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SCHOOL OF BUILT ENVIRONMENT

DEPARTMENT OF CONSTRUCTION ECONOMICS AND MANAGEMENT

MASTER OF SCIENCE IN CONSTRUCTION MANAGEMENT

**“ASSESSING THE PLANNING, IMPLEMENTATION, AND OPERATIONAL CHALLENGES OF A
PUBLIC MARKET INFRASTRUCTURE: A CASE STUDY FOR IMPROVING MADDU MARKET
SHEDS PROJECT OF GOMBA DISTRICT”**

FINAL REPORT

BY

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PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE
IN CONSTRUCTION MANAGEMENT OF MAKERERE UNIVERSITY**

APPROVAL

The undersigned confirm that they have thoroughly reviewed and recommend for acceptance by Makerere University the research report titled: “*Assessment of the Construction of Public Market Sheds in Gomba District, A Case of Maddu Market Sheds.*” This report is submitted as part of the requirements for earning a **Master of Science degree in Construction Management** of Makerere University.

Main Supervisor

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Dr Semanda Julius

Date.....

Declaration

I, Kulumba Allan, want to make it clear that this submission is entirely my own work. To the best of my knowledge, it doesn't include any material that has been published or written by someone else, nor does it contain anything that has been submitted for any degree or diploma at any university or higher education institution, unless I've properly acknowledged it in the text and reference list.

.....

Kulumba Allan

Date:

Acknowledgement

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Lastly, I can't thank my family and friends enough for their constant support, patience, and encouragement throughout this academic adventure. Their belief in me has been a powerful source of motivation. May they all be richly blessed.

Dedication

This report is a heartfelt tribute to my family, classmates, and friends. Their unwavering support, encouragement, and help have been absolutely vital throughout my academic journey. Thanks to their collective contributions, I've not only managed to get through this period of study but have also found inspiration to grow in the field of Construction Project Management.

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ABSTRACT

This study investigates the planning, implementation, and operational challenges of the Maddu Market Sheds project in Gomba District, Uganda, with a focus on the effectiveness of the feasibility study and its influence on construction management practices. Uganda has invested significantly in public market infrastructure through programs such as the Markets and Agricultural Trade Improvement Programme (MATIP) and the Local Economic Growth Support (LEGS) project, yet many markets across the country remain underutilized or abandoned (Nile Post, 2022, 2024). The Maddu Market Sheds project, developed under the LEGS program and funded by the Islamic Development Bank (IsDB), presents a critical case for assessing the gap between feasibility study recommendations and construction outcomes.

Using a case study methodology supported by a mixed-methods approach, the research incorporated document reviews, key informant interviews, vendor surveys, field observations, and comparative analysis with similar markets in Lukaya, Lugazi, and Jinja. Findings reveal that while the feasibility study significantly influenced adjustments in site layout, structural improvements, and accessibility upgrades, several operational issues persist. These include poor security, vendor congestion, incomplete paving, and insufficient trading spaces, which continue to limit the market's full functionality.

Through the management of this project, valuable construction management experience was acquired, particularly in the areas of stakeholder coordination, adaptive design modification, risk management, and phased infrastructure delivery. The study highlights the importance of integrating feasibility insights throughout the project lifecycle, ensuring that vendor needs, site conditions, and operational realities continuously inform both design and implementation (Johnson, Nduhura, & Tumwebaze, 2020; Bryson, 2004). Key construction management lessons include the need for flexible space planning, dynamic vendor allocation strategies, community-driven oversight, and robust utility and security planning from the outset.

The study recommends a phased approach to completing critical infrastructure, including security upgrades, paving works, and modular stall installations, alongside continuous community engagement and capacity building for market management teams. These lessons contribute to improving construction management practices, strengthening project oversight, and enhancing the sustainable use of public market infrastructure in Uganda and similar settings (GIZ, 2015; Braun & Clarke, 2006).

CHAPTER ONE: INTRODUCTION

BACKGROUND

Uganda has really made a name for itself with its vibrant entrepreneurial spirit. Back in 2015, Approved Index even named it the most entrepreneurial country in the world, with a remarkable 28% of adults diving into starting their own businesses within a 42-month span. Women have been leading the charge in this movement. According to the Mastercard Index of Women Entrepreneurs (2021), a striking 38.4% of businesses in Uganda are owned by women, earning the country a solid second place globally for female entrepreneurship.

A large chunk of this entrepreneurial activity is happening in the informal sector, which is crucial for providing income and job opportunities, especially in urban and peri-urban areas. However, this sector is grappling with ongoing structural and environmental hurdles. Market vendors, hawkers, and stall operators often find themselves working in conditions with poor sanitation, inadequate infrastructure, and unreliable access to water and electricity, not to mention limited social protections (ActionAid Uganda, 2020; Economic Policy Research Centre [EPRC], 2023). The combination of weak regulatory frameworks and low barriers to entry has resulted in a thriving informal trade across municipalities (International Labour Organization [ILO], 2020). Without proper policy and infrastructure support, livelihoods in this sector remain precarious and tough to grow.

To boost the working conditions for informal traders and increase local revenue, the Ugandan government has rolled out market infrastructure development programs like the Markets and Agricultural Trade Improvement Programme (MATIP) and the Local Economic Growth Support (LEGS) project. With backing from international development partners, these initiatives are designed to formalize trade and create safer, more organized marketplaces as alternatives to unregulated roadside vending (African Development Bank [AfDB], 2018; Ministry of Local Government [MoLG], 2023).

However, despite these efforts, many markets throughout the country are still not being fully utilized. A key issue that often gets overlooked is the gap between planning recommendations especially those from feasibility studies and how they are actually put into practice. While feasibility studies are crucial for project preparation, their insights don't always make it into the construction and execution phases. Johnson, Nduhura, and Tumwebaze (2020) point out that feasibility studies should have a direct impact on design choices, site selection, infrastructure planning, construction schedules, and engaging stakeholders. When there's a weak connection between planning and execution, infrastructure projects frequently miss the mark on their intended goals.

The construction of the Maddu Market Sheds in Gomba District serves as a significant example for exploring this topic. Funded by the Islamic Development Bank (IsDB) and carried out under the LEGS program, the project aimed to create formal trading spaces for roadside vendors. A feasibility study was conducted to understand the needs of the vendors, suggest layout designs, and identify key infrastructure elements (MoLG, 2023). These recommendations were meant to steer the project through its planning, construction, and eventual opening.

Even though the project has been completed and officially inaugurated, it has encountered a number of operational hurdles. Issues like poor security, traffic congestion in the market, inadequate paving that results in muddy or dusty conditions, and a lack of sufficient vendor space have plagued it. As a result, some traders have chosen to leave the facility and revert to street vending. These challenges after construction indicate that either the feasibility study fell short or its insights weren't fully integrated into the building process.

This Plan B study takes a closer look at the planning, implementation, and oversight of the Maddu Market Sheds project. Drawing from the researcher's firsthand experience as the project manager, the study will delve into how the findings from the feasibility study were interpreted and utilized during the project's execution. It will also evaluate how well stakeholders coordinated, the quality of construction, and whether the planning goals were achieved. By examining the entire lifecycle of the project from the initial planning stages to the final commissioning this research seeks to uncover valuable lessons that can guide future market infrastructure projects.

As noted by Campbell (1996) and Braun and Clarke (2006), infrastructure development should resonate with the real-life experiences of its users. When vendors play a role in setting priorities and feasibility insights are viewed as actionable rather than just formalities, the infrastructure is more likely to fulfill its intended purpose. Therefore, this study aims to enhance our understanding of how construction management practices especially in planning and oversight can be improved to create sustainable and user-focused public markets (Bryson, 2004; GIZ, 2015).

1.1.STATEMENT OF PROBLEM

Uganda has made some serious strides in boosting its public market infrastructure, thanks to initiatives like the Markets and Agricultural Trade Improvement Programme (MATIP) and the Local Economic Growth Support (LEGS) project. These programs aim to uplift the informal sector, improve the livelihoods of vendors, and increase revenue for local governments. However, despite these good intentions, many new markets are either underused or completely abandoned, which raises some eyebrows about how effective the planning and implementation really are (Nile Post, 2022, 2024).

