

## Postponement and Supply Chain Resilience of Courier Firms in Rivers State

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### **Abstract**

*This study investigated the relationship postponement and supply chain resilience of courier firms in Rivers States. The objectives of the study is to ascertain the extent to which Postponement relate with supply chain resilience of courier firms in Rivers States as well as the extent to which organisational culture moderates the relationship between the variables. The population of the study is 29 courier firms in Rivers State. Three (3) managers-General manager, administrative manager and logistics manager are respondents from each of 29 courier firms totaling 87 respondents that will provide primary data that will be used to ascertain the relationship between the variables. The primary data will be collected through a questionnaire that is designed in Likert scale of very high extent to very low extent. 7 research hypotheses will be tested using Pearson Product Moment Correlation with the aid of Statistical Package for Social Sciences 22.0 to establish the relationships between the variables. Results of the test showed that postponement, has significant and positive relationships with flexibility, and Agility – the measures of supply chain resilience. Therefore, the study concluded that that postponement positively relates with supply chain resilience of courier firms Rivers State. Therefore, the study recommended that management of Courier firms should develop their postponement to improve their supply chain resilience.*

**Keywords:** *Postponement, Supply Chain Resilience, Courier Firms, Rivers State*

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### **Introduction**

The courier industry in the 21st century is fiercely competitive, and successfully starting, sustaining, and expanding a courier service in today's fast-paced corporate climate is challenging. Bola-Balogun, Mba, and Omoniyi (2021) define courier organizations as companies that provide time-sensitive and secure door-to-door services, including the delivery of papers, parcels, items,

and cargo weighing between 0.5 KG and 50 KG. Courier businesses follow a standardized operating method that places emphasis on both speed and safety. This procedure encompasses the whole process, starting with receiving the consignments, assessing their packaging feasibility, creating manifests, labeling the packages, and tracing and tracking them, all the way to delivering the consignments to the intended recipients (Rukunga, 2018).

Resilience in organizations and supply chains refers to the ability to withstand and recover from extreme events, as well as the capacity to adapt to new situations (Brusset & Teller, 2017). While there is much research on supply chain resilience, most studies are broad, abstract, theoretical, and normative. Only a limited number of studies provide a specific set of recommendations to enhance supply chain resilience in a particular sector (Tukamuhabwa, Stevenson, Busby, & Zorzini, 2015). Supply chain resilience refers to the ability of a supply chain to adapt to unforeseen events, effectively respond to disruptions, and recover from them by ensuring uninterrupted operations at the desired level of connectivity and organization, as explained by Ponomarov and Holcomb (2009). Furthermore, supply chain resilience may mitigate and surmount risks by formulating solutions that facilitate the restoration of the supply chain to its initial operational condition after an interruption (Juttner & Maklan, 2011). The research examined the criteria variable in terms of flexibility and agility. Flexibility refers to the ability to accommodate specific consumer demands in the supply chain (Yi, Ngei, & Moon, 2011). Flexibility refers to the ability of all members in the supply chain to adopt a forward-thinking approach and adapt or respond to uncertain environmental conditions. It involves meeting the diverse expectations of customers while minimizing costs, time, and disruptions to the organization's performance. On the other hand, agility represents the capacity to handle unforeseen challenges, withstand unprecedented threats in the business environment, and capitalize on changes as opportunities (Boubaker, Jemaï, Sahin, & Dallery, 2019).

Thus, if these changes are delayed or postponed, divergence may intensify. The factors that contribute to the adoption of delay and the strategies for its effective implementation have attracted significant attention from several academics (Appelqvist & Gubi, 2005). The management gained an appreciation for the importance of delay as the manufacturing strategy shifted from mass production to mass customisation. According to Feitzinger and Lee (1997), some scholars argue that postponing is primarily a practical strategy for achieving mass customisation.

