

Crisis Management on Organisational Resilience in Manufacturing Firms in Akwa Ibom State

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ABSTRACT

Purpose: The effect of crisis management on organisational resilience highlights the importance of addressing both immediate challenges and underlying issues, as crises often expose and amplify existing vulnerabilities. This study examined the effect of Crisis management on organisational resilience in manufacturing firms in Akwa Ibom State, specifically one from each of the senatorial districts. The objective was to examine the effect of crisis management strategies such as training, incident reporting, decision making, effective communication and resource allocation affect organisational resilience. **Methodology:** With descriptive survey research design, primary data were obtained from 142 out of 220 employees, selected using the Taro Yamane formula. Data analysis involved simple percentages, frequency tables, descriptive statistics, and multiple regression analysis. **Findings:** The findings revealed that Training, Decision Making, Effective Communication, Incident Reporting, and Resource Allocation all positively impact organisational resilience. Specifically, the p-value for Training was 0.000, for Decision Making was 0.000, for Effective Communication was 0.000, for Incident Reporting was 0.000, and for Resource Allocation was $0.000 < 0.05$, all indicating significant positive effects at the 0.05 significance level. It was concluded that training, decision making and Effective Communication emerged as the most critical factor for ensuring effective coordination and response during crises. The study concludes that a broad approach integrating these factors is important for enhancing organisational resilience. Recommendations include investing in continuous training, developing robust communication systems, strengthening incident reporting, improving decision-making frameworks, and optimizing resource allocation to maintain resilience and operational continuity during disruptions. **Originality / Value:** This research contributes important insights into how these factors can be strategically leveraged to not only enhance resilience but also to drive long-term sustainability and competitive advantage.

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KEYWORDS: Crisis management, Organisational resilience, Training, Incident reporting, effective communication and resource allocation

1. INTRODUCTION

Most organisations today's, at one point or another encountered uncertainty in which the effect of the event(s) undermines its service, existence, or prestige. The readiness of the organization in times of uncertainty is what defines how capable the organisation is in handling crisis.

Mark (2023) defined a crisis as “an abnormal condition which is highly harmful to any business

which may become a threat to the business and also affects public trust for the business”. In solving crises, an organization must initiate a structured and reliable methods which will aid in handling crises and withstand them scientifically. According to scholars, crisis management plans and strategies must be understood by any individual or organization as a necessity to ensure how prepared and capable the are in terms of any uncertainty. (Uwa, 2021).

Crisis management is the structure which an organisation's set in preparation to tackle any uncertainty, incorporated by the leadership through knowledge management, and communication capability that facilitates quick decision-making at a strategic level within a formal environment, which helps in the recovery and maintaining of the existence or reputation of an organisation. Implementing a long-term recovery perspective helps an organisation to fit and capable to withstand any crisis that may occur in the future (Darkow, 2019).

The concept of resilience initially emerged from research on risk management and highly reliable organisations, and it has since stretched to encompass various organisational aspects, including collective dynamics, performance, and learning, as well as inter-organisational relationships (Udom & Ekpouko, 2024). Definitions of resilience vary depending on the approach, generally falling into two categories: one focused on defending against threats to ensure continuity and another centered on adapting to recover and thrive after adversity. Williams et al. (2017) define resilience as “the process by which a party (i.e., individual, organisation, or community) builds and uses capability endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity.”

In a volatile business environment, key factors for organisational resilience include Training, Decision Making, Effective Communication, Incident Reporting, and resource Allocation. Training prepares employees with essential skills for effective crisis management, ensuring they can recognize threats, respond appropriately, and adapt to changing circumstances. Incident Reporting provides necessary data to understand and address crises, fostering a learning culture and improving future preparedness. Decision Making facilitates timely, informed responses, crucial for navigating crises and maintaining organisational survival. Effective Communication keeps all stakeholders informed and aligned, reducing confusion and promoting transparency, which is vital for coordination and trust. Resource Allocation ensures that financial, human, and technological resources are optimally used to sustain operations and support recovery efforts.

Organisations today are facing problem of adapting to crucial situations or uncertainty based on lack of effective crisis management. Whenever crisis occurs, it is always difficult for them to withstand the situation because they lack defence mechanisms and ability to adapt to changes. Some organisations hardly cope with cognitive challenges, because they are not

aware of the effect changes to the organisation, so they fail to be prepared.

They lack the ability to face strategic challenges, which requires positive decision making, effective communication, this become a constant challenge for the organisation. They lack the ability to withstand political challenges that requires the allocation and reallocation of resources for the future. They also lack the ability to withstand ideological challenges, which requires proper incidental reporting and documentation to forecast the future and the problem is that this hinders their ability to respond effectively to uncertainty. In terms of “organisational resilience” most firm's today lack the capacity to withstand any uncertainty result that do occurs from changes in the environment. Therefore, to tackle the mentioned problems which are; lack of preparedness (putting their workforce in order), Decision-making pressure, communication breakdown and resource constraints, and this research will examine the effect of crisis management dimensions as independent variables on organisational resilience as dependent variables.

