SCHOOL OF POSTGRADUATE STUDIES

COMMUNITY-BASED STRATEGIES AND SUPPORT FOR IMPROVING THE SUSTAINABILITY OF SCHOOL INFRASTRUCTURE PROJECTS IN CHIBOMBO: A CASE OF BUILD IT INTERNATIONAL.

A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, UNIVERSITY OF LUSAKA IN PARTIAL FULFILMENT OF THE AWARD OF THE MASTER OF SCIENCE IN PROJECT MANAGEMENT.

BY

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DECLARATION

I **PRAISE LUWAILE** hereby declare that this dissertation.

Is a representation of my work.

Has duly acknowledged the work of other people.

Has not been presented for any other award in any University.

Signature:

Date: 18th January, 2025

APPROVAL

This study report of **Praise Luwaile** has been approved to meet the minimum requirement for the Master of Science in Project Management.

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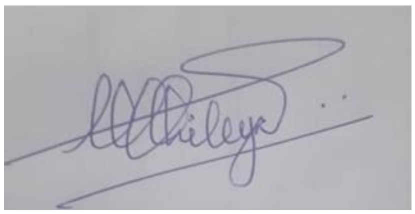
Signature: 

Date: 18th January 2025

DEDICATION

Dear loving husband,

I appreciate your constant support, understanding, encouragement, and love throughout the process. Your acceptance and always being with me have been the bulwark of my aid during this journey. Truly, your affection has served as my lifeline and my motivation in making this undertaking not only viable but also worthwhile. For all of this, I owe you everything.

To my unborn child (Yamika),

You have been my silent partner during this journey, your presence reminding me that there is love, hope, and more to come. You are an angel, a symbol of hope, and you inspired me to achieve this goal with the love and power that you have endowed on me. This piece of work aims to motivate you by highlighting true love, strength, and faith, and how much more there is to come in this world. Together with you, this piece is dedicated to all the love and strength you have showered on me.

With all my heart and gratitude, this is for you both.

ACKNOWLEDGEMENT

My heartfelt thanks go to God Almighty for the divine mercy and grace that has accompanied me through this journey of authoring this thesis. His strength, both in wisdom and service, was beneficial in completing this endeavour.

I am grateful to my supervisor, [Charles Kapekele Chileya], for his patience, assistance, and guidance, which enabled me to conduct this study. He played a fundamental role in mentoring me.

Thank you, Kelvin Mwando. Without your advice, motivation, and assistance at every point of the process, this would have been significantly more challenging.

I thank the study participants who were willing to share their time and knowledge that made this research possible.

This work would not have been possible without the support, understanding, and encouragement of my family and my husband. Their faith in me has made all of these possible and has been one of the keys to my success.

ACRONYMS

BII - Build It International

DEBS - District Education Board Secretariat

FGD - Focus Group Discussion

KII - Key Informant Interview

MOU - Memorandum of Understanding

PTC - Parent Teacher Committee

RAND - Random

SRS - Simple Random Sampling

SSB - Stabilized Soil Blocks

TAG - Technical Advisory Group

UNILUS - University of Lusaka

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ABSTRACT

This study investigated community-based strategies and support mechanisms for improving the sustainability of school infrastructure projects implemented by Build It International (BII) in Chibombo District, Zambia. Using a mixed-methods approach, the study examined community engagement strategies, support mechanisms, and the influence of local governance structures on project sustainability. Data was collected through surveys of 62 Parent Teacher Committee members, interviews with 11 key informants, and two focus group discussions across four schools: Kamaila, Katole, Machaya, and Mwachisompola Primary Schools.

The study findings revealed that community engagement through Parent-Teacher Committees (PTCs) fostered local ownership through parents being involved in the planning and participating in some of the project activities such as clearing of construction sites, digging on foundations, and participating in the maintenance of projects, challenges persisted in maintaining consistent participation and integrating community input into decision-making processes. BII's capacity-building initiatives, particularly maintenance training, were effective but lacked sustained follow-up support. The study identified significant barriers including limited financial resources, inadequate policy frameworks, and inconsistent community participation following the implementation of free education policy.

Key recommendations include strengthening participatory planning processes, expanding training programs with ongoing mentorship, developing sustainable funding models through income-generating activities, and enhancing alignment between community-driven projects and national education policies. The study emphasizes the need for structured monitoring systems and regular technical support to ensure long-term infrastructure sustainability.

This study contributes to the existing body of knowledge by providing context-specific insights into community-based infrastructure sustainability in rural Zambia, particularly highlighting the interplay between community engagement, capacity building, and governance structures. The findings suggest that successful infrastructure sustainability requires a comprehensive approach integrating community participation, sustainable construction techniques, and robust post-construction support mechanism

CHAPTER ONE

INTRODUCTION AND BACKGROUND

Introduction

The importance of education in developing countries cannot be overstated as it can spark economic development, social development and empower individuals. In Zambia where the scope of education is constrained due to a lack of infrastructure, Build It International is working on school construction projects in underserved communities.

Despite the government's commitment to enhancing educational facilities, many schools in Zambia still struggle with problems such as dilapidated classrooms, inadequate sanitation, and a lack of learning resources (UNICEF Zambia, 2017). Although there are policies in place to support school development, their implementation often fails due to a lack of community involvement, insufficient funding, and gaps in maintenance. These issues underscore the urgent need to explore community-based strategies that can improve the long-term sustainability of school infrastructure.

Furthermore, despite the government's efforts to improve school infrastructure the existing approach frequently lacks community engagement and support, leading to unstable outcomes (Munachonga et al., 2019; Makuwira, 2021). Without active local engagement, projects may deteriorate faster, limiting their impact on educational outcomes. Addressing this issue requires a shift towards community-driven approaches that empower local stakeholders to take ownership of school infrastructure projects.

The gap between vision and plan continues to widen due to the government's efforts towards improving school infrastructure not always being community-oriented and thought out which results in poor outcomes (Munachonga et al., 2019; Makuwira, 2021). For this reason, answering the question regarding community-oriented approaches and supplementary structures can go a long way in improving the sustainability of school building projects.

This study examines the role of community engagement and support systems in enhancing the sustainability of school infrastructure projects implemented by Build It International in Chibombo, Zambia. By evaluating the effectiveness of community participation, governance structures, and support mechanisms, the research seeks to generate insights that can inform more sustainable infrastructure development strategies (Hunja, 2018). Given the limited documentation on the long-term impacts of community participation in infrastructure sustainability (UNICEF Zambia, 2017; Mwanza, 2020), this study aims to bridge this knowledge gap and contribute to best practices in educational infrastructure development.

1.0.1 Background to the study

Zambia has made significant strides in improving access to education, with the government's efforts leading to an increase in the national net enrolment ratio from 79.3% in 2002 to 92.5% in 2018 (World Bank, 2022). However, the quality of education remains a pressing concern, in addition, the quality of education in most primary and junior secondary schools is poor. It argues that it is not only important to get children into school, but it is also important to ensure that they stay in school, receive good quality education, and complete a full cycle of basic (Peggy and Henry, 2020).

Historically, school infrastructure development in Zambia has faced challenges due to economic fluctuations and policy inconsistencies. Government-led initiatives such as the Basic Education Sub-Sector Investment Programme (BESSIP) and the Education Sector National Implementation Framework have attempted to address these gaps but have often been constrained by limited community participation and inadequate funding (World Bank, 2003). Recognizing these challenges, organizations like Build It International have stepped in to construct and rehabilitate schools, focusing on community-centered approaches to ensure longevity.

The inadequate state of school infrastructure poses a significant barrier to achieving quality education and realizing the full potential of Zambia's human capital (Makuwira, 2021). Recognising this challenge, organizations like Build It International have undertaken initiatives to construct and renovate school facilities in various regions of the country, including the Chibombo district.

