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SUPPLY CHAIN RESILIENCE AND CAPACITY UTILIZATION OF FOOD AND BEVERAGE COMPANIES IN THE POST COVID-19 ERA IN RIVERS STATE.

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ABSTRACT

The study examined supply chain resilience and capacity utilisation of food and beverage companies in the post covid-19 era in Rivers State. Two (2) objectives and two (2) hypotheses were formulated to guide the study. The cross-sectional explanatory survey research design was adopted. The target population of this study was one hundred and eighty five (185) employees from twenty (20) food and beverage companies in Rivers State. The sample size is the entire population of 185 employees. The study adopted resourced based theory. Spearman Rank Order Correlation Coefficient was used in for bivariate analyses (testing the hypotheses one and two). The findings revealed that there is a significant positive influence of supply chain resilience and capacity utilisation of food and beverage companies in the post covid-19 era in Rivers State. The study concluded that supply chain resilience influences capacity utilization of food and beverage companies in the post covid-19 era in Rivers State. The research therefore, recommended that Food and beverage firms in Rivers State should develop agility at all time and at all cost. This will enable them to absorb shocks from unforeseen pandemic on like in the era of covid-19 were supply chain was disrupted.

Keywords: Supply Chain Resilience, Agility, Supply Chain Collaboration

INTRODUCTION

Organisations in the 21st century are seriously in search of tools for measuring its present performance in comparison with the set goals, past achievements, and capacity utilization in the post covid-19 era. Policy formulation and business decision-making depend on economic indicators. A firms' capacity utilization is an important indicator of economic performance that explains changes in inflation, investment, long-run output growth (Sarbapriya, 2013). Capacity is very important but least understood concept in manufacturing and business world (Klammer, 1996). In Operations Management literature, capacity is defined as "the maximum rate of output of a process or system" or the throughput. Capacity decisions are important decisions for businesses. Capacity utilisation rate plays a crucial role in evaluating economic performance of manufacturing firms. Capacity utilisation is an important factor to be considered when an increase in productivity and expansion of firm's production become necessary. Also, the need to consider capacity utilisation is vital in many developing countries especially in Nigeria where capital is very scarce and mostly under utilised (Adeyemi & Olufemi, 2016).

The word "resilience" was orginated from materials science, referring to the ability of a system to recover its initial state after undergoing an elastic deformation without any changes in its nature (Ponomarov & Holcomb, 2009). Therefore, due to market instability and the occurrence of environmental and manmade disasters, the importance of incorporating this concept was emphasized in the operations management scenario (Scavarda et al., 2015).

Admitting that almost every supply chain faced disruptions of varying degrees during the Covid-19 era, with the pandemic scorching business firms objectives of any category to a standstill is to overstate the obvious. The food and beverage business was not spared either from this menace. Being prepared for any future disruptive event allows automobile companies to respond efficiently and effectively, and therefore become less vulnerable to disruptions of such nature (Scholten et al., 2014). Thus, resilience within organizations and throughout supply chains recognises both the ability to absorb shocks in the form of extreme events and the adaptive capability to adjust to new

circumstances (Brusset & Teller, 2017). Hence, it is recognised as a responsive capability for a firm's performance, as well as a key dimension of a firm's survival (Hohenstein et al., 2015). In Nigeria for instance, the pandemic crisis have had unprecedented and geographically uneven economic impacts through the direct effects of ill health and excess deaths, drastic contraction or cessation of economic activity during lockdown, reductions in the labour supply and consumption caused by the imposition of social distancing measures, and the 'second round' effects of falling incomes, increasing uncertainty and loss of confidence that have the potential to reduce growth in the future (Hughes et al., 2020; Harris et al., 2020). The severity of the recession stems from the combined effects of both demand *and* supply-side shocks. Generating profound disruptions for local economies reliant upon such activities, the sectoral effects of lockdown have been differentiated and felt most strongly by retail, hospitality, wholesale, food and beverageand associated services, and construction. Even after the Covid-19, it is clear that manufacturing industries in Nigeria are still facing uncertain in the production capacity utilisation. Manufacturing outputs continue to fall in its lowest ebb. This has continually and negatively affected the country by placing it on a recession radar for reasons including the economy's high dependence on transport, especially motor vehicles, manufacturing. While many world economy have curtail the negative impacts of the dreaded pandemic, China for instance, has now entered a stage of high-quality development from high-speed development, and building a modernized economic system. This continue to be illusive in manufacturing firms in Nigeria.