2. Understanding Crisis Management on Organisational Resilience

2.1. Concept of crisis management

Crisis management is a technique for tackling disaster from occurring, reducing it to the lowest minimum, managed, and controlled whereby the positive effect overwhelmed the negative effect. Preble, as cited in Karam (2020), stated that “crisis management is a method that helps in identifying and predicting areas of crisis, formulating calculated actions or measures to avert it from occurring, and minimizing the negative outcome of a crisis that could not be averted”. Uwa (2021) opined that “crisis management is a patterned arrangement of resources and organisational structures required to respond effectively to the crisis and recover successfully, restart, and restore normal activities”.

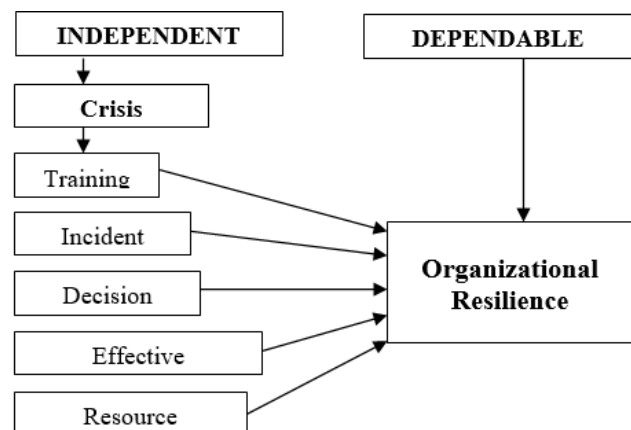


Figure 1: Model of crisis management and organisational resilience

Ronez (2016) states that “crisis management is a technique of forecasting, recognizing, preventing, and managing possible disastrous events through setting up a proper strategies to deal with a crisis when they occur”. In the same vein, John-Eke and Eke (2021) opined that “crisis management is a thought-out plan by organisations to minimize, manage, or avert a crisis when it arises”.

2.2. Types of Crisis

Crises manifest in diverse forms, each posing distinct challenges to organizations. Natural crises, such as hurricanes, earthquakes, or pandemics like Ebola and COVID-19, are acts of nature that can severely impact operations. (John-Eke & Bayo, 2021).

Financial crises can either be avoidable, resulting from corruption or mismanagement, or unavoidable, such as the economic downturns during the global COVID-19 pandemic, which led to layoffs, salary cuts, and closures. (Nützenadel, 2021).

Strategic crises stem from shifts in corporate environments due to factors like technological advancements. For instance, organizations that failed to adapt to innovations like video conferencing tools (e.g., Zoom or Skype) have struggled to maintain a competitive edge, while those leveraging these technologies cut costs and improved efficiency (Matthias et al., 2023).

Public relations crises, such as the 2005 Bellview Airline crash in Nigeria that killed all passengers, tarnished the airline’s reputation and prompted some organizations to switch carriers for staff travel. Another example involved Prime Hospital in Port Harcourt, which had to issue a public statement to refute misinformation on social media about treating a COVID-19 patient (Eze & Jones, 2022).

Smoldering crises arise from ignored or minor issues escalating over time. For instance, workplace violations, such as non-compliance with pension contributions or illegal layoffs, can grow into larger scandals if not promptly addressed, leading to reputational and financial damage (Dhanesh & Sriramesh, 2018).

2.3. Dimension of Crisis Management

A. Training

Crisis management training of personnel assists in the formal planning and training of persons so that in the need, there are people present to take care of organizations whenever crisis occurs. Training includes implementing case studies of catastrophes and depressed economies which are likely to hurt the wellbeing of various organizations. Also, encapsulations could include guidelines regarding certain situations (Komasawa, 2024). Alternatively,

some people may prefer crises management experts to conduct seminars or workshops for participants to gain knowledge on crisis management skills like communication during a crisis, decision-making in a timely manner during a crisis, and interaction of resources in crises (Brownson, C. 2023).

B. Incident Reporting

Reporting any events which disrupt normal functioning within an organisation forms part of the management of crisis, and is what is termed incident reporting (Bradley-Smith et al., 2024). Quite often when a crisis is anticipated or almost unavoidable, such reports are useful in helping an organisation understand facts with regard to the situation, averting similar cases and becoming better prepared for future events (Jones & Comfort, 2020). Accurate and timely reporting of an event helps the organisation to report objectively such particulars as the type of event, time of event, the location, the participating individuals, the event and the activities which followed (Park et al., 2019).

C. Decision making

The decision-making process in disaster and crisis management necessitates cognitive and supra-cognitive thinking skills, including analysis, composition, evaluation, and creative thinking (Kim, 2020). This process entails several stages, starting from defining the problem to collecting and classifying information, evaluating alternatives, and ultimately selecting the most appropriate course of action to enhance decision-makers' efficiency (Uwa, 2021).