Postponement is the act of adjusting the order and timing of events based on the idea of interchangeability (Bucklin, 1965). By postponing tasks, organizations may get valuable insights from the behavior of demand and other external variables (Aviv & Federgruen, 2001). It implements temporal buffers at certain locations where the absence of information might disrupt the coordinated progression (Yang, Yang, & Wijngaard, 2006). Evidently, it allows for more time to be allocated to procedures that need extra information. since a result, this creates more possibilities for requesting delays, since a corporation may compensate for a slowdown in one section of the supply chain by enhancing the performance of other areas (Yang, Yang, & Wijngaard, 2006). The primary distinguishing feature of postponement is to gather more factual

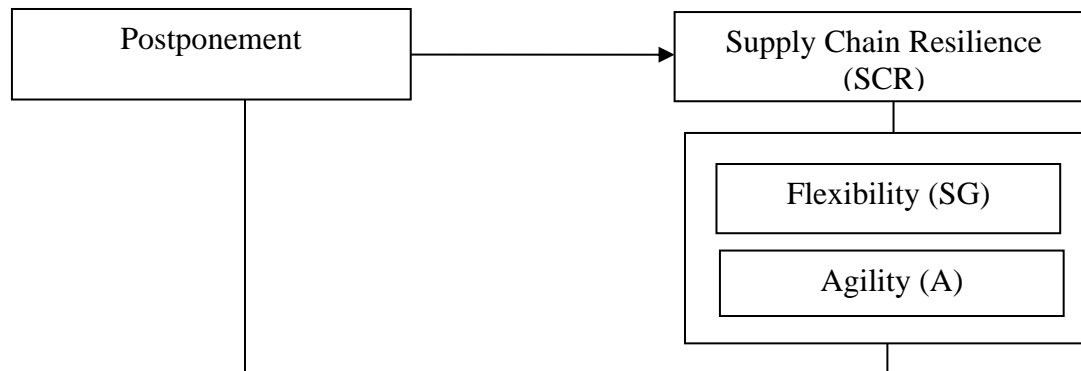
information to accurately determine and convert the customer's requirements into a precise product or service specification.

Although the theoretical foundations of postponement are well-established, its practical implementation has not yet reached the anticipated level of prevalence (Yang, Yang, & Wijngaard, 2006). According to Waller et al. (2000), there has been little focus on the idea of delay as it relates to inter-organizational matters. Postponement, once used only as a tactic for distinguishing a product, has evolved into a comprehensive approach to product design, manufacturing, logistics, and marketing on a worldwide scale (Van Hoek, 2001). Postponement may enhance capacity utilization by efficiently reallocating assets or resources to the appropriate areas along the supply chain. Implementing postponement often necessitates allocating specific levels of capability and resources to operations that get the most advantage from the acquired extra knowledge resulting from the delay (Yang, Yang, & Wijngaard, 2006). According to Skipworth and Harrison (2004), the ability of the delayed transformation process to handle fluctuations in demand relies on having extra capacity and efficient throughput. Evidently, it necessitates the creation and maintenance of spare resources, hence imposing significant requirements on capacity planning.

Several academic endeavors have concentrated on various facets of postponement (Alderson, 1950; Bucklin, 1965; Pagh & Cooper, 1998; Yang, Yang, & Wijngaard, 2006; Yeung, Selen, Deming, & Min, 2017). Literature is filled with research that try to establish connections between characteristics of procrastination, speculation, and practical consequences. Jafari (2014) investigated the concepts of delay and logistical flexibility in the retail industry. Pagh and Cooper (1998) examined the methods of supply chain delay and speculation. Methods for selecting an appropriate approach were investigated by San Cornelio and Bucklin (1965), who analyzed the concepts of deferral, speculation, and distribution channel structure. In their study, Yang, Yang, & Wijngaard (2006) investigated the concept of postponement within an inter-organisational context. Yeung, Selen, Deming, and Min (2017) conducted a study on the implementation of delay technique in the supply chain, focusing on cases from the Pearl River Delta. None of these research had a comprehensive perspective on delay in relation to supply chain resilience. Therefore, the main objective of the present research is to establish the correlation between the act of delaying and the ability of courier companies in Rivers State to withstand and recover from disruptions in their supply chains. This will be accomplished by measuring the level of adaptability and responsiveness as indicators of supply chain resilience. The investigation is guided by the following developed hypotheses.

