volatility, stringent international standards, and evolving consumer preferences. These challenges demand innovation that goes beyond mere technological adoption. Recent studies highlight how process optimization, sustainable packaging, and digital traceability systems enable agribusinesses to meet global market demands while achieving premium pricing [13, 14]. These findings align with the Resource-Based View (RBV), which underscores how firms take advantage of unique, difficult-to-replicate resources to secure competitive advantages [15]. For agribusinesses in Kenya, strategic innovation in production and post-harvest handling could prove instrumental in penetrating lucrative export markets.

The ability to adapt to dynamic global markets is equally critical, as emphasized by the Dynamic Capabilities Theory [16]. This framework highlights how successful firms continuously sense emerging opportunities, seize them through agile decision-making, and reconfigure resources to maintain competitiveness. African agribusinesses that align with international certifications (e.g., GlobalG.A.P., Fairtrade) or adopt climate-smart practices have demonstrated faster integration into global value chains [17, 18]. Kenya's horticulture sector offers compelling examples, where digital platforms like Twiga Foods and iProcure have reduced transaction costs and expanded smallholder farmers' access to international buyers [19].

A firm's capacity to absorb and apply external knowledge further determines its innovation success. Absorptive capacity, defined as the ability to identify, assimilate, and utilize new knowledge, plays an important role in bridging technology gaps prevalent in developing-economy agribusinesses [20]. In Kenya, collaborations between agribusinesses and research

institutions or multinationals have accelerated the adoption of advanced techniques, from solar drying to precision irrigation [21, 22]. For instance, the partnership between the International Water Management Institute (IWMI) and SunCulture illustrates how strategic collaborations can advance the adoption of precision irrigation in Kenya. This initiative combines IWMI's research expertise with SunCulture's solar-powered irrigation technology to promote climate-resilient, water-efficient farming. The partnership has yielded practical guidelines and a sustainable water strategy, demonstrating a scalable model for integrating innovation into smallholder agriculture [22]. Similarly, Petrovich [23] highlights how collaborations in Kiambu County have enabled smallholder farmers to adopt solar drying techniques. These technologies have extended the shelf life of fresh produce, increased market value, and contributed to sustainable ecological farming.

The transformative potential of digital technologies in agribusiness globalization cannot be overstated. Industry 4.0 tools such as IoT sensors, blockchain traceability, and drone-based monitoring are reshaping how agribusinesses meet the demands of global retailers [24]. Ethiopia's coffee sector, for example, secured premium pricing in European markets by implementing blockchain-based supply chain transparency [25]. These innovations not only build trust with international buyers but also ensure compliance with stringent import regulations such as the EU's deforestation-free supply chain requirements [26]. For agribusinesses in Kenya, adopting such digital innovations presents a strategic pathway to meet traceability, quality assurance, and sustainability expectations in global markets. From this review, it emerges that innovation strategies, whether through advanced technologies, institutional collaborations, or digital systems, are critical enablers of international growth and integration. However, empirical evidence specific to Kenyan agribusinesses is limited, justifying the need for this study.

III. Materials and Methods

3.1 Research design

This study employed a case study research design to examine how innovation strategies contribute to the international growth and market integration of agribusinesses in Kiambu County, Kenya. The case study approach was selected due to its suitability for investigating contemporary phenomena within real-life contexts, particularly when the boundaries between the phenomenon and its environment are not clearly evident [27]. This design facilitated an in-depth exploration of the complex processes through which agribusinesses develop and implement innovation strategies to enhance their global competitiveness.

3.2 Population and sampling strategy

The target population consisted of 68 export-oriented agribusiness enterprises registered in Kiambu County as of 2023, according to records from the County Trade Office. These enterprises represented various sub-sectors including horticulture, dairy, and coffee production. A stratified random sampling technique was employed to select a representative sample of 55 firms. Stratification was based on three key criteria: firm size (categorized as small, medium, or large), primary agribusiness activity, and years of export experience. This sampling approach ensured that the selected cases adequately reflected the diversity of agribusiness operations in the county, thereby enhancing the external validity of the findings. The sample size determination considered both statistical power requirements and practical constraints related to data collection accessibility.

