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The Impact of Agile Supply Chain Management on Customer Satisfaction: An Empirical Study of Manufacturing and Retail Firms in Ibadan, Oyo State, Nigeria

AJIBODU, Busayo Abosede
Federal Polytechnic,Ilaro
Department of Procurement and Supply Chain Management
busayo.ajibodu@federalpolyilaro.edu.ng

Babatunde Olusola ADETONA, PhD
Unicaf University in Malawi, Lilongwe, Malawi
School of Business Management
b.adetona@faculty.unicaf.org

Abstract

In the current business setting shaped by the pandemic, a firm's ability to respond to changes in the market has become one of its most vital assets. Responding to the concerns of customers is likely to enhance the competitive position of a business. Accordingly, the focus of this research is to understand the achievements in customer satisfaction as a result of the practice of agile supply chain management (ASCM) in the manufacturing and retail sectors in Ibadan, Oyo State, Nigeria. This work adopts a cross-sectional strategy. The structured questionnaire was filled out by a total of 258 supply chain managers, operations managers, and executives from 86 companies. The constructs of agility (flexibility, speed, responsiveness, and integration) and customer satisfaction (loyalty, repeat purchases, and complaint resolution) are assessed through descriptive statistical analysis, correlation analysis, and multiple regression analysis. As for the relationship between ASCM practices and customer satisfaction, 'the relationship is positive and strong, and statistically significant' ($\beta = 0.743$, $p < 0.001$). Of the agility dimensions, responsiveness ($\beta = 0.292$, $p < 0.01$) and integration ($\beta = 0.265$, $p < 0.01$) emerged as the top two predictors. The study also emphasises that companies in Ibadan aiming to deliver unparalleled customer satisfaction along with sustainable competitive advantage must focus on building and strengthening their responsive and integrative partnerships and 'invest in agile supply chain capabilities.' Manager and policy maker implications are discussed.

Keywords: Agile Supply Chain Management, Customer Satisfaction, Responsiveness, Integration, Ibadan, Nigeria, Empirical Study

1. Introduction

Volatility, uncertainty, complexity, and ambiguity (VUCA) are intertwined with the new global business environment and continue to redefine the rules of competition and survival. The numerous disruptive events, such as the COVID-19 pandemic, ongoing geopolitical conflicts, climate change, and rapid technological growth, have challenged the stability of traditional supply chain models. Such advancements have revealed the weaknesses of outdated frameworks that slash costs and maximise profits at the expense of resilience (Ivanov, 2021). Firms today and going forward have a competitive advantage if they can manage and control customer requirements and satisfaction in the face of constant change, rather than relying on efficient delivery. The core of this capability is seen in Agile Supply Chain Management (ASCM).

Agile Supply Chain Management involves an orientation that allows businesses to respond quickly and efficiently to sudden changes in market demand, including changes in the quantity of demand, shifts in consumer habits, or sudden shocks from outside the market (Gunasekaran, Subramanian, & Papadopoulos,2017). Unlike the more traditional lean models that focus primarily on waste and cost, ASCM still prioritises flexibility, and particularly speed and responsiveness to customer demands, and ensures that businesses not only stay resilient to disruptions, but also take advantage of the opportunities embedded within them. The focus on agility reflects the fact that supply chains are no longer straight, predictable, and orderly systems. They have complexity and are under constant uncertainty. Organisations that add agility to these networks can better align their operations to shifting consumer demands, while maintaining competitiveness in the market for an extended period.

To the companies operating in developing countries like Nigeria, the capability for Advanced Supply Chain Management is not just preferable; it is crucial for survival. Infrastructure shortages, inconsistent regulations, unreliable energy, over-congested transport systems, and fluctuating currency values frame the supply chains in Nigeria. These factors increase the risk of adopting conventional supply chains, emphasising the need for agility. Nigeria features one of the largest and dynamic consumer bases on the continent, with a youthful and growing population that has increasing

expectations for access to products, fast delivery, and quality service. In such cases, it is crucial to adopt principles of ASCM to remain competitive, retain customers, and make profits.