Any firm must understand the notion of capacity utilization since it has a significant impact on both the cost of producing a given good and the potential profit from its sale. Every firm has a capacity, whether it be for producing goods, providing services to clients, or finishing projects (Okeoma, Nwaobilor, & Amaechi, 2022). The most crucial factor in increasing a business's profitability is how this capacity may be used or maximized. The word "capacity utilization" is frequently used to refer to how fully businesses utilize the installed productive capacity of their machinery and equipment when producing utilities. Essentially, it shows the percentage of installed capacity or output that a company really uses. Although certain hazards and effects can be predicted, not all of them are (Christopher & Peck, 2004; Pereira et al., 2014). Therefore, a prompt and effective response is required to reduce losses if there is a disruption in the flow of goods or information (Kamalahmadi & Parast, 2017). Companies must therefore create proactive and reactive steps to mitigate effects and maintain competitiveness in order to acquire adaptive capacities to better respond to disasters (Hohenstein et al., 2015).It is known that organizations can thus deploy or develop specific dynamic capabilities such as idea generation capabilities, market disruptiveness capabilities, new product development capabilities, marketing capabilities or new process development capabilities (Esterby-Smith, et al, 2009).

To guarantee maximum inventory levels, cycle time, business processes, and customer service, it is necessary for modern Supply Chain Management (SCM) to reduce their constraints hence leading to increased firm profitability and competitiveness (Nyaoga, et al., 2015).

Statement of Problem

The COVID-19 pandemic has put the Nigerian economy's resiliency to the test and is making the country's development problems worse. Numerous studies have been conducted since the pandemic's start to determine how the crisis has affected the capacity utilisation of things like employment, output, and poverty. However, there have been no comprehensive studies on how businesses in Nigeria have been able to increase their productive capacities, which is crucial for a long-lasting and inclusive recovery.

Even though capacity utilisation is an important economic indicator, development economists have not given it the attention it deserves, particularly in the majority of developing nations, including Nigeria. Despite not receiving much attention, capacity utilization implies the degree of market demand in addition to explaining the link between actual output and maximum or potential output.

By raising operational expenses, over- or under-utilization of a plant's capacity can make it less competitive (Seguin and Sweet Land, 2014). The utilization of capacity will increase as market demand increases. On the other hand, if demand declines, capacity utilisation will drop. In the short term, supply chain management elasticity is mostly dependent on capacity utilization. Supply will be particularly inelastic for a company whose capacity utilization rate is close to 100% because there won't be any room for capacity growth to accommodate the necessary increase in supply. In other words, supply holds steady in the short run independent of price changes. However, businesses can eventually raise their capital resources and production capability to deal with an oversupply. During COVID-19, the majority of Nigerian manufacturing companies experienced capacity under-utilization, which posed a danger to their ability to increase production and productivity.

As a result, the primary knowledge contributions (theoretical and practical) from this research come from its concurrent treatment of an expanded approach to supply chain resilience and capacity utilization within a crucial sector intended to realize Nigeria's vision of a developed economy. Even while the ideas of supply chain resilience and capacity utilization have been extensively studied, only a few studies have attempted to look at the patterns and factors that affect these notions in businesses. Additionally, much earlier scholarly discourse examined the ideas of supply chain resilience and capacity utilization separately; no attempt was made to research the two factors simultaneously, and there is no current literature in the Post Covid-19 era that does so. Consequently, the study sought to determine the relationship between supply chain resilience and capacity utilization of food and beverage companies in Rivers State.

