Root Causes of Industrial Project Abandonment in the Niger Delta: Evidence from Incinerator Plant Project [1]

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ABSTRACT

Despite extensive investments in industrial infrastructure in Nigeria, relatively limited empirical attention has been given to the underlying causes of abandonment of specialised industrial facilities. This study investigates the root causes of the failure and subsequent abandonment of the Finima Incinerator Plant Project in the Niger Delta, Rivers state, Nigeria. The study adopted a mixed-methods case study design, combining a structured questionnaire survey with documentary evidence. Data were obtained from 65 knowledgeable professionals and stakeholders associated with the project and its industrial environment. The **Relative Importance Index (RII)** was employed to identify and rank the factors responsible for project failure and abandonment. The findings indicate that **financial constraints (RII = 0.9962)** constituted the most significant causative factor, followed by **poor project management (RII = 0.9808), inadequate stakeholder engagement (RII = 0.9731), technical and design issues (RII = 0.9692), operational inefficiencies (RII = 0.9692), and poor planning (RII = 0.9538)**. The findings suggest that the abandonment of the Finima Incinerator Plant was not attributable to a single failure event but emerged from the interaction of financial, managerial, stakeholder, technical, operational, and planning deficiencies. The study contributes to the literature by providing empirical evidence on the root causes of abandonment of a specialised industrial project in the Niger Delta, extending existing Nigerian project-abandonment research beyond conventional construction and public infrastructure. The findings provide a diagnostic foundation for developing appropriate interventions for the recovery and sustainable operation of abandoned industrial assets.

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1. INTRODUCTION

Industrial projects constitute important mechanisms for achieving economic development, technological advancement, environmental protection, and organisational sustainability. Such projects typically involve substantial investments in engineering, procurement, construction, technology, human resources, and operational infrastructure. Their successful delivery is therefore critical to achieving the economic, operational, and environmental benefits for which they are conceived.

However, the successful delivery of industrial projects remains challenging. Projects frequently experience cost overruns, schedule delays, scope changes, technical difficulties, contractual disputes, and stakeholder conflicts. In severe cases, these problems can culminate in project failure and abandonment. The problem is particularly important in developing countries, where limited financial resources, institutional weaknesses, inadequate project-management capacity, and unstable economic conditions can increase project vulnerability.

Project abandonment is more consequential than ordinary project delay because it represents a prolonged failure to convert invested resources into the intended project outputs and benefits. Nwachukwu and Emoh (2002), in their study of abandoned water and irrigation projects in Nigeria, identified funding constraints, price variation, corruption, government actions, contractual issues, and contractor-management problems among the barriers associated with project abandonment.

Similarly, Ayodele & Alabi (2011) identified inadequate planning, inadequate funding, inflation, contractor bankruptcy, scope variation, political factors, poor project management, incorrect estimates, inadequate cost control, faulty design, and delayed payments as important causes of construction project abandonment in Nigeria.

Although the Nigerian literature has established that project abandonment is influenced by multiple factors, much of the available evidence relates to conventional construction, public infrastructure, educational buildings, roads, water projects, and irrigation schemes; comparatively less attention has been given to **specialised industrial projects**, particularly facilities associated with industrial waste management and the oil and gas environment.

This gap is particularly significant in the Niger Delta. The region contains extensive industrial infrastructure associated with oil and gas exploration, production, processing, transportation, and supporting services. These activities generate complex technical, environmental, financial,

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regulatory, and stakeholder requirements. Industrial projects within this environment are consequently exposed to a distinctive combination of project risks.

The **Finima Incinerator Plant Project in Rivers State** represents an important case for examining these challenges. The project was intended to provide an industrial waste-treatment facility within the Bonny Island industrial environment. However, the project failed to achieve its intended objectives and was subsequently abandoned.

The circumstances surrounding the failure of the Finima Incinerator Plant raise an important research question: **what were the fundamental factors responsible for its failure and subsequent abandonment?** Answering this question requires moving beyond a general description of the project's abandonment to systematically identify, classify, and prioritise the underlying causes.

