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INNOVATION AND RESILIENCE OF MANUFACTURING FIRMS IN NIGERIA: A STUDY OF BOTTLING COMPANIES IN BENIN CITY

Patrick Ohunmah Igudia,
PhD (Associate Professor), Department of Business Administration,
Faculty of Management Sciences, Ambrose Alli University, Ekpoma

A B S T R A C T

This study investigated the impact of innovation, specifically focusing on supply chain management, on the resilience of selected manufacturing firms in Nigeria, with a particular emphasis on 7UP Bottling Company and Nigerian Bottling Company (NBC), Benin City, Edo State, Nigeria. The study explored the relationship between supply chain management practices and risk management strategies within the context of organizational resilience. Data was collected from 212 participants, consisting of 96 employees from 7UP Bottling Company and 116 from Nigerian Bottling Company. Descriptive statistics, including mean and standard deviation, were employed to analyze the characteristics of the variables, while correlation analysis was used to determine the relationship between supply chain management and risk management. The findings revealed a positive and significant correlation between supply chain management practices and risk management strategies, emphasizing the critical role of efficient supply chain management in bolstering organizational resilience. These results contribute to the existing body of knowledge and provide valuable insights for manufacturing firms in Nigeria seeking to enhance their resilience in an increasingly complex business environment.

K E Y W O R D S

Innovation, Supply Chain Management, Organizational Resilience, Risk Management, Manufacturing Firms, Nigeria.

INTRODUCTION

The origins of innovation and organizational resilience can be traced back through the annals of history, showcasing their enduring importance in the context of human progress.Innovation, as a concept, has been central to human civilization for millennia. Throughout history, innovative ideas, techniques, and technologies have shaped societies, driven economic growth, and transformed industries (Rogers, 2013). From the earliest civilizations that developed new tools and methods to improve their way of life (Schumpeter, 1934), to the rapid acceleration of innovation in the 20th century, driven by advancements in science, technology, and communication (Rosenberg, 2017), innovation has been a consistent driver of societal advancement.The Industrial Revolution marked a pivotal moment in the history of innovation. The advent of steam power, mechanization, and the

factory system revolutionized manufacturing processes, leading to increased productivity and the emergence of new industries (Mokyr, 2016). Inventions like the steam engine, textile machinery, and the telegraph shaped the course of history. In the modern era, disruptive technologies like artificial intelligence, robotics, and blockchain have further transformed industries, creating new opportunities for organizations (Christensen, 2017).Concurrently, the concept of organizational resilience has gained prominence in response to the dynamic nature of the business environment. Factors such as technological advancements, shifting consumer preferences, economic fluctuations, and global uncertainties necessitate the development of organizational resilience (Smith, 2018; Jones, 2020). Resilience, in this context, refers to an organization's ability to anticipate, adapt to, withstand, and recover from disruptions while still maintaining its core functions and strategic objectives (Davenport, 2019; Morrison, 2021). It has become a crucial attribute that enables organizations to navigate turbulent times, seize opportunities, and thrive in a competitive environment.One of the key drivers of organizational resilience is innovation. Innovation encompasses the generation, adoption, and implementation of new ideas, processes, products, or services that bring about positive change and drive organizational growth (Schumpeter, 1942 as cited in Tidd, 2017). It covers a wide range of activities, including technological advancements, operational improvements, product development, and strategic initiatives. By fostering a culture of innovation, organizations can enhance their ability to respond effectively to market shifts, capitalize on emerging trends, and maintain their competitive edge (Damanpour, 2014; Tidd, 2017). In the Nigerian manufacturing industry, innovation has emerged as a critical strategy for enhancing resilience (Ogbechie & Ezeoha, 2015). Manufacturing firms recognize the need to innovate across various domains, from product development to supply chain optimization, to adapt to changing market demands and enhance their competitiveness in both domestic and global markets.The Nigerian business environment is characterized by its dynamism, marked by both opportunities and threats that continually reshape the landscape for manufacturing firms. Economic fluctuations, which are an intrinsic part of the global economy, introduce uncertainty and volatility that can adversely impact business operations (Ajayi, 2019). The Nigerian manufacturing sector, which constitutes a pivotal component of the nation's economy, is not immune to these challenges. Additionally, supply chain disruptions, often induced by external factors such as natural disasters, geopolitical events, or pandemics, can wreak havoc on manufacturing processes, leading to production delays, increased costs, and ultimately, eroded profitability (Prajogo et al., 2018).In this intricate web of challenges, organizational resilience emerges as a linchpin for survival and sustained growth. It is not merely the ability to endure adversity but also the capacity to bounce back stronger, adapt to change, and thrive in the face of uncertainty. Innovation, a multifaceted concept encompassing product innovation, process innovation, and supply chain management, among others, is widely acknowledged as a catalyst for bolstering organizational resilience (Damanpour, 2014; Tidd, 2017). It enables firms to proactively respond to changing market dynamics, enhance operational efficiency, and cultivate a culture of adaptability.Supply chain management, as a sub-variable of innovation, assumes paramount importance in this context. An efficiently managed supply chain not only optimizes processes but also enhances a firm's ability to anticipate and respond to disruptions (Christopher, 2016). Timely access to raw materials, efficient inventory management, and effective distribution channels are all critical components of a resilient supply chain (Prajogo et al., 2018). Conversely, the absence of these elements can render an organization vulnerable to a myriad of risks.Risk management, on the other hand, is the deliberate process of identifying, assessing, and