Conceptual framework

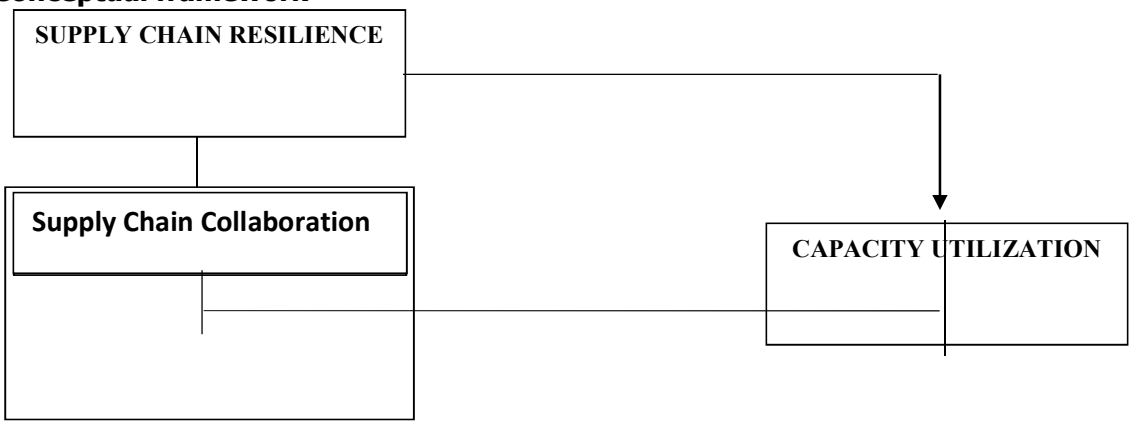

Fig. 1.1 Conceptual Framework Showing the Relationship between Supply Chain Resilience and Capacity Utilization.
Source: Kamalahmadi and Parast (2016); Christopher and Holweg (2011)

Objectives of the Study

The aim of this study is to examine the relationship between supply chain resilience and capacity utilization in post covid-19 era. However, the specific objectives were to:

1. Explore the relationship between agility and capacity utilization of food and beverage companies in the post covid-19 era in Rivers State.
2. Examine the relationship between supply chain collaboration and capacity utilization of food and beverage companies in the post covid-19 era in Rivers State.

Hypotheses

Ho_1: There is no significant relationship between agility and capacity utilization of food and beverage companies in the post covid-19 era in Rivers State.

Ho_2: There is no significant relationship between supply chain collaboration and capacity utilization of food and beverage companies in the post covid-19 era in Rivers State.

REVIEW OF RELATED LITERATURE

Supply Chain Resilience

The most adaptable and resilient supply chains are those that are built to do more than just withstand and recover. They are created with the use of procedures and cutting-edge supply chain technologies, which enable them to forecast, anticipate, and promptly react to any threats or opportunities the future may present. Supply chain resilience, according to Hohenstein et al. (2015), is the capacity of the supply chain to be ready for unforeseen risk events, responding and recovering quickly to potential disruptions to either return to its original situation or grow by moving to a new, more desirable state in order to improve customer service, market share, and financial performance. It is important to emphasize that supply chain resilience is a responsive capability for a firm's performance as well as a crucial component of a firm's survival. It recognizes both the ability to absorb shocks in the form of extreme events and the adaptive capability to adjust to new circumstances. Recent definitions tend to include various features found in earlier, simpler definitions, making them more complicated and comprehensive (Piers Ribero & Barbosa-Povoa 2018). Supply chain resilience is defined by Kalamandi and Parast (2016) as the ability of a supply chain to adapt to decrease the likelihood of encountering sudden disturbances, resist the spread of disturbances by maintaining control over structures and functions, and recover and respond through immediate reactive plans to transcend the disturbance.

Supply chain resilience at ensuring that decision-making is improved, risks are reduced, and cost implications are minimized for the company. At the same time, greater customer value is enhanced through systematic and frequent measurement of customer satisfaction and monitoring the commitment of customers' needs (Li et al., 2017). Supply chain resilience helps to unite the firms' skills, ideas, and culture.

Dimensions of Supply Chain Resilience

Agility

Agility refers to the response time to unpredictable changes in supply and demand (Christopher et al., 2004). Agility implies use of knowledge of the market and a virtual corporation to harness profitable opportunities in volatile markets (Mason, Naylor & Towill, 2000). It is a business-wide capacity which works with organizational structures, information systems, logistical processes and risk mitigation practices (Christopher & Towill, 2001). The effectiveness of any ability to respond quickly to the market dynamics will be to a large extent be determined by the capabilities of trading parties. The concept of agility therefore has to be extended beyond the individual organizations to include the operations of the supply chain in which the firm operates (Power, Sohal& Rahman, 2001). The rationale of an agile supply chain is the ability to respond quickly and efficiently to a dynamic marketplace.