This study therefore focuses specifically on the **root causes of industrial project abandonment**, using the Finima Incinerator Plant as a case study. The investigation considers financial, project-management, stakeholder, technical, operational, planning, contractual, institutional, and other factors identified from the literature and project evidence.

1.2 Problem Statement

Nigeria has experienced persistent project abandonment across different sectors. Previous empirical studies have attributed abandonment to inadequate financing, poor planning, weak project management, contractual problems, inflation, institutional weaknesses, contractor-related problems, and stakeholder issues (Ayodele and Alabi, 2011; Ewa, 2013; Nwachukwu & Emoh, 2002). However, the existing evidence provides limited understanding of how these factors manifest in specialised industrial projects.

The Finima Incinerator Plant Project presents a significant case in this regard. Despite its intended industrial and environmental function, the project failed and was subsequently abandoned. Yet, there remains insufficient systematic empirical evidence establishing the **relative importance of the factors that contributed to its failure**.

A major methodological problem in understanding project abandonment is that several factors often occur simultaneously. Financial difficulties may result in procurement delays; procurement delays may affect construction and commissioning; technical deficiencies may increase project costs; poor project management may prevent timely resolution of emerging problems; and inadequate stakeholder engagement may generate additional institutional or operational constraints. Consequently, identifying only one apparent cause may provide an incomplete explanation of abandonment.

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The absence of a systematic ranking of these factors creates a knowledge gap concerning which factors were most influential in the failure of the Finima Incinerator Plant. Without such evidence, interventions aimed at preventing similar industrial project failures may address symptoms rather than root causes.

This study therefore addresses the problem of **insufficient empirical understanding of the root causes and relative importance of factors responsible for the abandonment of the Finima Incinerator Plant Project**. By systematically identifying and ranking these factors, the study provides evidence for understanding the failure mechanism and establishes a foundation for subsequent project-resuscitation research.

1.3 Objective of the Study

The aim of this study is to identify and evaluate the root causes responsible for the failure and subsequent abandonment of the Finima Incinerator Plant Project in the Niger Delta.

The study specifically seeks to Identify and rank the key factors that led to the failure and subsequent abandonment of the Finima Incinerator Plant Project.

1.4 Research Question

In line with the aim and objectives the study is guided by the following research questions:

i. What are the key factors responsible for the failure and subsequent abandonment of the Finima Incinerator Plant Project?
ii. What is the relative importance of the identified factors responsible for the failure and abandonment of the Finima Incinerator Plant Project?
iii. Which categories of factors—financial, managerial, planning, technical, operational, stakeholder, contractual, or institutional—are most influential in explaining the project's abandonment?

2. CONCEPT OF PROJECT SUCCESS, FAILURE AND ABANDONMENT

2.1 Project Success

Project success has traditionally been associated with achieving the predetermined project objectives within specified constraints of cost, time, scope, and quality. However, contemporary project management scholarship recognises that project success extends beyond the traditional "iron triangle." Projects are increasingly evaluated according to stakeholder satisfaction, strategic benefits, operational performance, sustainability, organisational value, and long-term benefits realisation.

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This distinction is important to the present study because a project may be technically completed without achieving its intended operational or strategic benefits. Conversely, a project may experience delays or cost increases but still ultimately deliver substantial value. Therefore, assessing the Finima Incinerator Plant solely in terms of completion would provide an incomplete assessment of its performance. The study instead considers the extent to which the facility achieved its intended operational and environmental objectives.

Musawir et al. (2017) demonstrated that project governance and benefits management are strongly associated with project success and argued that project management needs to move beyond product delivery toward value creation. Their international survey of 333 projects showed that effective governance improves project success both directly and through effective benefits management.

This perspective is particularly relevant to industrial facilities because the ultimate value of an incinerator plant lies not simply in constructing the physical facility but in its ability to operate reliably, treat waste effectively, meet environmental requirements, and provide sustained organisational benefits.

2.2 Project Failure

Project failure may be understood as the inability of a project to achieve its predetermined objectives or deliver its expected benefits. Failure can occur through cost escalation, schedule delay, technical deficiencies, inadequate quality, inability to commission the facility, operational underperformance, or failure to satisfy critical stakeholder and regulatory requirements.