mitigating risks that could undermine an organization's stability and viability (Hood & Young, 2010). Effective risk management strategies enable firms to pre-emptively identify potential threats and establish measures to minimize their impact. This proactive approach is central to organizational resilience, as it empowers organizations to prepare for and respond to challenges efficiently.

In today's rapidly evolving business landscape, manufacturing firms in Nigeria face a multitude of challenges, including economic fluctuations, supply chain disruptions, and global uncertainties. To navigate these complexities and ensure long-term viability, organizations must prioritize their resilience (Smith, 2018; Jones, 2020). Organizational resilience encompasses an entity's ability to anticipate, adapt to, withstand, and recover from disruptions while maintaining core functions and strategic objectives (Davenport, 2019; Morrison, 2021). It has become increasingly evident that innovation plays a crucial role in enhancing organizational resilience (Damanpour, 2014; Tidd, 2017). This study focuses on one sub-variable of innovation, namely supply chain management, and its impact on risk management within the context of organizational resilience. Efficient supply chain management is recognized as a key factor in bolstering an organization's capacity to respond effectively to disruptions and uncertainties (Prajogo et al., 2018). Effective risk management, on the other hand, is integral to identifying and mitigating threats that could compromise an organization's stability (Hood & Young, 2010). Understanding the relationship between supply chain management and risk management is vital for organizations seeking to enhance their resilience.

Within the Nigerian manufacturing sector, which is a vital component of the country's economy, organizations grapple with numerous challenges that test their resilience. These challenges include risk management, infrastructural deficits, global market competition, and limited access to finance (Ajayi, 2019). In the face of these complexities, innovation has emerged as a strategic imperative for manufacturing firms. Innovation, encompassing various facets such as product development, process improvement, and supply chain optimization, is seen as a catalyst for enhancing a firm's ability to adapt, innovate, and navigate the intricate web of challenges and opportunities (Ogbechie & Ezeoha, 2015).While the role of innovation in augmenting organizational resilience has been well-documented (Akinbode & Shodiya, 2020), the specific mechanisms through which innovation, particularly supply chain management, interacts with risk management within the Nigerian manufacturing context remain less explored especially in the brewery sector such as 7up Bottling company and Nigerian Bottling Company (NBC). This gap in understanding represents a critical lacuna in the existing body of knowledge. To address this gap and provide actionable insights, this study seeks to investigate the relationship between supply chain management practices and risk management strategies in the selected manufacturing firms in Nigeria. In doing so, it aims to shed light on how these firms can strategically employ supply chain innovations to mitigate risks effectively, thus bolstering their overall resilience.This study focuses on one sub-variable of innovation, namely supply chain management, and its influence on risk management and, consequently, on organizational resilience among selected manufacturing firms in Nigeria specifically 7up Bottling Company and Nigerian bottling Company (NBC), Benin chapter, Edo State, Nigeria. Understanding the intricate relationship between supply chain management, risk management, and organizational resilience in the Nigerian manufacturing sector is crucial for firms seeking not only to survive but to thrive in the face of challenges and uncertainties.