Supply chain collaboration

For companies aiming to prosper and acquire a competitive edge, collaboration throughout the supply chain is an essential approach (Aggarwal & Srivastava, 2016). Soosay and Hyland (2015) assert that due to the capitalization of assets and the capabilities of supply chain cohorts, supply chain collaboration can enhance corporate performance. Supply chain allies cooperate, according to Cai et al. (2013), to expand business opportunities, learn new skills, solidify market position, and improve dexterity and supply chain considerations.

Aggarwal and Srivastava (2016) also found that knowledge sharing and supplier selection are the two main factors that influence the supply chain, whereas supply chain efficiency and waste reduction are the two main advantages of collaboration. Similar to this, Kache and Seuring (2014)

found that the growth of collaborative practices would lead to better and more sustainable business practices for the industry as a whole as well as advantages for buyers and sellers. Increased knowledge exchange between supply chain actors may lead to stronger working relationships and increased partner confidence, according to McDowell et al. (2013).

The Concept of Capacity Utilisation

How effectively a corporation or a nation uses its installed production capacity is known as capacity utilization in economics (Adeyemi & Olufemi, 2016). As a result, it describes the relationship between the output that was actually produced and the output that could have been produced if the installed equipment had been fully used. Industry capacity utilization is defined as "the level of utilization of an industry's installed productive capacity" by Okpaleye (1988). An industry is said to be working at its maximum efficiency when its installed production capacity is used up completely. The capacity output, on the other hand, is what the cost approach refers to as the highest output level at which an additional unit would significantly exceed the acceptable production range.

The quantity of services provided or clients serviced is referred to as utilization. Setting benchmarks for the "right" amount of utilization can be challenging due to the influence of various and variable customer demand patterns, even if it is simple to measure as an intermediate conclusion. Utilization is regarded as an organizational performance intermediate outcome in relation to organizational capability in our taxonomy (Adeyinka, 2013). According to this viewpoint, a company with consistently underutilized capacity would be viewed as having lower performance (Adeyinka, 2013). It may be advantageous to have some extra capacity since this wiggle room can promote organizational learning and long-term viability. However, if there aren't enough benefits to make up for it, having too much extra capacity can lose the organization money. In a similar vein, utilization that is significantly below or above what would be anticipated given the features of service delivery The maximum output that can be produced with the available technology and the fixed input when the variable input vector may take any non-negative value is referred to as a plant's capacity, according to Coelli et al. (2002). As a result, capacity utilization equals the ratio of observed production to plant capacity. So, when referring to output from a quasi-fixed input, capacity utilisation means the proportion of actual output to maximum or prospective production. Technically speaking, capacity output was described by Johansen (1968) as the maximum output that might be generated from a certain bundle of quasi-fixed inputs, even in the absence of any limitations on the availability of variable inputs.

In this present study, capacity refers to the maximum outflow which could be achieved from the installed capital stock in a given period. In other words, capacity is the amount of output a firm can produce which depends upon the amount of labour, buildings, machinery and other forms of capital stocks it has available for production process. Utilisation on the other hand means actual amount of capacity which is being employed to get output in the same period (Afroz & Roy, 1976). Hence, capacity utilisation in economic term implies the ratio of actual output to the level of optimum output beyond which the average cost of production begins to rise. That is, capacity utilisation expresses output as a percentage of total potential output. In other words, capacity output can be defined either in economic term (Berndt & Morrison, 1981) or in technical term. Thus, the economic definition was adopted in this study. However, pure technical efficiency relative to full capacity measures the difference between actual outputs to capacity output. It is caused by both inefficient utilisation of the variable inputs and fixed inputs. Deb and Ray (2013) denotes it as gross capacity utilisation and divides capacity utilisation into net capacity utilisation and gross capacity utilisation. Net capacity utilisation measures the difference between frontier output and capacity output. It is caused by only inefficient utilisation of the fixed inputs.

