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# ENTREPRENEURIAL EDUCATION THE MISSING LINK BETWEEN DESIGN AND INNOVATION IN FAST-MOVING CONSUMER GOODS (FMCG) INDUSTRY EVIDENCED IN THE NIGERIAN LEATHER SECTOR

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## Abstract

The transition from a creative design to a marketable innovation is a critical challenge for many industries, particularly within developing economies. This paper investigated the role of entrepreneurship as the crucial catalyst that bridges the gap between design and innovation in Nigeria's fast-moving consumer goods (FMCG) sector, with a specific focus on the leather goods industry. This study adopted a quantitative, cross-sectional survey design. Data was collected from 285 owners and senior managers of Small and Medium-sized Enterprises (SMEs) in the Nigerian leather clusters of Aba, Kano, and Lagos. The research instrument was a structured questionnaire designed to

**Keywords:** Entrepreneurship, Design Management, Innovation, Fast-Moving Consumer Goods (FMCG), Leather Industry, Nigeria, SMEs.



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measure entrepreneurial orientation, design management capability, and innovation performance (both product and process). The collected data were analyzed using descriptive statistics, Pearson correlation, and hierarchical multiple regression to test the formulated hypotheses. The results reveal a strong positive correlation between design management capability and innovation performance. More importantly, entrepreneurial orientation was found to have a significant positive effect on the conversion of design into tangible product and process innovations, acting as a direct driver. Furthermore, the study found that entrepreneurial alertness, a key dimension of entrepreneurship, significantly moderates the relationship between design and innovation. This suggests that firms with higher levels of alertness are more effective at identifying and exploiting opportunities to transform designs into market-successful innovations. This paper provides novel empirical evidence on the tripartite relationship between design, entrepreneurship, and innovation within the context of an African emerging market. By conceptualizing entrepreneurship as the "missing link," the study offers a more nuanced understanding of the innovation process in resource-constrained environments like the Nigerian leather industry. The findings provide actionable insights for entrepreneurs, policymakers, and industry stakeholders on how to leverage entrepreneurial competencies to enhance competitiveness.

# Introduction

In the highly competitive global landscape of Fast-Moving Consumer Goods (FMCG), innovation is not merely an advantage but a prerequisite for survival and growth (Kotler & Keller, 2021). Firms continuously strive to introduce new products, processes, and business models to capture consumer attention and market share. At the heart of this innovation imperative lies design – the intentional and creative process of shaping products, services, and experiences to meet user needs and desires (Brown & Katz, 2019). While a superior design is a potent source of competitive advantage, its potential is often unrealized. A significant gap frequently exists between the conceptualization of a good design and its successful commercialization as a market-ready innovation (Hertenstein, Platt, & Veryzer, 2020). This "design-innovation gap" is particularly pronounced in developing economies, where structural impediments and resource constraints hinder the translation of creative ideas into economic value.

The Nigerian leather industry, a vibrant and historically significant sector, exemplifies this challenge. With an estimated value of over $1 billion and significant potential for export



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and job creation, the sector produces a wide range of goods, including footwear, handbags, belts, and upholstery, which fall under the semi-durable FMCG category (Nigerian Economic Summit Group, 2022). Nigerian leather products, particularly those from Aba and Kano, are renowned for their creativity and aesthetic appeal, demonstrating a latent design capability. However, the sector is largely characterized by small, fragmented firms that struggle to scale, standardize, and innovate consistently. Many well-designed product concepts fail to become commercially successful innovations due to challenges in manufacturing processes, market access, and strategic management (Adeyemi & Oyeniyi, 2021).

This paper posits that **entrepreneurship** is the critical, often overlooked, element that bridges this design-innovation gap. Entrepreneurship, defined as the process of discovering, evaluating, and exploiting opportunities to create future goods and services, provides the necessary engine for this transformation (Shane & Venkataraman, 2000). It encompasses the proactiveness to pursue opportunities, the willingness to take risks, and the innovativeness to combine resources in new ways (Lumpkin & Dess, 1996). While design provides the 'what' (the idea, the blueprint), entrepreneurship provides the 'how' (the vision, the strategy, the execution). The entrepreneur acts as the agent who recognizes the market potential of a design, mobilizes the necessary resources (capital, human skills, technology), and navigates the uncertainties of the market to launch a successful innovation.

Despite the intuitive appeal of this connection, there is a dearth of empirical research systematically examining the role of entrepreneurship as a mediating or driving force in the design-innovation relationship, especially within the context of traditional industries in emerging markets. This study aims to fill this void by providing empirical evidence from the Nigerian leather sector. Understanding this dynamic is crucial for unlocking the immense potential of the industry, fostering economic diversification, and creating a sustainable competitive advantage for Nigerian firms in the global FMCG market.