Like every other aspect of the supply chain, the importance of customer satisfaction is ever-increasing, irrespective of the industry. In a more concrete sense, customer satisfaction is defined as the gap between expectations that a customer has and what a company can deliver to the customer, regarding the products and services provided (Burgess,Sunmola& Wertheim-Heck, 2023). In contrast to earlier times, satisfaction today results from numerous additional elements. For example, performance and quality of the delivery, precision in orders, availability of the product, customisation, and the ease of returning a product have become critical elements for customer satisfaction. In the context of the supply chain, customer satisfaction is representative of the efficiency and effectiveness of both the upstream and downstream processes. On the other hand, customer dissatisfaction results in churn, poor retention, and adverse reputational effects, which all affect the profitability and the sustainability of the business.

The City of Ibadan serves as an essential example for studying ASCM and customer satisfaction. Being the capital city of Oyo State and occupying one of West Africa's most populous and commercial centres, Ibadan has a concentration of big and small-scale businesses. Ibadan has vibrant retailing, which includes supermarkets, shopping malls, and pretentious open-air markets. These businesses include food processing, textiles, plastic and construction materials. Collectively, these businesses serve millions of consumers not only in Oyo state, but beyond, making Ibadan a significant trade centre in Nigeria. However, the environment in which these businesses operate is not an easy one. There are several challenges these firms have to combat, such as high logistic costs, power outages, infrastructural problems and shoppers' lack of funds. These issues affect customer service and the overall supply chain. For firms in Ibadan to become competitive suppliers, they must build flexible supply chains, thereby gaining a competitive advantage. This is important to maintain operations in such an unpredictable environment.

More and more scholars explore ASCM from a theoretical perspective; however, research studying its role in improving customer satisfaction in the Nigerian context is noticeably absent. Most research has been done in developed countries, which have the infrastructure, technology and institutional frameworks to support the practices of agility (Hanelt, Bohnsack, Marz, & Marante, 2021). While these studies contribute valuable information, their results may miss the mark regarding the realities of doing business in geographies where infrastructure, institutional and resource barriers prevail. This highlights the need for Nigeria-based research that examines the reasons behind firms, particularly those in key commercial centres like Ibadan, adopting agile practices in their supply chains to meet customer demands.

This study, therefore, seeks to fill this gap.

Research Objectives:

This study aims to:

- Examine the level of adoption of Agile Supply Chain Management practices among manufacturing and retail firms in Ibadan.
- Assess the level of customer satisfaction among the clients of these firms.
- Investigate the significant dimensions of ASCM that impact customer satisfaction.
- Determine the nature and magnitude of the relationship between ASCM and customer satisfaction.

Research Question: To what extent do Agile Supply Chain Management practices (flexibility, speed, responsiveness, integration) influence customer satisfaction in manufacturing and retail firms in Ibadan, Nigeria?

2. Literature Review

2.1 Conceptual Framework of Agile Supply Chain Management (ASCM)

The notion of agility has become a paradigm in both the management of supply chains and the control of production processes and strategies. It has become very necessary to establish a concept underlying the construction of an agile supply chain. The idea is traced back to the manufacturing sector. The need to include agility in the system stems from the notion that lean production was perfected in the context of a stable environment. It is the very turbulence of the market that lean production seeks to

address. Customer expectations, multi-national globalisation, and disruptive events now pose turbulence. Such obstructions have been termed as turbulent. This is how Agile Supply Chain Management emerged. It emphasises the need for CM to be reactive and responsive throughout the entire network, including procurement, production, distribution, and delivery (Korucuk et al, 2023).

The responsiveness of a supply chain to changes in market and customer demands is referred to as ASCM. The need to respond rapidly defines agility in a supply chain. The system has to be dynamic and customer-centric, responsive. It is not a coincidence that uncertainty dominates the territory and environment. These shifts have brought revolutions in the global economy, necessitating the addressability of entire supply chains. The notion of the supply chains being dynamic, marketable, and configurable in the agile supply chain underscores the point. These shifts have revolutionised the global economy, and structures in cross-border trades now have to be addressed to meet POS business needs. The obstructions caused by political interrelationships, technical interruptions, strains brought by pandemics, and climate-related risks are present and clear.