- H<sub>01</sub>:** postponement does not significantly relate with flexibility of courier firms in Rivers State.  
**H<sub>02</sub>:** postponement does not significantly relate with agility of courier firms in Rivers State

### Study Variables/Conceptual Framework



**Figure 1:** Conceptual framework of the relationship between Postponement and supply chain resilience courier firms in Rivers State.

**Source:** Ahmed, M.A. (2020).

## 2. Literature Review /Theoretical foundation

### Resource Based Theory

According to the resource-based approach, company resources include all the assets, capacities, organizational processes, firm qualities, information, and knowledge that a business controls (Barney, 1991). The proposal suggests that a corporation has a competitive advantage when it formulates a successful strategy using resources that cannot be replicated by any existing or future rival. Furthermore, the theory posits that in order for a resource or capacity to provide a competitive advantage, it must possess the qualities of rarity, value, non-imitability, lack of substitutes, and non-transferability. The resource-based theory posits that an organization's resources exhibit diversity in their nature and are not entirely fluid, resulting in variations across organizations (Namjoo & Keramati, 2018).

The Resource Based Theory (RBT) is widely recognized as one of the most often referenced and impactful ideas in the management industry. The article by Namjoo and Keramati (2018) posits that resources are the primary means through which a corporation may attain lasting competitive advantages. For instance, implementing green manufacturing and cleaner production practices often result in a competitive edge and improved company performance (Shan et al., 2019; Ashrafi & Mueller, 2015). Enterprises want to implement environmentally sustainable supply chain processes in order to achieve a competitive edge (Sharfman et al., 2009).

The theory is valuable for examining the impact of businesses' resources on both green practices and marketing performance. This is because firms' strategies heavily depend on their internal competences and their capacity to maintain them. Tukamuhabwa et al. (2015) state that the Resilience-Based Theory (RBT) is the predominant theory used to study the resilience of supply chain and industrial networks. Helfat and Peteraf (2003) and Hart and Dowel (2010) expanded upon the resource-based paradigm by including the incorporation of dynamic capacities and natural resources.

## **2.2 The Concept of Postponement**

The concept of postponement was first explored in a groundbreaking essay authored by Alderson in 1950. Postponement refers to the aspect of sequence and time that is determined by the idea of substitutability, as proposed by Bucklin in 1965. Multiple academics and experts in supply chain management have contended that delay is a complex and nuanced idea (Waller et al., 2000; Yang, Yang, & Wijngaard, 2006; Yang & Yang, 2009). According to Aviv and Federgrue (2001), postponement refers to the act of postponing operations in order to allow firms to gather information from the behavior of demand and other external elements. It implements temporal buffers at certain locations when the absence of information might disrupt the coordinated flow of the channel (Yang, Yang, & Wijngaard, 2006). Evidently, it allows for more time to be allocated to procedures that need extra information. Hence, this creates additional possibilities for submitting postponement applications, as a firm may compensate for a slowdown in one aspect of the supply chain by enhancing the performance of other areas (Yang & Yang, 2009; Yang, Yang, & Wijngaard, 2006). The primary distinguishing feature of postponement is to gather more factual information in order to precisely determine and convert the customer's requirements into a particular product or service specification. Postponement allows for the flexibility to modify the design of a product at the last feasible time in the event of problems in the supply of a component (Yang & Yang, 2009).

Although the theoretical foundations of postponement are well-established, its practical implementation has not reached the anticipated level of prevalence (Yang, Yang, & Wijngaard, 2006). Waller et al. (2000) contend that the idea of delay, as it pertains to inter-organizational operations, has not been given much consideration. Postponement, once used only as a tactic for distinguishing a product, has evolved into a comprehensive approach to product design, manufacturing, logistics, and marketing on a worldwide scale (Van Hoek, 2001). Postponement may enhance the use of capacity by efficiently reallocating assets or resources to appropriate areas along the supply chain (Van Hoek et al., 1999). The successful implementation of postponement typically necessitates the allocation of certain levels of capacity and resources to be set aside for those operations that get the most advantage from the extra knowledge acquired via the delay (Yang, Yang, & Wijngaard, 2006). Furthermore, Skipworth and Harrison (2004) contend that the ability of the delayed transformation process to adapt to fluctuations in demand necessitates both surplus capacity and optimal throughput efficiency.