D. Effective Communication

Effective communication during a crisis serves multiple crucial functions, including protecting employees and stakeholders, building trust, preventing the spread of misinformation, and averting panic (Udom & Ekpouko, 2024). Moreover, effective communication helps mitigate the threat that a crisis poses to an organisation's strategic objectives, reputation, and viability (Garcia-Perez et al., 2023). By aligning employees with the overall crisis management strategy and fostering a sense of unity towards common goals, communication channels help maintain organisational coherence during turbulent times (Brown et al., 2023).

E. Resource Allocation

Effective resource allocation is paramount in crisis management, necessitating prioritization of essential needs, coordinated response efforts, and open communication channels (Manchanda *et al.*, 2020). To optimize crisis response, it's crucial to regularly reassess resource distribution based on real-time data (Chen et al., 2020). Prioritizing resources based on

critical needs involves strategic allocation of personnel, equipment, and funds to address the most urgent aspects of the crisis (Ashana, 2021).

2.4. Concept of Organisational Resilience

Resilience, rooted in the Latin term *resiliere* meaning "jumping back," meaning "the ability to recover and adapt in the face of adversity". Introduced in academic literature by Holling (1973) in ecology, it has since been explored across various fields (Baghersad & Zobel, 2021). The American Psychological Association (2009) defines resilience as the capacity to adapt well to stressors such as trauma, health issues, and financial challenges. Organizational resilience combines defensive measures, proactive strategies, and self-reflection to take up, react to, and take advantage of disruptions (Baghersad & Zobel, 2021). Key outcomes of organizational resilience include maintaining stability and continuity during crises, improving crisis response efficiency, reducing financial losses, fostering adaptability, strengthening reputation, and enhancing employee morale and engagement. These outcomes position resilient organizations for sustained success and trust among stakeholders (Kim, 2020).

2.5. Crisis Management and Organisational Resilience

Organizational resilience depends on several critical factors, including training, incident reporting, decision-making, effective communication, and resource allocation. Training prepares an employee with the skills to adapt to challenges, fostering with the habit of learning which will help the workforce to handle disruptions effectively (Ali, 2022). Incident reporting provides valuable insights into vulnerabilities, enabling organizations to implement preventative measures and enhance adaptability (John-Eke & Bayo, 2020). Sound decision-making empowers organizations to navigate uncertainty, adapt strategies, and recover swiftly from setbacks (Christianson, 2019). Effective communication builds trust, reduces uncertainty, and promotes coordinated responses, ensuring agility in navigating challenges (Linnenluecke, 2017). Finally, strategic resource allocation prioritizes investments in risk management, training, and technology to strengthen an organization's ability to predict, get used to, and make progress after crisis (Matthias et al., 2023). Together, these elements create a robust framework for organizations to survive in dynamic and uncertain environments.

2.6. Theoretical Framework

This study examined two theories of crisis management and organizational resilience in manufacturing firms. The Situational Crisis

Communication Theory (SCCT), developed by Coombs (2007), emphasizes applying communication strategies depending on the type of crisis and organizational responsibility, offering denial, diminishment, and rebuilding strategies to manage reputation effectively. It highlights the importance of training employees, making strategic decisions, maintaining clear communication, accurate incident reporting, and allocating resources to protect stakeholder trust and enhance resilience. Meanwhile, the Dynamic Capability Theory by Teece, Pisano, and Shuen (1997) focuses on an organization's aptitude to get used to assets and strategies to changing environments through sensing opportunities, seizing them, and transforming operations. It underscores continuous learning, flexible decision-making, effective communication, incident analysis, and responsive source allotment to build resilience. The Dynamic Capability Theory is particularly suited for this study due to its emphasis on adaptability and alignment with critical aspects of crisis management, offering actionable strategies for firms to thrive despite disruptions.

3. Methodology

3.1. Study Design

Survey design was adopted; a well structured questionnaire was administered to the respondents for the research work.

3.2. Study Area

This research work was carried out in Akwa Ibom State, Specifically within the three Constituency s including the Uyo Constituency (Akwa Ibom North East) were Paragon Paint Industries is situated, the Ikot Ekpene Constituency (Akwa Ibom North West) were Edsuna table water company is situated, and the Eket Constituency (Akwa Ibom South) were Jubilee Syringe Manufacturing Company is situated. It consists of 31 Local Government Areas with Uyo as the capital.

The people of AkwaIbomState are predominantly farmers, Fishermen, craftsmen, traders and majority engaged in civil service. Only few engaged in commercial industrial activities that provide good and services and massive infrastructures to the State ranging from crop, Breweries, Asphalt production companies, Construction companies, Food processing and Aluminium smelting companies and Exxon Mobil producing Nigeria unlimited are directly or indirectly extensively degrading the area.