3.3 Data collection procedures

Primary data collection was conducted using a semi-structured questionnaire administered to senior managers and decision-makers responsible for innovation and international operations within the selected agribusinesses. The questionnaire instrument was carefully designed to capture both quantitative and qualitative data. The quantitative component employed Likert-scale items to measure various aspects of innovation strategy implementation. The qualitative component consisted of open-ended questions that allowed respondents to elaborate on their experiences with innovation adoption and its impact on their internationalization efforts. To ensure data quality, the questionnaire was pre-tested with five agribusiness managers not included in the final sample, and their feedback was used to refine the instrument. Data collection occurred over an eight-week period, with follow-up reminders and personal visits employed to achieve a high response rate of 95 percent.

3.4 Data analysis

Quantitative data were analyzed using descriptive statistical techniques. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize the characteristics of innovation strategies and their perceived outcomes. Inferential statistics, particularly correlation and regression analyses, were employed to

examine relationships between innovation strategies and globalization outcomes. All statistical analyses were performed using SPSS version 28.

IV. Results and Discussion

4.1 Descriptive findings on innovation strategies

The study sought to examine the contribution of innovation strategies to the international growth and market integration of agribusinesses in Kenya. Respondents were asked to rate their level of agreement with several statements related to their firms' innovation practices using a 5-point Likert scale. Table 1 presents a summary of the responses. Notably, 93.3% of the respondents either agreed (46.67%) or strongly agreed (46.67%) that their businesses actively align their resources with global market trends, resulting in a high mean score of 4.20 (SD = 1.27). This indicates a strong awareness among firms of the importance of adapting to global dynamics. Similarly, a large majority of respondents affirmed their commitment to innovation for global competitiveness. Specifically, 80% strongly agreed and 20% agreed that their agribusinesses had adopted various innovations tailored for presence in international markets, yielding a mean score of 4.80 (SD = 0.41). This suggests widespread adoption of differentiated strategies aimed at global positioning. In addition, market research emerged as a central component of firms' globalization strategy. About 60% of respondents reported that their businesses regularly conduct market research, while 33.3% indicated frequent engagement in such activities. The overall mean score for this item was 4.53 (SD = 0.64), highlighting a strong orientation towards informed, research-driven innovation decisions.

Table 1 Innovation strategies

| Innovation Strategies | Very Strongly disagree | Strongly disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly agree (%) | Mean | Std. Dev |
|--|------------------------|-----------------------|--------------|-------------|-----------|--------------------|------|----------|
| My business undertakes market resource vs global markets to suit the different global trends | 6.67 | 0 | 0 | 0 | 46.67 | 46.67 | 4.2 | 1.27 |
| My business adopted different innovations for global markets presence | 0 | 0 | 0 | 0 | 20 | 80 | 4.8 | 0.41 |
| My agribusiness frequently conducts market research as part of its globalization strategy | 0 | 0 | 0 | 6.67 | 33.33 | 60 | 4.53 | 0.64 |

These findings suggest that studied agribusinesses are proactively deploying innovation strategies that reflect an understanding of global market demands, thus strengthening their adaptability and strategic positioning. This points to the critical role that innovation plays in enabling agribusinesses to navigate and compete in global markets. The high levels of agreement among respondents regarding the adoption of innovations tailored for international markets, the use of market research, and responsiveness to global trends suggest that agribusinesses are not merely reactive but strategically proactive. This is in line with Schumpeter's theory of innovation, which states that innovation is a key driver of competitiveness and market expansion [28]. The consistent implementation of innovation strategies – such as product adaptation, market intelligence, and technological upgrades – serves to enhance firms' global appeal and responsiveness to shifting consumer preferences across borders. These results are consistent with previous studies [29, 30], which emphasized that innovation is a vital enabler for firms seeking to internationalize. Moreover, the strong orientation towards market research indicates that the firms value data-driven decision-making as a foundation for successful globalization strategies. This strategic behavior reflects a maturing agribusiness sector in Kenya that is increasingly aligning its internal capabilities with external opportunities in the global marketplace.

4.2 Globalization outcomes of agribusinesses

To assess the outcomes of these innovation strategies, the study also evaluated the respondents' perceptions of their businesses' globalization performance. Two indicators were used: increased international market presence and expanded export volumes. As shown in Table 2, 53.3% of respondents strongly agreed and 46.67% agreed that their firms had

expanded their presence in international markets. The same pattern was reported regarding increased export levels. Both indicators recorded a high mean score of 4.53 (SD = 0.52), with no respondents indicating neutrality or disagreement. The low standard deviation suggests a high degree of consensus among agribusinesses about their globalization success. These results provide descriptive evidence that firms engaging in innovation are seeing tangible benefits in terms of their global integration and export performance.