However, despite these efforts, the long-term sustainability of school infrastructure projects remains a significant challenge in Zambia. The existing approach often lacks sufficient community involvement and support, leading to issues such as inadequate maintenance and ineffective resource utilisation (Mwansa & Bwalya, 2017; Hunja, 2018). Previous studies have examined the importance of community participation in infrastructure development but have not sufficiently explored its long-term effects on school sustainability, particularly in rural districts like Chibombo (UNICEF Zambia, 2017; Uddin et al., 2016).

Build It International, a UK-Zambia-based charity established in 2006, has developed a unique approach that integrates community participation with vocational skills training in construction trades. By training unemployed youths from local communities, BII not only builds infrastructure but also equips individuals with practical skills, promoting both education and employment (Build It International, 2024). However, the long-term impact of these projects on school sustainability and educational outcomes in Chibombo remains understudied.

This study seeks to address this gap by investigating the role of community engagement and support mechanisms in sustaining school infrastructure projects. By focusing on four primary schools in Chibombo—Kamaila, Machaya, Katole, and Mwachisompola—the research aims to assess best practices, challenges, and policy implications for sustainable school infrastructure development. Findings from this study will provide actionable recommendations for policymakers, NGOs, and community leaders to enhance the effectiveness and longevity of educational infrastructure investments.

1.2 Statement of the Problem

Sustainable development and maintenance of school infrastructure in Zambia remain a critical challenge, despite various initiatives by the government and non-governmental organisations. School facilities that are not properly maintained or supported often deteriorate rapidly, compromising learning environments and limiting educational outcomes. While Build It International has implemented several infrastructure projects in the Chibombo District, concerns remain about the long-term viability and maintenance of these facilities without consistent community engagement and effective support systems.

The current infrastructure development approach in many rural schools frequently overlooks the crucial role of community ownership and participation, resulting in inadequate maintenance practices, resource mismanagement, and eventual deterioration (Munachonga et al., 2019). Furthermore, while existing literature acknowledges the importance of community involvement in school infrastructure projects, there is a lack of empirical data and in-depth analysis on how these strategies impact the long-term sustainability of school facilities in Zambia, particularly in Chibombo (UNICEF Zambia, 2017; Mwanza, 2020). This knowledge gap undermines the ability of stakeholders to implement more effective and community-driven infrastructure sustainability models.

Addressing these issues is critical to ensuring that investments in school infrastructure translate into lasting benefits for learners and communities. This study aims to investigate the role of community engagement strategies, support mechanisms, and local governance frameworks in sustaining school infrastructure development projects by Build It International in Chibombo. By identifying key factors that enhance or hinder sustainability, the study provides actionable insights and practical recommendations for improving infrastructure maintenance, strengthening community ownership, and promoting educational outcomes.

1.3 Study Objectives

General objective

To Examine Community-Based Strategies and Support for Improving the Sustainability of School Infrastructure Projects in Chibombo.

Specific objectives

To assess the nature of community engagement strategies employed by Build It International on the long-term sustainability of school infrastructure projects in Chibombo, Zambia

To evaluate the effectiveness of support mechanisms provided to communities in Chibombo by BII for the maintenance and sustainability of school infrastructure projects.

To assess the influence of local governance structures and educational policies on the sustainability of community-led school infrastructure projects in Chibombo, Zambia

1.4 Study Questions

What specific community engagement strategies implemented by Build It International have contributed to the sustainability of school infrastructure projects in Chibombo, Zambia?

How have BII's support mechanisms, including capacity-building initiatives and maintenance programs, influenced the long-term viability and effectiveness of school infrastructure projects in the Chibombo area?

In what ways do local governance structures and educational policies facilitate or hinder the long-term sustainability and effectiveness of community-led school infrastructure projects in Chibombo, Zambia?

1.5 Scope of the study

The study was conducted in four primary schools located within diverse community settings in the Chibombo District, specifically at Kamaila, Machaya, Katole, and Mwachisompola Primary Schools. These schools were supported by Build It International whose sole purpose is to improve the educational infrastructure. The study examined two important stakeholder group categories: members of the Parent Teacher Committee (PTC) and the school head teachers as well as the Build It Construction Project Team. These stakeholders not only facilitate the construction, but they can also implement proper systems to ensure the use and upkeep of the school infrastructure for the long term.

Focusing on the selected groups, the study sought to obtain a detailed knowledge of the different types of community mobilisation strategies and the kinds of support which are available for enhancing the sustainability of school development projects. These shifting paradigms necessitated a more robust understanding of the existing practices, and the problems experienced in maintaining the school facilities in the community. This seeks to, eventually, guide further attempts towards increasing community participation and monitoring of educational projects in the region, reinforcing the projects' sustainability (Jones & Smith, 2019).

1.6 Significance of the study

This study is of paramount significance as it has generated critical insights into the development of sustainable school infrastructure, particularly through robust community-based approaches. Through the robust analysis of Build It International's work in Chibombo, the study managed to capture the best lessons that allow effective engagement and empowerment of the communities through the various stages of the project cycle.

The results highlight the need and interventions particular to the members of the communities, not only when designing and constructing, but also when the educational amenities are in place and even after the project is completed. This strategy is designed to instill a sense of ownership in the people in a particular region so that the schools can function efficiently on a perpetual basis without needing any external aid.

In addition, the study highlights the various capacity-building gaps that certain communities must deal with to manage such educational structures without any help. These gaps include training on how to sustain educational infrastructure, resource management, and project formulation and implementation, which are critical in achieving autonomy and strength in the community.

Moreover, the study points out important policy and funding challenges that grassroots-level initiatives to achieve sustainability face. By pointing out these barriers the study provides practical recommendations for future reforms and the allocation of resources and assistance to facilitate inclusive approaches towards educational infrastructure development.

This study makes a case for conceptualising a model that successfully brings together community engagement and sustainable school-building processes within the Zambian context. This model resonates with Zambia's wider community development strategies and promotes the advocacy for more of these strategies that are locally driven.

These findings advance the case for a systematic approach to investment planning by the different groups of people such as the government departments, NGOs, and community elders. The findings from this study, it possible to enhance the education sector in Zambia and improve access to education and its quality.

1.7 Limitations of the Study

This study is geographically confined to the Chibombo District, focusing specifically on four primary schools supported by Build It International: Kamaila, Machaya, Katole, and Mwachisompola Primary Schools. While this allows for an in-depth exploration of localized issues, it may limit the generalisability of findings to other regions in Zambia or similar contexts elsewhere.

Another limitation is the reliance on purposive sampling for selecting participants, which, while effective in ensuring that the most relevant stakeholders are included, may introduce selection bias. Additionally, participants' understanding of technical aspects related to community engagement and infrastructure sustainability may vary, potentially influencing the depth and accuracy of responses. To address this, semi-structured interviews, surveys, and focus group discussions were conducted to clarify and explore where necessary.

Time constraints posed challenges in engaging a larger sample size or conducting longitudinal evaluations to measure the long-term impacts of community engagement strategies. Furthermore, some participants, particularly school head teachers and community leaders, faced competing time commitments, which limited their availability for the study.

Finally, the lack of baseline data on the sustainability and maintenance of school infrastructure before Build It International's involvement constrained the study's ability to make direct pre- and post-intervention comparisons. Secondary data from internal reports and previous evaluations by Build It International were used to address this gap, but these sources did not fully reflect the complexities of the current context.

1.8 Definition of key terms and concepts

Community Engagement Approaches: Methods engaged by Build It to ensure the local community is involved in all stages of construction projects to ensure ownership and sustainability. These have also been defined as strategies to involve community members in project planning, implementation, and maintenance (Banerji & Mili, 2018; Adedokun et al., 2019; Njeru & Kihiu, 2022).

Support Mechanism: These are post-build support rendered to the community in terms of capacity building to ensure good maintenance of education infrastructure. In other words, these are Systems supporting communities in maintaining school infrastructure, including training and funding (Banerji & Mili, 2018; Adedokun et al., 2019; Njeru & Kihiu, 2022).

Governance Structures: these are policies or frameworks developed by the Ministry of Education to guide the communities in community-led infrastructure development. These can also be looked at as policies and frameworks influencing community-led sustainability efforts (Mwamba & Zulu, 2021; Mbasera et al., 2021).