3.3. Study Population and Sample Method

The population of the study was 220 employees of the three selected manufacturing firms in AkwaIbom State. (Human resources department; Paragon Paint Industries, Edsuna table water company and Jubilee Syringe Industries, AkwaIbom State, 2023)

Table 1. Population

S/N	Selected Manufacturing Companies	Population
1	Paragon Paint Industries	90
2	Edsuna table water company	80
3	Jubilee Stringe Industries	50
	Total	220

Source: Data from Field Survey, 2024

In determining the samples size, Taro Yamane’s formula was used.

$$n = \frac{N}{1 + N(e)^2}$$

Where; n = Samples Size, N = Population, e = level of significance at 5%

A stratified sampling technique was adopted in choosing the one hundred and forty two (142) respondents to represent the total population of two hundred and twenty (220). The questionnaires were proportionally allotted to different cadre of employees in the study organizations using Bowley’s formula for the representation as follows:

$$\frac{nh}{N} = \frac{nNH}{N}$$

Where: n = sample size, NH =population of a strata, N = population.

Table 2. Sample Size

S/N	Selected Manufacturing Companies	Population	Sample Size
1	Paragon Paint Industries	90	58
2	Edsuna table water company	80	52
3	Jubilee Stringe Industries	50	32
	Total	220	142

Source: Data from Field Survey, 2024

Using strata sampling, the sample size of the study still stands 142 respondents of the three selected manufacturing firms in AkwaIbom State.

3.4. Data Collection Method

Primary data and stratified sampling technique were used in the administration of the research instrument. The questionnaire was divided into two sections; A and B. Section A was made up of questions on the personal information (also called bio-data) of the respondents. Section B contains 16 questions in line with the subject of the study, using the likert-scale options as follows; Strongly agreed, Agree, Strongly disagree, Disagree and Undecided.

The dependents variable was Organisational resilience measured by Crisis Management dimensions which are;

1. Training
2. Incident Reporting
3. Decision Making
4. Effective Communication
5. Resource Allocation

The validity of the instrument was determined through content validity. Internal consistency method and test re-test method was adopt to determined the reliability of the instrument. The questionnaires given to respondents were issued again after two weeks of interval to same respondents to check consistency and reliability.

3.5. Method of Data Analysis

Statistical Package for social Science (SPSS) was used to analyze the data with interpretation made using frequency tables and percentages. In this case, the multiple regression analysis was used in measuring the effect of Crisis management on organisational resilience of the selected manufacturing firms in AkwaIbom State. Based on the objectives of the study, multiple regression model was adopted for test of hypothesis as follows;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \mu \dots \dots \dots \text{eqn 1.}$$

Where; Y = Organisational resilience (dependent variable), X = Crisis Management (explanatory/independent variable), Explicitly, the equation was defined as: Organisational resilience = f (Crisis Management) + μ

Therefore, the broad model for this study was modified as;

$$ORGR = \beta_0 + \beta_1 TN + \beta_2 IR + \beta_3 DM + \beta_4 EC + RL \mu \dots \dots \dots eqn 2.$$

Where; ORGR = Organisational Resilience, TN = Training, IR = Incident Reporting, DM = Decision making, EC =Effective Communication, RL = Resource Allocation, β_0 =Intercept or regression constant, $\beta_1, \beta_2, \beta_3$ = Regression coefficients, μ = Stochastic error term

The generally expected criterion for decisions is that H_0 (null hypothesis) is accepted if the P-value is greater than 5% significant level and to be rejected where the P-value is less than the 5% significant level, i.e., where P is greater than 5% we accept null hypothesis and where P is less than 5%, we reject null hypothesis and Alternative hypothesis will emerge.

4. Results and Discussion

4.1. Summary of Questionnaire Distribution and Response Rates

The questionnaire was administered to the respondents identified and the summary is as shown in table that a total of 142 copies of were administered to the employees of the three selected manufacturing firms in Akwalbom State. 58 questionnaires, comprising 41%, were administered to Paragon Paint Industries. In Uyo, 52 questionnaires, representing 37%, were distributed to Edsuna table water company, and 32 questionnaires, making up 22%, were directed to Jubilee Syringe Industries in Onna. The administered questionnaire, 142 were correctly completed and returned, and none was rejected.

Table 3 Summary of questionnaire administered

Firm	Questionnaire Administered	Questionnaire Returned	Percentage (%)
Paragon Paint Industries	58	58	41
Edsuna table water company	52	52	37
Jubilee Stringe Industries	32	32	22
Total	142	142	100

Source: Field Survey Data (2024)

4.2. Demographic Overview of Respondents

Table 4 shows that the male respondents were made up of 86 respondents representing 61% and 56 female respondents representing 39%. This implies that male employees were majority in the selected manufacturing firms in Akwalbom State.