The concept is multidimensional because different stakeholders may assess the same project differently. A project owner may regard a project as unsuccessful because of excessive cost, while an operator may emphasise poor reliability, and a host community may focus on inadequate social or environmental benefits.

Flyvbjerg (2014) provides a particularly influential perspective on large projects, identifying recurring patterns of projects being delivered "over budget, over time" and with underachievement of expected benefits. His analysis highlights the importance of realistic forecasting, governance, risk assessment, and decision-making in preventing systematic project underperformance.

Denicol et al. (2020) further demonstrated that poor megaproject performance is caused by multiple interacting dimensions. Their systematic review analysed 6,007 titles and abstracts and 86 full papers, identifying 18 major causes and 54 potential cures. Importantly, their review emphasises that large projects should be examined as complex, inter-organisational production systems involving project architecture, collaboration, institutions, communities, and supply-chain integration.

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Although the Finima Incinerator Plant may not necessarily satisfy the strict definition of a global "megaproject," the underlying insight remains applicable: complex industrial facilities involve multiple technical systems, organisations, stakeholders, contracts, and institutional requirements, making them vulnerable to systemic failure.

2.3 Project Abandonment

Project abandonment represents a more severe manifestation of project failure. It occurs when project activities are discontinued before the intended objectives are achieved, or when a completed or partially completed facility ceases to progress toward sustainable operation.

Abandonment should be distinguished from temporary suspension. A temporary suspension may involve a deliberate pause while funding, technical, contractual, or regulatory issues are resolved. Abandonment, by contrast, implies prolonged cessation without effective measures to return the project to productive activity.

In Nigeria, abandoned projects have become a recurring feature of infrastructure development. Nwachukwu and Emoh (2002), examining abandoned water and irrigation projects, noted that abandoned projects had become common and investigated the barriers responsible for their abandonment. Their findings identified inadequate funding, price variation, corruption, government actions, contractual issues, and contractor management problems among the important factors contributing to project abandonment.

Project abandonment is particularly problematic because the value of an industrial asset can deteriorate during prolonged inactivity. Equipment may become obsolete, components may corrode, control systems may become unsupported, technical documentation may become outdated, and skilled personnel associated with the original project may no longer be available.

Thus, abandonment creates a second-order problem: the cost of restoring an abandoned project can be significantly greater than the cost that would have been required to complete and maintain it at the point when difficulties first emerged.

2.4 Causes of Industrial Project Failure and Abandonment

The literature reviewed for this study suggests that project abandonment can be grouped into several major dimensions: financial, project management and governance, planning, technical/design, operational, stakeholder, contractual, institutional, and external/environmental factors.

2.4.1 Financial Constraints

Financial constraints are consistently identified as one of the major causes of project abandonment in Nigeria.

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Project financing affects the ability of organisations to procure materials, pay contractors, maintain project schedules, retain skilled personnel, complete testing and commissioning, and sustain operations. A project that lacks secure and predictable funding can experience interruptions that subsequently generate additional costs and delays.

Nwachukwu and Emoh (2002) found inadequate sources of funding and price variation among important barriers associated with abandoned Nigerian projects

Similarly, Ayodele and Alabi (2011), using Relative Importance Index analysis, identified inadequate funds, inflation, contractor bankruptcy, wrong estimates, inadequate cost control, and delayed payments among the causes of project abandonment in Nigeria.

2.4.2 Poor Project Management

Poor project management is another major contributor to project failure. Project management provides the mechanisms through which scope, cost, schedule, quality, resources, risks, procurement, contracts, communication, and stakeholders are coordinated.

Ayodele and Alabi (2011) identified an incompetent project manager and inadequate cost control among the causes of project abandonment in Nigeria.

Denicol et al. (2020) similarly demonstrate that poor performance in complex projects is associated with multiple organisational and management deficiencies rather than purely technical problems.

For an industrial facility such as the Finima Incinerator Plant, project management becomes particularly important because technical, commercial, environmental, and operational activities must be coordinated throughout the project life cycle.

