e-ISSN 3027-0537
p-ISSN 3027-0375

10.5281/zenodo.14950190 Vol. 8 Issue 02 February - 2025 Manuscript ID: #1796

CAPACITY UTILIZATION AND CORPORATE RESILIENCE OF AVIATION INDUSTRY IN NIGERIA

Ifubaraboye Ogolo & Felix Oluwatayo Oloda
Department of Business Administration,
Faculty of Management Sciences, Federal University Otuoke, Bayelsa State, Nigeria
Email for Correspondence:*felixoluwatayo@yahoo.com*

ABSTRACT

This study examines the relationship between capacity utilization and corporate resilience of aviation industry in Nigeria, with a focus on the moderating role of organizational size. Using a correlational research design, the study explores how the dimensions of capacity utilization—labor utilization and technological utilization—affect the measures of corporate resilience, namely adaptability and risk mitigation. A total of 303 respondents were sampled from a population of 1,254 management staff in domestic airlines, and data were collected using a structured questionnaire. The findings, analyzed using Spearman rank correlation, revealed significant positive relationships between labor utilization and adaptability ($r = .534$, $p < .01$) as well as risk mitigation ($r = .693$, $p < .01$). Similarly, technological utilization significantly correlated with adaptability ($r = .708$, $p < .01$) and risk mitigation ($r = .629$, $p < .01$). Furthermore, organizational size was found to moderate the relationship between capacity utilization and corporate resilience, indicating that larger firms benefit more from capacity optimization due to their financial strength and resource availability, while smaller firms require strategic alliances to enhance resilience. These results highlight the critical role of optimizing labor, technology, and organizational size to strengthen resilience in a volatile and high-risk sector like aviation. The study concludes that prioritizing capacity utilization strategies, alongside leveraging organizational size, can enhance the adaptability and risk management capabilities of aviation firms in Nigeria. Recommendations include workforce training, technological innovation, strategic resource planning, and leveraging organizational size for improved resilience.

Keywords:

Capacity utilization, corporate resilience, labor utilization, technological utilization, adaptability, risk mitigation, organizational size, Nigerian aviation industry.

***How to cite*:** Ogolo, I., & Oloda, F. (2025). CAPACITY UTILIZATION AND CORPORATE RESILIENCE OF AVIATION INDUSTRY IN NIGERIA. *GPH-International Journal of Business Management,* 8(02), 62-77. https://doi.org/10.5281/zenodo.14950190

1.1 Introduction

Corporate resilience is a critical organizational attribute that enables firms to anticipate, absorb, recover, and adapt to disruptive challenges, ensuring sustained functionality and competitiveness. In an increasingly volatile global environment, marked by economic uncertainties, environmental crises, and technological disruptions, corporate resilience equips organizations to navigate adversity. Its relevance spans several domains, including risk management, stakeholder confidence, and long-term profitability. Firms with strong resilience mechanisms can maintain operational continuity, safeguard customer trust, and adapt their strategies to mitigate potential disruptions effectively (Vargas & Rivera, 2019). Moreover, corporate resilience fosters innovation and agility, driving sustained growth even in unstable conditions.

Over the past decade, research on corporate resilience has gained significant traction across various disciplines, including strategic management, organizational behavior, and operations management. Scholars have explored the determinants of resilience, emphasizing factors such as leadership capabilities, organizational culture, and technological adaptability (Williams & Vorley, 2021). Studies have increasingly focused on the dynamic capabilities that enable firms to respond proactively to shocks, particularly in high-risk industries such as aviation, healthcare, and financial services (Kuckertz et al., 2022). Additionally, research has highlighted the role of digital transformation in strengthening resilience, as firms leverage data analytics, artificial intelligence, and automation to enhance decision-making and operational agility (Zhou & Wu, 2023).

Despite extensive scholarly efforts, corporate resilience remains a pressing challenge, especially in industries with high exposure to external shocks. The aviation sector, in particular, has been a focal point for resilience research due to its susceptibility to economic downturns, fuel price volatility, regulatory changes, and unexpected disruptions such as pandemics and geopolitical instability (Gössling et al., 2021). While previous studies have underscored the significance of financial robustness and crisis management frameworks in enhancing resilience, gaps remain in understanding the operational and resource-based determinants of resilience in aviation firms (Chen & Lobo, 2020).

Capacity utilization significantly impacts corporate resilience by shaping the organization's ability to manage resources, align operational capacity with demand, and respond to disruptions. High capacity utilization reflects the effective deployment of resources, ensuring maximum productivity and operational efficiency. Conversely, underutilization can lead to resource wastage and financial strain, weakening the firm's resilience. Overutilization, on the other hand, may cause wear and tear, employee burnout, and system inefficiencies, reducing the organization's ability to recover from shocks. Therefore, balanced capacity utilization supports corporate resilience by fostering operational stability and optimizing resource allocation (Stulz, 2024).