According to Yang, Yang, and Wijngaard (2006), developing and sustaining spare resources is necessary for this task, which puts significant pressure on capacity planning. Based on the above

information, Anderson (1950) defines delay as a method that alters the characteristics of products, such as their shape, identity, and inventory position. Furthermore, the use of postponement as a supply chain approach aims to mitigate the expenses associated with volatile demands by deferring the establishment of time, location, form, and possession utilities (Yang & Yang, 2009). Postponement is often seen as a fundamental strategy that enhances flexibility (Tang & Tomlin, 2008). Postponement is a deliberate approach that involves delaying the execution of a job, rather than commencing it with incomplete or incorrect information intake (Yang et al., 2004a). In theory, the purpose of postponement is to delay certain actions in the supply chain until client orders are received or more accurate information is obtained (Li, Ragu-Nathan, Ragu-Nathan, & Subba Rao, 2006).

Van Hoek (2001) defines postponement as an organizational strategy in which some tasks within the supply chain are delayed until client orders are received. Postponement has expanded its scope beyond distribution and scholars have investigated several sub-categories of the first kinds established by Alderson (1950). Zinn and Bowersox (1988) introduced the concept of form postponement, in addition to time postponement. Pagh and Cooper (1998) observed that form postponement entails delaying the completion of items (such as labeling, packing, assembly, or design) until there is a better understanding of demand or market intelligence, or until client orders are received. Methods involving the introduction of a delay in time Postponement refers to the act of postponing the processing or distribution of operations, such as the form and/or location of items, until specific client order information is obtained (Yang & Yang, 2009). Postponement has been shown to effectively assist supply chains in managing market expectations related to quality, delivery, price, and variety (Rahimnia & Moghadasian, 2010).

In 1950, Alderson argued that the notion of delay may enhance marketing efficiency in a comprehensive distribution system. He also asserts that the primary advantages of using delay are cost reduction in sorting and mitigating marketing hazards. Minimizing marketing risk is most effectively achieved by deliberately delaying actions, so enabling the risk to diminish or be controlled by the company. According to Ahmed (2020), delay is seen as a flexible strategy driven by managers' intention to synchronize operations outside the boundaries of the organization. This stance may sometimes be harmful to the manager. However, if such acts are aligned with the firm's policies and geared at attaining the firm's objectives, they are approved. Otherwise, they are halted. In his initial work, Bucklin (1965) defined postponement as a strategy to transfer the risk of owning products from a buyer or supplier in a distribution channel to the other party involved, by delaying the movement of inventories.

Applying this concept to a supply chain, postponement may transfer the risk to the most suitable participant in the supply chain, hence decreasing the total risk (Hallikas et al., 2004). Practically, this has been made easier by a shift in a delay strategy towards relying on external suppliers for the completion of certain customized tasks (Yang & Burns, 2003). Cox and Goodman (1956) define postponement as the deliberate act of delaying each subsequent step in the process of narrowing down commitments in marketing channels, with the aim of minimizing the probability and expense of making incorrect commitments. Nevertheless, the concept of postponement does

not serve as a solution for all planning issues in marketing, as stated by Alderson in 1950. Postponement is economically advantageous when the savings in inventory carrying costs resulting from the consolidation of stocks are greater than the extra expenses incurred in transportation, order processing, and missed sales opportunities (Zinn & Levy, 1988). Postponement is a strategic and structural notion used to achieve personalization (Van Hoek, 1998a).