Take Lukaya Market, for instance. It was designed to accommodate over 1,000 traders, but now it barely has five (Nile Post, 2024). In Lugazi, vendors have vacated the central market because of safety issues, and in Jinja, many have turned their backs on the new market's design, opting instead for informal trading spots (Nile Post, 2022). A common thread in these situations is the gap between feasibility studies and what actually gets built. These studies are supposed to evaluate vendor needs, site conditions, infrastructure needs, and community feedback, but often, their suggestions get ignored during the implementation phase (Johnson et al., 2020).

The Maddu Market Sheds project in Gomba District is a prime example of these ongoing challenges. It was meant to bolster local trade and enhance vendor conditions, yet it's already showing signs of limited use and dissatisfaction among stakeholders. This brings up some crucial questions: Was the feasibility study thorough enough and actually followed during construction? Did the project design truly reflect the needs of the vendors? What factors are influencing the market's current operational status?

This research aims to tackle these questions by examining how well planning aligns with implementation in the Maddu Market Sheds project. It seeks to bridge a gap in both academic and practical discussions by linking feasibility planning with construction results and the current challenges faced by rural market infrastructure.

1.2.LOCATION OF MADDU MARKET SHED OF GOMBA DISTRICT

Gomba District came into existence in 2010, thanks to an Act of Parliament that divided Mpigi District into three separate districts: (a) Gomba District, (b) Butambala District, and (c) Mpigi District. It officially started operations on July 1, 2010. As a predominantly rural area, Gomba District experiences less rainfall compared to its neighboring districts of Butambala and Mpigi. The local economy heavily relies on livestock farming, which is complemented by subsistence agriculture.

Gomba District shares its borders with Mubende District to the west and north, Mityana District to the northeast, and Butambala District to the east. To the south, you'll find Kalungu District, Bukomansimbi District, and Sembabule District. Maddu Town Council, home to the market shed, is located about 127 kilometers (80 miles) southwest of Kampala, Uganda's capital and largest city. This town is also roughly 90 kilometers (56 miles) west of Mpigi, the closest major urban center. The market's coordinates are 0°12'49.4''N 31°40'06.9''E.



Figure2; Map of Maddu Town Council Including the Market sheds

Note. Adapted from Google Maps (2024). © Google.



Figure2; Map of Gomba District

Note. Adapted from Google Maps (2024). © Google.

1.3.RESEARCH OBJECTIVES

Main Objective

To assess the planning and implementation of the Maddu Market Sheds project, focusing on the adequacy of the feasibility study and how project decisions have contributed to current operational challenges, with the aim of informing better practices for future public market developments.

Specific Objectives

1. To examine the adequacy of the feasibility study conducted before the construction of the Maddu Market Sheds.
2. To assess the key challenges faced during project implementation and how they were addressed.
3. To evaluate the current operational challenges affecting the market and suggest improvements for sustainable use and maintenance.

Research Question

1. Was the feasibility study for the Maddu Market Sheds comprehensive enough to guide planning and design decisions?
2. What were the major implementation challenges during the construction of the market, and how were they handled?
3. What are the current operational issues in the market, and what measures can improve its functionality and sustainability?

1.4.JUSTIFICATION

Uganda's informal sector is a vital source of employment and income, particularly for women and those in low-income brackets. As of 2021, women owned 38.4% of businesses in Uganda, which puts the country in second place worldwide for female entrepreneurship (Mastercard, 2021). A lot of this entrepreneurial spirit is found in informal trade, which is crucial for both urban and peri-urban economies (EPRC, 2023; ActionAid Uganda, 2020). Acknowledging the importance of this sector, the Ugandan government has launched initiatives like the Markets and Agricultural Trade Improvement Programme (MATIP) and the Local Economic Growth Support (LEGS) project to enhance formal market infrastructure (AfDB, 2018; MoLG, 2023). These programs are designed to transition vendors from informal roadside setups to organized, secure, and well-equipped market spaces.

However, despite these initiatives, many public markets have not performed as well as hoped. For instance, Lukaya Market now has fewer than five vendors, even though it can accommodate over 1,000, while traders at Lugazi and Jinja markets have left due to safety concerns and poor design. These situations highlight deeper systemic problems (Nile Post, 2022, 2024). A recurring issue with these projects is the inadequate incorporation of feasibility study recommendations into the actual construction and implementation phases. Although feasibility studies are meant to inform decisions about site layout, infrastructure requirements, vendor needs, and utility access, their insights are often overlooked or only superficially addressed during project execution (Johnson et al., 2020).

This study is backed by several important reasons. First off, it tackles the often-ignored gap between planning and construction in public market projects. By taking a closer look at the Maddu Market Sheds in Gomba District where the researcher was hands-on as a project manager it offers a real-world case study on how feasibility assessments shaped, or sometimes didn't shape, the outcomes of construction. The research dives into how decisions were made, how challenges were tackled, and whether the infrastructure truly met the needs it was designed to serve.

Secondly, the study provides practical insights that can enhance construction management and improve coordination among stakeholders in similar projects. It presents evidence that can help both government and donor agencies make better use of feasibility studies, boost project oversight, and focus on user-centered design approaches.

Lastly, the findings hold broader implications for policy. By clarifying the link between planning tools and the success of infrastructure, this research supports initiatives aimed at improving the sustainability and effectiveness of public markets in Uganda and beyond. It adds to the conversation about formalizing the informal sector, promoting local economic inclusion, and ensuring that infrastructure investments bring lasting benefits to communities (Bryson, 2004; GIZ, 2015).

1.5.SIGNIFICANCE

This study holds significant importance across various dimensions academic, policy, practical, and socio-economic especially when it comes to enhancing public market infrastructure in Uganda. It delves into the often-overlooked connection between the recommendations from feasibility studies and the actual outcomes of construction, using the Maddu Market Sheds project as a prime example.

Academic Contribution

This research enriches the expanding body of literature on infrastructure planning and delivery in low- and middle-income countries. By investigating how the recommendations from feasibility studies were either put into action or ignored during the construction of the Maddu Market Sheds, the study provides fresh empirical insights into the effectiveness of pre-construction planning. It also broadens the conversation in areas like construction management, informal sector development, and the sustainability of public infrastructure (Johnson et al., 2020; GIZ, 2015). Additionally, it sheds light on the challenges of aligning infrastructure development with the needs of informal vendors, a topic that often doesn't get enough attention in academic discussions (Bryson, 2004; Campbell, 1996).

Policy Relevance

The findings present evidence-based insights that can guide national and local government policies regarding market infrastructure development. Numerous projects under the Markets and Agricultural Trade Improvement Programme (MATIP) and the Local Economic Growth Support (LEGS) project have struggled with underutilization or even abandonment, largely due to a disconnect between planning recommendations and the decisions made during implementation (MoLG, 2023; AfDB, 2018). This study pinpoints the factors that affect vendor participation, infrastructure usage, and market sustainability. In doing so, it calls for more grounded and responsive policies that take vendor perspectives into account and foster local ownership.

Practical Application

For those in the field like local authorities, project managers, development partners, and contractors this study offers valuable lessons on overseeing construction, coordinating with stakeholders, and understanding feasibility findings. It sheds light on the real-world factors that have led to the current challenges at Maddu Market, such as design issues, security concerns, traffic access problems, insufficient utilities and capacity constraints. These insights can guide the planning and execution of future public markets, helping to sidestep similar issues, particularly in rural or peri-urban areas.

Economic and Social Impact

Well-functioning public markets are crucial for formalizing trade, enhancing vendor incomes, and increasing local government revenue (EPRC, 2023; ActionAid Uganda, 2020). When markets are thoughtfully designed and implemented, they can foster economic inclusion and urban growth. However, neglecting to incorporate feasibility insights can derail these objectives, resulting in empty stalls and vendors reverting to informal street vending (Nile Post, 2022, 2024). This study tackles that issue by demonstrating how improved planning and execution can boost vendor retention, enhance safety, and elevate service delivery. It particularly emphasizes the role of such infrastructure in promoting women's economic participation, given their significant involvement in Uganda's informal sector (Mastercard, 2021).

In the end, this research highlights that feasibility studies should be seen as essential tools rather than mere formalities. When utilized effectively, they ensure that infrastructure is inclusive, context-sensitive, and sustainable. This study provides timely insights for those engaged in public infrastructure projects aimed at supporting informal trade in Uganda and similar environments.