In the aviation industry, capacity utilization directly influences corporate resilience due to the sector's capital-intensive and operationally dynamic nature. The efficient utilization of aircraft fleets, human resources, and airport facilities enhances profitability, operational flexibility, and service quality. Low capacity utilization, resulting from factors such as fluctuating passenger demand, high operating costs, or regulatory constraints, can jeopardize an airline's financial health and adaptive capacity (Michaela, 2023).

Labour Utilization significantly impacts corporate resilience by determining the efficiency and adaptability of an organization's workforce during disruptions. Effective labor utilization ensures that employees are appropriately trained, cross-functional, and optimally allocated to critical operations. In the aviation industry, where disruptions such as weather delays or technical failures are common, a well-utilized workforce is pivotal for maintaining operational continuity and mitigating risks(Tang et al., 2025).

Technological Utilization is another critical dimension that influences corporate resilience. Technology enhances adaptability by enabling real-time decision-making, predictive analytics, and automation of routine tasks. For instance, advanced booking and scheduling systems allow airlines to manage capacity efficiently, minimizing the impact of overbookings or cancellations. Furthermore, technological investments in predictive maintenance and operational efficiency reduce the likelihood of technical disruptions, thereby mitigating risks. Inadequate technological utilization, however, exposes organizations to higher operational risks and limits their capacity to respond to disruptions effectively(Waribugo & Umoh, 2018).

Capacity utilization has emerged as a crucial yet underexplored factor influencing corporate resilience. Effective resource utilization, particularly in labor and technology, plays a fundamental role in enabling organizations to withstand disruptions and sustain operational efficiency (Nguyen & Kim, 2023). However, existing literature has primarily focused on financial and strategic resilience, overlooking the direct impact of operational factors such as workforce optimization and technological efficiency in shaping resilience outcomes (Adegbite & Salami, 2024). This gap necessitates an investigation into how capacity utilization, particularly labor and technological utilization, affects the adaptability and risk mitigation capabilities of firms in the aviation sector.

The Nigerian aviation industry presents a compelling case for examining the interplay between capacity utilization and corporate resilience. The sector is a key driver of economic development, facilitating trade, tourism, and connectivity. However, Nigerian airlines face persistent challenges, including underutilized aircraft fleets, inefficient labor management, and inadequate technological infrastructure (Oluwaseun et al., 2023). These challenges have contributed to financial instability, service disruptions, and a reduced ability to recover from economic shocks. While research on corporate resilience has expanded globally, limited studies have specifically examined how capacity utilization shapes resilience in Nigeria's aviation industry. This study seeks to bridge this gap by exploring the relationship between capacity utilization and corporate resilience, focusing on the dimensions of labor and technological utilization and their impact on adaptability and risk mitigation.

1.2 Statement of the Problem

The aviation industry in Nigeria is plagued by systemic challenges that undermine its corporate resilience, making it ill-equipped to withstand disruptions and adapt to a dynamic operational environment. Poor corporate resilience manifests through vulnerabilities in adaptability and risk mitigation, both of which are critical for ensuring continuity, profitability, and competitiveness. Adaptability, the ability to adjust to changing conditions and unforeseen disruptions, is a cornerstone of corporate resilience. However, the Nigerian aviation industry exhibits significant deficiencies in this area. Airlines and stakeholders struggle to respond to fluctuating passenger demand, currency volatility, and global crises such as pandemics. The sector's limited capacity to innovate and reconfigure operational models to align with market realities exacerbates the situation (Gu et al., 2023).

Risk mitigation, the capacity to identify, assess, and address potential threats, is another critical aspect of corporate resilience that remains underdeveloped in Nigeria's aviation sector. Airlines often face operational risks, including safety concerns, technical failures, and financial instability, without robust contingency plans in place (Stephens & Ukpere, 2011). The frequent financial distress of airlines, as evidenced by the recurrent collapse of domestic carriers such as Air Nigeria and IRS Airlines, underscores the industry's fragility. Additionally, poor risk management frameworks and inadequate safety measures have led to regulatory sanctions and reputational damage, further weakening the resilience of the sector (Adedokun et al., 2022).

A major contributor to this weak corporate resilience is suboptimal capacity utilization. Labour utilization, which encompasses workforce deployment, training, and productivity, remains inefficient due to a mismatch between available human resources and operational demands. Many Nigerian airlines operate with either underutilized or overburdened staff, leading to inefficiencies that impair service delivery and operational sustainability (Okonkwo et al., 2021). Moreover, the technological infrastructure in the industry is lagging, with many carriers still reliant on outdated systems for flight scheduling, maintenance tracking, and customer service operations. This deficiency in technological utilization reduces operational efficiency and increases vulnerability to technical failures, further exacerbating the resilience problem (Uchenna & Balogun, 2023).

Despite existing research on corporate resilience in the aviation industry, studies have largely focused on financial sustainability, regulatory policies, and crisis management, with limited attention to the role of capacity utilization in shaping resilience outcomes. While studies in other economies have highlighted the importance of resource optimization in enhancing resilience, there remains a paucity of empirical research linking capacity utilization—specifically labour and technological utilization—to corporate resilience in Nigeria's aviation sector (Afolayan & Omotosho, 2024). Addressing this gap is essential for developing targeted interventions that enhance adaptability and risk mitigation through improved resource utilization.