Table 4. Demographic Characteristics of Respondents

Demographic Characteristic	Frequency	Percent (%)
Gender		
Male	86	61
Female	56	39
Total	142	100
Age		
18-25	35	25
26-40	92	65
41-55	11	8
56-70	4	2
Total	142	100
Marital Status		
O'Level	41	29
NCE/OND	61	43
HND/BSC	39	27
Post-Graduate Degree	1	1
Total	142	100
Married Status		
Single	74	52
Married	68	48
Total	142	100

Department		
HR Unit	3	2
Maintenance Unit / Operational	125	89
Accounting Unit	6	4
Transport/Logistic Unit	6	4
Security Unit	2	1
Total	142	100

Source: Field Survey Data (2024)

35 (25%) were between the ages of 18-25years, 92 (65%) were between the ages of 26-40 years and 11 (8%) respondents were between the ages of 41-55 years while 4 respondents representing 2% were above 56-70 years of age respectively. This implies that majority of employees in the selected manufacturing firms in Akwalbom State were between the ages of 26-40 years.

The results in table 4 shows that 41 respondents representing 29% were O'Level61 respondents representing 43% were NCE/OND holders while 39 respondents representing 27% had HND/B.Sc and 1 respondents representing 1% Masters Degree/above respectively. This implies that majority of employees in the selected manufacturing firms in Akwalbom State are NCE/OND holders.

The results in table 4 above indicate that 74 respondents representing 52% were single and 68 respondents representing 48% were married respectively. This implies that majority of employees were single.

Table 4 shows distribution based on the department they belong to. It shows that, 3 respondents representing 2% belong to HR Unit, 125 respondents representing 88% belong to Maintenance /Operational department making it the largest group. 6 respondents representing 4% are from the Accounting department. 6 respondents (4%) are from the Transport/Logistic Unit. 2 respondents (1%) are from the Security Unit. The majority of respondents in the three selected firms belong to the Maintenance Unit/Operational department, followed by the Accounting Unit and Transport/Logistic Unit. There are smaller numbers of respondents from the HR Unit and Security Unit.

4.3. Data Analysis of respondents' responses

Table 5. Percentage analysis of respondents' responses regarding Training and organisational resilience

Questions	Agreed	Strongly Agreed	Disagreed	Strongly disagreed	Undecided	Total
Training has effect on organisational resilience in manufacturing firms.	75 (53%)	31 (22%)	23 (16%)	8 (6%)	5 (3%)	142 (100%)
Proactive crisis planning leads to better preparedness and resilience during unforeseen events in manufacturing firms.	69 (49%)	39 (27%)	21 (15%)	6 (4%)	7 (5%)	142 (100%)
Training programs specifically focused on crisis management are beneficial for organisational resilience in manufacturing firms.	50 (35%)	42 (30%)	17 (12%)	5 (3%)	28 (20%)	142 (100%)

Source: Field survey Data (2024)

This analysis shows that 75 respondents representing 53% agreed that Training has effect on organisational resilience in manufacturing firms, 31 representing 22% strongly agreed, 23 representing 16% disagreed, 8 representing 6% strongly disagreed while 5 respondents representing 3% were undecided. Concerning "Proactive crisis planning leads to better preparedness and resilience during unforeseen events in manufacturing firms." 69 respondents representing 49% agreed, 39 representing 27% strongly agreed, 21 representing 15% disagreed, 6 representing 4.2% strongly disagreed while 7 respondents representing 4.9% were undecided. For "Training programs specifically focused on crisis management are beneficial for organisational resilience in manufacturing firms." 50 respondents 35% agreed, 42 representing 30% strongly agreed, 17 representing 12% disagreed, 5 representing 3% strongly disagreed while 28 respondents representing 20% were undecided

Table 6. Percentage analysis of respondents' responses regarding Decision making and organisational resilience

Questions	Agreed	Strongly Agreed	Disagreed	Strongly disagreed	Undecided	Total
Decision making has effect on organisational resilience in manufacturing firms.	58 (41%)	40 (28%)	25 (18%)	8 (5%)	11 (8%)	142 (100%)
Decision-making under pressure is a critical skill necessary for crisis management within manufacturing firms.	61 (43%)	71 (50%)	2 (1%)	0 (0%)	8 (6%)	142 (100%)
I believe that leadership plays a critical role in successfully navigating crises and maintaining organisational resilience.	64 (45%)	62 (44%)	5 (3%)	0 (0%)	11 (8%)	142 (100%)

This analysis shows that 58 respondents representing 41% agreed that Decision making has effect on organisational resilience in manufacturing firms, 40 representing 28% strongly agreed, 25 representing 18% disagreed, 8 representing 5% strongly disagreed while 11 respondents representing 8% were undecided. Concerning “Decision-making under pressure is a critical skill necessary for crisis management within manufacturing firms.” 61 respondents representing 43% agreed, 71 representing 50% strongly agreed, 2 representing 1% disagreed, 0 representing 0% strongly disagreed, while 8 (6%) were undecided. For “I believe that leadership plays a critical role in successfully navigating crises and maintaining organisational resilience.” 64 respondents representing 45% agreed, 62 representing 44% strongly agreed, 5 representing 3% disagreed, 0 representing 0% strongly disagreed while 11 respondents representing 8% were undecided