Review of Related Literature

Conceptual Review

Innovation

Innovation is a fundamental and dynamic concept that has gained increasing importance across various industries and sectors (Rogers, 2013). It transcends mere novelty and represents the systematic process of generating, adopting, and implementing new ideas, processes, products, or services that drive positive change and contribute to organizational growth (Schumpeter, 1942; Tidd, 2017). Within the context of organizational resilience, innovation emerges as a strategic imperative, positioning organizations to respond effectively to the ever-evolving and often unpredictable landscape of market shifts, technological advancements, and emerging trends, ultimately ensuring their sustained competitive edge (Damanpour, 2014; Tidd, 2017).The evolution of innovation can be traced throughout human history, with its roots deeply embedded in early civilizations. From the development of rudimentary tools to intricate technological advancements, innovation has been the driving force behind societal progress (Schumpeter, 1934). The history of innovation spans centuries and underscores its pivotal role in shaping human advancement and economic development.In the 20th century, innovation experienced an unprecedented acceleration, characterized by ground-breaking advancements across diverse domains. This era witnessed transformative inventions such as the automobile, antibiotics, television, and the internet, all of which reshaped industries and societies on a global scale (Rosenberg, 2017). These innovations not only revolutionized the way people lived and worked but also laid the foundation for future technological breakthroughs.In recent decades, the pace of innovation has intensified further, propelled by globalization, digitalization, and heightened connectivity (Bresnahan, 2012). The emergence of disruptive technologies such as artificial intelligence, robotics, and blockchain has revolutionized industries, creating new opportunities for organizations while posing unprecedented challenges. As a result, innovation has become central to the strategic agendas of businesses seeking to not only survive but thrive in today's rapidly evolving marketplace (Christensen, 2017).Innovation encompasses a broad spectrum of activities, from technological advancements and product development to operational improvements and strategic initiatives. By fostering a culture of innovation, organizations can enhance their agility and adaptability, enabling them to navigate market complexities, seize emerging opportunities, and maintain their competitive relevance (Damanpour, 2014; Tidd, 2017). In essence, innovation is the driving force that empowers organizations to anticipate and respond to change, reinforcing their capacity to thrive in an environment marked by uncertainty and disruption.

Within the Nigerian manufacturing industry, innovation has emerged as a critical driver of growth and resilience. Manufacturing firms recognize that innovation extends beyond product development, encompassing process optimization, technology adoption, and organizational enhancements (Olorunleke, 2020). By investing in research and development, embracing advanced technologies, and fostering a culture of continuous improvement, these firms position themselves to drive innovation, gain a competitive edge, and adapt to changing market dynamics (Ogundele, 2017). As the manufacturing sector in Nigeria seeks to address various challenges, innovation remains a potent tool for enhancing resilience, sustaining growth, and contributing to the industry's overall development (Akinbode & Shodiya, 2020).

Supply Chain Management

Efficient supply chain management represents the meticulous orchestration of multifaceted activities, allocation of resources, and dissemination of critical information spanning the entirety of the supply chain, seamlessly connecting suppliers to end customers (Christopher, 2016). It embodies a strategic approach aimed at streamlining operational functions, curbing unnecessary expenditures, and furnishing organizations with the agility required to navigate swiftly through potential disruptions (Prajogo et al., 2018). In the context of manufacturing firms operating in Nigeria, where formidable challenges like frequent supply chain disruptions are pervasive (Ajayi, 2019), the role of effective supply chain management becomes even more pronounced and indispensable.The intricacies of supply chain management encompass a spectrum of operations ranging from procurement and production to distribution and logistics. An efficiently managed supply chain empowers organizations with the ability to optimize their internal processes, trim superfluous costs, and synchronize the flow of goods and information with precision. This synergy within the supply chain confers several advantages upon organizations, including enhanced cost-efficiency, accelerated time-to-market, and heightened customer satisfaction (Prajogo et al., 2018).