Sustainability Outcomes. These are positive results of education infrsatrucre project that continue to benefit the community. Which is also defined as long-term maintenance and effectiveness of infrastructure projects (Hunja, 2018; Uddin et al., 2016).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature on community-based approaches and support systems for sustainable school infrastructure, focusing on Build It International's initiatives in Chibombo, Zambia. It focuses on analysing data and theoretical approaches from international, national, and local aspects for community participation, capacity enhancement, and setting up sustainable educational facilities. This paper undertakes critical evaluation and integration of diverse views, which builds a strong platform for constructing an overall plan directing the project, by employing various academic sources such as texts, journals, reports, and case studies.

The chapter is structured to comprehensively explain the state and set the stage for the development of community-led methodologies that would enable the school infrastructure to last in Chibombo. For this study, the literature review is categorised into three parts, being Global, African, Southern, and Zambian parts. It is by looking at these various levels that the study was able to identify the missing gaps to discover new knowledge and add to the body of knowledge on the subject matter.

2.1 Empirical Literature Review

Global Context

There has been research conducted around the world regarding the sustainability of education infrastructure and the community's role in providing it. One of them is the research study conducted by Islam, A. M et.al., (2013), Islam et al's research were on Problems of Communities: The role of CBO in Participatory Approaches. The research emphasised the larger role a Community- Based Organization (CBO) target such as Lalbag Society has in community problem-solving with the use of local methods such as Participatory Rural Appraisal (PRA) tools. Community involvement and mobilisation of the CBO proved to be especially important for better local-driven solutions.

Community Participation in Education Infrastructure Development. Banerji & Mili (2018) also studied this concept. The study focused on whether planning for school facilities/infrastructure by community members as well as building there will have any benefits. The main conclusion was that there was community involvement in the construction and the input during building afforded the schools and infrastructure a more long-term and contextual relevance than would otherwise have been the case.

According to Mansuri and Rao (2013) Research review titled “Localizing Development: Does Participation Work?” published by the World Bank, to enhance the outcomes and increase the sustainability of projects, active community participation is necessary when developing projects such as building a school. The findings highlight that participatory approaches often lead to better resource management and long-term sustainability of projects when communities have a stake in the outcome.

Shaeffer (2019) Engaging with Communities in Education: A Think Piece: Why, What and How? Community involvement, in almost all projects, including those that aim at augmenting educational facilities, has emerging needs to be treated with the same respect appropriate for its implementation. Communities that build and manage schools are more likely to have these structures maintained over an extended period.

Bowen et al. (2010) This research titled When Suits Meet Roots: The Antecedents and Consequences of Community Engagement Strategy has explained how effective community engagement strategy regarding a type of Geographical Alignment Strategy, towards Development projects such as the development of school systems could enhance the sustainability of the projects in the long run. It was found that locally initiated projects were more sustainable because people’s value base and representative governance structures were incorporated into maintenance and decision-making processes.

Knowledge gap

Global studies emphasise the attention of community people in the maintenance of educational infrastructure. However, not all global studies give a specific approach to the socio-economic and cultural characteristics of rural communities such as in Chibombo, Zambia. Further, they focus on short-term objectives and therefore neglect the possible long-term effects of study projects, such as the impact of community-initiated and implemented development plans. In addition, the specifics of how to strengthen community capacity for managing and guarding the project remain scanty. Furthermore, there is limited research on how to adapt or alter already existing policies to incorporate community engagement approaches in rural areas. This study will address these gaps including giving localized perspectives and policy recommendations as well as undertaking sociological fieldwork alongside policy interventions for long-term planning.

African Context

Njeru and Kihiu (2022) examined the importance of community mobilisation features for the sustainability of school-building projects in rural parts of Kenya. The study found that effective community mobilization strategies like awareness campaigns and skills training enabled greater community involvement, ownership, and sustainable outcomes in rural school construction projects in Kenya. Projects with strong mobilisation strategies were also completed on schedule, were well-run, were much better in terms of maintenance, and were underpinned by solid community governance systems while those with low levels of mobilisation of resources had evidence of resource deficiencies, underdeveloped infrastructure, and vandalism.

The country study by Adedokun et al. (2019) in a few countries from Sub-Saharan Africa sought to identify important determinants of the long-term viability of community-based school infrastructure projects. The same study indicated that about four years after implementation, projects that included plans for training community members in construction, project management, and maintenance had greater levels of sustainability (Adedokun et al., 2019). Further, The inclusion of income-generating activities.

The study knowledge gap

Across Africa, there is a lack of comprehensive frameworks integrating community participation into the sustainability of school infrastructure. Research is needed to develop and implement tailored capacity-building programs, innovative funding mechanisms for long-term maintenance, and an understanding of the role of community governance in sustainability.

This study aims to close these gaps by examining Build It International's projects in Chibombo, Zambia

Zambian Context

Lungo, Mavole & Martin (2017) did a study on the Determinants of Project Sustainability beyond Donor Support: The Case of Caritas Norway Supported

Governance Project in Mansa Diocese, Zambia. The findings show that the governance project has suffered sustainability due to poor community participation, low educational levels among households, undiversified households, and poor understanding of governance. The findings also show that despite being an essential part of every development in society, women are the most uneducated and least likely to participate in community projects. Based on the findings, the study recommends that development stakeholders should ensure communities they are working with participate in all stages of project formulation and implementation.

Juliet (2018) an exploration of strategies used, and challenges encountered by administrators in the maintenance of conditions of infrastructure and equipment in public primary schools in the Lusaka district, Zambia. The study revealed that although schools had maintenance committees in place, they lacked a school policy to guide their day-to-day maintenance activities.

Nalomba (2016) assessed the communication strategies used in stakeholder mobilisation for infrastructure development and maintenance of classrooms in schools, in the Case of Chinsali District. The findings revealed that people were more concerned about poorly managed or unfunded infrastructure development and maintenance projects in schools as opposed to fulfilling their roles as stakeholders in such projects for assured success. Moreover, most of the stakeholders were aware of the need for their participation in infrastructure development and maintenance of school infrastructure. The study revealed that there was a prevailing culture of dependence on the Government for infrastructure development and maintenance of classrooms in schools. The mentality that infrastructure development and maintenance of classrooms is the sole responsibility of the Government is one of the greatest challenges proving to be an obstacle in integrating the community in infrastructure development and maintenance in schools.

Mwamba and Zulu (2021) investigated community participation in school infrastructure development projects in Zambia. The study found that while involving local communities was beneficial, a lack of skills, funding, and enabling policies constrained the sustainability efforts (Mwamba and Zulu, 2021). Many communities lacked training in construction techniques, project management, and fiscal management, hindering their ability to effectively participate and maintain the infrastructure long-term

(Mwamba and Zulu, 2021). Additionally, limited financial resources and a lack of mechanisms to channel funds to community groups posed challenges to operations and maintenance activities (Mwamba and Zulu, 2021). The study also highlighted the need for policies and regulatory frameworks that promote and facilitate community participation, as existing policies were inadequate in supporting such approaches (Mwamba and Zulu, 2021).

The study knowledge gap

The identified knowledge gap in Zambia's context lies in the lack of comprehensive frameworks that effectively integrate community participation into the sustainability of school infrastructure. There is a need for study on developing and implementing capacity-building programs tailored to local contexts, innovative funding mechanisms for long-term maintenance, and understanding the role of community governance in sustainability.

This study aims to close these gaps by examining four schools built by Build It International in Zambia's Chibombo district. The study will analyze the NGO's community engagement strategies, assess the effectiveness of capacity-building efforts, and evaluate the impact of government policies on the sustainability of these school projects. By doing so, the study seeks to strengthen models for collaboration between NGOs and communities to ensure the long-term sustainability of school infrastructure.