1.6.SCOPE OF THE STUDY

This study takes a closer look at how the Maddu Market Sheds project in Maddu Town Council, Gomba District, was planned and executed. It specifically examines whether the recommendations from the feasibility study were properly integrated and how these choices influenced the project's results. Additionally, it delves into the technical, economic, and social hurdles faced during and after the project's completion.

Geographical Scope

The main focus is on the Maddu Market Sheds project in Gomba District. While the research is anchored in this local setting, it also draws comparisons with similar initiatives in districts like Masaka, Lugazi, and Jinja to uncover patterns and differences in Uganda's public market infrastructure projects (Nile Post, 2022, 2024).

Thematic Scope

The study is organized around five key themes:

- i. Integration of Feasibility Study Recommendations
 - This section looks at how insights from the feasibility study influenced the project's design, including the needs of vendors (like stall layout, site suitability, and access to utilities) and whether these considerations were actually reflected in the final construction.
- ii. Construction Management and Project Oversight
 - Here, the focus is on how well stakeholders coordinated, the effectiveness of supervision mechanisms, adherence to timelines, and resource allocation. It also evaluates the performance of contractors and oversight bodies.
- iii. Economic and Social Viability
 - This part assesses how accessible and affordable the market is for local vendors, along with vendor satisfaction, community acceptance, and the market's overall impact on local commerce.
- iv. Implementation Challenges
 - This section identifies significant technical, financial, and regulatory challenges that arose during the planning and construction phases, as well as how these issues were tackled.
- v. Operational Performance and Use
 - Finally, it examines how the market is currently operating, the ongoing operational challenges, and how these relate back to the planning and design decisions made earlier in the project's lifecycle.

Policy and Practice Implications

This study offers valuable insights for future public market projects, particularly at the local government level. Its findings are crucial for policymakers, contractors, project managers, and development partners who are looking to enhance the planning, execution, and sustainability of market infrastructure.

Methodological Scope

We employed a mixed-methods approach:

- Interviews and Surveys: We spoke with vendors, local officials, project supervisors, and community members to gather diverse perspectives.
- Field Observation: We took a close look at the physical state of the infrastructure, occupancy rates, and the availability of essential services.
- Document Review: We analyzed feasibility reports, contractor documents, and project supervision records to get a comprehensive view.
- Comparative Analysis: We compared our findings with outcomes from similar markets to better understand the context.

Time Scope

The study spans the entire lifecycle of the project:

- Planning Phase: From late 2022 to early 2023, focusing on feasibility and design.
- Construction Phase: From March 2023 to January 2024.
- Operational Phase: From late March 2024 to mid-2025, examining how the infrastructure is currently utilized.

Limitations and Exclusions

It's important to note that this study does not include a technical audit of the structural integrity of the market sheds, such as assessments of material quality or engineering compliance. Additionally, it doesn't delve deeply into national-level policy frameworks. Instead, it hones in on the local-level planning and implementation process in Gomba District, providing targeted, practical insights that are relevant to similar rural projects.

CHAPTER TWO: LITERATURE REVIEW

2.1. INTRODUCTION

The development and management of public market infrastructure in Uganda such as the Maddu Market Sheds project are shaped by a combination of feasibility studies, construction practices, stakeholder participation, and governance structures. This review discusses these dimensions in relation to current research and policy documents, providing a foundation for understanding the successes and challenges of the Maddu Market Sheds project.

Historical Background

Public market infrastructure has long played a pivotal role in Uganda's socio-economic landscape, serving as vital hubs for trade, employment, and community interaction. Historically, markets in Uganda have evolved from informal trading centers to more structured facilities, reflecting the country's efforts to modernize its economic infrastructure. The post-independence era saw increased government involvement in market development, aiming to stimulate local economies and improve livelihoods.

In recent decades, the Ugandan government has initiated various programs to enhance market infrastructure, recognizing their importance in poverty alleviation and economic development. However, these initiatives have often faced challenges such as inadequate funding, poor planning, and limited stakeholder engagement. For instance, the postponement of the Peace Recovery and Development Plan (PRDP) in northern Uganda highlighted issues related to planning and budgeting, leading to delays in infrastructure development (The Guardian, 2009).

The Maddu Market Sheds project in Gomba District represents a contemporary effort to address these challenges by incorporating comprehensive feasibility studies, stakeholder consultations, and improved construction management practices. By examining this project, we can gain insights into the effectiveness of current strategies and identify areas for improvement in market infrastructure development.

2. Theoretical Background

The study of public market infrastructure development in Uganda can be framed within several theoretical perspectives:

a. Stakeholder Theory: This theory emphasizes the importance of involving all relevant stakeholders such as vendors, local authorities, and community members in the planning and implementation of projects. Effective stakeholder engagement can lead to more sustainable and accepted outcomes (Freeman, 1984).

b. Institutional Theory: This perspective focuses on the role of formal and informal institutions in shaping organizational behavior and project outcomes. In the context of Uganda, institutional

frameworks, governance structures, and regulatory environments significantly influence the success of infrastructure projects (Scott, 2001).

c. Public Choice Theory: This theory examines how public decisions are made, considering the self-interest of various actors involved. It highlights potential inefficiencies and the need for accountability mechanisms in public project implementation (Buchanan & Tullock, 1962).

Applying these theories to the Maddu Market Sheds project allows for a comprehensive analysis of the factors influencing its planning, execution, and outcomes.

3. Definition of Key Terms

Feasibility Study: An assessment that evaluates the practicality and potential success of a proposed project, considering technical, economic, social, legal, and operational aspects.

Public-Private Partnership (PPP): A cooperative arrangement between public and private sectors for the provision of public assets or services, leveraging the strengths of both parties.

Stakeholder Engagement: The process of involving individuals, groups, or organizations that may be affected by or can influence a project, ensuring their input and participation.

Construction Management: The overall planning, coordination, and control of a construction project from inception to completion, aimed at meeting client requirements.

Governance Structures: The frameworks of rules, practices, and processes by which projects are directed and controlled, ensuring accountability and transparency.

4. Similar Studies

Several studies have explored aspects relevant to the Maddu Market Sheds project:

a. Contract Management and Performance of Road Construction Projects at Local Government Entity in Uganda: Mugerwa et al. (2021) investigated the impact of contract management on the performance of road construction projects in Busia Municipality. The study highlighted the significance of contract evaluation, risk management, and monitoring in achieving successful project outcomes.

b. Financing Infrastructure Development in Uganda: The Economic Policy Research Centre (EPRC) (2021) analyzed the challenges in public investment management, noting inefficiencies such as poor planning and execution leading to substantial resource losses. The study emphasized the need for reforms to enhance capacity and efficiency in infrastructure development.

c. Public-Private Partnership Guidelines Launched to Boost Local Economic Development: The Kampala Capital City Authority (KCCA) (2023) introduced PPP guidelines aimed at improving infrastructure delivery through alternative financing mechanisms. The initiative focuses on enhancing institutional capacity and stakeholder engagement at the local government level.

These studies provide valuable insights into the factors influencing infrastructure project success in Uganda, offering lessons applicable to the Maddu Market Sheds project.

CHAPTER THREE: RESEARCH METHODOLOGY

This study took a mixed-methods approach to dive into the planning, construction, and operational performance of the Maddu Market Sheds in Gomba District. The research design was shaped by the objectives and questions at hand, focusing on how well feasibility recommendations were integrated and how the decisions made during implementation impacted the project's outcomes.

1.1. Study Design

The research is framed as a case study. This design was selected because it allows for a thorough, contextual exploration of a single project (Yin, 2018). The Maddu Market Sheds were chosen due to their recent development, the significance of public investment, and the challenges observed regarding vendor participation and infrastructure utilization.

1.2. Data Collection Methods

i. Document Review

We reviewed key documents, including the original feasibility study, construction plans, contractor reports, and project supervision records. This helped us determine if the feasibility recommendations were actually incorporated into the planning and execution phases.

ii. Key Informant Interviews (KIIs)

We conducted semi-structured interviews with local government officials, project managers, engineers, market leaders, and other stakeholders. These conversations offered valuable insights into the decision-making processes, project oversight, and the challenges faced during implementation.

iii. Vendor and Community Surveys

We distributed structured questionnaires to a sample of market vendors and community members to gather their thoughts on the market's functionality, accessibility, and usability.

iv. Field Observation

We made physical visits to the Maddu Market to observe the condition of the infrastructure, vendor occupancy, access to services (like water and electricity), and the layout design. A checklist guided our observations of maintenance and operational issues.