The fundamental principle of postponement is to shift the manufacturing process by "pulling" rather than "pushing" it, hence transferring inventory from completed items to semi-finished goods or raw materials (Yeung, Selen, Deming, & Min, 2017). Delaying an activity may be beneficial for implementing a glocalisation plan, where the centralisation of operations occurs at the first stages, while a decentralised approach is used for downstream actions that aim to offer a customised product within the specified timeframe (Yang, Yang, & Wijngaard, 2006). Postponement refers to deliberately delaying supply chain processes, which requires a dedicated allocation of resources to maintain adaptability and manage costs associated with delays (Ahmed, 2020). Enterprises often use postponement strategies to address intricate or fluctuating demand patterns, hence mitigating the costs associated with uncertainty (Ahmed, 2020). The time delay is determined by the synchronization of the shipment of products from the manufacturing facilities and the receipt of client orders.

According to Gunasekaran & Ngai (2005), form postponement allows companies to implement a build-to-order (BTO) or make-to-order (MTO) approach. Pagh and Cooper (1998) extended this perspective by emphasizing the concepts of logistics and manufacturing delay (and speculation) and put forth a 2x2 matrix that classifies strategies based on a mix of these two categories. Furthermore, van Mieghem and Dada (1999) provide the concept of price postponement. Kiesmüller, de Kok, and Fransoo (2005) examine the concept of deferring the decision on transportation mode selection. In a similar vein, Zinn and Bowersox (1988) observed that considering the timing of shipping and the location of final product processing might provide alternate options to proactive distribution. This approach results in a decrease or complete removal of the predictive aspect of logistics, since goods are delivered directly to shops or customers (Pagh & Cooper, 1998). Lee (1998) introduced the concepts of complete postponement, logistics postponement, and form postponement. Bowersox and Closs (1996) examined the concepts of time delay, location postponement, and manufacturing/form postponement. Zinn and Bowersox (1988) investigated the concepts of labeling postponement, packaging postponement, assembly postponement, manufacturing postponement, and time postponement. The study conducted by Brown et al. in 2000 focuses on the concepts of product postponement and process postponement..

### **2.3 The Concept of Supply Chain Resilience**

The origins of research on supply chain resilience may be traced back to the early 2000s, when the initial definitions were created by scholars such as Rice and Caniato (2003) and Christopher and

Peck (2004). Resilience is a novel notion that has just developed in the field of supply chain management. There are currently many definitions of supply chain resilience in the literature (Ouabouch, 2015).

Resilience is shown as a process in which a supply chain encounters a sequence of disruptive events and must demonstrate flexibility and agility. A supply chain is a coordinated network of business partners engaged in the manufacturing processes that transform raw materials into final products or services to meet customer demand (Mensah & Merkurjev, 2012). Ponomarov and Holcomb (2009) define supply chain resilience as the ability of the supply chain to effectively anticipate and respond to unexpected events, as well as to recover from disruptions by ensuring the uninterrupted operation of the supply chain at the desired level of interconnectedness and control over its structure and function. To attain resilience, a corporation may develop a robust supply chain that is capable of adapting to fluctuations in the business environment (Trkman & McCormack, 2009). An enduring supply chain is essential to ensure the continuity of operations, as stated by Hendricks et al. (2009).

Supply chain resilience is the ability of a supply chain to adapt and prepare for disruptions, recover in a timely and cost-effective manner, and ultimately improve its operations after the disruption (Tukamuhabwa, Stevenson, Busby, & Bell, 2015). Hence, the aforementioned definition indicates that SCRES may be evaluated based on four key factors: readiness for a disruptive occurrence, reaction to the occurrence, restoration from the occurrence, and development/competitive advantage after the occurrence. In order to effectively respond to unforeseen occurrences and promptly restore its original condition, a supply chain company must cultivate resilience skills (Barroso Machado, & Cruz-Machado, 2015). Managers must implement strategies to mitigate the possible adverse impacts of risks, both on the directly impacted business and on other supply chain enterprises that may be affected, given the interdependent nature of relationships across supply chain entities (Ouabouch, 2015).

Resilience, as shown by these criteria, refers to the ability of a supply chain to rapidly recover and resume regular operations after an adverse occurrence. In practice, resilience is characterized by a proactive approach, acknowledging the possibility that the chain may not have been functioning optimally prior to the occurrence. According to Pal (2013), supply chain resilience is linked to the implementation of crisis management and business continuity plans. This helps to improve short-term crisis management by increasing operational flexibility, as well as long-term strategies through the use of business continuity plans. Additionally, supply chain resilience can be enhanced through growth strategies such as market penetration, diversification, and transformational initiatives. Supply chain resilience refers to the capacity of a system to restore itself to its initial condition after disruptions. Supply chain dependence is linked to the task of risk management and reducing risk to the absolute minimum.