2.2 Theoretical framework

A theoretical framework serves as the foundation upon which a study is built, providing a structured lens through which the study can interpret and analyze data. According to Creswell (2014), a theoretical framework is critical in shaping the study process, as it guides the development of study questions, data collection, and interpretation of results. It draws from existing theories, models, and concepts relevant to the study problem, establishing a scholarly context that positions the study within broader academic discourse. Theoretical frameworks not only support the justification for the study but also enhance its credibility by linking the study to established knowledge (Creswell & Plano Clark, 2011).

In this study, the theoretical framework provided the necessary structure to analyse the role of community participation in educational infrastructure projects. Drawing from relevant theories of community engagement, participatory development, and sustainable infrastructure, the framework enabled the study to contextualize findings within larger discussions in education, development, and project management. This alignment allowed for a critical assessment of how theoretical perspectives intersect with or challenge the study's outcomes (Patton, 2015).

Ultimately, the theoretical framework functions as a roadmap that guides the study throughout the study. It emphasises the role of theory in shaping practical solutions to real-world problems, underscoring the interconnectedness of study, policy, and practice (Creswell & Creswell, 2018). Below are the theories that are going to guide this study.

Community Development Theory

Ledwith, M. (2020) defines community development theory as a framework focused on collective action and social justice, where communities are empowered to address inequalities and work towards social change. It emphasizes participatory approaches, where individuals within a community collaborate to identify issues, build on their strengths, and work together to create sustainable development. Ledwith highlights the importance of critical consciousness, reflection, and the transformative potential of grassroots movements in achieving lasting social and economic improvements within communities.

Community development theory emphasizes community empowerment, participation, and capacity-building as essential elements for sustainable development (Matarrita-Cascante & Brennan, 2012). It focuses on fostering social cohesion, enhancing local resources, and promoting collective action to address community needs and aspirations. This theory has been developed by scholars such as Matarrita-Cascante and Brennan (2012), who have highlighted the importance of community-driven approaches in promoting sustainable development.

By evaluating community engagement approaches, capacity-building initiatives, support mechanisms, and enabling governance structures, this study aligns with the key principles and concepts of Community Development Theory. The findings can contribute to the understanding of how community-driven approaches can foster sustainable development outcomes, particularly in the context of school infrastructure projects in Zambia.

Project Management Theory: these are structured methodologies for planning, executing, and controlling projects to help achieve specific goals within constraints like time, cost, and scope. Core concepts include initiating, planning, executing, monitoring, and closing projects, with a focus on managing risks, quality, and stakeholder engagement (PMI, 2017).

In this context, project management theory will help the study have a broad understanding of how community-driven initiatives are planned and executed project management initiatives can more effectively integrate community input, manage resources, and ensure long-term sustainability.

Project management theory, with its focus on planning, stakeholder engagement, and monitoring, can be a useful tool to assess the long-term success of community-built schools. By applying these concepts, the study can identify best practices for ensuring these projects are sustainable.

Community Participation Theory:

Project management theory is a comprehensive framework that guides the planning, execution, and control of projects to achieve specific objectives within defined constraints of time, cost, and quality (Kerzner, 2017). It encompasses various methodologies, tools, and techniques designed to optimize resource utilization, manage risks, and ensure successful project completion. This theory emphasizes the importance of clear goal-setting, stakeholder management, and adaptive planning throughout the project lifecycle (Turner, 2016).

Community Participation Theory was developed by scholars like Paulo Freire, Robert Chambers, and David Korten) emphasizes involving locals in decision-making and project implementation for sustainable development.

Community participation theory posits that involving local community members in decision-making processes and project implementation leads to more effective, sustainable, and culturally appropriate outcomes (Rifkin & Kangere, 2002). This theory emphasizes the importance of local knowledge, ownership, and empowerment in development projects, such as those focused on school infrastructure in Chibombo.

These theories relate to the topic by highlighting the importance of both structured project management and community involvement in ensuring the long-term sustainability of school infrastructure projects. Combining these approaches can lead to more effective resource allocation, increased local buy-in, and improved maintenance of school facilities over time.

2.3 Conceptual framework

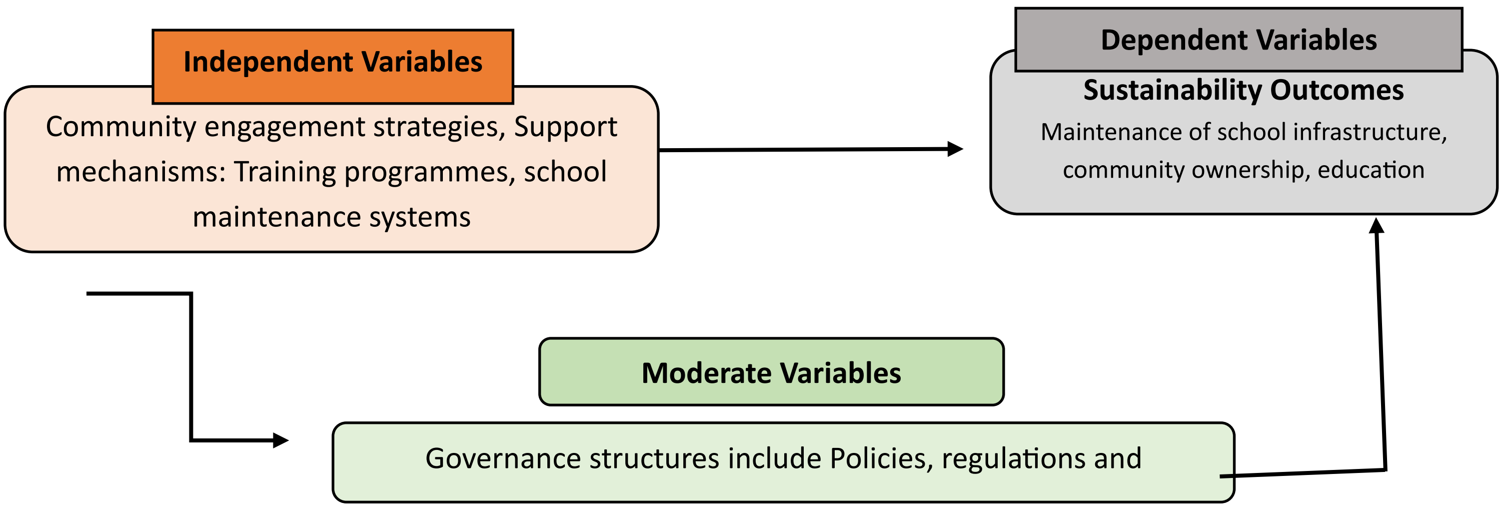
A conceptual framework serves as an essential tool in study, providing a structured visual representation that illustrates the relationships between key concepts and variables relevant to the study. According to Bordage (2009), a conceptual framework maps out the logical connections between theoretical constructs, helping to clarify the direction and scope of the study. Creswell (2014) emphasizes that conceptual frameworks are particularly useful in complex studies, as they offer a schematic overview that not only identifies core variables but also depicts how these elements interact within a given context. This visualisation simplifies abstract ideas, allowing studies to systematically approach data collection and analysis.

In this study, the conceptual framework will act as a blueprint that links the major components influencing sustainable school infrastructure development. Specifically, it will illustrate the interrelationships among community participation, capacity building, enabling policies, and sustainable school infrastructure. Each of these elements represents a critical factor that contributes to the long-term success of school infrastructure projects, and their interactions highlight pathways through which sustainability can be achieved or hindered.

Independent Variables - Community Engagement Approaches: Strategies and methods employed to involve community members in project planning, implementation, and maintenance. Support Mechanisms: Systems and structures in place to support communities in maintaining school infrastructure (e.g., training programs, funding models).

Moderating Variable - Governance Structures: Policies, regulations, and frameworks influencing community-led sustainability efforts.

Dependent Variable - Sustainability Outcomes: Long-term effectiveness and maintenance of school infrastructure projects, including longevity of infrastructure, quality of maintenance, community ownership, and overall educational outcomes. Below is the diagrammatic representation of the conceptual framework.



