Resource Flexibility and Delivery Consistency: An Analysis of Manufacturing Firms in Osun State, Nigeria

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Abstract

This study examined the relationship between resource flexibility and delivery consistency in manufacturing firms in Osun State, Nigeria. Using a descriptive survey design, data were collected from 125 owner managers of manufacturing organizations through structured questionnaires. The findings reveal that resource flexibility significantly impacts delivery consistency, with strategic agility dimensions (strategic foresight, strategic sensitivity, resource fluidity, and clarity of vision) playing a critical role in enhancing competitive capabilities. The study concludes that manufacturing firms in Osun State can improve delivery consistency by adopting flexible resource management practices and fostering strategic agility. It is therefore recommended that the manufacturing firms in Osun State of Nigeria should henceforth adopt flexible resource management and foster strategic agility in order to enhance delivery consistency.

Keywords: Resource Flexibility, Delivery Consistency, Strategic Agility, Manufacturing Firms, Competitive Capabilities

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IJSRSSMS | p.21

Background to the Study

Manufacturing companies operate within steadily changing environments, necessitating care as they expand. Adequate resource allocation guarantees efficiency and productivity, while flexibility in resource usage helps adjust to new conditions. In the manufacturing sector, delivery consistency is vital for client pleasure and market competitiveness. This research focuses on manufacturing companies in Osun State, Nigeria, and examines the dynamic resource management strategy's flexibility and delivery consistency. By assessing the link between flexibility and delivery consistency, this study intends to identify key practices that successfully balance these components, improve operational excellence, and meet the challenges of modern manufacturing. Manufacturing firms must do more than adapt; they must tame the resource flexibility delivery consistency nexus. This need requires a nuanced study wherein this study delves. The study investigates how manufacturing companies in Osun State negotiate resource flexibility while delivering consistently. This research, by identifying key practices that improve operational capabilities, examines this delicate interplay and substantially impacts manufacturing operations.

Manufacturing companies are the backbone of many economies, and their continued expansion is vital to global economic development and innovation. Flexibility of resources in this context means dynamically allocating resources, such as workforce, equipment, and materials, to meet demand changes and unforeseen difficulties. Flexibility helps manufacturing companies adapt to changing market circumstances and diversify their products to meet customer preferences. As consumer demands evolve and market trends shift, flexibility becomes a crucial attribute for manufacturing firms. It allows them to adjust their production capabilities, diversify product offerings, and innovate to stay relevant in competitive markets. This adaptability is vital for survival and growth in the dynamic and fast paced landscape of modern manufacturing. Manufacturing companies must also ensure delivery consistency to maintain their position in the competitive and ever-changing economic landscape. Delivery consistency entails offering goods on time, with precision and reliability, and meeting customer demands reliably. Customers increasingly value fast deliveries. Meeting these expectations requires excellent operational processes and a thorough understanding of the supply chain. Delivery consistency directly affects customer happiness, manufacturing company reputations, and market competitiveness. Resource flexibility and delivery consistency are vital in improving manufacturing companies seek ways to adapt to variable market conditions during unstable economic conditions and improve operational performance. This research focuses on manufacturing firms in Osun State, a vital Nigerian manufacturing hub. Osun State manufacturers face local and worldwide challenges, including economic fluctuations, supply chain disruptions, and shifting consumer preferences. Thus, the present study perfectly balances resource flexibility and delivery consistency to compete. Understanding the delicate balance between adaptive resource management and dependable delivery is an urgent need for manufacturing firms in Osun State. By bridging this knowledge gap, the current study aspires to contribute to the advancement of manufacturing theory and practice, becoming an invaluable guide for companies and scholars alike in the quest for operational excellence in the changing manufacturing landscape.

Literature Review

Resource Flexibility and Delivery Consistency

Resource flexibility refers to the ability of an organization to adapt its resources (human, financial, and material) to meet changing demands. Studies have shown that firms with high resource flexibility are better positioned to respond to market fluctuations, reduce lead times, and maintain consistent delivery schedules (RedWell et al., 2021). Delivery consistency, on the other hand, is the ability to deliver products on time and in the right quantity, which is critical for customer satisfaction and competitive advantage (Chepchirchir et al., 2018). Resource flexibility and delivery consistency are crucial for manufacturing firms to respond to market uncertainties. Chod & Rudi (2005) demonstrate that responsive pricing combined with resource flexibility allows firms to profit from demand variability. Nilsson & Nordahl (1995) propose a framework linking market demand, production system characteristics, and supplier flexibility to guide manufacturing flexibility analysis. Chauhan & Singh (2014) identify key measures of resource flexibility, with machine versatility and worker adaptability being most important. They also found most measures significantly correlate with overall resource flexibility. Yazici (2005) shows that cellular manufacturing, combined with volume and routing flexibilities, can significantly reduce lead times compared to job shops. Additionally, multiskilled workers shared between cells improve resource utilization. These studies highlight the importance of various types of flexibilities including resource, pricing, volume, mix, and routing in enhancing manufacturing performance and delivery consistency in uncertain market conditions.

Strategic Agility and Competitive Capabilities

Strategic agility encompasses the ability to anticipate and respond to changes in the business environment through strategic foresight, sensitivity, resource fluidity, and clarity of vision. These dimensions enable firms to innovate, improve product quality, and achieve cost leadership (Kale et al., 2019). Research has demonstrated that strategic agility positively influences competitive capabilities, including delivery reliability and innovation (Abu Radi, 2013; Khoshnood & Nematizadeh, 2017).