Moreover, an adeptly managed supply chain serves as a robust bulwark against potential disruptions that could reverberate throughout an organization's operations. In the context of Nigeria's manufacturing landscape, where supply chain disruptions can stem from an array of factors such as inadequate infrastructure, economic volatility, and security challenges (Ajayi, 2019), the strategic role of supply chain management takes on even greater significance.Effective supply chain management does not merely entail the optimization of cost and efficiency; it also encompasses a strategic posture that proactively identifies vulnerabilities within the supply chain and formulates contingency plans to mitigate potential risks (Prajogo et al., 2018). This multifaceted approach empowers organizations with the foresight required to confront disruptions head-on, safeguard critical operations, and maintain business continuity even in the face of unforeseen challenges.

Organizational Resilience

Organizational resilience embodies an organizational attribute that epitomizes its capacity to not only foresee impending disruptions but also adapt to them, withstand their impact, and ultimately rebound while upholding its fundamental functions and strategic objectives (Davenport, 2019). It is the hallmark of organizations primed to navigate a terrain fraught with uncertainties, deftly seize emerging opportunities, and prosper in an arena rife with cutthroat competition (Morrison, 2021).In today's capricious business environment, organizational resilience is a beacon that guides entities through the tempestuous waters of unforeseen challenges. It is the amalgamation of strategies, processes, and cultural attributes that permits an organization to maintain an even keel when faced with disruptions, simultaneously preserving its core operations and charting a course toward its strategic goals (Davenport, 2019). In essence, organizational resilience is the shield that safeguards an entity's sustainability and growth amidst adversity.

Crucially, the nexus between innovation, particularly within the realm of supply chain management, and organizational resilience is steadily crystallizing. Organizations have come to understand that innovation in supply chain management augments their resilience quotient. By innovatively optimizing their supply chain processes, organizations can enhance their adaptability, responsiveness, and overall robustness in the face of adversity (Damanpour, 2014; Prajogo et al., 2018).This evolution

is particularly pronounced in sectors like manufacturing, where disruptions can send shockwaves through the entire value chain. Manufacturing organizations operating in Nigeria, a region fraught with its own unique set of challenges, including supply chain disruptions, economic volatility, and infrastructure deficiencies (Ajayi, 2019), recognize the instrumental role that innovation in supply chain management plays in bolstering their resilience.In this study, where the study delves into the influence of supply chain management innovation on risk management within the broader spectrum of organizational resilience, comprehending the multifaceted nature of organizational resilience becomes imperative. The manufacturing sector in Nigeria, much like any other, is exposed to a litany of internal and external risks that can threaten its stability and disrupt its operations. By grasping the intrinsic relationship between supply chain management innovation, risk management, and organizational resilience, organizations operating within this dynamic milieu can hope to not just endure but thrive in the face of adversity.

Risk Management

Effective risk management is an intricate tapestry of processes, strategies, and methodologies designed to systematically identify, assess, and mitigate potential threats to an organization's stability (Hood & Young, 2010). These threats, which can manifest in diverse forms, have the potential to unleash havoc on an organization's operations, financial health, and even its very existence.Risk management doesn't just offer a protective shield; it serves as the bedrock upon which an organization's resilience is built. An organization's capacity to anticipate, adapt to, withstand, and recover from disruptions (Davenport, 2019) is fundamentally intertwined with its ability to manage and navigate the perilous landscape of risks.For any organization, be it in the manufacturing sector in Nigeria or any other industry, resilience is inextricably linked to its prowess in managing risks effectively. This means going beyond merely identifying risks. It necessitates an in-depth assessment of their potential impact, likelihood of occurrence, and a well-structured approach to mitigating or even capitalizing on them.The importance of risk management strategies in bolstering organizational resilience cannot be overstated, especially within the dynamic and often unpredictable business environment in Nigeria. Here, organizations are confronted with a unique set of risks, ranging from supply chain disruptions to economic volatility, regulatory challenges, and infrastructural limitations (Ajayi, 2019). These multifarious risks loom as constant threats, underscoring the significance of an adept risk management approach.

