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RISK MANAGEMENT AND VIABILITY OF AUTOMOBILE SERVICE FIRMS IN SOUTH EAST NIGERIA

IHENAKWE IFEOMA ANTHONIA (Ph.D.)
Department of Management, Faculty of Management Sciences, Imo State University, Owerri
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Abstract

This study investigates the relationship between risk management and the viability of automobile service firms in South-East Nigeria, focusing on three key dimensions: innovation capacity, strategic flexibility, and employee retention. Despite the importance of risk management in organizational sustainability, there is limited research addressing these dynamics within the automobile sector in this region. To bridge this gap, the study employed a cross-sectional survey design within a mixed-methods framework. Data were collected from 347 respondents across five strategically significant automobile firms: Innoson Vehicle Manufacturing Company (Nnewi, Anambra State), Cavem Investment Limited (Enugu, Enugu State), Abia State Computerized Vehicle Inspection Service (Umuahia, Abia State), Solomento Auto Services Centre (Owerri, Imo State), and Tebenaj Automobile Solutions Services (Abakaliki, Ebonyi State). Quantitative data were obtained using structured questionnaires, while qualitative insights were gathered through semi-structured interviews. Findings reveal strong and positive correlations between risk management and all three indicators of organizational viability: innovation capacity ($r = 0.916$, $p < 0.05$), strategic flexibility ($r = 0.957$, $p < 0.05$), and employee retention ($r = 0.899$, $p < 0.05$). The study concludes that strengthening risk management practices enhances firms' ability to innovate, adapt strategically, and retain skilled employees, thereby boosting resilience and long-term viability in the automobile sector of South-East Nigeria.

Keywords: Risk management, Viability, Innovation capacity, Strategic flexibility, Employee retention, Automobile firms, South-East Nigeria

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Introduction

Risk management has become a critical element of organizational strategy, enabling firms to anticipate, evaluate, and respond to uncertainties that could disrupt operations or threaten growth. It involves structured processes for identifying risks—whether financial, operational, or environmental—and designing proactive mechanisms that not only minimize potential harm but also strengthen resilience (Hopkin, 2018). In service-oriented industries, particularly those with high operational exposure, risk management is widely acknowledged as a driver of competitiveness and long-term sustainability (Kleffner, Lee, & McGannon, 2003). Globally, structured risk frameworks have been associated with business continuity, stakeholder confidence, and improved adaptability in volatile markets (Hoyt & Liebenberg, 2011).

Organizational viability is closely linked to such practices. Defined as the ability of a firm to sustain profitable operations while adapting to environmental shifts, viability is commonly reflected in innovation capacity, strategic flexibility, and employee retention. Innovation capacity reflects the extent to which firms adopt new technologies and improve service delivery (Cameron, 1984; Verbano&Venturini, 2013). Strategic flexibility captures the ability to adjust operations and strategies in response to market dynamics (Grewal &Tansuhaj, 2001). Employee retention underscores the importance of workforce stability in maintaining quality and efficiency (Akinwale, Dada, & Oluwafemi, 2019). Together, these dimensions reveal how effective risk management strengthens the foundation for long-term organizational performance.

The automobile service industry provides an important setting for examining this relationship. International studies show that risk-oriented practices in the automotive sector can reduce workplace accidents, enhance profitability, and stabilize employee retention (Fatoki, 2014; Yazid, Hussin, &Daud, 2011). In Nigeria, however, the sector faces operational risks such as cost overruns, supply chain disruptions, and workplace hazards that directly influence service outcomes (Etuk, Etuk, & Michael, 2014). Within South-East Nigeria, the industry is represented by both large firms—such as Innoson Vehicle Manufacturing, Cavem Investment Limited, Abia State Computerized Vehicle Inspection Service, Solomento Auto Services, and Tebenaj Automobile Solutions and numerous small-scale garages. While these firms contribute significantly to regional economic development, their adoption of structured risk management practices has received limited scholarly attention (Okeke &Okechukwu, 2020; Okoro & Uzoma, 2021).

Although prior research has highlighted the benefits of risk management in enhancing financial sustainability and organizational resilience in other regions (Yazid, Hussin, &Daud, 2011; Fatoki, 2014), fewer studies have explored how these practices specifically influence innovation, flexibility, and workforce stability within the Nigerian automobile service context. This study therefore positions itself within that space, offering insights

into how risk management shapes the viability of firms in South-East Nigeria without duplicating earlier work conducted in other sectors or regions

Statement of the Problem

The automobile service sector in Nigeria is an indispensable component of the national economy, sustaining mobility in a country where more than 60 percent of vehicles are imported and often second-hand, requiring constant maintenance and repair (Etuk, Etuk, and Michael, 2014). In the South-East region, the industry is dominated by small-scale and informal garages that provide critical services to both private car owners and commercial transport operators (Okeke and Okechukwu, 2020). Despite its relevance, the sector faces significant challenges that threaten its sustainability, ranging from unsafe working conditions and financial instability to weak operational structures and inconsistent service delivery.