2.4.3 Project Governance Deficiencies

Project governance concerns the structures, processes, authority, accountability, decision-making arrangements, and oversight mechanisms through which projects are directed and controlled. Weak governance can produce: unclear accountability; delayed decisions; ineffective escalation mechanisms; inadequate oversight; conflicting stakeholder interests; weak change control; poor alignment between project and organisational objectives; and inadequate monitoring of project benefits.

Joslin and Müller (2016) found a significant relationship between project governance orientation and project success. Their study suggests that stakeholder-oriented governance is associated with project success. Young et al. (2020), using data from 51 global organisations and 66,817 responses, found that specific governance mechanisms—including vision, change, sponsorship, key performance indicators, and monitoring—were significantly related to project success.

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2.4.4 Inadequate Planning

Project planning provides the foundation for defining objectives, scope, resources, schedules, budgets, procurement requirements, risks, and implementation arrangements.

Ayodele and Alabi (2011) identified inadequate project planning as one of the leading causes of project abandonment in Nigeria. Ewa (2013) similarly found that lack of adequate planning at project inception was a major root cause of abandonment in Nigerian tertiary institutions. The study also identified lack of articulated vision and objectives as a significant issue.

2.4.5 Technical and Design Problems

Industrial projects depend heavily on the adequacy of engineering design and technical integration. Design errors, incomplete engineering information, inappropriate technology, equipment incompatibility, poor installation, and inadequate testing can significantly affect project performance.

Technical problems can originate during: conceptual design; feasibility studies; front-end engineering design; detailed engineering; procurement; fabrication; installation; commissioning; or operation.

Ayodele and Alabi (2011) identified faulty design as one of the causes of project abandonment in Nigeria. For an incineration facility, technical performance is especially important because successful operation requires the coordinated performance of combustion systems, emission-control systems, waste-feeding systems, electrical systems, instrumentation, utfilities, and safety systems. Technical failure can therefore become a direct cause of project abandonment or can reinforce other problems such as cost escalation, schedule delay, operational inefficiency, and loss of stakeholder confidence.

2.4.6 Operational Inefficiency

A project may be physically completed but still fail if it cannot operate reliably or economically.

Operational inefficiencies can arise from: inadequate staffing; insufficient operator competence; poor standard operating procedures; inadequate preventive maintenance; lack of spare parts; poor asset-management systems; inadequate utilities; weak reliability management; and failure to establish sustainable operating budgets.

2.4.7 Stakeholder Engagement Deficiencies

Industrial projects involve a broad range of stakeholders whose interests may differ. These include project sponsors, government agencies, regulators, contractors, suppliers, employees, host communities, environmental organisations, and other affected parties.

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Inadequate stakeholder engagement can lead to: resistance; misinformation; conflicts; delays; regulatory difficulties; reduced community support; and loss of legitimacy. Eskerod, Huemann, and Savage (2015) demonstrate the growing importance of stakeholder management within project management scholarship and emphasise the theoretical and practical development of stakeholder thinking in projects.

Mok, Shen, and Yang (2015), reviewing stakeholder management in mega-construction projects, found that the complexity and uncertainty of large projects require effective approaches to managing conflicting stakeholder interests. They also argue that stakeholder management is strongly influenced by project context.

2.4.8 Contractual and Procurement Factors

Nwachukwu and Emoh (2002) identified contractual conditions and contractor management among the factors affecting abandoned Nigerian projects. Ewa (2013) also identified poor and ambiguous contract documentation as a significant root cause of project abandonment.

In complex industrial projects, procurement and contract-management deficiencies can have significant downstream effects because delays in specialised equipment can prevent construction completion or commissioning.

2.4.9 Institutional and Political Factors

Projects operate within institutional environments involving laws, regulations, government agencies, organisational structures, and policy decisions.

Institutional instability can result in: changes in project priorities; changes in government; policy discontinuity; regulatory uncertainty; delayed approvals; bureaucratic processes; and changes in funding arrangements.

Nwachukwu and Emoh (2002) identified unilateral government actions, inflation, corruption, and other institutional factors among the barriers associated with abandoned Nigerian projects. Ewa (2013) similarly identified lack of institutional continuity, weak leadership, and inefficient legal systems among the root causes of abandonment. This suggests that project performance cannot be separated entirely from the institutional environment in which the project is implemented.