This study, therefore, seeks to examine the impact of capacity utilization on corporate resilience in the Nigerian aviation industry. By assessing how labour and technological utilization influence adaptability and risk mitigation, the research aims to provide empirical evidence that informs strategic decision-making in the sector. The findings will offer insights into optimizing capacity utilization as a resilience-enhancing mechanism, thereby contributing to the broader discourse on corporate resilience in developing economies.

1.3 Aim and Objectives

The aim of the study is to examine the relationship between capacity utilization and corporate resilience of aviation industry in Nigeria. More specifically, this study shall:

1. determine the relationship between labour utilization and adaptability of aviation industry in Nigeria.
2. examine the relationship between labour utilization and risk mitigation of aviation industry in Nigeria.
3. ascertain the relationship between technological utilization and adaptability of aviation industry in Nigeria.
4. find out the relationship between technological utilization and risk mitigation of aviation industry in Nigeria.

5. ascertain if the size of organization will moderate the relationship between capacity utilization and corporate resilience of aviation industry in Nigeria.

1.4 Research Questions

1. What is the relationship between labour utilization and adaptability of aviation industry in Nigeria?
2. What is the relationship between labour utilization and risk mitigation of aviation industry in Nigeria?
3. What is the relationship between technological utilization and adaptability of aviation industry in Nigeria?
4. What is the relationship between technological utilization and risk mitigation of aviation industry in Nigeria?
5. Will size of organization moderate the relationship between capacity utilization and corporate resilience of aviation industry in Nigeria?

1.6 Research Hypotheses

The full null hypotheses were formulated and tested at 0.05 significance level

H_{O1}: There is no significant relationship between labour utilization and adaptability of aviation industry in Nigeria.

H_{O2}: There is no significant relationship between labour utilization and risk mitigation of aviation industry in Nigeria.

H_{O3}: There is no significant relationship between technological utilization and adaptability of aviation industry in Nigeria.

H_{O4}: There is no significant relationship between technological utilization and risk mitigation of aviation industry in Nigeria.

H_{O5}: Size of organization will not moderate the relationship between capacity utilization and corporate resilience of aviation industry in Nigeria.

2.0 Literature Review

2.1 Conceptual Framework

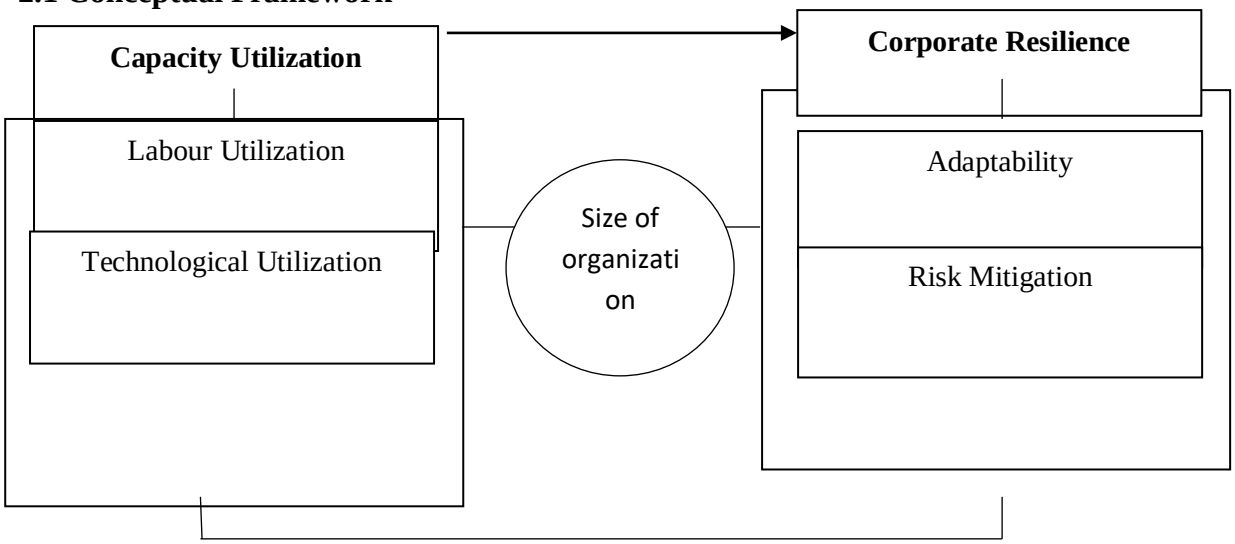

Figure 1: Conceptual Framework of Capacity Utilization and Corporate Resilience

Source: Singh et al. (2022); Turhan (2018); Stulz (2024); Vargas and Rivera (2019).