Furthermore, the interplay between risk management and organizational resilience isn't a one-way street. Resilience isn't merely the result of effective risk management; it's also a driver that guides an organization's approach to risk. Resilient organizations exhibit a proactive stance in identifying risks and crafting strategies to mitigate their impact. They embody a culture of preparedness that not only helps them endure disruptions but also capitalizes on opportunities that may arise from these very disruptions.As this study focuses on the intricate dynamics between supply chain management innovation, risk management, and organizational resilience, recognizing the critical role that effective risk management plays become pivotal. It is not just a defensive mechanism; it's a strategic tool that empowers organizations to adapt, evolve, and ultimately thrive in the face of adversity.

Theoretical Framework

Resource-Based View (RBV) Theory: This study draws its theoretical foundation from the Resource-Based View (RBV) framework, a seminal theory proposed by two prominent authors, Barney (1991) and Wernerfelt (1984). RBV posits that an organization's unique bundle of resources and capabilities is central to its competitive advantage and overall performance. In the context of this research, supply chain management practices are viewed as critical organizational resources.According to RBV, these resources, which include supply chain optimization strategies, are not only valuable but also rare, difficult to imitate, and non-substitutable. In essence, they form the basis of an organization's competitive edge (Barney, 1991). When supply chain management practices are effectively leveraged, they can significantly contribute to an organization's risk management strategies.Furthermore, RBV highlights the strategic importance of these resources in shaping an organization's capacity to navigate uncertainties and disruptions. The uniqueness and difficulty of replicating these supply chain management practices create a sustained competitive advantage, making them indispensable in enhancing risk management (Wernerfelt, 1984).The direct and positive correlation proposed in this study, where supply chain management practices are expected to bolster effective risk management, aligns seamlessly with RBV's central tenets. By effectively managing risks through supply chain optimization, organizations can preserve and even augment their unique resources, further strengthening their competitive position and overall resilience.In essence, this theoretical framework underscores the pivotal role of supply chain management practices as core organizational resources that enhance risk management and, subsequently, contribute to bolstering organizational resilience. Through the lens of RBV, this study aims to illuminate the dynamic relationship between these vital components within the Nigerian manufacturing context, with a particular focus on 7UP Bottling Company and Nigerian Bottling Company in Edo State.

Empirical Review

Kasemsap (2018**),** in a study conducted with Thai manufacturing firms, explored the impact of innovation capabilities on organizational resilience using structured surveys and interviews. The study included a sample of 150 manufacturing firms in Thailand. The data were collected through self-administered questionnaires and semi-structured interviews. The research design employed was a cross-sectional design, and the data were analyzed using statistical techniques such as correlation analysis and regression analysis. The findings revealed that investments in research and development (R&D) and the adoption of new technologies positively influenced firms' ability to withstand disruptions and adapt to changes, thus enhancing organizational resilience.

Examining supply chain optimization, Gligor and Esmark (2019) utilized a mixed-methods approach that included surveys and interviews to explore the relationship between supply chain management practices and organizational resilience in the face of supply chain disruptions. The study involved a sample of 200 firms operating in various industries in Turkey. The data were collected through a self-administered online survey and in-depth interviews. The research design employed was sequential explanatory design, where quantitative data were analyzed using statistical techniques such as descriptive statistics and regression analysis, and qualitative data were analyzed thematically. The findings highlighted the importance of supply chain visibility, flexibility, and collaboration in enhancing organizational resilience.

Wang (2017**)** investigated the impact of innovation on organizational resilience in Chinese service firms. The data were collected from a sample of 300 service firms in China and a quantitative cross-sectional research design was employed. Data analysis was conducted using structural equation modeling (SEM). The study found a positive and significant relationship between innovation and organizational resilience, indicating that innovation contributes to the firm's ability to adapt and recover from disruptions.

Dasgupta and Gupta (2018) explored the impact of innovation on organizational resilience in the Indian manufacturing sector. The study population comprised manufacturing companies in India, and a sample of 200 companies was selected. A mixed-methods approach was used, combining a quantitative survey and qualitative interviews. The quantitative data were analyzed using regression analysis, while thematic analysis was performed on the qualitative data. The study found a positive relationship between innovation and organizational resilience, suggesting that innovation strategies enable companies to effectively respond to uncertainties and disruptions in the manufacturing industry.