Klein and Summers (1996) defined an organization's productive capacity as "the total level of output or production that it could produce in a given time period". Capacity utilization is the percentage of the firm's total possible production capacity that is being used. Therefore, an organization should

be most efficient if it is running at 100% capacity utilization. An organization's full capacity is the minimum point on total cost function, a full input point on the aggregate production function and a bottleneck point in a general equilibrium system. Full capacity should be defined as a realizable level of output that can be attained under normal input conditions without prolonging accepted working schedules, and allowing for usual vacations and for normal maintenance (Klein & Summers, 1996; Nyaoga, et al., 2015).

The phrase "rated capacity" rather than "theoretical capacity" is used in the model of Consortium for Advanced Manufacturing International (CAM-I), which divided the capacity into three categories: productive, nonproductive, and idle. In the CAM-I model, rated capacity is the product of idle, nonproductive, and productive capacity (Klammer, 1996; Nyaoga, et al., 2015). The greatest rate of output that a plant is capable of producing under a specific set of apposed operational conditions is known as its capacity or plant capacity (Stratton, 1996). The capacity of the plant encompasses all the resources—facilities, machinery, and labor—that are used to produce the product as well as how they are employed. It is a gauge of a manufacturer's or a manufacturing enterprise's capacity to provide goods to clients as needed.

Supply Chain Resilience and Capacity Utilisation in the Post Covid-19 Era

A very visible impact of the COVID-19 pandemic on supply in Nigerian firms is the negative effect it has had on the rate of capacity utilization of manufacturing firms. Before the onset of the crisis, firms were already operating on less than full capacity, due in part to high input production costs and epileptic power supply. These challenges have been exacerbated by the pandemic with dire consequences for capacity utilization in Nigeria, as evidenced by the much lower capacity utilization rates in firms compared to the pre-COVID-19 period.

However, COVID-19 has had a notable impact on manufacturing in every industry sector. In a recent survey by the National Association of Manufacturers, almost 80% of manufacturers anticipated financial and operational consequences from the COVID-19 pandemic (Verdier, 2021). Even prior to the pandemic, there was a notable shift from global to more local economies due in large part to international trade tensions, increased foreign wages, quality control and other factors; the pandemic only intensified this trend (Verdier, 2021). Now, many industries are looking to bring supply chains (critical component/raw material production) closer to home, resulting in manufacturers building new production facilities or expanding existing facilities as a means of improving supply chain resiliency. This changing landscape is pushing companies to re-evaluate their processes and production capacities (Verdier, 2021).

Prior to the pandemic, many manufacturers were challenged to attract and retain skilled technicians to operate their production equipment. The pandemic required manufacturers to suspend operations or reduce the number of staff working to ensure worker safety, which led to backlogs in order fulfillment and severe supply chain shortages globally. As a result, leaders in food and beverage companies are collaborating with other organisations in accelerating their investment in automation to improve supply chain resiliency in the future (Verdier, 2021). While the initial investment may be high, automation has multiple benefits. It can help protect workers' health by minimizing contact with one another (automation requires fewer workers in a given space). It also has a benefit of increasing consistency in product quality, and over time can mitigate the impact of production cost due to rising wages whether production is offshore or domestic (Verdier, 2021).

Resource Based View Theory

This theory highlights the gains a company acquires by possessing the necessary resources required for its survival. These may be in form of financial muscle, physical locations, human labor and effort, technological advancements among other capabilities. These resources and capabilities set a firm apart from the rest and forms part of its competitive advantage. Possession of products and services with unique characteristics or specific and detailed work procedures will shut out competition for

firm's resources and capabilities (Prahalad & Hamel, 1990). Organizations capacity utilizations' ability can also be considered an opportunity in order to cope with global competition. Well-managed supply chain is essential to create capacity utilization and value (Lambert & Cooper, 2000). Competition is no longer specific to individual firms but rather it is supply chain against supply chain (Min&Mentzer, 2004). Benefits for this theory therefore accrue directly to firm's capacity utilization (Deere, 2006).