2.1.1 Capacity Utilization

Capacity utilization refers to the extent to which an organization effectively uses its available resources—such as labour, technology, and infrastructure—to produce goods or deliver services. It is a critical metric for measuring operational efficiency, financial performance, and resource optimization. High levels of capacity utilization indicate efficient use of assets, while underutilization suggests resource wastage and potential financial strain. Overutilization, however, may result in operational inefficiencies, increased maintenance costs, and employee burnout. In the aviation industry, capacity utilization encompasses fleet management, workforce allocation, and technological investments, influencing profitability and sustainability (Michaela, 2023).

2.1.2 Dimensions of Capacity Utilization

Labour Utilization: Labour utilization refers to the degree to which an organization employs its workforce efficiently to meet operational demands. Effective labour utilization involves optimal staff deployment, skill alignment with job requirements, and productivity maximization. In the aviation industry, labour utilization is critical due to the sector's labour-intensive nature, requiring specialized roles such as pilots, ground crew, and customer service agents. Poor labour utilization can lead to inefficiencies, skill mismatches, and low employee morale, which negatively impact service quality and operational continuity. Conversely, cross-training and flexible workforce strategies enhance adaptability and mitigate risks during disruptions (Tang et al., 2025).

Technological Utilization: Technological utilization pertains to the effective deployment and integration of technology to streamline operations, enhance productivity, and reduce risks. In the aviation sector, this includes automated booking systems, predictive maintenance technologies, and real-time data analytics. High technological utilization supports operational efficiency and resilience by enabling proactive decision-making, improving safety standards, and optimizing resource allocation. However, limited or outdated technology can hinder an

organization's ability to adapt to market changes and manage operational disruptions effectively (Waribugo & Umoh, 2018).

2.1.3 Corporate Resilience

Corporate resilience refers to an organization's ability to anticipate, withstand, adapt to, and recover from adverse conditions, disruptions, or uncertainties. It encompasses strategies and practices aimed at ensuring business continuity, safeguarding stakeholder confidence, and achieving long-term growth despite challenges. In the aviation industry, corporate resilience is essential due to the sector's exposure to economic volatility, safety risks, and regulatory changes. Building resilience involves fostering adaptability, robust risk management frameworks, and leveraging resources efficiently to maintain competitiveness and operational stability (Vargas & Rivera, 2019).

2.1.4 Measures of Corporate Resilience

Adaptability: Adaptability is the capacity of an organization to adjust its strategies, processes, and operations in response to changing conditions and unforeseen disruptions. In the aviation industry, adaptability includes the ability to realign flight schedules, modify routes, and optimize workforce deployment during periods of fluctuating demand or crises. Organizations with strong adaptability can seize emerging opportunities and minimize operational losses. However, poor adaptability, often resulting from rigid operational structures and limited technological integration, reduces responsiveness and competitiveness (Gu et al., 2023).

Risk Mitigation: Risk mitigation involves identifying, assessing, and managing risks to reduce their impact on organizational objectives. Effective risk mitigation frameworks enable organizations to anticipate potential threats, implement preventive measures, and recover quickly from disruptions. In the aviation sector, this includes safety protocols, financial planning, and crisis management strategies. Airlines that invest in robust risk management systems, such as predictive maintenance and emergency response plans, can safeguard operational continuity and maintain stakeholder trust. Conversely, inadequate risk mitigation exposes organizations to prolonged downtimes, financial losses, and reputational damage (Stephens and Ukpere, 2011).

2.2 Moderating Variable

2.2.1 Size of Organization

The size of an organization refers to the scale and capacity of a firm in terms of its workforce, financial resources, operational scope, and market presence. It is typically measured using indicators such as the number of employees, total revenue, asset base, or market share (Penrose, 2023). Organizational size influences various strategic and operational decisions, including investment in technology, risk management frameworks, and crisis response mechanisms. In the aviation industry, large airlines often have extensive networks, access to global markets, and the financial strength to withstand economic downturns. Conversely, smaller airlines may operate within limited regional markets and struggle with resource constraints, affecting their ability to maintain operational efficiency and sustain long-term resilience (Afolabi & Oke, 2022). The structural differences between large and small firms create disparities in their ability to optimize capacity utilization and respond to industry disruptions, making organizational size a crucial moderating variable in this study.

The role of organizational size in shaping corporate resilience is evident in the aviation industry, where larger airlines tend to have superior financial buffers, diversified revenue streams, and robust technological infrastructures, all of which contribute to their ability to withstand external shocks (Kraus et al., 2023). Large aviation firms benefit from economies of scale, enabling them to implement sophisticated risk mitigation strategies, such as predictive maintenance and dynamic pricing models, to enhance resilience. In contrast, smaller airlines may lack these capabilities, making them more vulnerable to operational disruptions, fuel price volatility, and economic downturns. This variation underscores the moderating effect of organizational size on the relationship between capacity utilization and corporate resilience. Understanding this dynamic provides valuable insights into tailoring resilience strategies that align with an airline's structural and financial capabilities, ensuring that both large and small firms optimize their capacity utilization for sustained performance (Ogunleye & Ajayi, 2023).