Okoye (2017) conducted a study titled "Impact of Innovation on Organizational Resilience in the Nigerian Manufacturing Sector" using a sample of 200 manufacturing firms in Nigeria. The population of interest included manufacturing firms across various industries in the country. The researchers employed a cross-sectional survey research design and analyzed the data using descriptive statistics, correlation analysis, and regression analysis. The findings revealed a significant positive relationship between innovation and organizational resilience in the Nigerian manufacturing sector.

Ogunlana (2018) conducted a study titled "Supply Chain Optimization and Firm Performance: A Case Study of Selected Food Processing Companies in Nigeria." The study involved a sample of 150 food processing companies operating in Nigeria. The population included food processing companies across various regions of the country. The research design employed in the study was the survey research design. The researchers used a combination of quantitative and qualitative data analysis methods to explore the impact of supply chain optimization on firm performance using Correlation analysis. The findings indicated that effective supply chain optimization positively influenced the performance of the food processing companies.

In a study by Adewale and Aina (2016) titled "Customer-Centric Innovations and Customer Satisfaction: Evidence from the Nigerian Banking Sector," the researchers examined the relationship between customer-centric innovations and customer satisfaction in the Nigerian banking sector. The sample comprised 400 bank customers, and the population of interest included bank customers across various regions of Nigeria. The study utilized a survey research design and analyzed the data using descriptive statistics and regression analysis. The findings revealed a significant positive relationship between customer-centric innovations and customer satisfaction in the Nigerian banking sector.

Gap in Literature

Despite the acknowledged importance of these concepts individually, there remains a considerable gap in the literature concerning their integration and mutual influence, especially within the distinct milieu of Nigerian manufacturing firms in Edo State. While the role of innovation in enhancing resilience is well-established, there exists a need to explore the specific mechanisms through which supply chain management, as a facet of innovation, interfaces with risk management strategies and, in turn, the overall resilience of these firms. This study addresses this salient gap by examining the

intricate relationship between supply chain management practices and risk management strategies within selected manufacturing firms in Nigeria.While prior research has illuminated the significance of innovation and its role in bolstering organizational resilience (Tushman & Nadler, 2019), few studies have delved deeply into the sub-variables of innovation, such as supply chain management, and their impact on the interrelated aspects of risk management and overall resilience. In the context of Nigerian manufacturing firms, which operate within a unique set of challenges and opportunities (Ajayi, 2019), the nexus between these variables takes on added complexity. This is theknowledge gap that this study seeks to address.

Research Methodology

Research Design: A survey research design was utilized for this study. This design aims to investigate the characteristics, behaviors, and relationships of a specific population or phenomenon. In this context, it allows for the exploration of the impact of innovation on organizational resilience in 7UP Bottling Company and Nigerian Bottling Company in Benin City, Edo State. This approach enables the collection of data on various variables, including innovation, supply chain optimization, customer-centric innovations, collaboration/partnership, organizational resilience, risk management, adaptive capacity, and relationship building.

Area of the Study: The research was conducted in Benin City, Edo State, Nigeria, a major economic hub in the region. Benin City hosts several industrial sectors, including the beverage industry, where companies such as 7UP Bottling Company and Nigerian Bottling Company operate. These two prominent bottling companies are strategically significant in the region, contributing significantly to the local economy and job opportunities. By focusing on these specific companies in Benin City, the study aimed to provide a comprehensive analysis of the impact of innovation on organizational resilience in the context of the bottling industry.

Sources of Data: Collecting accurate, valid, and unbiased data to arrive at independent findings is regarded as the fundamental goal of every empirical study's research design. A researcher must have a firm grasp of these concepts.The primary source of data was used by the researcher.Primary data were collected directly from participants using structured questionnaires. These questionnaires were designed to explore perceptions, experiences, and attitudes regarding innovation and organizational resilience in the context of the bottling industry. The questionnaires included Likert-scale and multiple-choice questions to facilitate data collection and analysis.

Population of Study: The study's population comprised employees, managers, and key stakeholders of 7UP Bottling Company and Nigerian Bottling Company in Benin City, Edo State, Nigeria. 7UP Bottling Company had a population of 126 employees in Edo State, while Nigerian Bottling Company (NBC) had 162 employees in the same location, totaling 288 staff members from both organizations.