A major concern is the high level of risk exposure within these firms, which often operate without structured mechanisms for identifying, assessing, and managing threats to their survival. Mechanics and technicians are regularly exposed to occupational hazards such as toxic fumes, musculoskeletal strain, and unsafe equipment, resulting in accidents, absenteeism, and high employee turnover (Umeokafor, 2017). Financial risks also abound, with frequent underestimation of repair costs, unreliable spare parts supply chains, and unmet deadlines that weaken customer trust and diminish profitability (Etuk, Etuk, and Michael, 2014). These risks collectively undermine the ability of automobile service firms to grow, stabilize, and remain competitive.

The lack of structured risk management has direct consequences on the three dimensions of viability that underpin business sustainability: innovation capacity, strategic flexibility, and employee retention. Firms that fail to innovate through modern diagnostic tools and improved processes are unable to keep pace with the increasingly complex automotive technologies entering Nigeria (Verbano and Venturini, 2013). Weak strategic flexibility, including poor adaptability to fluctuating market conditions and supply chain disruptions, exposes businesses to operational instability and missed growth opportunities (Grewal and Tansuhaj, 2001). At the same time, the inability to retain skilled workers, often driven by unsafe work environments and poor incentives, compromises service quality, disrupts continuity, and erodes customer confidence (Akinwale, Dada, and Oluwafemi, 2019).

While global studies have shown that structured risk management enhances innovation, adaptability, and workforce stability (Yazid, Hussin, and Daud, 2011; Fatoki, 2014), empirical evidence on this relationship within Nigeria's automotive service sector remains limited. Existing research on small and medium enterprises (SMEs) in Nigeria has concentrated primarily on financial constraints and regulatory inefficiencies, with little attention to how risk management influences the long-term viability of firms (Adebisi and

Gbegi, 2013). This gap is particularly evident in the South-East, where the predominance of informal operators and the absence of systematic risk management practices leave businesses vulnerable to failure.

Consequently, the problem this study addresses is the inadequate application of risk management in automobile service firms in South-East Nigeria, and how this deficiency undermines their innovation capacity, strategic flexibility, and employee retention the key determinants of organizational viability.

Objectives of the Study

The main objective of this study is to examine the relationship between risk management and viability of automobile service firms in South-East, Nigeria. The specific objectives are to:

1. assess the association between risk management and innovation capacity.
2. explore the nexus between risk management and strategic flexibility.
3. investigate the relationship between risk management and employee retention.

Research Questions

1. To what extent does risk management enhance innovation?
2. To what extent does risk management improve strategic?
3. What is the relationship between risk management and employee retention?

Research Hypotheses

In order to give direction to this research project, the following set of hypotheses has been formulated;

Ho_1: There is no significant relationship between risk management and innovation capacity.

Ho_2: Risk management is not significantly related to strategic flexibility

Ho_3. Risk management is not significantly related to employee retention

REVIEW OF RELATED LITERATURE

This section reviews relevant literature on risk management and the viability of automobile service firms, focusing on conceptual, theoretical, and empirical perspectives**.** It examines risk management as a critical organizational practice and its connection to key dimensions of firm viability, namely innovation capacity, strategic flexibility, and employee retention**.** The discussion is guided by Resilience Theory, Dynamic Capabilities Theory, and the Resource-Based View (RBV) Theory**,** which together provide a framework for understanding how risk management enhances organizational adaptability, competitiveness, and sustainability. Empirical studies from both global and Nigerian

contexts are critically assessed to highlight current debates, identify gaps, and establish the relevance of this research to automobile service firms in South-East Nigeria. The operational conceptual model of the relationship between business resilience and organizational viability are shown in figure 2.1 below:

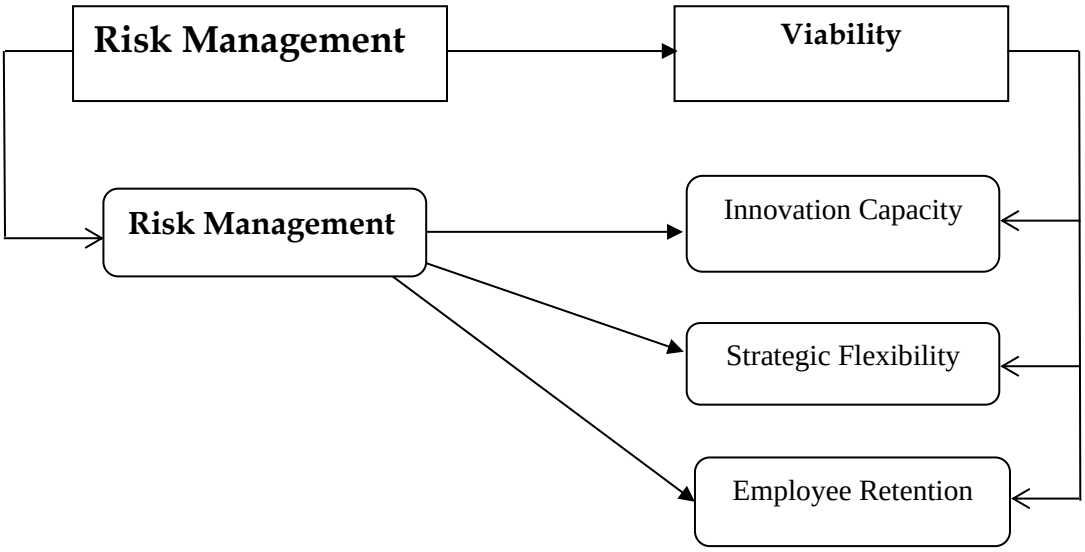

Figure 2.1:Operational Conceptual Framework
Source: From the researcher's desk, 2025

Concept of Risk Management

Risk management has emerged as a critical determinant of business resilience and long-term viability in today's volatile and complex environment. Organizations are continually exposed to economic instability, regulatory changes, supply chain disruptions, technological shifts, and operational hazards, all of which can threaten their survival (Hopkin, 2018; Aven, 2016). To remain competitive, firms must adopt dynamic risk management systems that anticipate, absorb, and adapt to these uncertainties. As literature suggests, risk management is no longer a peripheral or reactive activity but a strategic capability that directly enhances organizational resilience and sustainability (Hillson, 2014; International Organization for Standardization, 2018).

A key outcome of risk management is the development of resilience within the workforce and the organization as a whole. Resilience enables firms to anticipate, withstand, and recover from disruptions while sustaining essential operations (Burnard and Bhamra, 2011; Duchek, 2020). Building resilience not only protects against external shocks but also improves workplace culture and employee well-being. Employers who foster resilience create a workforce better able to handle stress, remain engaged, and contribute

productively, leading to greater job satisfaction, organizational commitment, and improved retention (Odumeru and Ifeanyi, 2023). These outcomes reinforce the role of risk management as both an operational safeguard and a driver of human capital sustainability.

Closely linked to resilience is employee engagement, another dimension supported by effective risk management practices. Engaged employees are more productive, motivated, and innovative, thereby reducing absenteeism and enhancing organizational efficiency (Odumeru and Ifeanyi, 2023). Engagement also strengthens commitment to organizational goals, fosters creativity in product and service delivery, and ultimately raises customer satisfaction. For automobile service firms, where technical expertise, service reliability, and customer trust are vital, employee engagement directly influences the firm's ability to remain viable in a competitive environment.

The literature therefore affirms that risk management strengthens organizational viability not only by safeguarding physical and financial resources but also by cultivating resilience and engagement among employees. By equipping firms with tools to anticipate and adapt to uncertainty, risk management transforms potential threats into opportunities for innovation, efficiency, and sustained growth. For automobile service firms in South-East Nigeria, embedding such practices is crucial for survival and competitiveness in a dynamic and high-risk business environment.

Concept of Organizational Viability

Organizational viability refers to an organization's ability to survive, adapt, and thrive while fulfilling its mission and vision in a dynamic environment (Schwaninger, 2022; Leonard-Barton, 2019). It goes beyond survival to include maintaining a stable identity, anticipating changes, and sustaining long-term growth. The Viable System Model (Beer, 2019) emphasizes that organizations require integrated structures and processes to remain viable, highlighting governance, adaptability, and alignment with external environments as essential features.

Viability is multifaceted, encompassing resilience, adaptability, innovation, and effective risk management. Zahra (2023) notes that viable organizations possess the resources, foresight, and trustworthiness necessary to achieve long-term goals, while Antoncic and Hisrich (2021) emphasize the role of innovation in enabling continuous renewal. Similarly, Adham (2022) stresses adaptability to market dynamics and environmental pressures as a critical determinant of sustained performance. Together, these perspectives show that organizational viability is not static but an evolving capacity that requires balancing internal strengths with external opportunities and risks.