## **2.4 Measures of Supply Chain Resilience**



Several past studies have been undertaken to assess supply chain performance. In 2016, Arani, Mukulu, Waiganjo, and Wambua performed a research that examined the relationship between strategic sourcing and supply chain resilience in manufacturing enterprises. The researchers used customer service, market share, and profitability as measures to quantify the implementation of supply chain resilience in manufacturing companies. Adiele and Ihunwo (2022) performed a research on the relationship between material demand planning and supply chain performance in oil and gas enterprises located in Rivers State. The researchers used product quality, customer satisfaction, and cost reduction as metrics to evaluate the effectiveness of the supply chain. In their research, Ma (2009) proposed an alternative set of four dimensions for supply chain flexibility, which are supply, R&D, production, and distribution. In their 2018 research, Karl, Micheluzzi, Leite, and Pereira examined the relationship between supply chain resilience and critical performance. Specifically, they focused on the aspects of flexibility and agility in supply chain resilience. Hence, this research will include adaptability and nimbleness..

### **Flexibility**

Flexibility refers to the capacity to adapt and react to changes in the surrounding conditions. Flexibility, in the context of a product reliant on the manufacturing process, refers to the capacity to modify production outputs in accordance with shifts in demand. The degree of flexibility in a certain aspect of the supply chain is mostly determined by the level of flexibility shown by the other components through which the inventory moves (Quesada, et al, 2012). This feature enhances the coordination processes and enables businesses to effectively manage and adapt to significant levels of uncertainty (Talluri et al., 2013). Hence, a robust supply chain has the capability to effectively handle unforeseen interruptions and calamities by attaining an appropriate degree of adaptability (Sahu et al., 2017). Furthermore, the implementation of adaptable supply chains enables companies to minimize backorders, lost sales, and late orders, while simultaneously enhancing customer satisfaction. Additionally, it empowers companies to effectively address and adapt to fluctuations in demand, such as seasonal changes, periods of subpar manufacturing or supplier performance, and the introduction of new products, markets, or competitors (Beamon, 1999).

Flexibility is widely recognized as a crucial distinguishing factor in the present marketplace. Supply chain flexibility is often seen as a significant strategy to address the growing unpredictability and rivalry in the market. A company that has a malleable supply chain is more likely to endure and expand its market presence. Performance improvements have been found to be linked to supply chain management. However, managing supply chains and maintaining flexibility has become increasingly challenging due to intense competition, globalization, dynamic business environments, and customer-centric approaches. The publication by Macclever, Annan, and Boahen in 2017.

### **Agility**

Agility refers to the firm's capacity to rapidly adapt its supply chain strategies and activities. Agility is a crucial characteristic that is strongly linked to the efficiency of strategic supply chain management (Wieland & Wallenburg 2013). Agility pertains to the ability of a supply chain organization to rapidly gather and efficiently handle its knowledge, personnel, and capabilities via a planned, effective, and coordinated approach in response to evolving customer needs, with the goal of mitigating the impact of increasing unforeseen changes. The concept of agility was first established in 1991 by the Lacocca Institute of Lehigh University, namely by Goldman and Preiss. This marked a transition in competitiveness from mass production to a new age of agility, which was previously centered upon manufacturing systems. Turbulence and unpredictability in the business environment have emerged as the primary factors leading to the demise of the aviation sector (Tsourveloudis & Valavanis, 2002; Stratton & Warburton, 2003). The need for agility in supply chains and production systems arises from the inherent difficulty to accurately forecast and anticipate future events and their subsequent alterations.