Table 7. Percentage analysis of respondents' responses regarding Effective Communication and organisational resilience

Questions	Agreed	Strongly Agreed	Disagreed	Strongly disagreed	Undecided	Total
Effective Communication has effect on organisational resilience in manufacturing firms.	59 (41%)	37 (26%)	26 (18%)	9 (6%)	11 (8%)	142 (100%)
Effective communication within and across teams is crucial for coordinated crisis management efforts in manufacturing firms.	78 (55%)	56 (39%)	1 (1%)	0 (0%)	7 (5%)	142 (100%)
Open and transparent communication channels enhance the ability to navigate through crises in manufacturing firms	67 (47%)	63 (44%)	1 (1%)	2 (1.4%)	9 (6%)	142 (100%)

This analysis shows that 59 respondents representing 41% agreed that Effective Communication has effect on organisational resilience in manufacturing firms, 37 representing 26% strongly agreed, 26 representing 18% disagreed, 9 representing 6% strongly disagreed while 11 respondents representing 8% were undecided. Concerning “Effective communication within and across teams is crucial for coordinated crisis management efforts in manufacturing firms.” 78 respondents representing 55% agreed, 36 representing 39% strongly agreed, 1 representing 1% disagreed, 0 representing 0% strongly disagreed, while 7 respondents (5%) were undecided. For “Open and transparent communication channels enhance the ability to navigate through crises in manufacturing firms.” 67 respondents representing 47% agreed, 63 (44%) strongly agreed, 1 (1%) disagreed, 2 (1%) strongly disagreed, while 9 (6%) were undecided

Table 8. Percentage analysis of respondents' responses regarding Incident Reporting and organisational resilience

Questions	Agreed	Strongly Agreed	Disagreed	Strongly disagreed	Undecided	Total
Incident Reporting has effect on organisational resilience in manufacturing firms.	65 (46%)	59 (42%)	12 (8%)	0 (0%)	6 (4%)	142 (100%)
Lessons learned from past crises contribute to the continuous improvement of crisis management practices	61 (43%)	45 (31.7%)	15 (11%)	4 (3%)	17 (12%)	142 (100%)
Reporting incidents promptly contributes to the overall resilience of manufacturing firms during crises.	65 (46%)	40 (28%)	25 (18%)	8 (6%)	4 (3%)	142 (100%)

From the analysis 65 respondents (46%) agreed that Incident Reporting has effect on organisational resilience in manufacturing firms, 59 representing 42% strongly agreed, 12 representing 8% disagreed, 0 representing 0% strongly disagreed while 6 respondents representing 4% were undecided. Concerning “Lessons learned from past crises contribute to the continuous improvement of crisis management practices.” 61 respondents representing 43% agreed, 45 representing 32% strongly agreed, 15 representing 11% disagreed, 2 representing 3% strongly disagreed while 17 respondents representing 12% were undecided. For “Reporting incidents promptly contributes to the overall resilience of manufacturing firms during crises.” 65 respondents (46%) agreed, 40 representing 28% strongly agreed, 25 representing 18% disagreed, 8 representing 6% strongly disagreed, while 4 respondents (3%) were undecided

Table 9. Percentage analysis of respondents' responses regarding Resource Allocation and organisational resilience

Questions	Agreed	Strongly Agreed	Disagreed	Strongly disagreed	Undecided	Total
Resource Allocation has effect on organisational resilience in manufacturing firms.	67 (47%)	59 (41%)	9 (6%)	4 (3%)	3 (2%)	142 (100%)
Strategic resource allocation ensures that manufacturing firms can withstand and recover from crisis situations.	59 (41%)	68 (48%)	4 (3%)	3 (2%)	8 (6%)	142 (100%)
Crisis management efforts should often be overlooked or under prioritized in manufacturing organisations.	73 (50%)	62 (46%)	2 (1%)	0 (0%)	5 (3%)	142 (100%)

From the analysis 67 (47%) agreed that Resource allocation has effect on organisational resilience in manufacturing firms, 59 representing 41% strongly agreed, 9 representing 6% disagreed, 4 representing 3% strongly disagreed, while 3 respondents 2% were undecided. Concerning “Strategic resource allocation ensures that manufacturing firms can withstand and recover from crisis situations.” 59 respondents representing 41% agreed, 68 representing 48% strongly agreed, 4 representing 3% disagreed, 3 representing 2% strongly disagreed while 8 respondents (6%) were undecided. For “Crisis management efforts should often be overlooked or under prioritized in manufacturing organisations.” 73 respondents representing 51% agreed, 62 representing 44% strongly agreed, 2 representing 1% disagreed, 0 representing 0% strongly disagreed while 5 respondents representing 3% were undecided.