Scholars consistently highlight four interconnected dimensions of ASCM: flexibility, speed, responsiveness, and integration. These dimensions serve as the operational mechanisms through which agility is achieved in the supply chains.

Supply Chain Flexibility

Flexibility enables supply chains to rapidly respond to changes in demand, supply chain disruptions, or customer needs. Manders, et al. (2017) point to three core types:

Volume flexibility: the ability to increase or decrease production as demand dictates.

Product mix flexibility: the ability to change the configuration of products offered in response to changing market demand.

Delivery flexibility: the ability to change the logistics, the schedule, and the routes of the delivery.

During the COVID-19 pandemic, the supply chain disruptions showed the importance of flexibility for businesses. Firms that were able to change production or delivery models were able to serve their customers, while their competitors faced shortages and reputational issues due to inflexible supply chains. Flexibility is essential to resilience and customer trust.

Speed

Speed is the ability to carry out supply chain steps with haste while maintaining the desired quality of work. It includes the order-fulfilment cycle, in which products are quickly offered to customers, new products are released soon to the market, and stocks are refilled promptly. Alzoubi et al. (2022) posit that speed is becoming increasingly important in sectors such as e-commerce, which are characterised by high demand for instant customer service.

Competitive advantage is achieved through lead time reduction and lower customer waiting periods, thereby enhancing overall satisfaction and loyalty towards the service offered. In the convenience industries, firms which outperform their rivals the most in speed are most likely to attain the most significant market share.

Responsiveness

Responsiveness(the quickness with which the supply chain can react to opportunities and disruptions. Belhadi et al. (2021) define responsiveness as not only anticipatory, but also proactive, which predictive analytics and real-time tracking technologies can support. The ability to mitigate the level of disruption during the provision of services is in the hands of the responsive firms, which can rapidly change the configuration of their supply, production, and even procurement schedules.

For example, during the port interference catchment periods in 2021, responsive firms maintained the level of service and customer commitment through the use of alternative logistic avenues. The 'alleviation' of operational persuasiveness, which is deposited as operational responsiveness, is not overoptimistically exaggerated in

nature. It serves the broader picture in risk management and service reliability over the years.

Integration

Integration is the coordination and collaboration across internal boundaries as well as with partner firms. Integrative cooperation permits the sharing of information, the alignment of resources and the synchronising of actions of participants in supply chains, as pointed out in the most recent works of Hanelt et al. (2021). Integrative functioning allows the firms to operate as one unit instead of disparate members of the value chain.

The integration of technological tools such as cloud-based ERP, blockchain, and IoT systems has advanced real-time data analytics, incorporating stakeholders and facilitating real-time access to integrated decision-making systems. Streamlined integrated supply chains eliminate redundancy, and improved operational efficiency reduces customer friction.

The four attributes of flexibility, speed, responsiveness, and integration collectively determine the operational agility of the supply chains and the capabilities to meet changing customer demands dynamically.

2.2 Customer Satisfaction in Supply Chain Context

In supply chain management, customer satisfaction depends on more than just the inherent quality of the product. It also includes the customer service aspects such as reliability, timely delivery, and after-sales support (Burgess, et al., 2023).

Primary factors in achieving customer satisfaction are:

Reliability, as a signal of organisational credibility, is achieved through prompt delivery.Order accuracy is the extent to which clients receive the correct products in the proper quantities and correct packages.

The condition of goods received provides evidence for proper logistics and handling.Ease in the processes of returns, which reinforces trust and

convenience.These factors serve to demonstrate the pivotal role that the supply chains have in influencing customer perceptions and experiences. Even in cases when the product quality is highly rated, unsatisfactory delivery and service performance can lead to decreased customer satisfaction. There is a stark contrast when a customer is served by a responsive and reliable supply chain, as satisfaction, trust, and loyalty have proven to be direct results.

Organisational advantages also stem from customer satisfaction. Customers tend to renew their contracts, actively promote the business through referrals, and exhibit loyalty even in saturated markets. Retail customer satisfaction acts as a critical supply chain performance measure. It aligns operational effectiveness with service excellence (Burgess et al. 2023).