The importance of organizational viability lies in its contribution to strategic management and sustainability. Organizations that prioritize viability are better equipped to anticipate

risks, capitalize on opportunities, and foster resilience through innovation, flexibility, and employee engagement (Davies, 2020; Adham, 2022). Professionals such as risk managers, strategic planners, and sustainability experts play central roles in embedding these principles into strategy, ensuring that organizations remain competitive and sustainable over time.

For this study, organizational viability is measured through (**innovation capacity, strategic flexibility, and employee retention**) key indicators of a firm's ability to adapt, remain competitive, and sustain long-term growth. These dimensions capture the dynamic interplay between resilience, innovation, and human capital, offering a comprehensive framework for assessing the survival and prosperity of automobile service firms in South-East Nigeria

Measures of Organizational Viability

Organizational viability can be assessed through **innovation capacity, strategic flexibility, and employee retention,** each reflecting critical aspects of a firm's ability to adapt, compete, and sustain growth.

1. Innovation Capacity: Innovation capacity refers to an organization's ability to generate, implement, and institutionalize new ideas, products, or processes that add value to both the firm and its customers (Olsson, 2019; Schramm, 2019). It encompasses technological, organizational, and process innovations, enabling firms to improve efficiency, competitiveness, and resilience. Innovation relies on leadership, employee knowledge, idea generation, and the integration of external knowledge, creating a continuous cycle of learning and improvement. High innovation capacity ensures that firms can respond proactively to changing market demands, emerging risks, and competitive pressures, thus supporting long-term viability.

2. Strategic Flexibility: Strategic flexibility is the organization's ability to adapt to environmental uncertainties, reconfigure resources, and implement timely strategic changes (Abbott and Banerji, 2023; Shimizu and Hitt, 2004). It includes operational, market, and competitive flexibility, allowing firms to absorb disruptions, exploit opportunities, and maintain alignment with evolving market conditions. Organizations with high strategic flexibility can rapidly adjust their strategies, processes, and structures in response to internal and external pressures, enhancing their resilience and sustaining long-term performance.

3. Employee Retention: Employee retention reflects the organization's capacity to maintain a committed, skilled, and motivated workforce over time (Zineldin, 2000; Logan, 2000). Retaining employees contributes to continuity, institutional knowledge, productivity, and organizational culture. Factors influencing retention include fair remuneration, career development opportunities, supportive work climate, motivation,

and alignment with organizational values. High retention ensures that firms sustain human capital, critical for innovation, strategic execution, and overall resilience

Theoretical Review

This study is anchored on three key theories: Resource-Based View (RBV).

Resource-Based View Theory

Resource-Based View Theory**,** developed by Jay Barney in 1991, explains how organizations sustain competitive advantage through effective utilization of internal resources, both tangible (equipment, technology) and intangible (human capital, knowledge, brand reputation). RBV stresses resources' characteristics—rarity, imitability, non-substitutability, and organizational alignment and focuses on resource acquisition, development, and deployment to create value. It is widely applied in strategic management, entrepreneurship, and organizational development, often in conjunction with dynamic capabilities (Davis in Venkatesh, 2020).

Empirical Review

Aurora, Rodrigo, & García-Morales (2024) investigated the critical role of **innovation capacity**and**organizational resilience** as dynamic capabilities that enhance business performance. The study employed a **mixed-method approach**, combining empirical analysis of firms with conceptual modeling to explore how these capabilities help organizations navigate external pressures in volatile and uncertain environments. The findings revealed that firms with high innovation capacity were better able to respond to technological disruptions, market changes, and economic challenges. Moreover, organizational resilience complemented innovation by providing the necessary structure, processes, and culture to implement innovative solutions effectively. Together, innovation capacity and resilience function as **dynamic capabilities**, enabling proactive adaptation and continuity during crises. The study concluded that organizations investing in both capabilities experience improved risk management, sustained competitiveness, and long-term viability, offering valuable insights for industries such as automobile manufacturing, where technological, regulatory, and market uncertainties are prevalent.
Nosike, Ojobor, & Cynthia (2024)examined the role of **organizational adaptability and strategic flexibility** in enhancing business resilience, particularly during and after periods of crisis. The study adopted a **mixed-method approach**, combining case studies, surveys, and interviews to explore how businesses adjusted processes, technological applications, and business models in response to external disruptions. The findings indicated that firms with higher levels of strategic flexibility were better able to anticipate and respond to market uncertainties, implement innovative solutions, and maintain operational

continuity. Strategic flexibility was identified as a key **risk management tool**, allowing organizations to mitigate potential threats while sustaining competitiveness. This empirical evidence supports the notion that adaptive capabilities are essential for long-term viability, providing actionable insights for sectors such as automobile manufacturing, where rapid technological changes and market volatility require agile and responsive organizational strategies.