**Specific Objectives**

1. To determine the effect of entrepreneurial orientation on the level of innovation performance (product and process) in SMEs within the Nigerian leather sector.
2. To examine the moderating role of entrepreneurial alertness in the relationship between product design capability and innovation performance in SMEs within the Nigerian leather sector.

**Research Questions**

3. What is the effect of entrepreneurial orientation on the innovation performance (product and process) of SMEs in the Nigerian leather sector?

4. To what extent does entrepreneurial alertness moderate the relationship between product design capability and innovation performance among SMEs in the Nigerian leather sector?

**Null Hypotheses**

To provide a framework for statistical testing, the following null hypotheses (H_0) were formulated:

**H_01:** Entrepreneurial orientation has no significant effect on the innovation performance of SMEs in the Nigerian leather sector.

**H_02:** Entrepreneurial alertness does not significantly moderate the relationship between product design capability and innovation performance in SMEs in the Nigerian leather sector.

**Methodology**

This study employed a quantitative, cross-sectional survey design. This approach was chosen for its suitability in collecting data from a large sample at a single point in time to examine the relationships between variables and test hypotheses (Creswell & Creswell, 2022). The design allows for the statistical analysis of the associations between entrepreneurial orientation, design capability, entrepreneurial alertness, and innovation performance.

The target population for this study comprised all registered Small and Medium-sized Enterprises (SMEs) operating in the leather goods sector (footwear, bags, belts) in Nigeria. The study focused on the three major commercial hubs known for leather production and trade: Aba (Abia State), Kano (Kano State), and Lagos (Lagos State). According to the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and local trade association records, the estimated number of registered SMEs in these clusters is approximately 1,500.

A sample size of 306 was calculated using Yamane's (1967) formula for finite populations: n=N/(1+N(e)2), where N=1500 and the level of precision (e) is 0.05.

n=frac15001+1500(0.05)2=frac15001+1500(0.0025)=frac15004.75approx316

To account for non-responses, the sample size was rounded up to 320. A multi-stage sampling technique was used. First, the three clusters (Aba, Kano, Lagos) were purposively selected due to their high concentration of leather SMEs. Second, a proportionate stratified sampling method was used to draw samples from each cluster based on its relative size. Finally, simple random sampling was used to select the individual firms from the lists provided by local trade associations in each cluster.

The primary data collection instrument was a structured questionnaire. The questionnaire was divided into five sections:

1. **Section A:** Demographic information of the respondent (owner/manager) and the firm (age, size, location).
2. **Section B: Entrepreneurial Orientation (EO):** Measured using a 9-item scale adapted from Covin and Slevin (1989), covering proactiveness, innovativeness, and risk-taking.
3. **Section C: Product Design Capability (PDC):** Measured using a 6-item scale adapted from Hertenstein et al. (2020), focusing on aesthetics, functionality, and user-centric design processes.
4. **Section D: Entrepreneurial Alertness (EA):** Measured using a 5-item scale from Tang, Kacmar, and Busenitz (2012), assessing the propensity to scan for, search for, and associate information about new opportunities.
5. **Section E: Innovation Performance (IP):** Measured using an 8-item scale adapted from Camisón and Villar-López (2014), covering both product innovation (new product launches, product improvements) and process innovation (new production methods, improved logistics).

All measurement items used a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire was pilot-tested with 30 SME owners in Ibadan to ensure clarity, validity, and reliability. The Cronbach's Alpha coefficients for the scales in the pilot study were all above the recommended threshold of 0.70 (EO: 0.88; PDC: 0.85; EA: 0.82; IP: 0.91), confirming internal consistency.

Data was collected over a period of eight weeks (May-June 2025) through trained research assistants who administered the questionnaires in person to the owners or senior managers of the selected firms. Out of the 320 questionnaires distributed, 285 were properly filled and returned, resulting in a response rate of 89%.

The collected data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 28. The analysis involved several stages:

1. **Descriptive Statistics:** Frequencies, percentages, means, and standard deviations were used to summarize the demographic characteristics of the respondents and the key variables of the study.
2. **Correlation Analysis:** Pearson's correlation coefficient (r) was used to examine the strength and direction of the linear relationships between the study variables.
3. **Inferential Statistics:** Hierarchical multiple regression analysis was employed to test the hypotheses. For Hypothesis 1, innovation performance was regressed on entrepreneurial orientation. For Hypothesis 2, a three-step moderation analysis was conducted:

- Step 1: Innovation performance was regressed on the control variables (firm age, firm size) and the independent variable (product design capability).
- Step 2: The moderator (entrepreneurial alertness) was added to the model.
- Step 3: An interaction term (Product Design Capability × Entrepreneurial Alertness) was created and added to the model to test for moderation. A significant change in R2 and a significant beta coefficient for the interaction term would indicate a moderating effect.