2.4.10 External and Environmental Factors

Projects can also be affected by factors outside the direct control of the project organisation. These include: inflation; exchange-rate fluctuations; economic recessions; supply-chain disruptions; regulatory changes; security issues; environmental events; and changes in technology.

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The influence of such external factors is particularly significant for projects involving imported equipment or specialised technologies because exchange-rate movements and international supply-chain constraints can substantially affect project cost and schedule.

2.5 Research Gap

The study identifies four principal gaps in the literature.

- **i.** Sectoral Gap: Existing Nigerian research has concentrated heavily on construction, education, water, irrigation, and public infrastructure. There is insufficient empirical evidence concerning industrial project abandonment.
- ii. Contextual Gap**:** Limited research has investigated project abandonment within the specific industrial and socio-institutional environment of the Niger Delta.
- **iii.** Project-Specific Gap**:** There is limited empirical research specifically examining **the Finima Incinerator Plant Project** and systematically establishing the factors responsible for its abandonment.
- **iv.** Analytical Gap**:** Previous studies have identified multiple abandonment factors, but relatively little research has combined **systematic factor identification, quantitative prioritisation using RII, and contextual interpretation of how the factors interact within an abandoned industrial facility**.

3. METHODOLOGY

3.1 Research Design

The study adopted a descriptive case study research design, which is appropriate for an in-depth investigation of the abandoned Finima Industrial Incinerator Plant within its real-world context. Case study designs are particularly suitable when the research seeks to explore complex phenomena, such as industrial project abandonment, and to understand the interactions between technical, financial, managerial, and socio-political factors (Yin, 2018).

Objective: Identification and Prioritization of Causes of Abandonment:

The Relative Importance Index (RII) was applied to survey responses from all 65 stakeholders. RII provides a structured method to rank the causes of project abandonment based on stakeholder perception of severity and frequency, ensuring that the most critical factors are systematically identified (Azman et al). This quantitative prioritization facilitates targeted analysis and informs subsequent stages of the study.

The population was 65 stakeholders which comprised stakeholders and professionals considered knowledgeable about the Finima Incinerator Plant Project and the industrial environment within

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which it was conceived, implemented, operated, and subsequently abandoned. The demography of the stakeholders is shown on Table 1.

A total of **65 respondents** constituted the sample for the questionnaire survey. Given the specialized nature and small size of the population, **a census approach was employed**. A census involves administering the questionnaire to all 65 stakeholders, ensuring comprehensive data collection without introducing sampling bias (Kothari, 2004). This method is particularly suitable for studies where each respondent's input is critical for understanding complex phenomena, such as industrial project abandonment.

Table 1 Demography of Stakeholder Survey

Stakeholder Category	Number of Respondents	Percentage (%)	Census Justification
Project Professionals (engineers, project managers, technical staff)	21	32.3%	Key implementers of technical and operational aspects; all included to capture technical causes.
Community Heads / Leaders	12	18.46%	Represent local social context and community interactions; all included to capture social/political factors.
Government Agency Representatives	10	15.38%	Responsible for regulatory oversight and project approval; all included to capture policy/governance impact.
Technocrats / Environmental Experts	8	12.31%	Provide technical, environmental, and compliance insights; all included to capture technical bottlenecks.
Other Stakeholders (contractors, consultants, NGOs, industry observers)	14	21.54%	Include perspectives on procurement, funding, and operational challenges; all included to ensure completeness.
Total	**65**	**100%**	Census ensures comprehensive coverage of all stakeholder groups.

3.3 Method of Data Collection

The study employed primary and secondary data collection methods.

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Primary data were collected using a **structured questionnaire** administered to the selected respondents.

The questionnaire was developed from the study objectives and the factors identified from the literature review, project documentation, and preliminary investigation of the Finima Incinerator Plant. The instrument was organised into sections covering:

1. respondents' demographic and professional characteristics;
2. factors responsible for the failure and abandonment of the project;
3. relative importance of the identified causative factors; and
4. consequences of the identified factors on project performance.