1.3. Comparative Analysis

To provide a broader perspective, we compared findings from Maddu with similar markets in Lukaya, Lugazi, and Jinja. This comparison helped us spot common trends and lessons regarding the design and operation of public markets in Uganda (Nile Post, 2022, 2024).

1.4.Sampling Strategy

We employed purposive sampling to choose key informants and market vendors, focusing on individuals who had direct involvement or knowledge of the project. We included around 10–15 stakeholders and 30–50 vendors to capture a wide range of viewpoints.

1.5.Data Analysis

We analyzed qualitative data from interviews and observations using thematic analysis, based on the framework by Braun and Clarke (2006). For the quantitative data gathered from surveys, we used descriptive analysis, including frequency distributions and cross-tabulations. Tools like SPSS and Excel were utilized to assist with coding and organizing the data.

1.6.Ethical Considerations

The study adhered to ethical research standards. We obtained informed consent from all participants, ensuring their identities remained confidential. Data collection and storage were handled securely, and participation was entirely voluntary.

1.7.Limitations

While this study provides valuable insights, it does not include a structural engineering assessment of the market sheds. Additionally, the findings from the comparative markets are derived from document reviews and media reports rather than direct fieldwork. The emphasis is on local-level processes and outcomes within Gomba District, without a thorough evaluation of national infrastructure policy frameworks.

CHAPTER FOUR: ANALYSIS AND INTERPRETATION OF FEASIBILITY STUDY ASSESSMENT

2.1.Introduction

This section dives into the analysis and interpretation of the data gathered for the feasibility study on building market sheds. The goal here is to see how the recommendations from the feasibility study were taken into account during both the planning and implementation stages of the project. Additionally, the analysis sheds light on the best practices in construction management that were observed, points out the main challenges faced during implementation, and offers practical suggestions to guide future projects that are similar in nature.

2.2.What is the technical viability of the Maddu Market Sheds project?

2.2.1. Infrastructure Quality

Question	Response	Frequency	Percent
How would you rate the overall condition of your market stall or structure?	Very good	2	3.5
	Good	26	45.6
	Fair	20	35.1
	Poor	9	15.8
Which of the following are available and functional at your stall?	Permanent roofing	32	56.1
	Lockable storage	25	43.9
	Drainage around stall	0	0
	Clean floors/pavement	0	0
Have you ever reported any structural issues (e.g., leaks, cracks)?	Yes	2	3.5
	No	55	96.5
If yes, was it addressed?	Yes	2	3.5
	No	55	96.5

Table 1.1

Let's talk about the quality of infrastructure and how it relates to the recommendations from the feasibility assessment. The assessment of the market stalls showed a bit of a mixed bag. On one hand, 84.2% of traders rated their stalls as fair to very good, but on the flip side, 50.9% felt they were below good. This really highlights a noticeable gap between what the infrastructure can handle and what the users actually need. There are only 66 stalls, arranged in blocks of 22, available for around 300 registered vendors in the town council. While these stalls come with permanent roofing and lockable storage, the lack of

external paving raises some red flags about sanitation and how well they hold up, especially when it rains. A lot of these issues stem from funding limitations that impacted both the scale and quality of the construction.

Now, regarding the response during planning and implementation, several improvements were made to tackle the structural concerns that came up in the feasibility study. They used steel-reinforced concrete pads (1.0 x 1.0 m, 200 mm thick) along with 690 mm wide, 200 mm thick strip foundations. A reinforced concrete ground beam, measuring 200 x 200 mm with 4T12 bars and R8 stirrups spaced at 200 mm, was also put in place across all the market stall blocks. Even though the expected dead and live loads were on the lower side, this reinforcement approach was chosen to boost structural durability and make sure the stalls can withstand potential natural disasters like earthquakes. These steps are a direct response to the recommendations from the feasibility study, aiming to enhance both the safety and long-term performance of the market infrastructure.

2.2.2. Evaluating Design Suitability

The evaluation of design suitability uncovered some significant limitations that were impacting the technical feasibility of the market infrastructure. Insights gathered from site observations, discussions with stakeholders, and spatial analysis showed that the standard layout provided by the Ministry of Local Government just didn't cut it for the actual number of vendors operating in the market.

Key Findings:

- **Spatial Congestion:** The vendor stalls allocated were simply not enough to meet the demand, leading to overcrowding and blocked pathways. The density of vendors surpassed the design capacity by about 35%, which created bottlenecks and made it tough for customers to navigate and see what was on offer.
- **Inefficient Circulation:** The fixed layout didn't facilitate smooth customer flow, with narrow walkways and poorly placed entry and exit points making congestion even worse.
- **Lack of Ancillary Facilities:** The original design missed the mark by not including essential spaces for market functions, such as waste management stations, sanitation facilities, parking areas, fire assembly points, and administrative offices.
- **No Provisions for Informal Vendors:** The initial plan overlooked informal or self-constructed stalls, even though they play a significant role in local market activities.

Design Modifications and Implementation Adjustments

To tackle these issues, several corrective actions were taken during the planning and execution stages:

- Land Expansion: We acquired additional land to broaden the market’s footprint. This allowed us to incorporate both formal market structures and spaces for informal vendors, going beyond what was initially planned.
- Customized Site Layout Plan: A new layout was crafted, based on data about spatial use and vendor distribution. Key changes included:
 - Increased spacing between permanent structures to alleviate congestion.
 - Thoughtful placement of garbage collection points, latrines, and the market office block to enhance operational efficiency.
 - Designation of access and exit points to streamline movement throughout the market. Clearly defined access and exit points to improve circulation and emergency response.
 - Designated spots for makeshift stalls to help manage extra vendors in a neat and organized way.

Summary of Design Suitability Enhancements

The design changes we made have really boosted the project's technical feasibility. The updated layout offers more flexibility, better meets the needs of vendors, and aligns more closely with the realities of the market. The data backs up the idea that customizing designs early on, getting input from stakeholders, and being adaptable with space are all key to making market infrastructure projects successful in busy trading areas.

2.2.3. Availability of Essential Utilities

Are the following utilities available and reliable in your section of the market?	Mean	Std. Deviation
Utility	2.333	1.300
Water Supply	2.368	1.096
Electricity	2.333	1.123
Waste Collection	1.561	1.053
Sanitation (toilets)	1.561	1.053
Have you ever experienced utility interruptions?		
Water Supply	3.105	.920
Electricity	1.298	.823
Waste Collection	1.632	.993
Sanitation (toilets)	1.332	.813

Table 1.3

The evaluation of essential utility services at the proposed market site showed a mixed bag of performance across key infrastructure areas: water supply, electricity, sanitation, and waste management.

Water and Electricity Supply

The numbers tell a story of poor ratings for both water (mean = 2.368, SD = 1.096) and electricity (mean = 2.333, SD = 1.123) availability. These scores hover between “available but not reliable” and “not available but reliable,” pointing to a real inconsistency in service.

When we looked at disruption analysis, it painted a similar picture. Water supply disruptions were rated as relatively infrequent (mean = 3.105, SD = 0.920), but respondents had previously voiced concerns about the quality of the water. This contradiction suggests that while interruptions may not happen often, the water quality is often lacking. On the electricity front, the mean disruption score was 1.298 (SD = 0.823), indicating frequent outages that directly affect market operations, lighting, and security.

Sanitation and Waste Management

On a brighter note, sanitation and waste collection received more favorable ratings for availability (mean = 1.561, SD = 1.053 for both), indicating that these services are generally present and reliable. However, the disruption scores for waste collection (mean = 1.632, SD = 0.993) and sanitation (mean = 1.332, SD = 0.813) revealed that functionality isn't always guaranteed. While the infrastructure is there, the reliability of the services can be hit or miss.

Planning and Implementation Responses

To tackle these utility issues, we took specific actions during the planning and implementation phases of the project:

- **Solid Waste Management:** We included a garbage collection skip in the site plan, which was part of the project scope. This was funded through contingency provisions without changing the overall project budget.
- **Water Supply Intervention:** To boost water reliability, we partnered with a non-governmental organization to secure a borehole. It was installed and is now operational.