Esther &Agonimi (2024) investigated the relationship between **resilient risk management** and **employee retention** within the context of Nigeria's crisis economy. The study employed a **quantitative approach**, analyzing survey data from organizations operating under high levels of economic and operational uncertainty. The findings revealed a strong positive correlation between effective risk management practices and employee retention, indicating that firms that proactively identify, assess, and mitigate risks are more likely to maintain a stable and committed workforce. The study concluded that resilient risk management not only safeguards organizational operations but also fosters employee confidence, loyalty, and engagement. These insights are particularly relevant for industries such as automobile manufacturing, where effective risk management strategies are crucial for maintaining operational stability and retaining skilled personnel amid economic and market challenges.

Gap in Literature

The gap in literature is discussed from three major areas, namely: subject gap, geographical gap, and gap on variables/indices.

Subject Gap: There is a dearth of research on the relationship between risk management and the viability of automobile firms, particularly in the context of Southeast Nigeria. Existing studies have not adequately examined how risk management contributes to key aspects of organizational viability, such as innovation capacity, strategic flexibility, and employee retention, in the automobile sector.

Geographical Gap: Most studies on risk management and organizational viability have been conducted in developed economies or industries outside Southeast Nigeria, with limited research focusing on this region. This geographical gap underscores the need for studies that account for the unique economic, regulatory, and market challenges affecting automobile firms in Southeast Nigeria.

Gap on Variables/Indices: The automobile industry in Southeast Nigeria lacks comprehensive research on the interplay between risk management and organizational viability indicators (innovation capacity, strategic flexibility, and employee retention). This knowledge gap highlights the importance of empirical studies to clarify these relationships and inform strategies for enhancing firm resilience and sustainability

METHODOLOGY

This section presents the methodology adopted for the study, providing a detailed account of the research design, target population, sample size, and procedures for data collection. It also describes the research instrument employed, including the processes used to establish its validity and reliability. Finally, the section outlines the techniques applied in analyzing the collected data, ensuring that the chosen methods are appropriate for addressing the research objectives.

Research Design

This study adopts a cross-sectional survey research design within a mixed-methods framework to investigate the relationship between Risk Management (RM) and Viability (V) in automobile service firms across South-East Nigeria. The cross-sectional design enables the researcher to capture data at a single point in time, providing a snapshot of the current organizational conditions and practices.

A mixed-methods approach is employed to strengthen the depth and reliability of the study. The quantitative component utilizes structured questionnaires to collect standardized data from a broad sample of employees, while the qualitative component incorporates semi-structured interviews to gain deeper insights into organizational dynamics, practices, and resilience strategies.

This design is suitable for examining how risk management and Viability (innovation capacity, strategic flexibility, and employee retention). It allows for the integration of diverse perspectives across different organizational levels and service segments, ensuring a comprehensive understanding of the resilience-viability relationship within the automotive sector.

Population of the Study

The population of this study comprises organizations within the Nigerian manufacturing sector, with a specific focus on automobile service firms located in the South-East region. The selected firms include: Innoson Vehicle Manufacturing Company in Nnewi, Anambra State; Cavem Investment Limited in Enugu, Enugu State; Abia State Computerized Vehicle Inspection Service in Umuahia, Abia State; Solomento Auto Services Centre in Owerri, Imo State; and Tebenaj Automobile solutions Services in Abakaliki, Ebonyi State. These firms were chosen based on their operational diversity and strategic significance in the region's automotive service industry. The population of the study was 2,635 workers, encompassing employees staff of the organization

Table showing the Population on each automobile servicing firms

S/N	Firm Name	Location	State	Number of Workers
1	Innoson Vehicle Manufacturing Company	Nnewi	Anambra	1,800
2	Cavem Investment Limited (Dealers of Diana Motors)	Enugu	Enugu	232
3	Abia State Computerized Inspection Service Center	Umuahia	Abia	153
4	Solomento Auto Services Centre	Owerri	Imo	50
5	Tebenaj Automobile solutions Services	Abakaliki	Ebonyi	400
	Total			**2635**

Sample Size and Sample Size Determination

Taro Yamene's formula (1984) for small samples will used as a guide to determine the accurate sample size from the population. Let the sample size be n, population size N and allowable error of sampling be e (e = 5% or 0.05)