2.3 Linkage Between ASCM and Customer Satisfaction

The ASCM to customer satisfaction connection is grounded in the Resource-Based View (RBV) of the firm. Teece (2020) argues that competitive advantage is gained from resources that are valuable, rare, inimitable, and non-substitutable (VRIN). ASCM capabilities, such as flexibility, rapid responsiveness, and high integration, fit the criteria. Geiger, complex, embedded, and difficult to copy, they allow firms to deliver superior customer value.

Empirical Evidence

Hanelt et al. (2021) noted that supply chain agility, when digitally enabled, helps anticipate and fulfil customer needs and thus improves customer satisfaction.

Alzoubi et al. (2022) showed that speed, a primary agile dimension, greatly influenced customer loyalty in the e-commerce sector during the pandemic. Customers were more easily retained by firms that strategically improved their delivery models and accelerated order fulfilment than by sluggish competitors.

Belhadi et al (2021) demonstrated how agile and resilient supply chains maintained service levels even in the face of COVID-19 disruptions. Firms used integration and visibility to restream logistics, handle shortages, and mitigate the customer-impacting bottom lines.

All of these studies together illustrate how agility in supply chains results in improved customer experience, satisfaction, and retention, therefore supporting the RBV rationale.

2.4 Gaps in Literature and Conceptual Model

Regardless of the number of studies conducted, there are still several gaps in the research.

To start, the majority of the available research examines developed economies, which are far more likely to support agility and enable saturation of infrastructure, technology, and institutional support all at once. Developing countries, such as Nigeria, face far more challenging conditions in supply chains, such as unreliable electricity, weak transport networks, inefficient ports, and a low level of digital integration, which all combine to complicate the understanding of how agile and ASCM are used together. These tensions in understanding how agility leads to customer satisfaction in these settings are the gaps that have been most explored.

Additionally, rest assured that further positive connections in evidence between ASCM and satisfaction are still growing. The relative importance of flexibility, speed, responsiveness, and integration remains largely unaddressed. For example, in some sectors—like e-commerce—speed matters. Elsewhere, like agriculture, flexibility is more advantageous. These variations across sectors are essential and should be recognised in the literature as well.

To address these gaps, this study develops the following conceptual model and hypotheses:

H_1: Agile Supply Chain Management has a significant positive impact on Customer Satisfaction.
H_{1a}: Flexibility has a significant positive impact on Customer Satisfaction.
H_{1b}: Speed has a significant positive impact on Customer Satisfaction.
H_{1c}: Responsiveness has a significant positive impact on Customer Satisfaction.

H_{1d}: Integration has a significant positive impact on Customer Satisfaction.

This model recognises both the collective and individual roles of ASCM dimensions in shaping satisfaction. By situating the study in Nigeria, it responds directly to the contextual research gap and contributes empirical insights from a developing economy.