Statistical significance for all inferential tests was set at the $p \< 0.05$ level.

**Results**

Table 2 presents the mean and standard deviation for the core constructs of the study. The scores indicate that respondents, on average, rated their firms moderately high on all variables. Innovation Performance had the lowest mean score (M=3.62), suggesting that while firms are engaging in innovative activities, there is room for improvement. Entrepreneurial Orientation received the highest mean score (M=4.15).

**Correlation Analysis**

Pearson's correlation analysis was conducted to explore the relationships between the variables. As shown in Table 3, all variables are positively and significantly correlated with each other. A strong, positive correlation exists between Entrepreneurial Orientation and Innovation Performance ($r = .612, p \< .001$), providing initial support for Hypothesis 1. Product Design Capability is also strongly correlated with Innovation Performance ($r = .545, p \< .001$).

**Test of Hypothesis 1 (H_01)**

Hypothesis 1 stated that entrepreneurial orientation has no significant effect on the innovation performance of SMEs. A simple linear regression was conducted to test this. The results, presented in Table 4, show that the model is statistically significant ($F(1, 283) = 171.45, p \< .001$) and explains a substantial portion of the variance in innovation performance (R2=.375).

The regression coefficient for Entrepreneurial Orientation is positive and highly significant ($\\beta = .751, t = 13.09, p \< .001$). This indicates that for every one-unit increase in Entrepreneurial Orientation, Innovation Performance is predicted to increase by 0.751 units.

**Decision:** Since the p-value (.000) is less than 0.05, we **reject the null hypothesis (H_01)**. This provides strong evidence that entrepreneurial orientation has a significant positive effect on the innovation performance of SMEs in the Nigerian leather sector.



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**Test of Hypothesis 2 (H_02)**

Hypothesis 2 stated that entrepreneurial alertness does not significantly moderate the relationship between product design capability and innovation performance. Hierarchical multiple regression was used for this test. The variables were mean-centered before creating the interaction term to reduce multicollinearity.

The significant beta coefficient of the interaction term and the significant change in R2 indicate a moderating effect. Therefore, we **reject the null hypothesis (H_02).** Entrepreneurial alertness significantly moderates the relationship between product design capability and innovation performance. The positive coefficient suggests that the effect of design capability on innovation is stronger when entrepreneurial alertness is high.

**Summary of Findings**

This study set out to empirically investigate the role of entrepreneurship in the relationship between design and innovation in the Nigerian leather sector. The statistical analysis yielded two major findings:

1. The results demonstrated a strong, positive, and statistically significant relationship between the entrepreneurial orientation of a firm and its innovation performance. Firms exhibiting higher levels of proactiveness, innovativeness, and risk-taking were found to achieve higher levels of both product and process innovation. This finding supports the rejection of the first null hypothesis (H_01).
2. The study revealed that entrepreneurial alertness significantly moderates the relationship between product design capability and innovation performance. The positive interaction effect implies that the ability of a firm to convert its design capabilities into successful innovations is significantly enhanced when its leaders and members are highly alert to new opportunities, information, and market shifts. In other words, a good design is more likely to become a successful innovation in a firm that actively scans its environment. This finding led to the rejection of the second null hypothesis (H_02).

In summary, the empirical evidence strongly suggests that entrepreneurship is not a peripheral activity but a core mechanism that both directly drives innovation and amplifies the contribution of design to innovation performance within the context of Nigerian leather SMEs.

**Discussion of Findings**

The findings of this study provide critical insights into the dynamics of innovation in a traditional industry within an emerging economy. The discussion is structured around the two main findings and their implications in relation to existing literature.

**The Direct Impact of Entrepreneurial Orientation on Innovation**

The confirmation that entrepreneurial orientation (EO) is a potent driver of innovation performance ($\\beta = .612, p \< .001$) aligns with a large body of entrepreneurship literature (e.g., Rauch et al., 2009; Lumpkin & Dess, 1996). However, its specific application to the Nigerian leather sector offers a nuanced perspective. The high mean score for EO (4.15) suggests that entrepreneurs in this sector perceive themselves as proactive and willing to take risks. Yet, the mean score for innovation performance is comparatively lower (3.62). This paradox suggests that while the entrepreneurial *spirit* exists, it may not be translating into innovative *outcomes* as effectively as possible.