Then:

$$n = \frac{N}{1 + Ne^2}$$

Where: n = Sample size

N = Population size (2,635)

e = Proportion of the sampling error (we assume 0.05)

1= Constant figure

Given that the researcher has chosen 5% or 0.05 as a level of significance the sample size can be calculated thus:

There:

$$n = \frac{2635}{1+2635(0.05)^2}$$

$$n = \frac{2635}{1+2635(0.0025)}$$

$$n = \frac{2635}{7.5875} = 347$$

Hence, the total sample size used for the study becomes 347 respondents. Base on the calculation, the sample size is **347 respondents.**

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Sources of Data

The data for this study will be collected from primary and secondary sources. The primary data will be collected from the respondents using a questionnaire. The questionnaire was developed by the researcher and vetted by the supervisor. The secondary data on the other hand was gathered from textbooks, journals, articles, seminar papers and periodicals. The data was collected from secondary sources was compared with the current data obtained from primary sources.

Instrument and Its Administration

The primary data collection instrument for this study was a structured questionnaire, designed to provide respondents with four options to choose from. The questionnaire's development was informed by a thorough review of existing literature, tailored to address the research questions and hypotheses. The instrument focused on the study's variables, with items specifically designed to capture Risk Management, and measures of Viability of organizations (innovation capacity, strategic flexibility, and employee retention).

The questionnaire consisted of two sections: Section A, which gathered demographic information (sex, age, marital status, length of service, position, and educational qualification), and Section B, which collected data on the study's variables. A modified 4-point Likert-type scale was used, with the following response options and weights: Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1).

The questionnaire was administered to respondents in the selected automobile service firms in the South-eastern region. The administration process was carried out by the researcher and four trained assistants. Prior to distribution, the respondents were briefed on the study's purpose, and then the questionnaires were distributed and collected.

Validity of the Instrument

To establish the instrument's validity, face and content validity were assessed. The questionnaire was reviewed by the researcher's supervisor and two lecturers from the Department of Management at Imo State University. These experts evaluated the instrument's ability to capture the required information and scrutinized each item to ensure alignment with the study variables. Their feedback and suggestions were incorporated, and the instrument was modified accordingly before proceeding to the reliability test.

Reliability of the Instrument

Reliability refers to the dependability of something. Reliability refers to the extent to which your data collection techniques or analysis procedures will yield consistent findings

whereas validity is concerned with the ability of the instrument to measure what it is designed to measure. Content validity was used to ascertain whether the content of the questionnaire is appropriate and relevant to the study objective. Content validity indicates the content reflects a complete range of the attributes under study and is usually undertaken by seven or more experts. To estimate the content validity, the researchers seeks the opinion of his supervisor and others that are expert on the field of management and research. Measurement of the model reliability assessed using Cronbach's alpha (CA) based tests. CA provides an estimate of the indicator inter correlations and an acceptable measure for CA is 0.7 or higher.

$$\alpha = \frac{k \times c}{v + (k-1)\, c}$$

Where k = the number of scale items

c = the average of all co-variances between items

v = the average variance of each item.

Cronbacfa Alpha Reliability Test Results

Variables	Dimensions/Measures	Items	Alpha
Risk Management			
	Risk Management	5	0.832
Viability	Innovation Capacity	5	0.912
	Strategic Flexibility		
	Employee Retention	5	0.852
		5	0.812

Source: SPSS Output, 2026

Data Analysis Techniques

Data analysis is the engine room of every research Analysis of data has to do with rational processing of data with the use of statistical tools, to produce information. The aim of the statistical analysis of data with regards to this research study will assist (enable) the researcher make sense of the data and helps the researcher make conclusions that are valid and lead to good decision. The first level of statistical analysis involves the use of simple, descriptive or inductive statistic which uses the frequency, percentage mean, and standard deviation. The second level of statistical analysis will involve determining the degree of relationship between the variables which include Pearson correlation analysis and regression analysis was employed. The scientific package for social science (SPSS version 23) software shall be employed with regression and correlation analysis will be

used because of the nature of the topic and these two techniques are the most common model used by many researchers.