Source: Praise (2024

Figure 1: Conceptual Framework

Relationships

The independent variables have a direct impact on the dependent variable. The moderating variable influences the strength and direction of the relationship between the independent variables and the dependent variable, potentially enhancing or constraining the impact of community engagement and support mechanisms on sustainability outcomes.

CHAPTER THREE

STUDY METHODOLOGY

3.0 Introduction

This section details the study methodology used in the study, including the study approach, specific design, sample population, and sampling technique. It also outlines the data collection instrument, the procedures for gathering data, and the ethical considerations. Finally, it describes the analytical methods for data analysis.

3.1 Study Approach

The study employed a mixed methods study approach to understand the role of community-based approaches and support systems in improving the sustainability of school infrastructure projects. This approach integrates both qualitative and quantitative methods, offering a comprehensive analysis of the study question (Creswell & Plano Clark, 2018). The qualitative component focuses on exploring community members' experiences and perspectives through semi-structured interviews and focus groups. These methods provide insights into the social processes and challenges faced by communities involved in infrastructure projects, offering detailed, descriptive data that help understand the context of sustainability in school infrastructure.

The quantitative component involved surveys distributed to a larger sample of stakeholders, such as members of the Parent Teacher Committee. By combining both qualitative and quantitative data, the study provides a fuller understanding of the factors influencing sustainability. This mixed methods approach allows for data triangulation, improving the reliability and validity of findings (Teddlie & Yu, 2007). According to Creswell (2014), such a design is especially valuable when investigating complex phenomena, as it offers both in-depth understanding and measurable outcomes.

3.2 Study Design

The study design utilised a sequential exploratory approach with two phases. First, qualitative data was collected through semi-structured interviews with key stakeholders like Build It representatives, school Head Teachers, and community leaders, involved in its projects in Chibombo. These interviews explored experiences with community involvement, support mechanisms, and perceived long-term infrastructure sustainability impacts. Secondly, a quantitative survey was developed based on the qualitative analysis to measure specific aspects of community engagement and support systems. The quantitative data provided additional insights and allowed the generalisation of findings to a broader population (Teddlie and Yu, 2007).

3.3 Study Population

The target population is the group of elements (individuals, objects, species, organisms, events, organizations) that a study aims to investigate and from which conclusions will be drawn. According to Neuman (2007), a population refers to the complete set of items or potential observations of the type under investigation. For this study, the target population comprises Parent Teacher Committee (PTC) members and Teachers in the target schools supported by Build It International within the Chibombo district, which are Kamaila, Katole, Machaya, and Mwachisompola Primary Schools. The number of Teachers and PTC members in these schools is 73 (School registers, 2024). The school registers are updated termly and consist only of parents who have been actively attending school meetings and activities.

Inclusion Criteria:

- Participants actively involved in BII-supported school infrastructure projects.
- PTC members and headteachers currently serving at the four selected schools.

Exclusion Criteria:

- Individuals not directly involved in the school infrastructure initiatives.
- Community members without direct responsibility for the management or maintenance of the infrastructure.

3.4 Sample Size

Most sampling formulas derive a sample from a known population (Yamane, 1967). This sampling technique is statistically sound given the nature of the objectives, the unavailability of population size, and study gap considerations (Glenn, 1992). However, since the population in this study has been defined as having a total of 73 members, the following formula is used to determine the required sample size:

$n = N/(1+N\mu^2)$ Where: n, N, and μ are sample size to be tested, the Population, and the margin of error, respectively.

- nn = sample size
- NN = population size (73)
- ee = margin of error (0.05)

Substituting values

$n = 73/(1+(73)〖0.05〗^2) = 62$ responses required

Therefore, a minimum of 62 responses were required. This calculation aligns with the methodologies proposed by Yamane (1967) and Glenn (1992).

For this study, 62 participants responded to the survey, including members of the selected schools' Parent Teacher Committees. Additionally, two focus group discussions were conducted with Parent-Teacher Committee (PTC) members, comprising 8 women and 10 men. The study also included Eleven key informant interviews, featuring 4 headteachers from each school, 4 PTC chairpersons from each school, and 3 staff members from Build It International.

3.5 Sampling Techniques

This study employed a two-stage sampling approach to mitigate selection bias, starting with the Simple Random Sampling (SRS) technique. According to Singh (2003), SRS is the most straightforward and widely used method, where each sample unit has an equal probability of being selected. A random sample was drawn from beneficiaries of school infrastructure projects using the "RAND: BETWEEN" function in Microsoft Excel to administer Household Survey Questionnaires. To obtain diverse perspectives from various stakeholder groups, the study used purposive sampling to select key informants for interviews and FGDs. This non-probability technique ensured the inclusion of participants with relevant expertise and experience regarding school infrastructure sustainability.

Mitigating selection Bias:

- Selection criteria for key informants were established to ensure diversity across gender, roles, and experience levels within the stakeholder group.
- A balanced representation of male and female PTC members was ensured in the focus groups.

Clarifying the Sampling Frame:

- The population frame was derived from verified and updated school registers (2024). The registers were cross-checked with school administration records to ensure accuracy and reliability.

3.6 Data Collection and Instruments

Primary data was collected using three (3) data collection tools: semi-structured interviews with key informants, Focus Group Discussions (FGDs), and surveys for community members who are beneficiaries of Build It school infrastructure projects. The semi-structured approach allowed for probing and enabled the study to collect in-depth information, including perceptions and views (Dharmendra, 2017). The use of multiple methods enhanced the validity of the process, and reliability of the data, and enabled triangulation of findings.

Secondary data sources complemented the primary data collection. Which included project reports, government publications, academic literature, and relevant news articles about school infrastructure sustainability additionally, publicly available data from relevant ministries or regulatory bodies provided valuable context and statistical information.

3.7 Data Analysis Technique

The study employed a mixed methods approach that combined qualitative thematic analysis (Braun & Clarke, 2006) of interview data to examine community approaches and support systems. Additionally, it included quantitative analysis of survey data using Microsoft Excel: Microsoft 365 (Creswell & Plano Clark, 2011) to identify patterns related to community engagement and the sustainability of infrastructure. By combining both qualitative and quantitative findings, this study sought to offer an in-depth understanding of community-based school infrastructure projects in Chibombo. It explored the various dimensions of these projects, including their design, implementation, and impact on the local community. The qualitative data illuminated the personal experiences and perspectives of stakeholders involved, such as School administrators, parents, and local leaders, while the quantitative data provided measurable outcomes related to community engagement in the sustainability of education infrastructure. Through this integrated approach, the study aimed to capture a holistic view of how these infrastructure initiatives contribute to educational development and community empowerment in Chibombo.

3.8 Validity and Reliability

To ensure the validity and reliability of this study, rigorous measures were undertaken at each stage of the study process. Validity was achieved by employing well-established data collection instruments that were carefully designed to align with the study objectives. These instruments were pretested to ensure they accurately captured the intended information and were reviewed for content relevance (Creswell, 2014). Reliability was maintained by standardising the data collection procedures to minimize variability and ensure consistency across respondents. Additionally, the sample size was determined using statistical methods to enhance the generalisability of findings, and multiple data sources, such as surveys, focus groups, and key informant interviews, were triangulated to corroborate results (Creswell & Plano Clark, 2011). These steps were essential to ensure the study's findings were both credible and replicable.

3.9 Ethical Considerations

Ethical clearance was obtained from the UNILUS Study Ethics Committee and Build It International’s management. Key ethical measures included informed consent, where participants were briefed on the study’s objectives and provided written consent before participation. This process ensured that participants received detailed explanations regarding the study’s purpose, data usage, and their rights. Furthermore, confidentiality was prioritised, with assurances made about the anonymity of respondents. Personal identifiers were omitted from the data to protect privacy, and participation was entirely voluntary, allowing respondents the freedom to withdraw at any point without any repercussions.

Additionally, ethical safeguards were put in place to handle sensitive information disclosed during interviews and focus group discussions (FGDs) with strict confidentiality. The researcher adhered to ethical guidelines established by UNILUS.