The respondents were requested to rate the identified causative factors according to their perceived significance using a **five-point Likert-type scale**, ranging from low to very high importance.

The questionnaire approach was selected because it permits the perceptions of a relatively diverse group of knowledgeable respondents to be systematically captured and converted into quantitative data for comparative analysis.

Secondary data were obtained through a review of available project and institutional records relevant to the Incinerator Plant Project. These included, where accessible project reports; technical and engineering documents; project; contractual and procurement records; environmental documentation; project schedules; operational and maintenance information; stakeholder-related reports; and other relevant documentary evidence.

The documentary review served two principal purposes. First, it provided historical and contextual information concerning the project. Second, it enabled the researcher to compare documentary evidence with the perceptions obtained from questionnaire respondents.

Data Triangulation was used. The use of multiple data sources was intended to enhance the credibility of the research findings. Questionnaire responses provided the **perception-based assessment** of the relative importance of the identified causes, while documentary evidence provided **contextual and project-specific evidence** concerning the circumstances and consequences of abandonment.

The convergence or divergence of these sources was considered during the interpretation of the findings. This approach reduced reliance on a single source of evidence and strengthened the explanatory value of the case study.

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3.4 Method of Data Analysis

Both **descriptive and quantitative analytical techniques** were employed to analyse the data.

The **Relative Importance Index (RII)** was employed as the principal technique for identifying and ranking the factors responsible for the failure and abandonment of the Finima Incinerator Plant Project. RII is appropriate for studies in which respondents are required to assess the relative importance or significance of multiple factors using an ordinal rating scale. It allows factors assessed by respondents to be transformed into comparable indices and subsequently ranked. The RII was calculated using:

The Relative Importance Index (RII) was calculated from questionnaire responses to rank the significance of identified abandonment factors. The formula for RII is:

$$RII = \frac{\sum W}{A \times N} \qquad \text{...Equation 3.4}$$

Where:

W= weight assigned to each factor by respondents (Likert scale 1–5)

A= highest weight (4)

N= total number of respondents (65)

Factors with the highest RII scores were considered the **most critical causes** of project abandonment.

Accordingly, the RII ranges from **0 to 1**, with a higher value indicating greater perceived importance of the factor. The RII values obtained from the study were used to establish the relative ranking of the causes of project failure and abandonment.

Based on the study's questionnaire results, the principal factors ranking is shown in Table 2

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Table 2. RII Value for Abandonment Causes

Causes of Finima Incinerator Plant Project Abandonment							
S/N	Factors	1	2	3	4	R.I.I.	Ranking
1	Funds and Financial Constraints	0	0	1	64	0.9962	1st
2	Poor Project Management	0	0	5	60	0.9808	2nd
3	Inadequate Stakeholder engagement	0	0	7	58	0.9731	3rd
4	Technical and Design Issues	0	0	8	57	0.9692	4th
5	Operational Inefficiencies	0	1	10	54	0.9692	5th
6	Poor Planning	0	3	4	55	0.9538	6th
7	Corruption & Misappropriation of fund	55	7	3	0	0.3000	7th
8	Supply Chain Disruptions	55	10	0	0	0.2885	8th
9	Cost Overruns	60	3	2	0	0.2731	9th
10	Security Challenges and Vandalism	61	2	2	0	0.2731	10th
11	Environmental and Social Concerns	61	2	2	0	0.2731	11th
12	Political Instability	62	3	0	0	0.2615	12th
13	Unqualified/Inexperience Consultants	65	0	0	0	0.2500	13th

From Table 2 From Table 4.1, the results indicate that Funding and Financial constraints (RII = 0.9962) was the most significant factor, followed closely by poor project management (RII = 0.9808) and Inadequate stakeholder engagement (RII = 0.9731). These findings align with previous research by Amech and Esegbo (2011), who also highlighted funding constraints as a primary reason for project abandonment in Nigeria.

Inadequate funding remains a prevalent issue in infrastructure projects across developing economies. According to Frimpong et al. (2003), many industrial projects in Nigeria suffer from financial mismanagement, delayed budget allocations, and dependence on government funding without alternative financing mechanisms. The absence of sustainable financial planning often leads to project stagnation and eventual abandonment.