Table 2 Globalization of agribusinesses

| Globalization of Agribusinesses | Strongly disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly agree (%) | Mean | Std. Dev |
|---------------------------------|-----------------------|--------------|-------------|-----------|--------------------|------|----------|
| Increased Market Presence | 0 | 0 | 0 | 46.67 | 53.33 | 4.53 | 0.52 |
| Increased Export Levels | 0 | 0 | 0 | 46.67 | 53.33 | 4.53 | 0.52 |

To examine the relationship between innovation strategies and globalization, Pearson correlation and linear regression analyses were conducted. The correlation coefficient between innovation strategies and globalization of agribusinesses was found to be $r = 0.403$, with a p-value of 0.004, indicating a moderate, statistically significant positive relationship. This suggests that as firms enhance their innovation practices, their degree of international market integration also improves. Regression analysis further confirmed this relationship. Innovation strategies were found to significantly predict the globalization of agribusinesses, with a standardized beta coefficient of $\beta = 0.374$ and $p < 0.05$. These results suggest that innovation strategies contribute meaningfully to firms' ability to operate in global markets, reinforcing the central thesis of this study.

The findings are consistent with [31], who demonstrated that SMEs pursuing broader internationalisation pathways – measured through scale, scope, timing, and pace – experience significantly greater innovation outcomes than domestically focused firms. The Kiambu agribusinesses appear to mirror this trend, where innovation (through market research, product adaptation, and global responsiveness) acts as both a driver and enabler of global presence. Similarly, Dana et al. [32] highlighted the role of international market exposure and digital technologies in stimulating innovation in emerging market firms. The high levels of agreement among respondents in this study regarding the adoption of innovation strategies suggest that Kenyan agribusinesses are cultivating the entrepreneurial orientation necessary for innovation-led globalization. Furthermore, Ortigueira-Sánchez et al. [33] confirmed that innovation types (product, process, or organizational) directly contribute to export performance in emerging market SMEs, particularly when supported by institutional mechanisms like government innovation subsidies. Though the present study did not assess public support mechanisms, the strong link between innovation strategies and export outcomes – seen in both the descriptive data and inferential results – echoes the same conclusion: innovation is a strategic enabler of global expansion.

V. Conclusion and Recommendations

5.1 Conclusion

This study set out to examine the effect of innovation strategies on the globalization of agribusinesses in Kiambu County, Kenya. The findings revealed a strong positive perception among agribusiness owners regarding their use of innovation practices – particularly in market research, product adaptation, and responsiveness to global consumer demands. Descriptive statistics showed high levels of agreement with innovation-related statements, suggesting a proactive approach among agribusinesses toward engaging with international markets. Inferential analyses confirmed that innovation strategies are a significant predictor of globalization. The statistically significant correlation ($r = 0.403$, $p = 0.004$) and regression results ($\beta = 0.374$, $p < 0.05$) indicate that firms implementing innovation strategies are more likely to expand their market presence and export capacity. These findings reinforce the theoretical perspective that innovation is both a driver and outcome of international market engagement, especially in emerging economies. The outcomes of the study point to the importance of fostering innovation capabilities as a strategic pathway to global competitiveness. For agribusinesses in developing economies such as Kenya, investing in continuous product development, market intelligence, and adaptation to international trends is essential for sustained growth and relevance in global markets.

5.2 Recommendations

1. Agribusiness owners and managers should be provided with regular training on global market trends, product development, and technological innovation to strengthen their strategic capabilities for international market engagement.
2. Government agencies and industry associations should facilitate access to affordable or subsidized market research tools and platforms that help agribusinesses identify and respond to global consumer preferences and emerging market opportunities.
3. Stakeholders should promote the adoption of digital technologies such as e-commerce, digital marketing, and supply chain platforms. This is in order to enhance global visibility and operational efficiency among agribusinesses.
4. Trade and innovation policies should be integrated to include innovation performance as a criterion in export promotion programs and subsidies, ensuring that globally oriented firms receive adequate support to scale their innovations.

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