Test of Hypotheses

The hypotheses formulated will be tested using the Pearson Correlation statistical tool in IBM SPSS version 23.The mathematical analysis as it concerns the study using the Pearson Correlation Coefficient (r) to examine the relationships between Risk Management and Viability of organizations (i.e. testing the hypotheses)

The Notations of variables are as follows:

Risk Management: (RM)
Innovation Capacity :(IC)
Strategic Flexibility: (SF)
Employee Retention: (ER)

The Pearson correlation coefficient (r) is given by:

$$r = \frac{\sum(X_i - \bar{X})(Yi - \bar{Y})}{\sqrt{\sum(Xi - \bar{X})^2 \sum(Yi - \bar{Y})^2}}$$

Where:

Xi = each individual value of variable X
Yi = each individual value of variable Y
$\bar{X}$ = mean of variable X
$\bar{Y}$ = mean of variable Y
$\sum$ = summation over all observations

Interpretation of r:

r = +1: perfect positive linear relationship
r = –1: perfect negative linear relationship
r = 0: no linear relationship

DATA PRESENTATION, ANALYSIS AND INTERPRETATIONS

This section focused on data presentation, analysis and interpretation. The analysis was based on the copies of questionnaire collected. The hypotheses were also tested and the research findings discussed. It should be noted that out of 347 copies of questionnaire distributed, only 323 were returned in usable form.

Data Presentation

The data collected in the questionnaire were presented in this section. Three hundred and forty-seven (347) copies of questionnaire were prepared by the researcher and administered to the respondents (employees) of the selected automobile service firms operating in South-East Nigeria. The questionnaire administration and the collection rate were presented in the Table 4.1 below:

Table 4.1: Questionnaire Administration and Collection

Respondents	Questionnaires		Percentage
	No. Administered	No. Collected	
Senior Staff	179	169	48.70%
Junior Staff	168	154	44.38%
Total	347	323	93.1%

Source: Field Survey, 2026

Table 4.1 shows how the 347 questionnaires were administered to the respondents (senior staff and junior staff) of the selected automobile service firms operating in South-East Nigeria s and their collection rate. Out of the 347 questionnaires administered to the respondents, 179 copies were distributed to senior staff of the companies and 169 copies were collected from them which represents 48.7% collection rate; while 168 copies were assigned to junior staff and 154 copies were retrieved from the respondents which represents 44.38% collection rate. Generally, the administered questionnaires received 93.1% return rate.

Hypothesis 1

Ho_1: There is no significant relationship between Risk Management and innovation capacity.

Table 4.2: Result of Bivariate Analysis between Risk Management (RM) and Innovation Capacity (IC)

		RISK_MANAGEMENT	INNOVATION_CAPACITY
RISK_MANAGEMENT	Pearson Correlation	1	.916**
	Sig. (2-tailed)		.000
	N	323	323
INNOVATION_CAPACITY	Pearson Correlation	.916**	1
	Sig. (2-tailed)	.000	
	N	323	323
**. Correlation is significant at the 0.05 level (2-tailed).			

Source: SPSS-Generated Output (See Appendix II)

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Table 4.2 presents the result of the bivariate analysis performed between Risk Management (RM) and Innovation Capacity (IC). The p-value is 0.000, which is less than the level of significance (0.05), hence, the null hypothesis which states that there is no significant relationship between Risk Management and innovation capacityis rejected. With a correlation of 0.916, it implies that innovation capacity(IC) strongly and positively correlates with Risk Management(RM), thus, the conclusion is that innovation capacity(IC) significantly relates with Risk Management(RM).

Hypothesis 2

Ho_2: Risk management is not significantly related to strategic flexibility

Table 4.3: Result of Bivariate Analysis between Risk Management (RM) and Strategic Flexibility (SF)

		RISK_MANAGEMENT	STRATEGIC_FLEXIBILITY
RISK_MANAGEMENT	Pearson Correlation	1	.920**
	Sig. (2-tailed)		.000
	N	323	323
STRATEGIC_FLEXIBILITY	Pearson Correlation	.920**	1
	Sig. (2-tailed)	.000	
	N	323	323
**. Correlation is significant at the 0.05 level (2-tailed).			

Source: SPSS-Generated Output (See Appendix)

Table 4.3 presents the result of the bivariate analysis performed between Risk Management (RM) and Strategic Flexibility (SF). The p-value is 0.000, which is less than the level of significance (0.05), hence, the null hypothesis which states that Risk management is not significantly related to strategic flexibility is rejected. With a correlation of 0.920, it implies that Strategic Flexibility (SF) strongly and positively correlates with Risk Management(RM), thus, the conclusion is that Strategic Flexibility (SF) significantly relates with Risk Management(RM).