4. RESULTS AND DISCUSSION

The RII results from Table 2 clearly establish that Funding and Financial Constraints (RII = 0.9962) was the most dominant cause of abandonment of the Finima Incinerator Plant. The near-perfect RII value indicates overwhelming consensus among respondents that financial instability constituted the primary systemic constraint. This finding corroborates global infrastructure

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research by Flyvbjerg (2014), who argues that financing fragility and cost underestimation are central predictors of infrastructure discontinuity.

Within the Niger Delta industrial context, funding disruptions often lead to halted contractor payments, deferred maintenance, procurement stagnation, and suspension of technical upgrades. Consistent with the Theory of Constraints, finance functioned as the principal bottleneck restricting overall system performance.

The second-ranked factor, Poor Project Management (RII = 0.9808), indicates governance weakness as a reinforcing mechanism. Institutional fragility—highlighted in governance studies by the World Bank—often amplifies financial inefficiencies through weak monitoring lack of risk registers, and absence of performance accountability frameworks.

Inadequate Stakeholder Engagement (RII = 0.9731) ranked third, underscoring the socio-environmental sensitivity of industrial projects in the Niger Delta. In line with Stakeholder Theory, neglecting community inclusion increases resistance, operational tension, and reputational vulnerability. This supports participatory governance principles advanced by the United Nations Environment Programme.

Technical and Design Issues (RII = 0.9692) and Operational Inefficiencies (RII = 0.9692) ranked fourth and fifth, indicating that while the abandonment was financially initiated, it was technically manifested. Waste-to-energy facilities, as emphasized by the International Energy Agency, require precision engineering and disciplined maintenance regimes to sustain uptime and emissions compliance.

Poor Planning (RII = 0.9538) further validates deficiencies in front-end project structuring, feasibility rigor, and implementation sequencing.

Interestingly, variables such as Political Instability, Security Challenges, Environmental/Social Concerns, Unqualified Consultants and others were ranked infinitesimal. This suggests that the Finima case deviates from generalized Niger Delta narratives of politically or security-induced abandonment; instead, it reflects a predominantly financial-governance-technical failure configuration.

Poor project management was the second highest-ranked factor. Inefficiencies in planning, execution, and resource allocation have long been associated with project abandonment. Studies by Nwosu and Chukwu (2021) highlight that the lack of skilled project managers, weak regulatory oversight, and inadequate risk management contribute significantly to poor project delivery.

Lack of stakeholder engagement was also identified as a crucial factor. Stakeholder involvement, including local communities, regulatory bodies, and private sector players, is essential for project

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success. When stakeholders are not adequately consulted or involved, resistance, conflicts, and lack of community ownership arise, leading to delays and eventual project collapse (Ikechukwu et al., 2021).

Inadequate stakeholder engagement ranked third, emphasizing the impact of socio-political instability on industrial projects in the Niger Delta when the community representatives are not adequately engaged. Vandalism, militancy, and theft have been recurrent issues affecting infrastructure development in the region (Amadi, 2017). The inability to secure project sites has deterred investors and delayed project completion.

Technical, design issues (RII=0.9692) and Operational Inefficiencies (RII=0.9692), although ranked fourth and fifth are approximately of same rank, remains significant. Poor planning (0.9538) ranked sixth which is also significant which comprises of poor feasibility studies, substandard engineering design plan, and lack of adherence to best practices contribute to structural and operational failures. Similar cases in Nigeria, such as the abandoned Ajaokuta Steel Mill, illustrate the consequences of inadequate technical planning (Adeleke et al, 2022). The remainder causative agent where insignificant in respect to Finima Incinerator Plant.

4.1 Discussion of Findings

The findings are broadly consistent with previous Nigerian studies but extend the literature to a specialised industrial project. The dominance of **financial constraints** supports Nwachukwu and Emoh (2002), who identified funding-related issues among important barriers to abandoned projects in Nigeria. It is also consistent with Ayodele and Alabi (2011), who found inadequate funding and delayed payments to be significant causes of project abandonment.

The high ranking of **poor project management** supports the broader project-performance literature, which demonstrates that governance, planning, monitoring, risk management, and coordination significantly influence project success.