4.4. Descriptive statistics of variables

Table 10 Descriptive Statistics of variables

Variables	N	Mean	Std. Deviation	Skewness	Kurtosis Statistic
Training	142	6.1761	2.93499	.770	-.277
Incident Reporting	142	5.7606	1.90903	.566	-.274
Decision Making	142	5.6831	2.48219	1.408	1.759
Effective Communication	142	5.4859	1.79730	.633	-.132
Resource allocation	142	5.1408	1.85882	1.828	4.020

Table 10 shows the descriptive results of independent variables:

1. Training with 6.1761 means, 2.93499 standard deviation indicates more variability, also with moderate skewed (0.770) and kurtosis (-0.277) showing a flatter distribution.
2. Incident Reporting show 5.7606 means with slight positive skewed of 0.566, kurtosis (-0.274).
3. Decision making show 5.6831 means, 2.48219 standard deviation a positive skewed (1.408) and 1.759 kurtosis revealing long tail
4. Effective communication show 5.4859 means and moderate skewed (0.633) and kurtosis (-0.132) nearly normal.
5. Resource allocation shows 5.1408 also indicate positive skewed (1.828) with 4.020 kurtosis revealing slight distribution with outlier.

4.5. Analysis of Model Fit and Predictive Significance

Table 11 indicates that the predictors (resource allocation, training, effective communication, incident reporting and decision making) collectively explain 59.7% of the variance in organizational resilience (R Square + 0.597). The Adjusted R Square, slightly lower at 0.583, shows the level of prediction. Standard error of 0.64971 shows the distance between the variable and the predictors value.

Table 11. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.773 ^a	.597	.583	.64971	1.984

The Constant: (Training, Incident Reporting Effective Communication, and Decision Making Resource allocation) are the Predictors on Dependent Variable: Organisational Resilience.

Therefore Durbin-Watson statistic is 1.984, revealing that the models are likely met.

ANOVA shows that in the model all the predictors have significant effect on organizational resilience as $F = 40.363$, $p = 0.000 < 0.05$. The regression sum squares is 85.190, 57.408 represents the unexplained variability.

Table 12. ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	85.190	5	17.038	40.363	.000 ^b
	Residual	57.408	136	.422		
	Total	142.599	141			

Source: Researcher's computation (2024) using SPSS 23.0

the model explains Dependent Variable: Organisational Resilience and the Predictors: (Constant), Resource allocation, Training, Effective Communication, Incident Reporting, Decision Making are substantial portion of the variance in organisational resilience of the three selected manufacturing firms in Akwalbom State (Paragon Paint Industries, Edsuna Table Water Company and Jubilee Syringe Industries), as evidenced by the statistically significant F-value.

4.6. Evaluating the Impact of Independent Variables on organisational resilience of the three selected manufacturing firms in Akwalbom State

The effect of the independent variable on the dependent variable was tested and each hypothesis were analyzed based on the regression results obtained.

Table 13 Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-.368	.299		-1.232	.000
	Training	.306	.032	.429	9.678	.000
	Decision Making	.189	.041	.225	4.618	.000
	Effective Communication	.552	.058	.475	9.602	.000
	Incident Reporting	.365	.043	.513	8.564	.000
	Resource Allocation	.329	.049	.404	6.746	.000

a. Dependent Variable: Organisational Resilience

Source: Researcher's computation (2024) using SPSS 23.0

The p-values as revealed in table 13 above was employed in the test of hypotheses at 5% significance level.

Hypothesis Testing

Hypothesis one:

- (H₀): Training has no effect on organisational resilience in manufacturing firms.
- (H₁): Training has effect on organisational resilience in manufacturing firms.

Since the p-value = 0.000 < 0.5, the null hypothesis was rejected and the alternative accepted, which states that; training has positive effect on organisational resilience at the 0.05 significance level.

Hypothesis two:

- (H₀): Decision making has no effect on organisational resilience in manufacturing firms.
- (H₁): Decision making has effect on organisational resilience in manufacturing firms.

The p-value = 0.000 < 0.05, Thus, null hypothesis was rejected and the null hypothesis accepted which states; that decision-making has positive effect on organisational resilience.

Hypothesis three:

- (H₀): Effective Communication has no effect on organisational resilience in manufacturing firms.
- (H₁): Effective Communication has effect on organisational resilience in manufacturing firms.

Similarly, the p-value = 0.000 < 0.05, Hence, the null hypothesis was rejected and alternative hypothesis accepted which states that; effective communication has positive effect on organisational resilience.

Hypothesis Four:

- (H₀): Incident Reporting has no effect on organisational resilience in manufacturing firms.
- (H₁): Incident Reporting has effect on organisational resilience in manufacturing firms.