Boubaker, Jemaï, Sahin, and Dallery (2019) argue that agility may be described as the capacity to effectively handle unforeseen obstacles, adapt to unanticipated business environment dangers, and capitalize on changes as advantageous possibilities (Swafford et al., 2008). Agility refers to the capacity of a supply chain to promptly adapt to sudden shifts in demand or supply, as well as effectively manage external interruptions (Lee, 2004). According to Boubaker, Jemaï, Sahin, and Dallery (2019), sudden changes might have negative consequences for a firm, but they can also provide opportunities for other companies, as noted by Sharifi and Zhang (1999). In today's global market, enterprises must possess the talent of being responsive, which is becoming more crucial. Therefore, firms need to be nimble, as stated by Swafford et al. (2008).

Agility refers to an organization's ability to respond rapidly, minimize risks, and capitalize on new possibilities (Bahrami, 1992; Conboy, 2009). According to scholars, agility is a strategic approach to effectively manage risk and mitigate the adverse impact of change (Sharifi & Zhang 2001). Furthermore, Boubaker, Jemaï, Sahin, and Dallery (2019) argue that scenarios requiring agility in the supply chain context refer to unexpected disruptions and changes, both external and internal, that might negatively impact supply chain performance, either temporarily or permanently, and hence need an agile reaction. Agility refers to the capacity of a marketing organization to swiftly and effortlessly modify or adjust their plan (Tallon & Pinsonneault, 2011). They argued that agility is crucial for achieving significant improvements in an organization's productivity, structures, or processes. This involves deliberate and well-planned strategies that are implemented with precision and persistence.

## **2.5 Postponement and Supply Chain Resilience**

In their study, Krishnan and Pertheban (2017) examined the effects of supply chain resilience measures on supply chain ambidexterity, which is considered a dynamic skill. The research aimed to examine the development of organizations' supply chain ambidexterity via a process of establishing dynamic capabilities. Additionally, it wanted to explore how ambidexterity might help buffer the adverse effects of supply chain disruptions and enhance corporate performance. Data was gathered from a sample of 164 medium-sized manufacturing small and medium enterprises

(SMEs) that are currently functioning in Malaysia. The research discovered that the process of developing a dynamic supply chain resilience capacity is a factor that influences supply chain performance. The research highlighted inventory management, visibility, established decision strategy, and diversity as key dynamic characteristics for supply chain resilience.

In their study, Yang and Yang (2009) investigated the concept of postponement in the context of supply chain risk management, specifically from a complexity viewpoint. The research aimed to investigate the function of delay in supply chain risk management, focusing on its impact from a complexity viewpoint. Following an examination of the relevant literature, this study first examines the ideas derived from normal accident theory, which focuses on the features of catastrophic events, and applies them to disruptions in supply chains. Subsequently, the use of normal accident theory is employed to elucidate the function of postponement in the control of supply chain risk. In addition, this research examines the complexity ramifications of often suggested strategies to alleviate supply chain interruptions. Under some conditions, implementing such precautions might increase the intricacy of a system, making it impractical.

In this study, Macclever, Annan, and Boahen (2017) examined the relationship between supply chain flexibility, agility, and company performance. The research specifically examined the relationship between the flexibility of the supply chain and the performance of the company, with the moderating variable of supply chain agility. A sample of 77 industrial and service enterprises operating in the Kumasi city were chosen. The sample consisted of both top management people and non-management workers from the companies. Questionnaires served as the primary tool for gathering data. The results indicated a favorable correlation between supply chain flexibility and supply chain agility with firm performance ( $p < 0.01/0.05$ ). In addition, the moderation of SC Agility on SC Flexibility had a favorable effect. However, this effect was found to be statistically insignificant, suggesting that SC agility did not substantially moderate the beneficial influence that SC Flexibility has on firm performance.

### **3. Methodology**

The present study used an explanatory research strategy. The present study use explanatory research to elucidate the relationship between two variables. Explanatory research examines several criteria, such as the nature of the link between two variables and the theoretical model that may be constructed and tested to explain the correlation (Lomax, 2007). The research population consisted of 29 courier businesses located in Rivers State. A total of 87 respondents were surveyed, with each of the 29 courier businesses providing three managers: a General Manager, an Administrative Manager, and a Logistics Manager. Therefore, it was necessary to determine an adequate sample size in order to draw conclusions about the population using that sample. The population of this research comprises 29 courier services listed in the Yellow Pages of Rivers State for the year 2013/2014. The study's consistency was measured using the Cronbach's alpha coefficient, Alpha..