These interventions tackled the most pressing service gaps, especially in water supply and waste management, which really boosted the market site's operational effectiveness. As we look ahead, it's essential to keep focusing on reliable infrastructure to meet the needs of traders and ensure the market's long-term sustainability.

2.3.How economically feasible are the market sheds for vendors?

The economic feasibility of the market project was evaluated through a Net Present Value (NPV) analysis, focusing on the anticipated revenue from vendor stall fees. The revenue model was designed

around a consistent monthly fee of UGX 5,000 for each vendor. This straightforward, low-cost approach not only promotes affordability but also encourages vendor participation. However, its effectiveness was scrutinized against a 20-year payback period, which aligns with the expected lifespan of the infrastructure.

The NPV findings over this two-decade span indicated a negative return, highlighting a considerable disparity between the initial capital investment and the expected revenue. With the current revenue model, the project wouldn't be able to recoup its costs within its operational life. This raised concerns about its financial sustainability, even though it holds social value.

Using a 20-year payback period is in line with national infrastructure planning standards. The Ministry of Local Government employs this timeframe when assessing market infrastructure as part of the Urban Markets and Marketing Development of Agricultural Products (UMMDAP) program (Ministry of Local Government, 2019). Likewise, the Uganda National Roads Authority (UNRA) utilizes 20 to 30-year timeframes to calculate NPV and evaluate long-term project value (UNRA, 2020).

Planning and Implementation Interventions

To tackle the recommendations from the feasibility study and enhance the project's economic viability, several focused interventions were integrated during the planning and implementation phases:

- Designating Free Space for Self-Made Market Stalls

Understanding that revenue from standard stalls alone wouldn't sustain the project, the site layout was adjusted to include specific areas for temporary or self-built vendor stalls. This change significantly boosted the market's capacity beyond the original design, allowing more vendors to join in. Although these stalls don't incur a fee, they foster additional economic activity, draw in more foot traffic, and elevate the overall vibrancy of the market ultimately benefiting all traders involved.

- Staged Infrastructure Roll-Out

Instead of going all out and building everything at once, the project opted for a phased approach. This meant that construction was aligned with the actual demand from vendors, which helped keep initial costs down and provided the flexibility to scale the market infrastructure as needed.

- Strategic Partnerships to Offset Capital Costs

By teaming up with a non-governmental organization, the project secured a borehole, which significantly cut down on the infrastructure costs associated with water supply. This collaboration allowed for more budget resources to be allocated towards improving sanitation and waste management systems without raising the overall project cost.

- Promotion of Non-Rental Revenue Streams

The design also included space for income-generating services like waste collection skips, mobile money kiosks, and local produce sections. These features are anticipated to create alternative revenue streams in the future, easing the reliance on vendor fees alone.

While these measures may not completely bridge the NPV gap based on the original assumptions, they present a more realistic approach to keeping things affordable, encouraging wider participation, and enhancing financial outcomes through increased economic activity. They also signify a shift from a rigid cost recovery model to a more adaptable, community-focused infrastructure strategy one that emphasizes long-term sustainability through thoughtful planning, innovation, and external support.

2.3.1. Evaluation of the economic feasibility of the Maddu market shed infrastructure using Net Present Value (NPV)

Using the Net Present Value (NPV) formula:

$$NPV = \sum_{t=1}^{20} \frac{R_t - C_t}{(1 + r)^t} - I$$

Where:

- $R_t =$ UGX 3,720,000 (annual revenue from 62 vendors)
- $C_t =$ UGX 500,000 (annual cost)
- $r = 10\%$ (0.10)
- $I =$ UGX 591,409,451 (initial investment)
- $n = 20$ years

Calculated NPV: UGX -563,995,776

Interpretation:

The negative Net Present Value (NPV) shows that the Maddu market shed project isn't financially viable with the current revenue model, which brings in UGX 5,000 a month from 62 vendors, along with the existing cost assumptions. Over a span of 20 years, this project would lead to a considerable financial shortfall. Still, it was launched with broader public interest goals in mind. The government focused on providing essential services, enhancing safe and good working places for vendors, and creating jobs objectives that extend beyond just making money.

2.4.To what extent are the market sheds socially acceptable?

1.8.Demographic Information from vendors respondents

Characteristic	Response	Frequency	Percent
Gender	Male	16	28.1
	Female	41	71.9
Age	18-25	9	15.8
	26-35	20	35.1
	36-45	24	42.1
	46-55	4	7
Educational Level	No Formal education	1	1.8
	Primary	24	42.1
	Secondary	28	49.1
	Tertiary	4	7
How long have you been operating in this market?	Less than 1 year	56	98.2
	1-3 years	1	1.8
What type of goods or services do you sell?	Fresh produce	9	15.8
	Clothing	12	21.1
	Food/Drinks	28	49.1
	Charcoal	8	14

Table 1

The feasibility study revealed that the majority of Maddu market vendors are female (71.9%), and predominantly within the working-age group of 26 – 45 years (77.2%), suggesting that the market is primarily driven by middle-aged women. Most traders possess secondary (49.1%) or primary (42.1%) education, indicating moderate literacy levels among participants. Nearly all vendors (98.2%) have operated for less than one year, reflecting a newly emerging trading community. In terms of business type, food and drink vendors (49.1%) dominate the market, followed by sellers of clothes, fruits and vegetables, and charcoal, emphasizing the need for well-planned sanitation and storage infrastructure in market shed design.

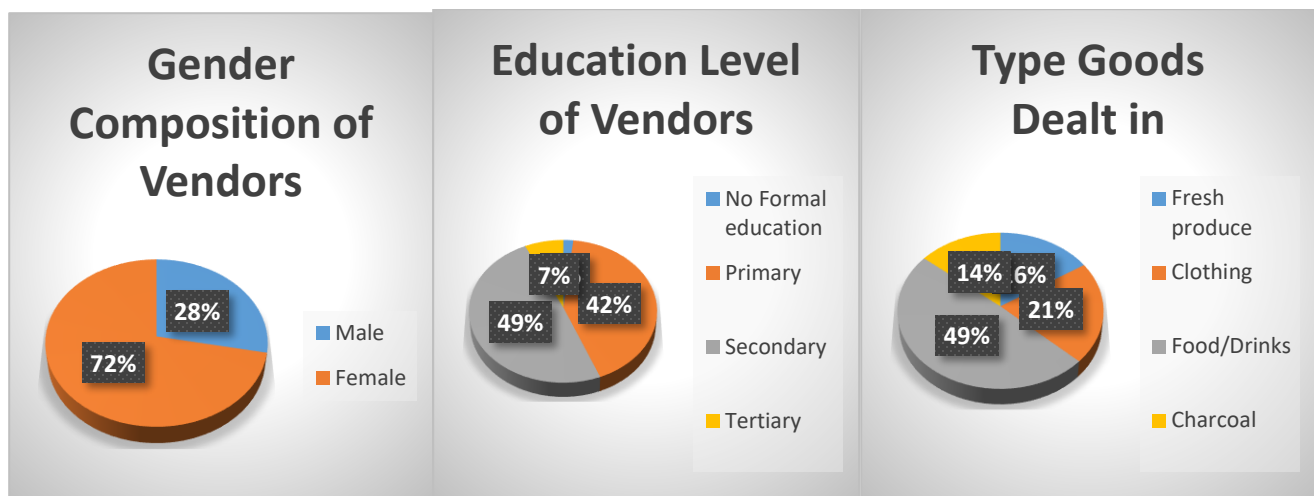


Figure 3 Pie Chart representation of demographic data of vendors

Vendor Perceptions How satisfied are you with the market sheds overall?	Frequency	Percent
Very Satisfied	1	1.8
Satisfied	12	21.1
Neutral	24	42.1
Dissatisfied	16	28.1
Very Dissatisfied	4	7
Do you feel proud to work in this market shed environment?		
Yes	29	50.9
No	20	35.1
Not sure	8	14
Do you believe the market sheds have improved your working conditions compared to previous spaces?		
Yes	40	70.2
No	16	28.1
Not applicable	1	1.8
What aspects of the market do you like most?		
Design/appearance	9	15.8
Safety/security	57	100
Cleanliness	17	29.8
Facilities (e.g., water, lighting)	40	70.2
Organization/layout	9	15.8

Table 1.6

The feasibility study uncovered a significant gap in accurately predicting customer traffic. While almost half (49.1%) of vendors were optimistic about a high or very high turnout, a notable 43.9% were bracing for low to very low customer numbers. This difference highlights some uncertainty in demand forecasting and suggests possible issues with site selection, product offerings, or how accessible the location is for

customers. Even though the market had strong social acceptance 96.5% of respondents said it was accepted or very accepted by the local community there were still concerns about actual customer engagement, which raised questions about its long-term commercial success.