Since the p-value = 0.000 < 0.05, the null hypothesis was rejected and alternative hypothesis accepted which states that; Incident Reporting has positive effect on organisational resilience.

Hypothesis Five:

- (H₀): Resource Allocation has no effect on organisational resilience in manufacturing firms.
- (H₁): Resource Allocation has effect on organisational resilience in manufacturing firms.

Since the p-value = 0.000 < 0.05, the null hypothesis was rejected and alternative hypothesis was accepted which states that; Resource Allocation has positive effect on organisational resilience.

4.7. DISCUSSION OF FINDINGS

What is the effect of training on organisational resilience in manufacturing firms in Akwa Ibom State?

Based on the research question 1, the coefficient result reveals that p-value = 0.000 < 0.05. showing that training has positive effect on organizational resilience in manufacturing firms and this is statistically significant, supporting the alternative hypothesis. This finding is aligned with a study by Smith et al. (2024), which found that organisations implementing comprehensive training programs experienced significant improvements in their organisational resilience.

What is the effect of incident reporting on organisational resilience in manufacturing firms in Akwa Ibom State?

Based on the research question 2, the regression coefficient shows that p-value = 0.000 < 0.05, revealing that incident reporting has positive effect on organizational resilience in manufacturing firms and this is statistically significant, supporting the alternative hypothesis. This finding is aligned with the results of a study by Lee et al. (2022), which found that organisations implementing comprehensive incident reporting systems experienced significant improvements in their organisational resilience.

What is the effect of decision making on organisational resilience in manufacturing firms in Akwa Ibom State?

Based on the research question 3, the regression coefficient with a low p -value = $0.000 < 0.05$, indicates that decision making has effect on organisational resilience in manufacturing firms. This study align with research conducted by Ardebili and Padoano (2020), who also observed a positive effect of effective decision-making processes on organisational resilience.

What is the effect of effective communication on organisational resilience in manufacturing firms in AkwaIbom State?

Based on the research question 4, the regression coefficient with a low p -value = $0.000 < 0.05$, supporting the alternative hypothesis. This indicated that effective communication has effect on organisational resilience in manufacturing firms. This finding align with research a longitudinal study by Wang et al. (2024) corroborate the strong positive effect of communication strategies on organisational resilience, emphasizing the importance of transparent and timely information dissemination.

What is the effect of Resource Allocation on organisational resilience in manufacturing firms in AkwaIbom State?

Based on the research question 5, the effect is statistically significant with a low p -value = $0.000 < 0.05$, supporting the alternative hypothesis. The findings of this study align with a meta-analysis by Gogalniceanu et al. (2024) found that organisations with strategic resource allocation frameworks exhibited higher levels of resilience, further supporting the significance of this effect.

There is a gap in understanding the underlying mechanisms or processes through which effective training, incident reporting, effective communication decision making and resource allocation contributes to resilience.

5. CONCLUSION

This study examined the effect crisis management strategies on organisational resilience in manufacturing firms. The regression analysis revealed that Training positively impacted resilience with p -value of 0.000 less than 0.05 indicating that enhanced training contributes significantly to organisational resilience. Incident Reporting showed a notable effect, were p -value = 0.000 less than 0.05 , reflecting that robust incident reporting systems are important for resilience. Decision Making, while positively impacting resilience, had effect with p -value of $0.000 < 0.05$, indicating the baseline resilience level when all factors are zero. Effective Communication had the highest positive effect on organisational resilience, also with p -value $0.000 < 0.05$, indicating that

improvements in communication are strongly associated with higher resilience. Resource Allocation had a positive effect with p -value = $0.000 < 0.05$, shows the importance of effective resource management.

This study concluded that crisis management has significant effect on organisational resilience in manufacturing firms, revealing its role in ensuring effective coordination and response during crises.

It was recommended that Manufacturing firms should invest in regular and comprehensive training programs to enhance employee skills and knowledge, Firms should establish and maintain effective incident reporting systems to identify and address potential risks promptly. Firms need to focus on enhancing decision-making processes to respond effectively to crises and challenges. Developing and maintaining robust communication systems is pertinent and efficient allocation of resources should be prioritized to ensure that critical areas are adequately supported, especially during disruptions.

This study provides empirical evidence, offers valuable insights into how these factors can be strategically leveraged to not only enhance resilience but also to drive long-term sustainability and competitive advantage. it contributes to both academic research and practical applications in organisational management, This comprehensive understanding is essential for building resilient organisations that can thrive in an increasingly volatile and complex global environment.

The effect of other dimensions, example; leadership style, organisational culture, and technology adoption, on organisational resilience should be studied by future researchers. Longitudinal studies are also essential, and comparative studies across different industries or organisational sizes could identify sector-specific or context-specific drivers of resilience, enabling the development of tailored strategies that are more effective within particular contexts.

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Conflicts of Interest

The author declares no conflicts of interest relevant to this publication.

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