This gap could be explained by the resource-based view (RBV) of the firm. While EO can be seen as a valuable intangible resource, its effectiveness is contingent on its combination with other tangible and intangible resources (Barney, 1991). In the Nigerian context, entrepreneurs may possess the orientation but lack access to complementary assets like advanced technology, skilled labor for scaling, and formal distribution channels, which are necessary to fully realize innovations (Adeyemi & Oyeniyi, 2021). Thus, our finding reinforces the idea that EO is a necessary but not sufficient condition for high innovation performance in resource-constrained environments. It acts as the "intent," the crucial first step that propels firms to overcome inertia and attempt to innovate, thereby bridging the gap between a static state and an innovative one.

**The Moderating Role of Entrepreneurial Alertness**

The second key finding—that entrepreneurial alertness moderates the design-innovation link—is perhaps the most significant contribution of this study. It moves beyond a simple linear relationship to show *how* entrepreneurship facilitates the conversion process. This supports the opportunity-based view of entrepreneurship (Shane, 2003). A firm may possess excellent product design capabilities (e.g., creating aesthetically pleasing and functional footwear), but these capabilities remain latent until an alert entrepreneur connects the design to an unmet market need, a new material, or a more efficient production technique.

For instance, an alert entrepreneur in Aba might notice a growing trend for eco-friendly fashion on social media (scanning), actively search for sustainable alternatives to synthetic leather (searching), and then connect this trend with their firm's design skills to create a new line of footwear from recycled materials (association and evaluation). This process transforms a static design capability into a timely and relevant product innovation. Our finding ($\\beta = .189, p \< .001$ for the interaction term) empirically validates this narrative. It shows that design capability has a much stronger payoff in firms that institutionalize this alertness. This resonates with the work of Tang et al. (2012), who

positioned alertness as a critical cognitive skill for identifying opportunities. Our study extends this by showing how this cognitive skill leverages an organizational capability (design) to produce a tangible outcome (innovation).

This finding directly addresses the "missing link" proposition. Design provides the raw material, but entrepreneurial alertness acts as the catalyst—the enzyme—that speeds up and enables the reaction that turns design into innovation. Without this alertness, even the best designs may remain as mere concepts or prototypes, failing to cross the chasm into commercial success, a common fate for many products in the Nigerian FMCG space (Okeke, 2023).

**Conclusion**

This empirical paper investigated the role of entrepreneurship as the critical link between design and innovation in the Nigerian leather goods sector. The study was motivated by the observation that despite possessing creative design capabilities, many firms in the sector struggle to translate these into sustained innovation and market success. Through a quantitative analysis of 285 SMEs in Aba, Kano, and Lagos, the study has generated compelling evidence to illuminate this complex relationship.

The research concludes that entrepreneurial orientation is a significant and direct driver of innovation performance. The proactiveness, innovativeness, and risk-taking propensity inherent in an entrepreneurial firm provide the fundamental impetus to transform ideas into market offerings. More profoundly, the study concludes that entrepreneurial alertness acts as a significant moderator, amplifying the effect of product design capability on innovation. This means that the economic return on investment in design is substantially higher in firms that are adept at scanning, searching, and making connections to identify and exploit market opportunities.

In essence, entrepreneurship is not just a parallel activity but an integral mechanism woven into the fabric of the innovation process. It provides both the engine (orientation) and the navigation system (alertness) required to successfully journey from a design concept to a commercially viable innovation. Therefore, this study affirms the central proposition that entrepreneurship is indeed the "missing link" that can unlock the latent potential of design within the Nigerian leather industry and, by extension, other similar sectors in emerging economies.

**Recommendations**

Based on the findings and conclusions of this study, the following recommendations are proposed for key stakeholders:

4. Beyond just possessing an entrepreneurial spirit, owners and managers should actively embed entrepreneurial orientation into their organizational culture. This involves empowering employees to be proactive, creating reward systems that encourage calculated risk-taking, and celebrating innovative efforts, even those that do not immediately succeed.
5. Firms should move beyond ad-hoc opportunity recognition. They should establish formal and informal processes for environmental scanning. This could include regular market research, attending trade fairs, monitoring social media trends, encouraging customer feedback, and networking with suppliers and even competitors to stay informed about emerging technologies, materials, and consumer preferences.
6. To close the design-innovation gap, firms should foster collaboration between their designers and those responsible for business strategy. Design teams should be made aware of market opportunities identified through entrepreneurial alertness, and entrepreneurs should understand the capabilities and constraints of the design process.

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