These comprehensive procedures ensured compliance with ethical standards in academic research while safeguarding the rights of all participants involved.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

Chapter Four presents the data collected using the tools developed for this study. Employing a mixed-methods approach, the study integrates qualitative and quantitative techniques to comprehensively understand the study subject. The data analysis follows the methodologies outlined in Chapter Three, ensuring a systematic evaluation. The findings are organised and discussed in alignment with the Study Objectives outlined in Chapter One, providing a clear connection between the data and the study's aims. This structure facilitates a thorough examination of how the findings address the study questions.

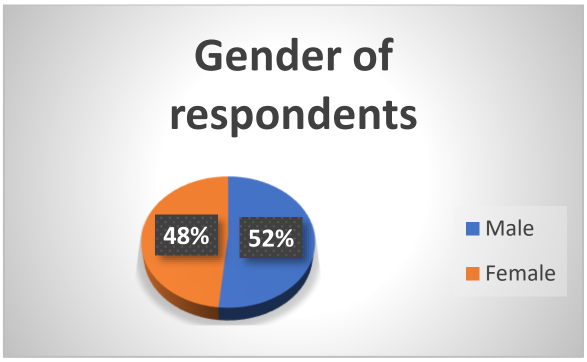
4.1 Demographic Data

The study captured demographic information on the respondents, and this included their gender, age and level of education attained. 62 members of the Parent Teacher Committee across the four schools supported by Build It while 11 Key informants were interviewed and 2 groups of parents who have participated in the projects participated in the Focus Group Discussions. This was done to enable triangulation of information from different stakeholders. Below are the summaries of the responses.

4.1.1 Gender

The Figure below shows the gender of the respondents in the study. It shows that the survey had a total of 62, 48% of the respondents were female and 52 were male.

Figure 1: Gender of survey respondents.



Source: Field survey by Author 2024

4.1.2 Age

The survey had an age range from 26 to above 55 years of age with the majority of the study subjects being aged above 56 (20). This revealed that most of the active members of the PTC were elderly and looking at the figures below.

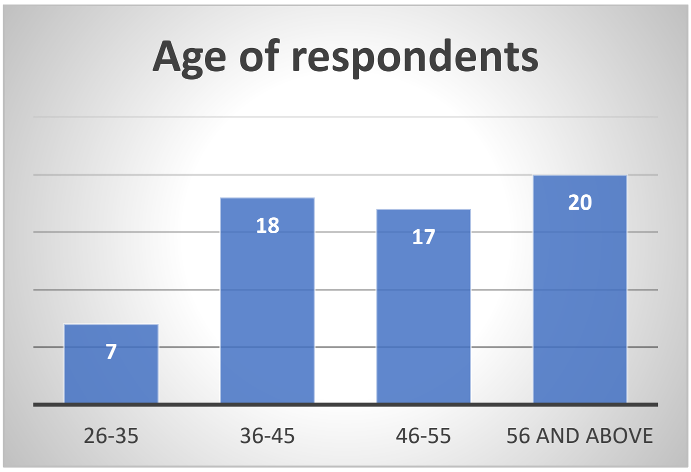


Figure 2 : Age group of survey respondents.

Source: Field survey by Author 2024

4.1.3 Education Level

The figure below shows the education level of the survey respondents. The figure below shows that the majority of the respondents only went up to primary education (37). The survey revealed that most of the PTC members have not attained higher education levels.

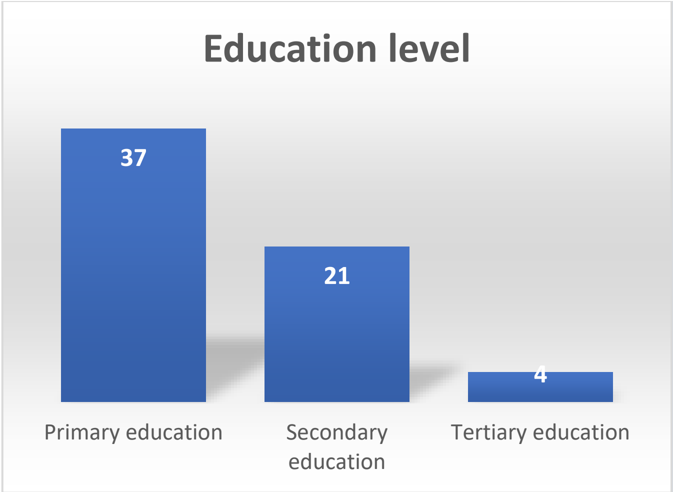


Figure 3 : Education level of survey respondents

Source: Field survey by Author 2024

4.1.4 Occupation

The figure below indicates that many respondents are unemployed. Among the members of the PTC, (18) are engaged in farming, and some are involved in trading as a means of livelihood. It is also worth noting that many members are not involved in any form of employment.

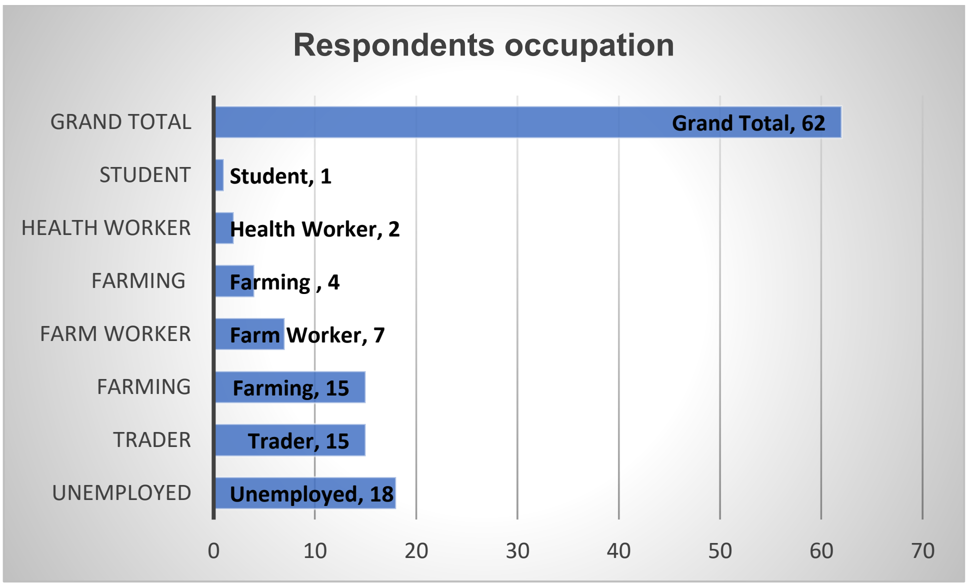


Figure 4 : Occupation of survey respondents.

Source: Field survey by Author 2024

4.2 Community Engagement and Participation

Table 1 : Awareness about BII Projects

Response	Frequency	Per cent	Valid per cent	Cumulative Percent
PTC Meetings	31	50.0	50.0	50.00
Word of mouth	22	35.5	35.5	85.48
Community Meetings	6	9.7	9.7	95.16
School General Meeting	3	4.8	4.8	100.00

Source: Field survey by Author 2024

Table 1 above shows the various ways respondents became aware of Build It projects. Notably, half of the participants (50%), reported that they learned about the initiatives through Parent Teacher Committee (PTC) meetings, highlighting the influence of these gatherings on community engagement. Additionally, a significant portion of respondents, 35.5%, discovered Build It through word of mouth, indicating the importance of personal connections and recommendations in spreading information. Furthermore, 9.7% of respondents indicated that community meetings were a source of information about Build It, while a smaller segment, 4.8%, mentioned general school meetings as their avenue for hearing about the projects. This data underscores the diverse channels through which information about Build It is disseminated within the community.

One of the project managers from BII had this to say during a key informant interview*: "BII adopts a participatory approach to planning school infrastructure projects. Right from the start, this entails engaging School authorities, local community stakeholders, the local government, the Ministry of Education, and DEBs (District Education Board Secretariates). To begin with, school scoping or needs assessments are undertaken together with community site suitability reports to ensure that the schools' project goals are met and that the infrastructure is used for the right reasons. "In order to ensure quality control and efficiency, standardized procedures that allow for localization are employed".*

Triangulation with key informant interviews indicated that BII engages multiple stakeholders, including school authorities, community leaders, and local government, during initial planning phases. Memoranda of Understanding (MOUs) formalise roles and responsibilities.