Empirical Studies

Adeyemi and Olufemi (2016) empirically investigated the determinants of capacity utilization in the Nigerian manufacturing sector between 1975 and 2008. The study used capacity utilization as the dependent variable while its determinants such as Real Manufacturing Output Growth Rate (MGDP), Real Interest Rate (INTR), Consumer's Price Index (CPI), Fixed Capital Formation in Manufacturing Sector (CPF) and Electricity Generation on Rate (ELEGR) (Proxy for energy) were used as independent variables. Co-integration and Error Correction Model (ECM) were employed as the estimation techniques so as to study the time series properties of the variables and to ascertain the existence of long-run relationship between capacity utilization and its determinant indicators. Structured questionnaire was administered to assess the operational materials and the performance of the selected firms. The findings of the study revealed that there is positive relationship between consumer's price index, fixed capital formation in manufacturing sector and capacity utilization. The study also showed that there is negative relationship between Electricity Generation, Real Manufacturing Output Growth Rate and Capacity Utilization which resulted in low manufacturing productivity growth rate in Nigeria. Based on the findings, the study strongly recommended that government should make adequate provision of infrastructural facilities especially Electricity Generation to boost production.

Hotlan, Zeplin and **Ferry** (2021) did an empirical study on the impact of supply chain integration on business performance through supply chain resilience, supply chain flexibility, and innovation system in Indonesia's manufacturing companies. Data collection has obtained as many as 470 questionnaires considered valid for further analysis. Data analysis used the partial least square (PLS) technique using smartPLS software version 3.0. The results show that supply chain integration affects innovation system, supply chain flexibility, and supply chain resilience because of its ability to share complete product information and share production planning. Innovation systems and supply chain flexibility enhance supply chain resilience through the ability to deal with sudden changes in customer demand and production problems. Supply chain integration improves business performance through innovation, supply chain flexibility, and supply chain resilience in the COVID-19 era. This research could be the best practice for managers in restoring manufacturing performance quickly. This study also contributes to the current research in supply chain management.

An empirical study by Gitonga (2018) was carried out investigating the impact of supply chain resilience and operational performance of manufacturing small and medium enterprises operating within the industrial area Nairobi County. The study was powered by the theories of dynamic capacity, resource-based, and strategic decision-making. According to information received from the Nairobi County licensing department, there are 58 registered manufacturing SMEs operating in Nairobi County's industrial sector. As part of this research, 58 manufacturing SMEs were surveyed. As a result, the entire population was analyzed using a census survey method. This study relied widely on closed-ended questionnaires for data gathering. Based on the study's goals, a series of statements and questions were prepared for the survey. The quantitative information collected from respondents in the survey was measured using the SPSS software. The study also employed regression analysis in order to show a correlation between manufacturing SMEs' supply1 chain1 resilience1 tactics and operational performance. There was a 95% confidence interval for the R

squared value of the manufacturing SMEs working in Nairobi County's Industrial region's operational performance, according to the study's findings. The findings in this study show that many of the SMEs in the Industrial Zone, Nairobi County are using these practices to increase their resilience during economic downturns with a 79 percent variation on operational performance measures. Research has shown that there is a direct correlation between the R-value of 0.839 and research variables. As a result of this study, it is recommended that strategic and middle-level managers in Nairobi County's Industrial Area devote additional resources to the implementation of supply1 chain1 resilience1 strategies to earn long-term benefits from exceptional operational performance. According to the findings of this study, SMEs in Kenya should boost their investments in supply1 chain1 resilience1measures to counter supply chain vulnerability and efficiently boost operational performance.

METHODOLOGY

The explanatory cross sectional survey research design was adopted for this study. The population of the study consisted of one hundred and eighty five (185) employees from twenty (20) food and beverage companies in Rivers State. The entire population was used as the study sample. Thus, this study is a census research which involves using the entire population rather than drawing a sample from it. The choice of census method here, is informed by the assumption that the population of 185 was not too large to be covered. Thus, there was no need sampling. The Spearman rank order correlation was applied for the bivariate analysis.

Test of Hypotheses

$H0_1$: there is no significant relationship between agility and capacity utilization of food and beverage companies in the post covid-19 era in Rivers State.