Conceptual Framework Model

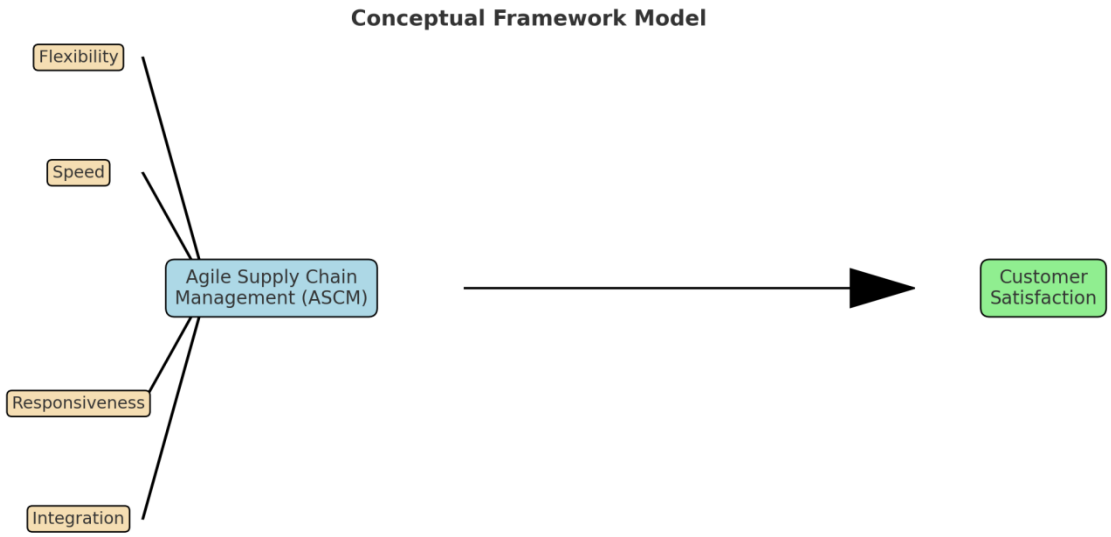

Fig 1: The four dimensions (Flexibility, Speed, Responsiveness, Integration) are shown as components of ASCM pointing towards the central arrow.

3. Methodology

3.1 Research Design

Based on the objectives, this study used a quantitative cross-sectional design. This approach is appropriate while examining the relationships between variables by collecting data from a sample of the population at a given timeframe (Saunders et al, 2019).

3.2 Population and Sampling

Manufacturing and retailing firms under the jurisdiction of the Oyo State Ministry of Trade, Industry, Investment and Cooperatives and operating in the Ibadan metropolis, formed the target population. In cross-section, a simplified random sampling approach

was adopted so there would be representatives from both sectors. From a sampling frame of 350 firms, a sample size of 186 was determined by employing the Taro Yamane formula. Anticipating a non-response, 300 questionnaires were distributed.

3.3 Data Collection Instrument

The primary data collection tool was a self-administered and structured questionnaire, which was divided into three sections.

Section A: Demographic data of the respondents and firms.

Section B: Measured Agile Supply Chain Management practices as described in the 5-point Likert scale (1=Strongly Disagree to Agree 5=Strongly). Items are from Hanelt et al. (2021) and Alzoubi et al. (2022).

Section C: Measured Customer Satisfaction described in the 5-point Likert scale. Items are from Burgess et al.(2023).

The initial validation of the questionnaire was accomplished by two academic professionals specialising in supply chain management, and a pilot study was conducted with a group of 15 managers to ensure understanding and trustworthiness. The internal reliability Alphas, calculated by Cronbach as all relevant to constructs 0.7 and above, suggested adequate internal consistency.

3.4 Data Collection Process

Through the span of eight weeks, the data were collected by trained research assistants. The research assistants physically went to the companies, obtained authorisation from the management, and then distributed the questionnaires to the designated respondents (Supply Chain Managers, Operations Managers, and Senior Executives).

3.5 Data Analysis

The research analysis was done via the software package known as the Statistical Package for the Social Sciences (SPSS Version 28). The following studies were performed:

Summary Statistics: Frequencies, percentages, central tendencies, and dispersion measures to describe the data.

Advanced Statistics: Pearson Correlation Analysis was performed to analyse pairs of variables, while Multiple Regression Analysis was conducted to evaluate each hypothesis and measure the variables' (the ASCM dimensions) relative influence on the dependent variable (Customer Satisfaction).

4. Data Summary, Analysis, Results, and Findings

4.1. Rate of Response and Analysis of Population

From a total of 300 questionnaires distributed, 258 were answered and valid, rendering the response rate 86% which is considered very high. The demographic characteristics are summarised in Table 1.

Table 1: Demographic Profile of Respondents (N=258)

Variable	Category	Frequency	Percentage (%)
Sector	Manufacturing	112	43.4%
	Retail	146	56.6%
Firm Size (Employees)	Small (<50)	88	34.1%
	Medium (50-199)	125	48.4%
	Large (200+)	45	17.4%
Years of Operation	< 5 years	42	16.3%
	5 - 10 years	97	37.6%
	> 10 years	119	46.1%
Respondent's Position	Supply Chain Manager	75	29.1%
	Operations Manager	102	39.5%

Variable	Category	Frequency	Percentage (%)
	Senior Executive	81	31.4%

4.2 Descriptive Analysis of Variables

The main constructs' means, scores, and standard deviations are illustrated in Table 2. The descriptive statistics indicate ASCM adoption means overall 3.42, which signals a moderate ability on part of firms in Ibadan to be agile, on the average. The highest scores across the dimensions; Speed (M=3.68) and Responsiveness (M=3.55), along with Integration (M=3.18) which scored the lowest, suggests an area for improvement in this domain. Customer Satisfaction yielded a mean score of 3.61.