Strategic agility is emerging as a crucial capability for organizations to thrive in turbulent environments, enabling them to quickly sense and respond to changes (Poi et al., 2022). It encompasses three metacapabilities: strategic sensitivity, leadership unity, and resource fluidity (Christofi & Chourides, 2021). Strategic agility contributes to competitive advantage by allowing firms to anticipate and seize market opportunities swiftly (Sampath & Krishnamoorthy, 2017). Studies have shown that strategic agility significantly impacts the competitive capabilities of private banks in Iran, with clarity of vision being the most influential factor (Khoshnood & Nematizadeh, 2017). Key elements facilitating strategic agility include knowledge management, information technology, leadership, and human resource management (Christofi & Chourides, 2021). As organizations face increasingly dynamic environments, developing strategic agility becomes essential for longterm success and survival, allowing them to adapt their strategic direction in response to changing circumstances (Poi et al., 2022; Sampath & Krishnamoorthy, 2017).

Methodology

The study adopted a descriptive survey design to examine the relationship between resource flexibility and delivery consistency. The population consisted of 125 owner managers of manufacturing firms in Osun State, Nigeria. A total enumeration sampling technique was used, and data were collected through structured questionnaires adapted from previous studies. The questionnaire was divided into three sections: demographic information, strategic agility dimensions, and competitive capabilities. Data were analysed using descriptive and inferential statistics, including regression analysis, with the help of SPSS software.

Results and Discussion Demographic Characteristics

The study revealed that 73.3% of the respondents were male, and 66.7% were married. Most respondents had significant work experience, with 29.2% having 610 years of experience and 27.5% having 1115 years. Educational qualifications varied, with 29.2% holding HND certificates and 22.5% holding B.Sc. degrees.

Table 1: Demographic Data of Respondents

Category	Frequency	y Percentage (%)	
Gender			
Male	88	73.3	
Female	32	26.7	
Marital Status			
Single	20	16.7	
Married	80	66.7	
Divorced	12	10.0	
Separated	8	6.7	
Educational Qualification			
ND	20	16.7	
HND	35	29.2	
B.Sc.	27	22.5	
M.Sc.	12	10.0	
PhD	5	4.2	
Work Experience			
Less than 5 years	30	25.0	
6–10 years	35	29.2	
11-15 years	33	27.5	
16-20 years	10	8.3	

Resource Fluidity and Delivery Reliability

Resource fluidity significantly influenced delivery reliability ($R^2 = 0.923$, p < 0.05). Respondents highlighted the importance of flexible resource allocation and organizational structures in ensuring timely delivery. Notably, 48.3% strongly agreed that deploying resources effectively increases delivery reliability.

Table 2: Regression Analysis of Resource Fluidity on Delivery Reliability

Variable	Coefficient	Standard Error	<i>t</i> -value <i>p</i> -value
Resource Fluidity (RF)	0.832	0.022	37.732 < .001
Constant	5.110	0.414	12.355 < .001



Figure 1: Relationship between Resource Fluidity and Delivery Reliability Figure 1 demonstrates the positive impact of resource fluidity on delivery reliability.

Clarity of Vision and Cost Leadership

Clarity of vision was found to have a significant effect on cost leadership capability ($R^2 = 0.869$, p < 0.05). Respondents agreed that a clear vision helps organizations achieve cost leadership by reducing production costs and improving profit margins. For instance, 49.2% strongly agreed that a clear vision contributes to cost leadership.

Table 3: Descriptive Statistics of Employee Wellbeing

Variable	Mean	SD	Min	Max
Job Satisfaction	7.2	1.5	3.0	10.0
Work Stress	5.1	2.0	1.0	9.0
Wellness App Usage	4.5	1.8	1.0	8.0

Strategic Agility and Competitive Capabilities

The combined effect of strategic agility dimensions (strategic foresight, sensitivity, resource fluidity, and clarity of vision) on competitive capabilities was significant ($R^2 = 0.977$, p < 0.05). The study found that strategic agility enhances product quality, innovation, delivery reliability, and cost leadership.

Table 4: Combined Effect of Strategic Agility on Competitive Capabilities

Variable	Coefficient	Standard Error	t p
Strategic Foresight (SF)	1.816	0.271	6.702 < .001
Strategic Sensitivity (SS)	1.161	0.406	2.858 .004
Resource Fluidity (RF)	1.321	0.354	3.731 < .001
Clarity of Vision (CV)	1.027	0.193	5.314 < .001
Constant	13.743	1.408	9.759 < .001

Discussion of Findings

The results align with previous studies, such as RedWell et al. (2021), who found that resource flexibility significantly impacts delivery reliability. Similarly, the findings support the work of Abu Radi (2013) and Khoshnood & Nematizadeh (2017), who highlighted the role of strategic agility in enhancing competitive capabilities. The study underscores the importance of strategic foresight, sensitivity, resource fluidity, and clarity of vision in driving operational efficiency and competitiveness in manufacturing firms.

Conclusion and Recommendations

The study concludes that resource flexibility and strategic agility are critical for maintaining delivery consistency and enhancing competitive capabilities in manufacturing firms. To achieve this, firms should:

- 1. Invest in strategic foresight to anticipate market changes and improve product quality.
- 2. Foster strategic sensitivity to drive innovation and adapt to environmental changes.
- 3. Enhance resource fluidity to ensure timely delivery and operational efficiency.
- 4. Develop a clear vision to achieve cost leadership and improve profitability.

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