2.3 Theoretical Review

Resource-Based View (RBV)

The Resource-Based View (RBV) theory, propounded by Barney (1991), provides a framework for understanding how organizations achieve and sustain a competitive advantage through the effective utilization of their internal resources. The theory posits that resources that are valuable, rare, inimitable, and non-substitutable (VRIN) are essential for creating and maintaining organizational success. In the context of capacity utilization, the RBV emphasizes the strategic management of resources such as labour and technology to enhance efficiency, adaptability, and corporate resilience.

RBV rests on several key assumptions:Organizations differ in the resources they possess, and these differences drive competitive advantage.Some resources are not easily transferable between organizations, allowing firms to maintain uniqueness and competitive advantage.Effective resource utilization determines an organization's ability to sustain long-term success and resilience (Barney, 1991).While the RBV has gained widespread acceptance, it has been criticized for its limitations:Critics argue that the RBV lacks a dynamic perspective and does not account for rapid environmental changes or evolving market demands (Priem & Butler, 2001).The theory is sometimes vague about what constitutes a "resource" and how resources are assessed as VRIN.The RBV underestimates the role of external factors, such as market conditions and regulatory environments, in shaping organizational outcomes (Peteraf, 1993).

The RBV is highly relevant to this study on capacity utilization and corporate resilience in Nigeria's aviation industry. The theory underscores the importance of leveraging labor and technology as strategic resources to optimize operations, enhance efficiency, and build resilience. For instance, airlines that effectively utilize skilled labor and modern technology can adapt better to disruptions, recover from operational setbacks, and maintain competitive advantage in the volatile aviation sector. The RBV provides a theoretical foundation for analyzing how resource optimization influences organizational resilience in this context.

2.4 Empirical Review

Michaela (2023) investigated the connection between managerial capacity skills and corporate resilience. The study employed a descriptive and survey research design, targeting a population of 76 management staff from private security firms in South-South Nigeria. Data collection was carried out using a structured questionnaire, and the obtained responses were analyzed using the Statistical Package for Social Sciences (SPSS), incorporating both descriptive and inferential statistical techniques. The results indicated a significant relationship between the development of operational skills and resourcefulness in private security firms within the South-South region of Nigeria. The study concluded that enhancing managerial capacity plays a crucial role in strengthening corporate resilience.

Similarly, Nneji (2023) explored the relationship between supply chain resilience and capacity utilization within the food and beverage industry in Rivers State, particularly in the post-COVID-19 period. The research utilized a cross-sectional explanatory survey design, with a target population of 185 employees from 20 food and beverage companies in Rivers State. The study adopted a census approach, analyzing the entire population of 185 respondents. Spearman Rank Order Correlation Coefficient was applied to test the first and second hypotheses through bivariate analysis. The findings revealed a significant positive impact of supply chain resilience on capacity utilization in food and beverage companies in Rivers State during the post-pandemic era.

3.0 Methodology

Research Design: The study adopted a correlational research design.

Population of the Study: The target population for this research comprised **1,254** management staff of domestic airlines in Nigeria. These management staff include executives, operational managers, financial managers, and senior decision-makers responsible for overseeing airline operations. The focus on management personnel ensures that the study captures insights from key individuals directly involved in strategic decision-making, resource allocation, and resilience planning within the aviation sector (Nigeria Civil Aviation Authority, 2025).

Sample Size and Sampling Technique: The random sampling procedure was adopted. Taro Yamane formula was used to estimate the sample size and a sample size of 303 was obtained.

Instrument for Data Collection: The instrument for data collection in the study is a questionnaire

Validity Test: The questionnaire was subjected to content and face validity to ensure that it adequately measures the constructs under study. Experts in aviation management, corporate resilience, and research methodology reviewed the instrument. Their feedback was incorporated to refine the items and align them with the study's objectives and theoretical framework.

Reliability of the Instrument: Cronbach's Alpha was adopted to determine the reliability of the instrument and a reliability coefficient of 0.82 was obtained.

Administration of the Instrument: The researcher personally administered the questionnaire to the respondents in their respective organization with the aid of staff as research assistant. The use of a research assistants in the distribution of the instrument is because they are familiar with the environment, management and staff as well as their levels

more than the researcher. As such, a combination of the researcher and the assistant facilitated the actualization of the researcher's objectives. The questionnaires were collected immediately they are filled.

Method of Data Analysis: The hypotheses were tested using the Spearman Rank Correlation at 0.05 significant level while the partial correlation is used to test for the moderating effect of the moderating variable.

4.0 Result

A total 303 copies of the questionnaire were distributed to the 303management staff of domestic airlines in Nigeria (South-South States). 284 copies of the questionnaires were appropriately filled and returned. Four hypotheses were raised and the spearman rank correlation was used to measure the significance of hypothesized variables.

H_{O1}: There is no significant relationship between labour utilization and adaptability of aviation industry in Nigeria.