Table 2 Level and type of community involvement in project implementation.

Response	**Frequency**	**Percent**	**Valid %**	**Cumulative Percent**
Project planning	24	38.71	38.71	38.71
Project planning and resource mobilization	21	33.87	33.87	72.58
Project Planning, resource mobilization, and labour contribution	9	14.52	14.52	87.10
Nil	8	12.90	12.90	100.00

Source: Field survey by Author 2024

The above table shows that a significant majority of participants were able to engage in project planning meetings, with 38.71% attending meetings, which indicates robust involvement in discussions and decision-making. Additionally, 24.19% are focused on project planning and resource mobilisation, highlighting their strategic roles in preparing and managing resources. Furthermore, 16.13% of participants contribute to both project planning, resource mobilisation, and labour tasks, demonstrating a hands-on approach to project execution. 12.90%, reported not being involved in these activities. Overall, these findings indicate a strong collaborative effort among participants, with 87.10% engaged in various aspects of project management and execution.

The PTC chairperson from Katole who participated in the KII had this to say: *"It is essential to establish a strong sense of ownership among community members right from the onset of the building construction. This involvement helps to foster a greater commitment to the project and ensure that everyone feels invested in its success".*

One of the women in FGD added: "*The community members actively participate through regular school meetings where they discuss project needs and progress. They make both material and labour contributions as requested by the school. This involvement includes attending planning meetings, contributing local materials, and providing manual labour during construction phases"*.

Head Women Machaya a member of the PTC at Machaya Primary School had this to add: *"I took the lead in demonstrating to the members the importance of getting involved in school construction projects. I helped to mobilise the members and ensured that the 15% contribution in terms of labour and upfront materials, both in labour and materials, was met as per Build It International's requirements."*

One of the Project Managers at Build It had this to say*: "School scoping or needs assessments together with site suitability reports are conducted to align the project goals with community priorities, ensuring the infrastructure serves its intended purpose effectively. Materials are sourced locally where possible, and designs are adapted to the climatic and geographical conditions of the area. Community consultations ensure that the infrastructure aligns with the specific needs".*

She further added*: "Engaging local stakeholders, from government officials to community leaders, is essential from the very beginning. This helps to define each party's roles and responsibilities, which are then formalised through Memoranda of Understanding (MOUs)".*

Another Project manager mentioned that: *"Involving the community in the decision-making process and giving them a vested interest in the project's success, fosters a stronger sense of ownership. This, in turn, is expected to translate into better long-term maintenance and care of the infrastructure by the community".*

Key informant interviews stressed that fostering ownership early in the project lifecycle enhanced community commitment and sustainability outcomes.

Table 3 : Clarity in communication regarding the project objectives

Response	Frequency	Percent	Cumulative Percent
Clear	30	48.39%	48.39%
Very clear	25	40.32%	88.71%
Not clear	7	11.29%	100.00%

Source: Field survey by Author 2024

The survey results regarding the clarity of communication on project objectives indicate a positive trend, with a significant majority of respondents finding the communication clear or very clear. Specifically, 48.39% of participants rated the clarity as clear, while 40.32% described it as very clear, bringing the cumulative clarity rating to 88.71%. However, a small minority, accounting for 1% of the responses, felt that communication was not clear. Overall, these findings suggest that many stakeholders have a strong understanding of the project objectives as communicated.

Community consultation feedback emphasized the need for consistent, transparent communication to maintain community trust and involvement.

4.3 Support Mechanisms and Capacity Building

Table 4 : Support Mechanism and Capacity Building

Were you or other community members provided with training or resources to maintain the school infrastructure?"			
Response	**Frequency**	**Per cent**	**Cumulative Percent**
Yes	62	100%	100%

Source: Field survey by Author 2024

The table indicates that all 62 respondents affirmed that they or other community members had received some form of support, whether in the form of training or resources, to maintain the school infrastructure. This suggests a strong consensus among respondents regarding the availability of assistance for infrastructure maintenance within the community. The positive response reflects an active engagement and investment of Build It in the upkeep of the school facilities.

Table 5 : Type of support received

Response	**Frequency**	**Per cent**	**Cumulative Percent**
Maintenance Training	62	100	100

Source: Field survey by Author 2024

All respondents indicated that the support they received was in the form of maintenance training. This highlights the importance of such training in ensuring that individuals feel equipped to handle maintenance tasks effectively. The data shows that all 62 participants reported that they or other members of the community received this type of support, accounting for 100% of the total responses. This suggests that maintenance training is a critical component in ensuring the sustainability of educational infrastructure.

One of the Build It Project Managers had this to say*: "After construction, Build It collaborates with the school and the community (through the PTC) to select a group of people to be trained in the maintenance of the infrastructure. The maintenance training provided by Build It is a one-off session, intended to equip the selected community members with the skills to maintain the infrastructure".*

He also added*: "It is difficult to maintain infrastructure in rural communities, hence the importance of post-construction support and maintenance strategies. Regular site inspections are conducted to monitor the performance of the completed projects and maintenance training is provided to school staff to build their capacity in handling minor repairs and upkeep".*

He further added*: "Build it has developed maintenance manuals. The construction methods are informed by a detailed manual, referred to as a "detail book," created by a technical advisory group known as TAG. This detailed book offers comprehensive guidance on the appropriate foundations, walls, windows, roofing, and materials to use, tailored to the local conditions and available resources in the community.*

The development and distribution of comprehensive maintenance manuals are a key initiative. These manuals serve as a reference guide for schools, empowering them to take ownership of the infrastructure's maintenance and ensuring its long-term sustainability".

BII's maintenance training is delivered post-construction and includes practical skills transfer, supported by maintenance manuals developed by a technical advisory group (TAG). Training participants are selected by PTCs and school leadership.

Table 6 : Whether maintenance training is effective in ensuring long-term sustainability.

Response	Frequency	Per cent	Cumulative Percent
Yes	50	80.65%	80.65%
No	5	8.06%	88.71%
Not Sure	7	11.29%	100.00%

Source: Field survey by Author 2024

The table indicates that a significant majority, 80.65%, responded with "Yes," suggesting strong agreement with the effectiveness of the maintenance training. On the contrary, only 8.06% answered "No," reflecting a minimal level of disapproval. Additionally, 11.29% of respondents selected "Not Sure," indicating uncertainty on the effectiveness of maintenance training.

Focus groups revealed concerns about the one-off nature of the training sessions and suggested the need for refresher courses and inclusion of students in training programs.

4.4 Local Governance and Educational Policies

Table 7: Whether PTC is effective in maintaining school infrastructure.

Response	Frequency	Per cent	Cumulative Percent
Very Effective	15	24.19	24.19
Effective	22	35.48	59.68
Neutral	10	16.13	75.81
Ineffective	12	19.35	95.16
Very Ineffective	4	6.45	100.00

Source: Field survey by Author 2024

The table presents respondents' perceptions regarding the effectiveness of the Parent-Teacher Committee (PTC) in maintaining school infrastructure. A notable 24.19% of respondents rated the PTC as "Very Effective," while 35.48% deemed it "Effective," indicating a significant majority (59.68%) view the committee positively in this role. On the other hand, 16.13% of respondents remained neutral, suggesting uncertainty about the PTC's impact. However, a combined 38.45% of respondents rated the committee as either "Ineffective" (19.35%) or "Very Ineffective," highlighting concerns that persist regarding its effectiveness. Overall, while the PTC has garnered many favourable ratings, there remains a substantial proportion of respondents who are either neutral or critical of its performance in maintaining school infrastructure.