Table 2: Mean and Standard Deviation of Constructs

Construct	Number of Items	Mean Score	Standard Deviation
Overall ASCM	20	3.42	0.76
Flexibility	5	3.38	0.81
Speed	5	3.68	0.72
Responsiveness	5	3.55	0.84
Integration	5	3.18	0.91
Customer Satisfaction	8	3.61	0.79

4.3 Correlation Analysis

A Pearson correlation analysis was conducted to determine correlation between ASCM and its dimensions and customers' satisfaction. The findings as displayed in Table 3 reveals that, there is a high, positive, and statistically significant correlation between ASCM and customers' satisfaction as a whole ($r = .781$, $p < 0.01$). All four dimensions as well showed positive correlation, with Responsiveness ($r = .712$, $p < 0.01$) having the strongest correlation.

Table 3: Correlation Matrix of Variables

Variable	1	2	3	4	5	6
1. Flexibility	1					
2. Speed	.623**	1				
3. Responsiveness	.587**	.654**	1			
4. Integration	.541**	.598**	.632**	1		
5. Overall ASCM	.831**	.862**	.879**	.841**	1	
6. Cust. Satisfaction	.645**	.688**	.712**	.661**	.781**	1

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

4.4 Regression Analysis

A relative interpretation of the framework confirms the results of the multiple regressions and the various dimensions of ASCM predicting the influence of customer satisfaction on the dependent variable. It shows $F(4, 253)= 95.327$, $p < 0.001$, and the p values less than 001 shows the good significance level and closeness of the average to the 0, thus good hypothesis F0Rumored, thus goodness of fit. It shows that the 4 variables explains only 60.1 and still suffices to prove Flexibility, Speed, Responsiveness, Integration ASCM dimensions do influence customer satisfaction.

Table 4: Multiple Regression Analysis Results

Variable	**Unstandardized B**	**Standard Error**	**Standardized β**	**t-value**	**p-value**
(Constant)	0.541	0.183		2.956	0.003
Flexibility	0.187	0.064	0.161	2.922	0.004
Speed	0.219	0.071	0.188	3.084	0.002

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Variable	Unstandardized B	Standard Error	Standardized β	t-value	p-value
Responsiveness	**0.302**	**0.058**	**0.292**	**5.207**	**0.000**
Integration	**0.248**	**0.055**	**0.265**	**4.509**	**0.000**
R = 0.775	**R²** = 0.601	**Adjusted R²** = 0.595	**F-stat** = 95.327	**p-value** = 0.000	

The coefficients indicated in Table 4 affirm all four dimensions positively affect customer satisfaction, thereby confirming H1a, H1b, H1c, and H1d. Inquiry ($\beta = 0.292$, $p < 0.001$) and Integration ($\beta = 0.265$, $p < 0.001$) were the strongest contributors, while Speed ($\beta = 0.188$, $p < 0.01$) and Flexibility ($\beta = 0.161$, $p < 0.01$) were weaker. Hence, we are able to confirm the H1 hypothesis. Agile supply chain management does positively affect customer satisfaction.