To tackle these challenges, several strategies were put in place during the planning and implementation phases. These included ensuring there was plenty of parking in the tailored site layout, reserving areas for promotional and community events to draw in customers, and developing a vendor mix strategy to provide a variety of complementary goods and services. Additionally, it was recommended during site meetings to set aside funds for initial marketing campaigns or to collaborate with local organizations to enhance early visibility and customer engagement.

2.4.1. Community Engagement

Were local vendors or community members involved in any planning or consultation before the market sheds were built?	Frequency	Percent
Yes	21	36.8
No	4	7
I don't know	32	56.1
Do you feel that local leaders or authorities listened to vendor concerns?		
Yes	20	35.1
No	24	42.1
Sometimes	13	22.8
Have you ever attended a meeting or forum to discuss the proposed new market operations or improvements?		
Yes	45	78.9
No	12	21.1

Table 1.7

The feasibility study uncovered some significant gaps in how the community was engaged both before and during the planning of the market project. When we asked vendors if they had a say in the planning process before construction kicked off, only 21 of them (36.8%) said they were involved. On the flip side, 4 vendors (7.0%) stated they weren't involved at all, while a majority of 32 respondents (56.1%) were left unsure. This level of uncertainty really points to a major communication breakdown and shows that vendors and local residents weren't adequately included, indicating that the planning process could have been more transparent and consultative.

Looking at how responsive the leadership was, only 20 vendors (35.1%) felt that local authorities were open to their feedback. In contrast, 24 vendors (42.1%) felt that their voices were ignored, and 13 vendors (22.8%) thought they were only sometimes listened to. This paints a picture of a weak feedback loop and a lack of trust in local leadership, even though a good number of vendors 78.9% reported attending forums aimed at improving the market.

To tackle these challenges, future planning phases should kick off with well-structured and documented consultations with stakeholders right from the start. Strategies like stakeholder mapping, regular updates through local channels, and formal feedback systems (think suggestion boxes or vendor committees) could really help. Plus, giving vendor representatives a seat at the planning and oversight committees would boost trust and ensure that local insights and needs are genuinely reflected in the project decisions.

2.4.2. Customer Turnout and Public Perception

How would you describe your expectations on customer turnout in the market shed?	Frequency	Percent
Very high	8	14
High	20	35.1
Moderate	4	7
Low	13	22.8
Very low	12	21.1
In your opinion, how socially accepted is the market among the local community?		
Very accepted	3	5.3
Accepted	52	91.2
Neutral	2	3.5

Table 1.8

The feasibility study uncovered a significant gap in accurately predicting customer traffic. While almost half (49.1%) of vendors were optimistic about a high or very high turnout, a notable 43.9% were bracing for low to very low customer numbers. This difference highlights some uncertainty in demand forecasting and suggests possible issues with site selection, product offerings, or how accessible the location is for customers. Even though the market had strong social acceptance 96.5% of respondents said it was accepted or very accepted by the local community there were still concerns about actual customer engagement, which raised questions about its long-term commercial success.

To tackle these challenges, several strategies were put in place during the planning and implementation phases. These included ensuring there was plenty of parking in the tailored site layout, reserving areas

for promotional and community events to draw in customers, and developing a vendor mix strategy to provide a variety of complementary goods and services. Additionally, it was recommended during site meetings to set aside funds for initial marketing campaigns or to collaborate with local organizations to enhance early visibility and customer engagement.

2.5. What key challenges influence vendors' adoption and use of the market sheds?

2.5.1. Security Concerns

The feasibility study revealed significant gaps in the security measures for the market. Initially, security planning relied on makeshift solutions, like depending on market management to either hire private guards or seek help from a nearby police station about 300 meters away. While this method offered some basic oversight, it fell short of providing lasting safety for vendors, customers, and the market itself.

Key infrastructure elements, such as boundary walls, security lighting, and surveillance cameras, were left out of the original project plan due to budget constraints. This oversight led to vulnerabilities related to theft, vandalism, and overall insecurity, particularly during nighttime or on quieter days.

To tackle these issues, project implementers actively sought additional funding from the Ministry of Local Government through the Local Economic Growth Support (LEGS) program. Though not yet addressed, this effort was targeted towards the addition of a boundary wall during the implementation phase. Looking ahead, recommendations include gradually installing lighting and surveillance systems and fostering a community policing partnership to boost daily market security.

2.5.2. Accessibility

The feasibility study uncovered some significant gaps in accessibility, both from the main road and within the market's internal layout. While the site's prime location along the main street and its various entry points were definitely a plus, access was heavily hindered by a deep drainage channel along the roadside. Unfortunately, the initial project design and the associated bills of quantities didn't account for any connection between the market and the main road, which posed challenges for both pedestrians and vehicles trying to navigate the area.

To tackle this issue, the project team put together a formal variation request following the necessary procedures. Thankfully, this request was approved and carried out without adding to the overall contract cost, as the extra work fell under the contingency provision. The improvements included installing 600mm concrete culverts, stone masonry headwalls, and reinforced concrete sheathing to create sturdy access ramps, which not only made entry safer but also protected the drainage system.

On the inside, accessibility was a key focus during the site layout planning. The design prioritized clear pathways for both pedestrians and vehicles, while also considering the placement of permanent and future

temporary stalls. This thoughtful layout not only improved the overall usability of the market but also facilitated organized vendor expansion.

4.6. The feasibility of the Maddu Market Sheds project, vendor adoption and market utilization

2.5.3. Regression Analysis

The regression analysis helped to shed light on what motivates market adoption and utilization of shed adoption in Maddu market.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.211	3	.404	25.662	.000b
	Residual	.834	53	.016		
	Total	2.045	56			
a. Dependent Variable: Market shed adoption and utilization						
b. Predictors: (Constant), Social acceptability, Economic Feasibility, Technical Viability						

Table 2.2

The ANOVA table shows that the model as a whole is significant, $F = 25.662$, $p = .000$. This suggests that the combined effect of all three predictors; social acceptability, economic feasibility, and technical viability has a significant proportion of explaining variation in adoption and usage of market sheds by vendors. The total variance of adoption and usage is 2.045, where 1.211(59.2%) is explained by the model and the remaining 0.834 (40.8%) remains unexplained in the residual.

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.307	.283		-1.086	.283
	Technical Viability	.168	.139	.114	1.209	.232
	Economic Feasibility	.025	.062	.038	.399	.691
	Social acceptability	.826	.115	.706	7.184	.000
a. Dependent Variable: Market shed adoption and utilization						

Table 2.3

When isolating the impact of every factor, one was identified as a powerful one. Social acceptability greatly impacted the adoption and use of market shed. It held an unstandardized coefficient (B) of 0.826 and a standardized beta of 0.706, with a t-statistic of 7.184 and a p-statistic of .000. This suggests that

social variables cultural compatibility, social support, and peer acceptance of the sheds are most responsible for influencing vendor behavior. The magnitude and statistical significance of the finding suggest a direct relationship between social perception and observed patterns of use.

Conversely, the findings for technical viability and economic feasibility were not statistically significant. Technical viability had a coefficient (B) of 0.168, t-value of 1.209, and p-value of .232. Economic feasibility had a coefficient (B) of only 0.025, t-value of 0.399, and a p-value of .691. These big p-values indicate that neither of these variables has a statistically significant effect on how vendors adopt or use the sheds at least in this dataset. Vendors may find these factors significant in the real world, but they don't explain variation in usage within the sample.