Table 1: Correlation between Labour Utilizationand Adaptability

			Labour Utilization	Adaptability
Spearman's rho	Labour Utilization	Correlation Coefficient	1.000	.534**
		Sig. (2-tailed)	.	.000
		N	284	284
	Adaptability	Correlation Coefficient	.534**	1.000
		Sig. (2-tailed)	.000	.
		N	284	284

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

The results from Table 1 indicate a positive and significant relationship between labour utilization and adaptability in Nigeria's aviation industry, as evidenced by a Spearman's correlation coefficient of 0.534 at a 0.01 significance level. This suggests that improved labour utilization, which involves optimal workforce allocation and skill enhancement, contributes to better adaptability within the sector. The significant relationship implies that as aviation firms efficiently utilize their workforce, they can better respond to operational challenges, fluctuating demand, and unexpected disruptions, thereby enhancing corporate resilience. Consequently, the null hypothesis (HO1) is rejected, confirming that labour utilization has a significant effect on adaptability.

H_{O2}: There is no significant relationship between labour utilization and risk mitigation of aviation industry in Nigeria.

Table 2: Correlation between Labour Utilization and Risk Mitigation

			Labour Utilization	Risk Mitigation
Spearman's rho	Labour Utilization	Correlation Coefficient	1.000	.693**
		Sig. (2-tailed)	.	.000
		N	284	284
	Risk Mitigation	Correlation Coefficient	.693**	1.000
		Sig. (2-tailed)	.000	.
		N	284	284

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

The findings from Table 2 reveal that labour utilization and risk mitigation are positively and significantly correlated, with a Spearman's correlation coefficient of 0.693 at a 0.01 significance level. This indicates that when aviation firms effectively utilize their workforce, they are better positioned to anticipate, manage, and mitigate operational risks such as flight delays, technical failures, and financial crises. A well-trained and efficiently deployed workforce ensures quicker responses to risks, leading to improved resilience. Given the statistical significance of the correlation, the null hypothesis (HO2) is rejected, affirming that labour utilization plays a crucial role in enhancing risk mitigation strategies within the aviation industry.

H_{O3}: There is no significant relationship between technological utilization and adaptability of aviation industry in Nigeria.

Table 3: Correlation between Technological Utilization and Adaptability

			Technological Utilization	Adaptability
Spearman's rho	Technological Utilization	Correlation Coefficient	1.000	.708**
		Sig. (2-tailed)	.	.000
		N	284	284
	Adaptability	Correlation Coefficient	.708**	1.000
		Sig. (2-tailed)	.000	.
		N	284	284

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

As presented in Table 3, there is a strong and positive correlation between technological utilization and adaptability, with a Spearman's correlation coefficient of 0.708 at a 0.01 significance level. This finding suggests that the adoption of advanced technological systems, such as automated booking systems, predictive analytics, and real-time operational monitoring, significantly enhances an airline's adaptability to market changes and unforeseen disruptions. Airlines with robust technological capabilities can swiftly adjust to passenger demand fluctuations, regulatory changes, and global crises, thereby improving overall

corporate resilience. Thus, the null hypothesis (HO3) is rejected, confirming that technological utilization significantly contributes to adaptability in the aviation industry.

H_{O4}: There is no significant relationship between technological utilization and risk mitigation of aviation industry in Nigeria.

Table 4: Correlation between Technological Utilization and Risk Mitigation

			Technological Utilization	Risk Mitigation
Spearman's rho	Technological Utilization	Correlation Coefficient	1.000	.629**
		Sig. (2-tailed)	.	.000
		N	284	284
	Risk Mitigation	Correlation Coefficient	.629**	1.000
		Sig. (2-tailed)	.000	.
		N	284	284

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

The results in Table 4 indicate a significant positive relationship between technological utilization and risk mitigation, with a Spearman's correlation coefficient of 0.629 at a 0.01 significance level. This implies that airlines that leverage technological tools such as predictive maintenance, automated safety protocols, and cybersecurity systems are better equipped to manage and reduce operational risks. Technological innovations enhance early risk detection, allow for proactive maintenance, and reduce the likelihood of technical failures, ultimately improving corporate resilience. Based on these findings, the null hypothesis (HO4) is rejected, indicating that increased technological utilization is crucial for effective risk mitigation in Nigeria's aviation industry.

H_{O5}: Size of organization will not moderate the relationship between capacity utilization and corporate resilience of aviation industry in Nigeria.

Table 5: Moderating Effect of Size of Organizationon Capacity Utilization and Corporate Resilience

Control Variables			Capacity Utilization	Corporate Resilience	Size of Organization
-none-[a]	Capacity Utilization	Correlation	1.000	.682	.733
		Significance (2-tailed)	.	.000	.000
		df	0	282	282
	Corporate Resilience	Correlation	.682	1.000	.691
		Significance (2-tailed)	.000	.	.000

		df	282	0	282
	Size of Organization	Correlation	.733	.691	1.000
		Significance (2-tailed)	.000	.000	.
		df	282	282	0
Size of Organization	Capacity Utilization	Correlation	1.000	.667	
		Significance (2-tailed)	.	.000	
		df	0	281	
	Corporate Resilience	Correlation	.667	1.000	
		Significance (2-tailed)	.000	.	
		df	281	0	

a. Cells contain zero-order (Pearson) correlations.