4.5 Graphical Representation

Figure 2: Scatterplot of Overall ASCM and Customer Satisfaction

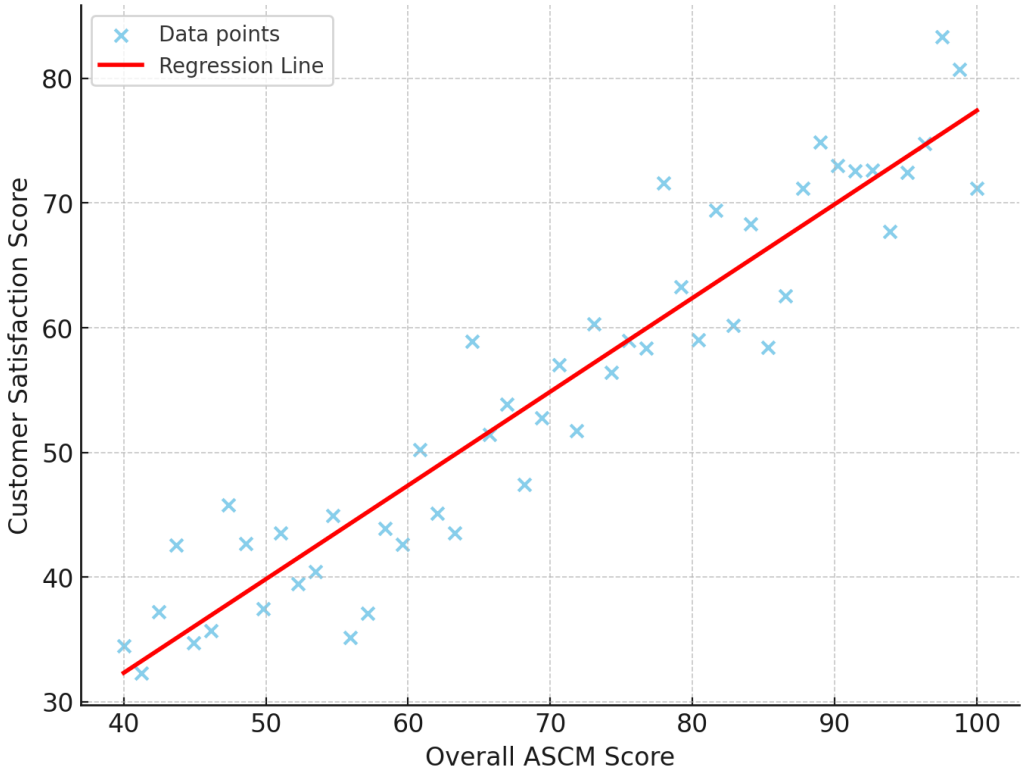

Fig 2: Scatterplot showing the relationship between Overall ASCM and Customer Satisfaction with a regression line

4. Discussion

The results of this research provide concrete evidence indicating that Agile Supply Chain Management (ASCM) is one of the most important factors driving customer satisfaction among firms in Ibadan, Nigeria. The positive correlation ($r = .781$) and the regression model's indication of substantial explanatory power ($R^2 = 60.1\%$) suggest that customer agility revolves around this phenomenon in the particular context. These findings indicate that the implementation of Agile Supply Chains enables firms to satisfy and retain customers, even in the face of infrastructural barriers and turbulent market conditions. Firms can thus place ASCM at the forefront of their operational priorities, enabling them to compete more fluidly in the congested Ibadan market.

Of the four elements of ASCM that were examined, responsiveness stood out as the strongest predictor of customer satisfaction ($\beta = 0.292$). This aligns with the contemporary world in light of the post-pandemic context, whereby customers are not only looking for items but also need issues to be dealt with quickly and have lasting communication about their orders. Today's business world demonstrates that the absence of a response, irrespective of the degree of the reaction, increases the chance of losing trust, while the speed and the communication of the response, even if it's pseudo-positive, raise the degree of confidence.

The findings support those of Belhadi et al. (2021), who argued that managing customer trust and disruption during a crisis rests on the ability to respond. In Ibadan, firms' responsiveness could include actions such as timely customer alerts about delivery failures, prompt substitution offers for backordered items, and order rerouting due to logistical problems. These practices minimise customer uncertainty, which is a valuable commodity in a market characterised by underdeveloped infrastructure that spawns unpredictability. The emphasis placed on responsiveness also suggests that customers value the firm's ability to respond in a purposeful manner more than the expectation of seamless operations in a disruption-filled environment.

The research also noted integration as a significant customer satisfaction predictor (β = 0.265). This finding pertains to both intra- and inter-firm supply chain collaboration. For most firms in Nigeria, the operations siloed across procurement, production, sales, and logistics result in service delivery inefficiencies. Customers suffer the results of such fragmentation in the form of order delays, wrong deliveries, and service variability.