Correlations 1

			Agility	Capacity Utilization
Spearman's rho	Agility	Correlation Coefficient	1.000	.726**
		Sig. (2-tailed)	.	.000
		N	160	160
	Capacity Utilization	Correlation Coefficient	.726**	1.000
		Sig. (2-tailed)	.000	.
		N	160	160

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

Ho_1 there is no significant relationship between agility and capacity utilization of food and beverage companies in the post covid-19 era in Rivers State (correlation. 1) reveals that there is a significant relationship between agility and capacity utilization of food and beverage companies in the post covid-19 era in Rivers State (where rho = .726 and p =0.000) and based on the decision rule of $p < 0.05$ for null rejection; we reject the null hypothesis and accept the alternative hypothesis: *there is a significant relationship between* agility and capacity utilization of food and beverage companies in post covid-19 era in Rivers State.

$H0_2$: there is no significant relationship between supply chain collaboration and capacity utilization of food and beverage companies in the post covid-19 era in Rivers State.

Correlations 2

			Supply Chain Collaboration	Capacity Utilization
Spearman's rho	Supply Chain Collaboration	Correlation Coefficient	1.000	.734**
		Sig. (2-tailed)	.	.000
		N	160	160
	Capacity Utilization	Correlation Coefficient	.734**	1.000
		Sig. (2-tailed)	.000	.
		N	160	160

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

Ho_2 there is no significant relationship between supply chain collaboration and capacity utilization of (correlation. 2) reveals that there is a significant relationship between supply chain collaboration and capacity utilization of food and beverage companies in post covid-19 era in Rivers State (where rho = .734 and p =0.000) and based on the decision rule of $p < 0.05$ for null rejection; we reject the null hypothesis and accept the alternative hypothesis: *there is a significant relationship between supply chain collaboration and capacity utilization of food and beverage companies in post covid-19 era in Rivers State.*

Discussions of Findings

For hypotheses one, the study established that agility influenced the capacity utilization of food and beverage companies in the post covid-19 era in Rivers. This was explained using Spearman rand order correlation which revealed that the influence was positive significant. Thus, agility helped food and beverage companies respond with minimal time to the rising needs of their industry after covid-19 era. This implies that food and beverage companies in Rivers State had embraced agility through the various methods like supplier engagement, product standardization, establishment of preferred suppliers, demand forecasting, and investment in product branding. Therefore, the study concluded that, customer response, demand response and flexibility form the integral part of agility and it influence the capacity utilisation of food and beverage companies in post covid-19 era in Rivers State. The findings obtained for agility coincide with Hasan et al. (2018) findings that there was positive medium (moderate) relationship between agility and capacity utilization of food and beverage companies in the post covid-19 era in Rivers.

For hypotheses two, **t**he study found that supply chain collaboration had a positive significant influence on the capacity utilization of food and beverage companies in the post covid-19 era in Rivers. It was established that there was a strong relationship between supply chain collaboration on the capacity utilization of food and beverage companies in the post covid-19 era in Rivers; hence, the study settled that supply chain collaboration influenced the performance of food and beverage companies in Rivers State. In addition, the study concluded that food and beverage companies in Rivers State frequently establish supply chain collaboration with their main supply chain partners through different methods such as sharing of resources, product development, demand forecasting, quality standards and monitoring of performance. The findings of the study therefore established that food and beverage companies in Rivers State adopt supply chain collaboration for effective capacity utilization of output. The findings obtained for supply chain collaboration, agree with those of Kache and Seuring (2014) who noted that, supply chain collaboration had a positive medium correlation with capacity utilization.

CONCLUSIONS

The study has attempted to establish a relationship between supply chain resilience and capacity utilization of food and beverage companies in the covid-19 era, River State. The study fi that agility has influence on capacity utilization of food and beverage companies in Rivers State. The study further found a positive relationship between supply chain collaboration and capacity utilization of food and beverage companies in the post covid-19 era in River.

RECOMMENDATIONS

1. Food and beverage firms in Rivers State should develop agility at all time and at all cost. This will enable them to absorb shocks from unforeseen pandemic on like in the era of covid-19 were supply chain was disrupted.
2. Food and beverage firms in Rivers State should develop collaboration with other business partners. This will enable them acquire useful knowledge as well as sufficient skills adopting automations that will enable continuous supply chain resiliency.

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