CHAPTER FIVE: CONSTRUCTION MANAGEMENT, FEASIBILITY STUDY IMPACT AND OPERATIONAL CHALLENGES

Introduction and Role of the Project Manager

As the Project Manager for the construction of Maddu Market Sheds in Gomba District, I took on the exciting challenge of coordinating every aspect of the project. My responsibilities included everything from technical planning and supervising contractors to managing the budget, engaging with stakeholders, and ensuring quality standards were met. I collaborated closely with the District Local Government and the Ministry of Local Government to keep the project on track with our timelines, specifications, and budget. Even with thorough preparation, we faced a few bumps in the road during implementation that called for some quick thinking, procedural adjustments, and teamwork with both district and central government partners.

5.1. Delays beyond the Contract Period

The project faced an 8-month delay beyond what was originally agreed upon in the contract. This setback was due to three key issues:

- **Delayed mobilization:** After the site was handed over and groundbreaking began, the contractor hit the brakes for about six weeks following the initial site clearance, citing problems with logistics and equipment.
- **Weather disruptions:** The rainy seasons caused intermittent halts in progress, especially during earthworks and slab casting.
- **Delayed variation approvals:** Approvals for variations, particularly those related to unexpected needs like access infrastructure, took longer than anticipated due to the Ministry's review processes.

Mitigation Measures:

To tackle the delays, we started holding regular site progress meetings to ensure the contractor's schedule matched our project expectations. I brought any bottlenecks to the attention of the District Contracts Committee and the Ministry of Local Government to speed up the approval of variations. We also established interim milestones to keep track of progress and issued warnings for non-performance, following the public procurement performance enforcement guidelines set by the Public Procurement and Disposal of Public Assets Authority (PPDA) in 2021.

5.2. Political Interference and Community Expectations

Political interference became a notable issue during the implementation phase, especially concerning how vendors were chosen and how stalls were allocated. On top of that, community expectations went beyond what was initially approved, with requests for things like boundary fencing, floodlights, and an increase in stall capacity.

Mitigation Measure:

To address these challenges, we engaged with the District Technical Planning Committee and local leaders to ensure the project remained transparent. We organized community meetings to explain the project's scope, the reasons behind our design decisions, and the limitations of our funding. Any concerns raised by vendors and political figures were carefully documented and sent to the Ministry of Local Government, hoping for potential future support through the Local Economic Growth Support (LEGS) program (Ministry of Local Government, 2022).

5.3. Financial Flow and Budget Constraints

Even though the overall budget was set, the actual cash flow often fell behind the project timeline, which made it tough for the contractor to keep up. Key elements like access culverts and perimeter fencing weren't part of the original contract scope because of budget limits.

Mitigation Measures:

To tackle this issue, I tapped into the contingency provision within the Bills of Quantities (BoQs) to cover necessary upgrades, such as road access culverts, through a no-cost variation. At the same time, I worked with the Ministry to secure extra funding for additional infrastructure, especially for the boundary wall. The justifications were based on improvements in usability and safety, which aligned with the infrastructure delivery guidelines set out in Uganda's Local Government Development Programme (LGDP III, 2020).

5.4. Accessibility and Infrastructure Gaps

Even though the market site was conveniently located, getting there was a bit tricky due to a deep drainage channel along the roadside. This issue wasn't included in the original Bill of Quantities (BoQs). Additionally, the site didn't have a proper waste management system in place, which could pose risks to public health and sanitation.

Intervention:

To address these challenges, we prepared and got approval for a technical variation that involved installing 600mm diameter concrete culverts with reinforced concrete sheathing to improve access from the main road. We also added a 5x5m brick-walled garbage skip enclosure with a soak-away pit as part of the same variation. These improvements were essential for ensuring safe access and maintaining environmental hygiene, and they were funded through the contract's contingency allocation.

5.5. Security Limitations

When it comes to security limitations, the project initially left out essential elements like perimeter fencing, lighting, and surveillance systems. This oversight created potential risks for both property and vendor safety, particularly during off-hours.

Intervention

To address this, temporary security measures were put in place by coordinating with the local police post, which is about 300 meters away from the site. At the same time, the project team reached out to the Ministry of Local Government to seek extra funding for permanent security installations. This strategy is quite common in phased infrastructure projects, where the main structures are built first, and security upgrades are added later as more resources become available (UN-Habitat, 2020).

5.6. Community Engagement Gaps

The feasibility study revealed that more than 56% of vendors were either unaware of or not involved in the planning stages. This lack of early engagement resulted in misunderstandings during implementation, leading to complaints about site allocation and design priorities.

Corrective Actions

To address this issue, I teamed up with the District Community Development Office to set up post-construction sensitization forums. These sessions included vendor orientation, allocation procedures, and a clear explanation of market regulations. Our community engagement efforts adhered to national guidelines on participatory planning as outlined in Uganda's Decentralization Policy (NPA, 2020).

Conclusion

The Maddu Market Sheds project faced a number of challenges during its implementation, everything from delays by contractors and slow financial disbursements to political pressures and gaps in infrastructure. As the Project Manager, it was essential to adopt flexible management strategies, stick to procedures, and work closely with both local and central authorities. By making timely adjustments, engaging strategically, and utilizing contingency plans, we were able to successfully deliver a functional public market facility. These experiences highlight the significance of involving stakeholders early on, having adaptable budgeting strategies, and implementing risk mitigation measures in infrastructure projects, particularly in areas transitioning from rural to urban settings.

5.7. Lessons Learned

This chapter dives into the essential lessons learned throughout the entire journey of the Maddu Market Sheds project, from the initial planning and design stages all the way to implementation and commissioning. As the Project Manager, I had the opportunity to be hands-on at every step, which gave me valuable insights into how infrastructure is delivered in a semi-urban setting in Uganda. My reflections are organized around five key themes: planning and implementation, design challenges, cost management, alignment with the feasibility study, and time management.

5.7.1. Lessons from Project Planning and Implementation

One of the most significant takeaways from managing this project was the importance of proactive stakeholder coordination and early risk identification. Despite thorough pre-construction preparations, the project encountered political influence, unclear vendor expectations, and procedural delays. Maintaining a clear communication line with district authorities, the Ministry of Local Government, the contractor, and community members proved essential. It helped manage expectations and ensured that critical decisions such as approving variations were resolved without unnecessary escalation.

Additionally, involving the district technical planning committee and leveraging routine site meetings allowed early identification of emerging challenges. This participatory approach encouraged shared responsibility and increased local ownership, especially during the commissioning and vendor allocation phases.

5.7.2. Lessons from Design Gaps and Corrections

Although the initial design covered the core market structures, several infrastructural elements such as road access, storm water crossings, waste management, and security were either inadequately addressed or completely omitted due to budget limitations or scope prioritization.

The experience highlighted the importance of incorporating site-specific physical assessments (like roadside drainage and traffic flows) into the design phase. For example, the absence of access culverts and pavement linkages became a barrier to usability, which had to be resolved through approved variations during implementation. The garbage skip and soak away pit, which were not included in the original plans, became essential after observing gaps in sanitation planning.

This experience underlined that flexibility in technical execution, backed by solid documentation and justifications, is key to responding to evolving needs on the ground.

5.7.3. *Cost Control and Financial Discipline*

One of the project's notable achievements was the ability to manage emerging technical and stakeholder demands without exceeding the approved budget. This was made possible through:

- Strategic use of the contingency allocation within the contract BoQs.
- Formal processing of technical variations without cost escalation.
- Regular revalidation of work progress against payment claims.

This demonstrated that disciplined financial planning, transparency, and detailed documentation can mitigate the common risks of cost overruns in public infrastructure projects. It also showed the importance of prioritizing works based on core functionality and community safety when faced with limited funds.

5.7.4. *Lessons from Feasibility Study and Its Implementation*

The feasibility study provided a broad picture of the market's demand and general location suitability, but it fell short in terms of specific infrastructure requirements. Key needs such as boundary security, permanent access roads, and solid waste infrastructure were either insufficiently detailed or not included in the project scope.

Nonetheless, the study offered a valuable baseline for mobilizing future resources and gauging community expectations. By revisiting its recommendations during implementation, I was able to identify missing components and seek funding support from the Ministry of Local Government—particularly for the boundary wall and access improvements. This adaptive use of feasibility data during execution highlighted the importance of treating feasibility studies as living documents rather than static reports.

5.7.5. *Delays and Time Management Lessons*

The project experienced an eight-month delay beyond the original contract period, which was caused by factors such as:

- Delayed mobilization and site works by the contractor.