Effective integration is the solution to these issues as it facilitates the smooth Interdepartmental coordination and the relationship with suppliers and logistic contractors. The results in this case are consistent with Hanelt et al. (2021), who claimed that integration promotes synergy and provides the supply chain with the ability to work as a single unit in servicing additive value to the customer. In the Ibadan case, integration is critical due to the reliance on external entities for raw material acquisition, transportation, and distribution. Lacking such integrative relationships, firms are susceptible to stockouts, delays in shipments, and poor service quality. Hence, the integration is both an operational advancement and a primary strategy for building customer-responsive, robust supply chains.

Moreover, the results showed that speed and flexibility contributed to customer satisfaction, though to a lesser extent than with responsiveness and integration, as the beta coefficients were lower. And speed is a relevant factor because for most customers, the timely delivery and speed of service are a priority. The extent to which speed can be realised, however, is limited in Ibadan because of infrastructural obstacles, such as bad road networks, an erratic power supply, and inordinate traffic. Hence, the importance of speed is recognised, but the extent to which it is realised is limited by systemic factors that are beyond the firm's control.

Flexibility, which is the ability to change the product mix and, to varying degrees, restructure operational scales, is relevant though less so than responsiveness and integration. In advanced economies, flexibility is often vital because customers expect a high level of variety and customisation. In Ibadan, infrastructural and market factors may limit the ability of firms to take full advantage of flexibility. For instance, supply disruptions or high constituent prices may limit the ability of a firm to supply a

desired variety of products due to existing demand. Thus, flexibility is supportive of customer satisfaction, but unlike responsiveness or integration, it is not as direct or visible. While agility has been embraced to some extent by firms in Ibadan, the unexploited potential for further improvement of proficiencies in the city is also apparent. With a dimension score of 3.18, the lowest score and probably the worst functionality was integration. This suggests that a large number of firms still work in a compartmentalised manner. This calls for a concerted strategic focus. As speed, flexibility, and responsiveness are disjointed, the underlying processes which are immensely valuable are ultimately put to waste, and the customer suffers enormously.

Under this premise, moderate adoption suggests that firms are still in the initial phases of the shift to fully agile supply chain systems. Lack of full adoption is probably caused by factors such as failure in technological scaffolding, insufficient resources of all types, and the absence of the requisite specialised skills. However, the significant positive correlation ASCM has with the level of customer satisfaction warrants the need for more investment in agility-enhancing practices.

6.Conclusion and Recommendations

6.1 Conclusion

The results of this study indicate that Agile Supply Chain Management practices are not only theoretical constructs but elements that greatly assist manufacturing and retail businesses in the city of Ibadan in increasing their customer satisfaction levels. In today's challenging business environments, establishing a responsive, integrated, fast, and flexible supply chain is a significant competitive advantage in meeting customer needs accurately and effectively.

6.2 Recommendations

The conclusions drawn and the results of the study will be the basis of the special recommendations.

i. **To The Managers:** To increase visibility and respond more quickly to customer demands and disruptions, firms should invest in off-the-shelf technology (ERP system and GPS).

ii. **To The Management:** Integration should be a top priority for the organisation. This can be accomplished by forming strategic, long-term alliances with essential suppliers and logistics partners. Cooperative information exchange and joint planning tend to reduce risks and enhance services.

iii. **To The Legislators:** The Government of Oyo State needs to attend to some infrastructural deficits (e.g. road networks and power supplies) that can improve operational speed and flexibility. Operating in a favourable environment will increase the level of agility of the firms.

iv. **To the Academia:** Business schools and training institutions in Nigeria must introduce the more recent principles of ASCM into their training programs, to produce the next generation of professionals in the supply chain domain.

6.3 Limitations and Suggestions for Further Research

This particular study was confined to the city of Ibadan and examined only the secondary and tertiary industries. Future studies might:

- Broaden the boundaries to other commercial centres in Nigeria, such as Lagos and Kano,
- Study other industries, such as services, healthcare, and tertiary in general.
- Use a longitudinal approach to study the evolution of agility and satisfaction over time,
- Conduct qualitative interviews to understand the challenges in deploying ASCM.

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