Table 5 shows that the size of an organization significantly moderates the relationship between capacity utilization and corporate resilience, as indicated by the correlation coefficients (0.667) at a 0.01 significance level. This suggests that larger aviation firms, with more extensive resources and operational capacities, can better leverage capacity utilization strategies to enhance corporate resilience. Larger airlines have more financial stability, technological infrastructure, and workforce flexibility, which improve their ability to manage disruptions and maintain operational continuity. Given the statistical significance of the correlation, the null hypothesis (HO5) is rejected, confirming that organization size plays a moderating role in the relationship between capacity utilization and corporate resilience in Nigeria's aviation sector.

4.3 Discussion of Findings

The findings of this study reveal that both labor and technological utilization significantly influence the corporate resilience of the aviation industry in Nigeria. Specifically, labor utilization demonstrated a significant positive relationship with adaptability and risk mitigation, which aligns with Stephens and Ukpere's(2011) study that found effective workforce management to be a critical factor in enhancing operational resilience. Similarly, Gu et al. (2023) highlighted that organizations with well-utilized human resources are better equipped to adapt to market changes and mitigate risks, further supporting these results.

Technological utilization was also found to have a strong positive impact on adaptability and risk mitigation. These findings corroborate Tang et al.'s (2025) research, which emphasized that the adoption of modern technology enables organizations to respond proactively to disruptions and maintain operational continuity. Furthermore, the significant relationship between technological utilization and adaptability is consistent with Waribugo and Umoh's(2018) work, which concluded that advanced technological systems improve an organization's ability to manage uncertainties effectively. Overall, the findings reinforce the importance of optimizing labor and technological resources to build resilience in the aviation industry.

Additionally, the study found that the size of an organization significantly moderates the relationship between capacity utilization and corporate resilience in the Nigerian aviation industry. This finding supports the argument that larger organizations, with extensive financial and infrastructural resources, are better positioned to leverage capacity utilization strategies effectively. The result aligns with Michaela (2023), who posited that larger aviation firms have greater flexibility in workforce allocation, technological investment, and operational adjustments, thereby enhancing their ability to withstand disruptions. Consequently, the study suggests that firm size plays a crucial role in determining how well aviation companies in Nigeria can optimize their resources to sustain operations and remain competitive.

5.1 Conclusion

This study examined the relationship between capacity utilization and corporate resilience in the Nigerian aviation industry, focusing on the dimensions of labor and technological utilization and their influence on adaptability and risk mitigation. The results demonstrate that both labor and technological utilization significantly contribute to improving adaptability and mitigating risks, essential components of corporate resilience. These findings underscore the critical role of resource optimization in sustaining operations and ensuring resilience in the volatile aviation sector. Furthermore, the study establishes that organizational size significantly moderates the relationship between capacity utilization and corporate resilience, indicating that larger organizations have a greater capacity to implement resource optimization strategies effectively. This highlights the need for firms to consider size-related advantages when formulating resilience-building strategies in the aviation industry.

5.2 Recommendations

1. Organizations in the Nigerian aviation industry should invest in continuous training and development programs for their workforce. Enhancing employees' skills and capabilities will improve their adaptability to dynamic industry challenges, enabling companies to remain competitive and resilient.
2. Aviation companies should establish comprehensive workforce planning and resource allocation strategies. This includes creating contingency plans and assigning skilled personnel to critical roles to mitigate risks effectively during disruptions or crises.
3. To enhance adaptability, aviation firms should prioritize the adoption of advanced technological systems such as predictive analytics, real-time monitoring tools, and automated processes. These technologies will enable rapid responses to environmental and operational changes.
4. Companies should invest in robust technological frameworks, including cybersecurity measures and data-driven risk management tools. These systems will help identify, assess, and address potential risks, ensuring the long-term sustainability of the aviation industry.
5. Aviation firms should leverage their organizational size to optimize capacity utilization strategies**.** Larger organizations should capitalize on their financial strength and extensive infrastructure to implement advanced resilience measures, while smaller firms should seek strategic partnerships and resource-sharing opportunities to enhance their ability to withstand disruptions.

References

Adedokun, T., Yusuf, O., & Oke, A. (2022). The impact of risk management practices on aviation sector resilience: A Nigerian perspective. *Journal of African Business Studies, 14*(3), 217-233.

Adegbite, O., & Salami, T. (2024). Resource optimization and corporate resilience: A review of emerging trends. *African Journal of Business Studies, 19*(2), 112-130.

Afolabi, O., & Oke, M. (2022). Organizational size and resilience strategies: A comparative study of African airline firms. *Journal of Business Continuity and Risk Management, 8*(2), 112-127.

Afolayan, D., & Omotosho, S. (2024). Resource optimization and corporate resilience: A systematic review of emerging economies. *African Journal of Management Research, 9*(1), 87-102.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99-120.