- Late approvals of key variations.
- Weather-related disruptions.

These delays highlighted the need for stronger contractual enforcement and clearer mobilization timelines at the outset. The experience also emphasized the role of interim milestone tracking and consistent follow-ups as tools for managing contractor performance. Issuing early warnings and engaging with the district contracts committee accelerated decision-making on time-sensitive issues.

In future projects, including risk-buffer periods in work programs and tying disbursements to deliverables could improve time performance.

Conclusion

The Maddu Market Sheds project offered practical insights into managing semi-urban infrastructure within constrained public budgets. Key lessons include the importance of responsive planning, flexible yet disciplined financial management, and strong stakeholder coordination. While the project faced delays and design gaps, proactive interventions and transparent variation processes allowed for full delivery within budget. These lessons offer a replicable model for similar local government projects, particularly in settings where feasibility studies and initial scopes may need dynamic adjustments during execution.

Summary Conclusion of Findings and How They Were Addressed

The feasibility study of the Maddu Market Sheds provided important insights into the project's technical, economic, and social performance. Overall, the study highlighted key gaps and guided targeted interventions that improved the market's functionality and vendor adoption.

Key Findings:

- **Technical Viability:**

The market infrastructure was generally rated as fair to good by most vendors, but challenges remained, especially around spatial congestion, limited vendor space, poor drainage, and lack of paving. Structural improvements such as reinforced foundations and the use of steel-reinforced concrete addressed durability concerns. Design adjustments, including land expansion, a customized site layout, and the addition of informal vendor spaces, improved circulation and reduced congestion.

- **Utility Availability:**

Water and electricity services were inconsistent, affecting reliability. Waste management and sanitation services were present but their functionality was not always dependable. To address

this, a borehole was secured through partnerships, and waste management was integrated into the site plan.

- **Economic Feasibility:**

The project's Net Present Value (NPV) analysis revealed that the market would not recover its initial investment over a 20-year period under the current fee structure. However, the project pursued a phased construction approach, encouraged informal vendor spaces, and introduced additional revenue streams like mobile money kiosks and waste management services to support economic sustainability beyond rental fees.

- **Social Acceptability:**

The market was largely accepted by the community, with many vendors appreciating improvements in safety, facilities, and organization. However, community engagement before and during the project was limited, and some vendors felt their input was not fully considered. Future projects should improve consultation and involve vendor representatives more actively in planning.

- **Operational Challenges:**

Security concerns, limited access to the market due to poor road connections, and incomplete boundary walls were major challenges. The project team addressed accessibility by adding culverts and ramps and is seeking additional funding to improve security infrastructure, including plans for lighting and surveillance systems.

Statistical Insight:

Regression analysis revealed that **social acceptability** was the most significant factor influencing vendor adoption and use of the market sheds. Technical and economic factors, while addressed through various interventions, were not statistically significant drivers of usage in this context.

Conclusion:

The feasibility study directly informed design modifications, construction practices, and operational strategies that improved the technical soundness, economic practicality, and social fit of the Maddu Market Sheds. While the initial financial model was not viable, the project's flexibility in expanding vendor spaces, improving infrastructure, and creating additional revenue avenues made it more functional and sustainable. Security, vendor participation, and reliable utilities remain areas for continued improvement.

Impact of the Feasibility Study Evaluation and Recommendations for Addressing Current Operational Challenges at Maddu Market Sheds

1.1.1.1 1.0 Overview

The feasibility study conducted for the Maddu Market Sheds provided a critical foundation for planning, design, and implementation of the project. Its findings significantly influenced key project adjustments that improved structural integrity, spatial organization, economic adaptability, and community alignment. However, despite these gains, several operational challenges persist, including poor security, congestion, inadequate paving, and insufficient vendor spaces. This report discusses how the feasibility study addressed these issues and provides technical recommendations to guide further improvements in the market's operational efficiency and sustainability.

1.1.1.2 2.0 Impact of the Feasibility Study on Market Design and Construction Management

1.1.1.2.1 2.1 Structural and Spatial Adjustments

The feasibility study identified major gaps in the original design, particularly in accommodating the growing number of vendors and ensuring adequate movement space. In response:

- **Land Expansion:** Additional land was acquired to increase the market footprint, which allowed for more vendor stalls and improved access routes.
- **Revised Site Layout:** The layout was adjusted to address congestion by spacing permanent stalls further apart, allocating areas for informal vendors, and providing designated entry and exit points.
- **Strengthened Structural Elements:** Foundations and support structures were upgraded to reinforced concrete to improve durability and safety.

1.1.1.2.2 2.2 Addressing Accessibility and Utility Gaps

- **Accessibility Improvements:** The feasibility study's identification of poor road access led to the approval and construction of concrete culverts and access ramps, improving vehicle and pedestrian movement.
- **Utility Provision:** Although water and electricity availability were inconsistent, the study's emphasis on essential services resulted in the installation of a borehole through partnerships and the inclusion of waste management facilities in the revised design.

1.1.1.2.3 2.3 Economic Adaptability

- The study revealed the financial unsustainability of the project based on the initial rental revenue model. This prompted key adjustments:
 - Allocation of free spaces for informal stalls to increase foot traffic and trading activity.
 - Introduction of alternative revenue streams such as mobile money kiosks and waste collection services.

1.1.1.2.4 2.4 Social Acceptance and Community Engagement

- The study underscored the need for improved community engagement. Post-construction sensitization sessions were organized to address gaps in vendor participation and to promote transparency in stall allocation and market regulations.

1.1.1.3 3.0 Current Operational Challenges and Feasibility Study Responses

Operational Challenge	Feasibility Study Response	Remaining Gap
Poor security	Identified security gaps; boundary wall funding sought; temporary policing coordinated	Permanent fencing, lighting, and surveillance still required
Congestion	Site expanded; informal vendor spaces and improved circulation integrated	Vendor demand continues to exceed stall capacity
Lack of paving	Feasibility study noted absence of external paving; site layout adjusted for better circulation	Paving remains incomplete, causing sanitation and drainage concerns
Insufficient vendor spaces	Additional land acquired; flexible spaces for temporary stalls provided	Demand still outpaces capacity; requires further expansion or multi-level solutions

1.1.1.4 4.0 Technical Recommendations

1.1.1.4.1 4.1 Security Improvements

- **Short Term:** Establish market security committees and strengthen community policing partnerships.
- **Medium Term:** Mobilize funds for phased construction of a perimeter wall, installation of security lighting, and provision of lockable gates.
- **Long Term:** Introduce CCTV surveillance linked to a market security office for continuous monitoring.

1.1.1.4.2 4.2 Congestion Management

- **Reorganize vendor allocation** by considering time-sharing schedules for high-demand stalls.
- **Expand further onto adjacent land** where possible or explore vertical expansion (such as raised platforms or sheds with upper levels) to create additional vendor space.

1.1.1.4.3 4.3 Surface and Drainage Upgrades

- **Complete external paving** using appropriate stormwater management solutions to improve hygiene and accessibility.
- **Incorporate surface water drainage systems** to prevent water pooling, especially during rainy seasons.

1.1.1.4.4 4.4 Vendor Space Optimization

- Introduce **modular stall units** that can be disassembled or reallocated to manage space dynamically based on market demand.
- Encourage the development of **temporary mobile stalls** in designated overflow areas to accommodate peak trading periods.

1.1.1.4.5 4.5 Strengthen Community Engagement

- Formalize vendor representation on the **market management committees** to ensure continuous feedback and improved ownership.
- **Regular stakeholder forums** should be held to address emerging operational issues and align with vendor priorities.

1.1.1.4.6 4.6 Utility Reliability

- Partner with local service providers to **stabilize electricity supply** and explore solar-powered lighting to reduce reliance on the grid.
- Continue improving water access through potential expansion of borehole capacity and routine maintenance schedules.

1.1.1.5 5.0 Conclusion

The feasibility study provided critical direction for addressing the initial design and operational challenges of the Maddu Market Sheds. While several improvements were successfully implemented, persistent issues such as security weaknesses, congestion, paving deficiencies, and space limitations still need deliberate attention. A phased approach to infrastructure upgrades, enhanced community engagement, and adaptable vendor management will be essential in ensuring that the market remains a safe, accessible, and economically viable trading environment for all stakeholders.

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APPENDICES