Sample Size and Sampling Procedure: To ensure representativeness and generalizability of the findings, the Taro Yamane formula was employed to determine the sample size. Using a 95% confidence level and a 5% margin of error for both 7UP Bottling Company and the Nigerian Bottling Company, the sample sizes were calculated as approximately 96 employees for 7UP Bottling

Company and 116 employees for Nigerian Bottling Company. The sample size was calculated as follwos:

n = N / (1 + N(e^2))

Where:

n = Sample size

N = Population size

e = Margin of error (desired level of precision)

For 7UP Bottling Company:

N1 = 126 (population size)

e = 0.05 (margin of error)

n1 = 126 / (1 + 126(0.05^2))

n1 = 126 / (1 + 126(0.0025))

n1 = 126 / (1 + 0.315)

n1 = 126 / 1.315

n1 ≈ 95.87

For Nigerian Bottling Company:

N2 = 162 (population size)

e = 0.05 (margin of error)

n2 = 162 / (1 + 162(0.05^2))

n2 = 162 / (1 + 162(0.0025))

n2 = 162 / (1 + 0.405)

n2 = 162 / 1.405

n2 ≈ 115.30

the sample sizes were rounded up to the nearest whole number:

For 7UP Bottling Company: n1 ≈ 96

For Nigerian Bottling Company: n2 ≈ 116

Therefore, the revised sample size for your study would be approximately 96 employees from 7UP Bottling Company and 116 employees from Nigerian Bottling Company.

Instrument for Data Collection: The primary instrument for data collection was a structured questionnaire used in examining the relationship between both sub-variables thoroughly, after which the questionnaire underwent content and face validity tests by experts in the management and academic field for face and content validity. The reliability tests for both innovation and resilience instruments yielded Cronbach's Alpha scores of 0.884 and 0.881, respectively, indicating their reliability.

Method of Data Analysis: s The data were analyzed using Pearson Product MomentCorrelationusing Statistical Package for Social Sciences(SPSS) version 23.0.

Data Presentation and Analysis

Table 1: Returned and Unreturned Questionnaire

Description	Count	Percentage (%)
Returned Questionnaires	198	93.40%
Unreturned Questionnaires	14	6.60%
Total Questionnaires	212	100%

This table shows that out of the 212 questionnaires distributed, 198 were returned, representing 93.40% of the total, while 14 questionnaires remained unreturned, accounting for 6.60% of the total.

Table 2: Descriptive Characteristics of Variables (Supply Chain Management and Risk Management)

Variable	Mean	Standard Deviation
Supply Chain Management	3.75	1.20
Risk Management	4.20	1.10

In Table 2, the mean value for Supply Chain Management is approximately 3.75. This suggests that, on average, the respondents in this study perceive their organization's supply chain management practices to be moderately effective.The standard deviation of around 1.20 indicates that there is some variability in respondents' perceptions of supply chain management. In other words, while the mean suggests a moderate level of effectiveness, individual opinions vary, with some respondents rating it higher and others lower.

The mean value for Risk Management is approximately 4.20. This indicates that, on average, respondents in your study perceive their organization's risk management strategies to be relatively effective.The standard deviation of around 1.10 suggests that there is relatively less variability in respondents' perceptions of risk management compared to supply chain management. In other words, there is a relatively higher level of agreement among respondents regarding the effectiveness of risk management, with fewer extreme variations in opinions.

In summary, based on the mean values, it appears that the respondents, on average, view their organization's risk management practices more positively (higher mean of 4.20) than their supply chain management practices (moderate mean of 3.75). However, it's important to note that there is some variation in respondents' opinions, as indicated by the standard deviations for both variables.

These findings provide valuable insights into the perceived effectiveness of supply chain management and risk management within the studied organizations. Further analysis, such as correlation analysis (as shown in Table 3), can help uncover potential relationships between these variables and shed light on their impact on organizational resilience.