Chen, L., & Lobo, M. (2020). Crisis preparedness in the airline industry: The role of resilience strategies. *Journal of Air Transport Management, 75*, 68-79.

Gössling, S., Humpe, A., & Fichert, F. (2021). Aviation and climate change: Economic resilience in times of crisis. *Journal of Transport Geography, 96*, 103-118.

Gu, X., Chan, H. K., Thadani, D. R., Chan, F. K. S., & Peng, Y. (2023). The role of digital techniques in organisational resilience and performance of logistics firms in response to disruptive events: Flooding as an example. *International Journal of Production Economics,266,* 109033. https://doi.org/10.1016/j.ijpe.2023.109033

Kraus, S., Moog, P., & Bouncken, R. (2023). Corporate resilience in turbulent times: The influence of firm size on adaptive strategies. *Journal of Business Research, 17*(1), 56-72.

Kuckertz, A., Brändle, L., & Gaudig, A. (2022). Organizational resilience in uncertain times: A review of dynamic capabilities in entrepreneurship. *Entrepreneurship Theory and Practice, 46*(4), 889-914.

Michaela, O. O. E. (2023). Managerial capacity skills and corporate resilience of private security firms in South-South Nigeria. *International Journal of Research Publication and Reviews,4*(6), 3225–3233. https://www.ijrpr.com

Nguyen, H., & Kim, S. (2023). Capacity utilization and organizational agility: The mediating role of operational efficiency. *Journal of Business Research, 151*, 24-36.

Nneji, O. V. N. (2023). Supply chain resilience and capacity utilization of food and beverage companies in the post Covid-19 era in Rivers State. *BW Academic Journal*, 12. Retrieved from https://mail.bwjournal.org/index.php/bsjournal/article/view/1470

Ogunleye, A., & Ajayi, F. (2023). Capacity utilization and corporate resilience in Nigerian aviation: Examining the role of firm size. *African Journal of Business and Economic Studies, 11*(3), 187-203.

Okonkwo, E., Ogbuefi, K., & Nnadi, M. (2021). Workforce efficiency and resilience in the Nigerian airline industry: A capacity utilization perspective. *West African Journal of Business and Economics, 10*(4), 301-321.

Oluwaseun, A., Eze, C., & Nwankwo, J. (2023). Challenges and prospects of the Nigerian aviation sector: A resilience perspective. *African Journal of Aviation and Management, 7*(1), 45-62.

Penrose, E. (2023). *The theory of the growth of the firm*. Oxford University Press.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal, 14*(3), 179-191.

Priem, R. L., & Butler, J. E. (2001). Is the resource-based "view" a useful perspective for strategic management research? *Academy of Management Review, 26*(1), 22-40.

Singh, M., Rathi, R., & Singh Kaswan, M. (2022). Capacity utilization in industrial sector: A structured review and implications for future research. *World Journal of Engineering,19*(3), 310–328. https://doi.org/10.1108/WJE-09-2020-0447

Stephens, M. S., & Ukpere, W. I. (2011). Airport capacity utilization in Nigeria: A performance and efficiency analysis. *African Journal of Business Management,5*(27), 11104–11115. https://doi.org/10.5897/AJBM11.1007

Stulz, R. M. (2024). Risk, the limits of financial risk management, and corporate resilience. *Fisher College of Business WP No. 2024-03-015* and *Charles A. Dice Center WP No. 2024-15, European Corporate Governance Institute – Finance Working Paper No. 1008/2024, HKU Jockey Club Enterprise Sustainability Global Research Institute - Archive.*https://doi.org/10.2139/ssrn.4932973

Tang, C., Dong, S., & Zhou, R. (2025). The impact of digitalization on corporate resilience. *International Review of Economics & Finance,97*, 103834. https://doi.org/10.1016/j.iref.2024.103834

Turhan, M. (2018). The effect of capacity utilization on economic growth in industrial enterprises. *Journal of Business Management and Economic Research,2*(11), 38–47. https://doi.org/10.29226/TR1001.2018.78

Uchenna, A., & Balogun, Y. (2023). Technological gaps and resilience challenges in Nigeria's aviation industry. *Journal of Transport and Logistics, 12*(1), 98-115.

Vargas, S., & Rivera, H. A. (2019). Business resilience: A dynamic capability to overcome extreme adversity. *Revista Espacios,40*(6), 5. https://revistaespacios.com/a19v40n06/a19v40n06p05.pdf

Waribugo, S. G., & Umoh, I. (2018). Promoting resilience of the Nigerian aviation industry through management information system capability: A conceptual model. *European Journal of Business and Management,10*(14), 67–78. https://www.iiste.org

Williams, N., & Vorley, T. (2021). Resilient entrepreneurship: Learning from small firm responses to crisis. *Entrepreneurship & Regional Development, 33*(5-6), 491-512.

Zhou, Y., & Wu, X. (2023). Digital transformation and corporate resilience: A structural equation modeling approach. *Journal of Business and Technology, 29*(3), 78-96