The importance of **stakeholder engagement** supports stakeholder-oriented project-management research, which emphasises that project success depends partly on the effective management of stakeholders with different interests and levels of influence.

The significance of **technical and design issues** is particularly important because it distinguishes industrial project abandonment from some conventional construction projects. Industrial facilities require integration of specialised equipment, process systems, controls, utilities, environmental systems, and operating capabilities. The findings therefore support a **multidimensional model of industrial project abandonment** in which:

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Financial → Managerial → Planning → Technical → Operational → Stakeholder interactions

can progressively undermine project or facility viability and ultimately result in abandonment.

5. CONCLUSION

This study investigated the **root causes of industrial project abandonment in the Niger Delta using the Finima Incinerator Plant Project as a case study**.

The findings demonstrate that project abandonment was not caused by a single factor. Rather, it resulted from the interaction of several critical dimensions of project failure. **Financial constraints emerged as the most important factor (RII = 0.9962), followed by poor project management (0.9808), inadequate stakeholder engagement (0.9731), technical and design issues (0.9692), operational inefficiencies (0.9692), and poor planning (0.9538).**

The findings indicate that financial resources, although fundamental, are not sufficient to guarantee successful industrial project delivery. Financial sustainability must be accompanied by effective project governance, competent project management, comprehensive planning, technical integrity, operational preparedness, and sustained stakeholder engagement.

The study consequently concludes that the root causes of industrial project abandonment should be viewed as an **interconnected causal system** rather than independent variables. Weakness in one dimension can trigger or intensify weaknesses in others, eventually producing a cumulative failure mechanism.

The principal contribution of this study is its empirical examination of an **abandoned specialised industrial facility in the Niger Delta**, thereby extending the Nigerian project-abandonment literature beyond conventional public construction projects. The ranked causative factors provide a diagnostic basis for identifying early warning indicators and improving project governance and delivery practices.

However, identifying the causes represents only the first stage in addressing industrial project abandonment. The subsequent study should therefore examine the **consequences of these causative factors and develop a practical and sustainable resuscitation framework** for the Finima Incinerator Plant.

5.1 Contribution to Knowledge

The study makes five principal contributions to knowledge:

1. **Contextual contribution:** It provides empirical evidence on industrial project abandonment within the Niger Delta.

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2. **Sectoral contribution:** It extends abandonment research from conventional construction and public infrastructure to a specialised industrial waste-management facility.
3. **Empirical contribution:** It establishes a ranked set of factors responsible for the failure and abandonment of the Finima Incinerator Plant.
4. **Methodological contribution:** It demonstrates the usefulness of RII for prioritising causes of industrial project abandonment based on informed stakeholder assessments.
5. **Conceptual contribution:** It demonstrates that industrial project abandonment is better understood as an **interacting system of financial, managerial, planning, stakeholder, technical, and operational failures** rather than as a single-cause phenomenon.

5.2 Recommendations

Based specifically on Objective 1 and the findings of this paper, the following recommendations are proposed:

1. **Financial feasibility should be rigorously established before project commencement**, including realistic cost estimates, funding availability, contingencies, and long-term financial sustainability.
2. **Project governance mechanisms should be strengthened** through clearly defined authority, accountability, escalation procedures, monitoring, and decision-making structures.
3. **Comprehensive project planning should be undertaken** before major commitments are made, incorporating realistic schedules, resource requirements, risk assessments, procurement strategies, and commissioning plans.
4. **Technical and design assurance should be strengthened** through independent engineering reviews, constructability assessments, equipment compatibility checks, and appropriate commissioning planning.
5. **Stakeholder engagement should begin during project conceptualisation** and continue throughout the project life cycle rather than being treated as an activity undertaken only when conflicts emerge.
6. **Operational readiness should be integrated into project planning** so that manpower, maintenance systems, spare parts, procedures, utilities, and technical support are available before commissioning.
7. **Early-warning indicators for project abandonment should be incorporated into project-control systems**, particularly indicators relating to funding, schedule

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performance, cost growth, technical deficiencies, unresolved stakeholder issues, and contractor performance.

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