Hypothesis 3

Ho_3. Risk management is not significantly related to Employee Retention

Table 4.4: Result of Bivariate Analysis between Risk Management (RM) and Employee Retention

		RISK_MANAGEMENT	EMPLOYEE_RETENTION
RISK_MANAGEMENT	Pearson Correlation	1	.899**
	Sig. (2-tailed)		.000
	N	323	323
EMPLOYEE_RETENTION	Pearson Correlation	.899**	1
	Sig. (2-tailed)	.000	
	N	323	323
**. Correlation is significant at the 0.05 level (2-tailed).			

Source: SPSS-Generated Output (See Appendix)

Table 4.4 presents the result of the bivariate analysis performed between Risk Management (RM) and Employee Retention (ER). The p-value is 0.000, which is less than the level of significance (0.05), hence, the null hypothesis which states that Risk management is not significantly related to Employee Retention is rejected. With a correlation of 0.899, it implies that Employee Retention (ER) strongly and positively correlates with Risk Management(RM), Thus, the conclusion is that Employee Retention (ER) significantly relates with Risk Management(RM).

Discussion of Findings

The estimated result of the fourth hypothesis of this study revealed correlation coefficient of 91.6%, it implies that innovation capacity (IC) is strongly and positively correlated to Risk Management (RM). The p-value also revealed a significant value of 0.00 which is less that the critical value of 0.05. Thus, the study concludes is that innovation capacity (IC) significantly relate with Risk Management (RM). This finding is in agreement with the work of **Aurora, Rodrigo, and García-Morales (2024)**conducted a study on the**critical role of innovation capacity and organizational resilience**in enhancing**business performance**. The study affirms that the research revealed that **innovation capacity and organizational resilience** serve as **key dynamic capabilities** that enable businesses to effectively navigate external pressures and maintain competitiveness.

With respect to the second hypothesis and research question, the bivariate analysis performed between Strategic Flexibility (SF) and Risk Management (RM) revealed the p-value as 0.00, which is less than the level of significance (0.05), hence, the null hypothesis which stated that there is no significant relationship between Strategic Flexibility (SF) and Risk Management (RM) is rejected. With a correlation of 0.957, it implies that Strategic Flexibility (SF) is strongly and positively correlated to Risk Management (RM). Thus, the conclusion is that Strategic Flexibility (SF) significantly relate with Risk Management (RM).

With respect to the third hypothesis and research question, the bivariate analysis performed between Risk Management (RM) and employee retention (ER) revealed the p-value as 0.00, which is less than the level of significance (0.05), hence, the null hypothesis which stated that there is no significant relationship between employee retention (ER) and Risk Management (RM)is rejected. With a correlation of 0.899, it implies that employee retention (ER) is strongly and positively conducted a study correlated to Risk Management (RM). Thus, the conclusion is that employee retention (ER) significantly relate with Risk Management (RM). This result supports the work of**Esther and Agonimi (2024) who** to**investigate the relationship between business resilience, employee retention, and performance**within the context of**Nigeria's crisis economy. They affirm that resilient risk management strongly relate with employee retention.**

Conclusion

The study has established that **risk management** plays a critical role in enhancing the viability of automobile firms in Southeast Nigeria. The findings indicate that **innovation capacity, strategic flexibility, and employee retention** are all strongly and positively associated with risk management. Specifically, firms with higher innovation capacity are better equipped to adapt to external pressures and maintain competitiveness, while strategic flexibility enables organizations to respond effectively to market and operational uncertainties. Additionally, strong employee retention is closely linked to robust risk management, highlighting the importance of workforce stability in sustaining organizational operations under volatile conditions.

Collectively, these results underscore that automobile firms in Southeast Nigeria can enhance their resilience and long-term viability by investing in innovation, fostering strategic flexibility, and implementing measures that support employee retention, all within a comprehensive risk management framework. Risk management thus emerges as a central mechanism through which firms can navigate economic, regulatory, and market challenges while securing sustainable growth.

Recommendations

1. **Enhance Innovation Capacity:** Automobile firms should invest in research and development, technological upgrades, and process innovations to strengthen their capacity for innovation. By doing so, firms can better anticipate and respond to market disruptions and operational risks, thereby improving overall risk management and long-term viability.
2. **Promote Strategic Flexibility:** Management should adopt flexible business strategies, including adaptable processes, responsive decision-making structures, and contingency planning. This will enable firms to swiftly adjust to changes in the market, regulatory environment, and operational conditions, enhancing their resilience and competitiveness.
3. **Strengthen Employee Retention Measures:** Firms should implement policies that promote employee stability and engagement, such as career development programs, performance incentives, and a supportive work environment. Retaining skilled employees ensures continuity in operations and strengthens the firm's capacity to manage risks effectively, contributing to sustained organizational viability.

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