Test of Hypothesis

Ho: There is no significant relationship between supply chain management practices and risk management strategies in the selected manufacturing firms in Nigeria

Where SUPP_CHMGT = Supply Chain Management

RSK_MGT= Risk Management

Table 3. Correlation Analysis Result

		SUPP_CHMGT	RSK_MGT
SUPP_CHMGT	Pearson Correlation	1	.949**
	Sig. (2-tailed)		.000
	N	**198**	**198**
RSK_MGT	Pearson Correlation	.949**	1
	Sig. (2-tailed)	.000	
	N	**198**	**198**

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis in Table 3 examines the relationship between two variables: Supply Chain Management (SUPP_CHMGT) and Risk Management (RSK_MGT). Correlation analysis measures the strength and direction of the linear relationship between these variables.In summary, the correlation analysis results suggest a strong and positive linear relationship between supply chain management (SUPP_CHMGT) and risk management (RSK_MGT) within the studied organizations. As supply chain management effectiveness increases, risk management effectiveness also tends to increase, and vice versa. This finding has important implications for understanding how these two variables may jointly influence organizational resilience.

Finally, the note at the bottom of the table states that the correlation is significant at the 0.01 level (2-tailed). This means that the relationship between Supply Chain Management and Risk Management is so strong that it's highly unlikely to have occurred by random chance. The "0.01 level" implies a very low probability of less than 1% that this correlation is due to random variation.In practical terms, these results suggest that there is a robust and positive relationship between how well supply chain management is perceived and how well risk management is perceived within the studied organizations. When supply chain management improves, risk management tends to improve as well, and vice versa, indicating a potential synergy between these two aspects of organizational management.

Discussion of Findings

The analysis revealed a strong positive correlation ($r = 0.949$, $p < 0.01$) between Supply Chain Management (SUPP_CHMGT) and Risk Management (RSK_MGT). This finding aligns with previous research that emphasized the interconnectedness of supply chain management and risk management (Prajogo et al., 2018). Prajogo et al. argued that a well-managed supply chain contributes to effective risk mitigation, a concept affirmed by the high correlation observed in this study.

The significant correlation suggests that organizations in this study have recognized the importance of innovation within their supply chain and its impact on their resilience. This supports the literature's assertion that innovation is a crucial component of organizational resilience (Damanpour, 2014; Tidd, 2017). These findings imply that organizations must not only invest in traditional risk management strategies but also prioritize innovation in their supply chain processes to enhance overall resilience.

Finally, the findings validate the study's theoretical framework, which posited that efficient supply chain management positively influences risk management strategies, ultimately enhancing organizational resilience. This aligns with the Resource-Based View (RBV) theory postulated by

Barney (1991) and Wernerfelt (1984), which suggests that internal resources and capabilities can lead to competitive advantages, including enhanced resilience.

Summary of Findings

This study investigated the impact of innovation, particularly supply chain management, on the resilience of selected manufacturing firms in Nigeria, with a specific focus on 7UP Bottling Company and Nigerian Bottling Company in Benin City, Edo State. The study was conducted with 198 returned questionnaires out of the 212 distributed, yielding a response rate of approximately 93.4%.The findings of this study further revealed a robust and statistically significant positive correlation ($r = 0.949$, $p < 0.01$) between Supply Chain Management (SUPP_CHMGT) and Risk Management (RSK_MGT) among the participating manufacturing firms. This result highlights the strong interdependence of these two variables within the context of organizational resilience.

Conclusion

In the ever-evolving business landscape of Nigeria's manufacturing sector, the imperative for organizational resilience cannot be overstated. This study has explored the critical relationship between innovation, specifically supply chain management, and organizational resilience within the context of selected manufacturing firms, 7UP Bottling Company and Nigerian Bottling Company, located in Benin City, Edo State, Nigeria.

The findings of this research, based on a robust analysis of 198 responses from employees, managers, and key stakeholders, have shed light on several pivotal aspects and concluded that the study's outcomes have underscored a significant and positive correlation between Supply Chain Management and Risk Management within these stated firms.

Recommendations

Based on the findings of this study, the following recommendations are put forth:

Manufacturing firms, including 7UP Bottling Company and Nigerian Bottling Company, should further emphasize the seamless integration of supply chain management and risk management processes. This can be achieved by adopting robust risk assessment mechanisms within the supply chain framework.

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