### **4. Results**

**H<sub>01</sub>:** Postponement does not significantly relate with flexibility Courier Firms in Rivers State  
**Table 1: Relationship between Postponement and Flexibility of Courier Firms in Rivers State**

		Postponement	Flexibility
Postponement	Pearson Correlation	1	.778**
	Sig. (2-tailed)		.000
	N	33	33
Flexibility	Pearson Correlation	.778**	1
	Sig. (2-tailed)	.000	
	N	33	33

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

**Source: SPSS output from field survey, 2023**

From results of the SPSS output in Table 1, the correlation coefficient (0.778) and the probability value (0.000) showed that the relationship between postponement and flexibility is positive, strong and significant ( $r = 0.778$ ,  $N = 33$ ,  $p = 0.000 < 0.05$ ). Therefore, the researcher rejects the null hypothesis which states that customer switching does not significantly relate with flexibility of Courier Firms in Rivers State.

**H<sub>02</sub>:** Postponement does not significantly relate with agility of Courier Firms in Rivers State  
**Table 2: Relationship between Postponement and Agility of Courier Firms in Rivers State**

		Postponement	Agility
Postponement	Pearson Correlation	1	.815**
	Sig. (2-tailed)		.000
	N	33	33
Agility	Pearson Correlation	.815**	1
	Sig. (2-tailed)	.000	
	N	33	33

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

**Source: SPSS output from field survey, 2023**

From results of the SPSS output in Table 2, the correlation coefficient (0.815) and the probability value (0.000) showed that the relationship between postponement and agility is positive, very strong and significant ( $r = 0.815$ ,  $N = 33$ ,  $p = 0.000 < 0.05$ ). Therefore, the researcher rejects the null hypothesis which states that customer switching does not significantly relate with agility of Courier Firms in Rivers State

## 5. Discussion of Findings

### Postponement and Supply Chain Resilience of Courier firms in Rivers State

The correlation study revealed a favorable, robust, and statistically significant association between postponement and flexibility ( $r = 0.778$ ,  $N = 33$ ,  $p = 0.000 < 0.05$ ). Hence, the researcher refutes the null hypothesis that claims there is no significant correlation between postponement and the flexibility of courier services in Rivers State. The research revealed a favorable, highly robust, and statistically significant association between postponement and agility ( $r = 0.815$ ,  $N = 33$ ,  $p = 0.000 < 0.05$ ). Thus, the researcher refutes the null hypothesis that claims there is no significant correlation between postponement and the flexibility of courier services in Rivers State. Furthermore, it was shown that there is a very favorable and substantial correlation ( $r = 0.888$ ,  $N = 33$ ,  $p = 0.000 < 0.05$ ) between postponement and agility. Thus, the researcher refutes the null hypothesis that claims there is no significant relationship between postponement and the agility of courier services in Rivers State. These findings are consistent with the results of earlier empirical research that were analyzed. Langat et al. (2021) investigated the relationship between mobile banking service quality and customer retention using a moderated mediation model that included customer perceived value and perceived company image. The research found that customer perceived value has a major role in moderating the association between mobile banking service quality and customer retention. Furthermore, the research found that the perceived corporate image influences the connection between mobile banking service quality and customer perceived value, as well as the connection between mobile banking service quality and customer retention. Perceived corporate image has a moderating role in the indirect relationship between the quality of mobile banking services and customer retention, operating via customer retention at all levels. Considering the aforementioned points, it is said that the act of delaying or rescheduling is a crucial tactic that might improve the ability of courier companies in Rivers State to withstand and recover from disruptions in their supply chain.

## **6. Conclusion**

In view of the findings of this study, the study concludes that postponement positively relates with supply chain resilience of courier firms in Rivers State.

## **7. Recommendations**

Managers of courier firms should embrace postponement to promote their supply chain resilience.

## **References**

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