PTC Chairperson from Katole added*: "Community members don't do enough of what is expected of them and they are mostly available to offer labour but are unable to make any funds contributions".*

One of the women from the FGD had this to say*: " PTC should do more to mobilise and raise awareness among community members to support the school, contribute finances, and establish sustainable maintenance committees."*

Stakeholders recommended empowering PTCs through policy reforms and increased financial autonomy to enhance their capacity to manage maintenance effectively.

4.5 Sustainability of School Infrastructure

Table 8 : whether there have been improvements in the condition of the school infrastructure since its completion

Response	Frequency	Per cent	Cumulative Percent
Some Improvements	34	54.84	54.84
Significant improvement	14	22.58	77.42

No Change	14	22.58	100.00

Source: Fieled survey by Author 2024

The table above shows that 54.84%, reported some improvements since the completion of the project, indicating a positive impact of the maintenance training on the overall infrastructure quality. Additionally, 22.58% observed significant improvements, suggesting that certain aspects of the infrastructure have markedly enhanced. However, it's important to note that an equal percentage (22.58%) indicated no changes, highlighting that there is still room for further enhancement in the school's facilities. Overall, the findings suggest a generally favorable perception of the improvements, with a combined total of 77.42% acknowledging some level of enhancement in the infrastructure.

BII Project Manager during the Key informant interview had the following to say: *"BII uses durable, low-maintenance materials such as stabilized soil blocks (SSB) or burnt bricks and reinforced concrete. These techniques emphasise structural integrity and resilience."*

He further added*: "The community's involvement is more effective when responsibilities are clearly outlined and supported by ongoing capacity-building programs".*

Another Project manager indicated that*: "The use of green construction materials, such as SSB blocks and burnt bricks, was highlighted as a key strategy for environmental sustainability. These materials are not only more eco-friendly but also undergo rigorous testing to verify their quality and long-term performance. This also makes it easy for the community to do repairs and maintenance because most of the materials used as locally available".*

Interviews with BII project managers highlighted the use of durable materials (e.g., stabilized soil blocks and burnt bricks) that facilitate low-cost, locally manageable maintenance.

Table 9 : The most important factors in ensuring the long-term sustainability of school infrastructure.

Response	Frequency	Per cent	Cumulative Percent
Community Involvement	30	48.39	48.39
Maintenance and Repairs	25	40.32	88.71
Deliberate school policy	7	11.29	100.00

Source: Fieled survey by Author 2024

From the table above the most significant contributor identified by respondents is community involvement, with 48.39% indicating its importance, highlighting the need for active engagement and support from local stakeholders. Following this, maintenance and repairs are recognized by 40.32% of respondents as a vital factor, emphasizing the necessity of ongoing upkeep to ensure the infrastructure remains functional and safe. Lastly, only 7 respondents, which reflects a more modest 11.29%, pointed to deliberate school policy as a crucial element, suggesting that while policy is important, it may not be as central as community engagement and maintenance. Overall, the data underscores the importance of involving the community and prioritizing maintenance to achieve sustainable school infrastructure.

FGDs underscored the role of ongoing community mobilization and sensitization in fostering sustainable practices.

4.6 Challenges observed on the sustainability of community-led school infrastructure projects

Table 10 : Challenges observed by respondents regarding the maintenance of school buildings.

Response	Frequency	Per cent	Cumulative Percent
Lack of Commitments	20	32.26	32.26
Vandalism	15	24.19	56.45
Trained personnel not implementing	10	16.13	72.58
Lack of care by learners	12	19.35	91.94
Other	5	8.06	100.00

Source: Field survey by Author 2024

The table highlights the challenges related to the maintenance of school buildings as identified by respondents. The most significant issue is the lack of commitment to ensuring that any damages to the buildings are attended to on time, with 32.26% of respondents citing this as a major barrier. The vandalism follows closely at 24.19%, suggesting that damage inflicted by individuals poses a considerable threat to the upkeep of facilities. Additionally, 16.13% of respondents pointed out that trained personnel are not effectively implementing their skills, hinting at potential shortcomings in applying training or supervision. Lastly, 19.35% noted the lack of care for the buildings by learners, learners tend to break windows and doors and other parts of the buildings. Overall, these challenges reveal critical areas for improvement, emphasizing the need for increased commitment, effective resource management, and better application of personnel training to ensure the proper maintenance of school buildings.

Katole PTC Chairperson had this to say: *“The community plays a vital role in safeguarding the school. It is crucial to implement a security plan and educate community members and learners about the importance of preventing vandalism and ensuring proper care. By raising awareness of the detrimental effects of such actions, we can promote a more respectful and protective attitude toward the school premises. Additionally, community members should actively participate in the maintenance of the school to ensure facilities remain in good condition.*

He however added that: *“Unfortunately, due to a persistent lack of funds, even the most basic maintenance needs often go unaddressed, hindering the overall learning environment”.*

Another PTC Chairperson from Kamaila had this to Say: *“Due to the withdrawal of PTA funds by the government, there is insufficient funding allocated to schools, making it difficult to facilitate maintenance. Some community members who may be willing to offer labour are unable to contribute any funds because of their economic circumstances, and most do not run any viable businesses that could sustain them”.*

During a focus group discussion (FGD) at Machaya Primary School, one of the participants expressed her concerns about the school's current limitations. She stated, *“Our school is enthusiastic about starting income-generating activities that could benefit our community and enhance our resources mobilisation to channel towards school maintenance. Unfortunately, we face significant challenges in pursuing even basic gardening initiatives because the available space on the school premises is quite limited.* .”

The school Head from Katole Katole mentioned that: *“We have insufficient funding, making it difficult to run the school and meet its needs. Additionally, there is a need to establish a maintenance committee to oversee capacity building for teachers and community members and help in resource mobilisation.”*

The Head Teacher from Machaya mentioned "BII should consider offering maintenance courses occasionally to enhance the existing skills within the community. It is also important to train senior students who can pass these skills on to their peers".

BII Project Manager stated*, " There is need for enhanced financial support from the Ministry of Education at the district level, this will make it easy for the schools to maintain the infrastructure."*

She also added*, "Low community participation and an expectation of payment for their involvement are also a major challenge".*

Another BII Project Manager added: *"An opportunity lies in investing more in study and development of sustainable construction techniques that can be more easily maintained by the local community. Partnering with other similar organizations, such as quasi-governmental bodies, could provide additional expertise and resources to support the sustainability of the infrastructure projects."*

One of the men in FGD mentioned *"There seems to be low involvement of community members at the moment because of the coming in of free education policy, this has made some parents think the government will do everything".*

The BII Project manager mentioned, "*There is a need for renewed engagement strategies and clear guidance from the government on the role the community still has to play to ensure the sustainability of school infrastructure".*

Stakeholders highlighted the negative impact of the free education policy on parental contributions and community involvement. Suggestions included the establishment of income-generating activities and renewed government engagement strategies. BII project managers recommended partnerships with government and quasi-government agencies to improve capacity-building and resource mobilization. Some participants advocated for integrating maintenance courses into school curricula and involving senior students in upkeep efforts.

The findings reinforce the importance of a multi-stakeholder approach, combining community involvement, NGO facilitation, and government support for sustainable school infrastructure development.

CHAPTER FIVE:

DISCUSSION OF RESULTS AND FINDINGS

5.0 Introduction

This chapter provides an in-depth discussion of the findings presented in Chapter Four. The discussion is framed by the study objectives and the theoretical perspectives outlined earlier, particularly Community Development Theory and Project Management Theory. The findings are also compared with insights from the reviewed literature to highlight the contributions of this study to the broader discourse on community-based strategies and support for sustainable school infrastructure projects.

5.1 Community Engagement Strategies Employed by Build It International

The findings revealed that community engagement is pivotal to the sustainability of school infrastructure projects in Chibombo. Strategies employed by Build It International (BII) included participatory planning, capacity-building initiatives, and fostering a sense of community ownership. These strategies align with the principles of Community Development Theory, which emphasises collective action and empowerment as central to sustainable development (Ledwith, 2020).

The active involvement of Parent-Teacher Committees (PTCs) was particularly significant. PTCs played a role in providing local materials, labour, and input during the planning and construction phases. This aligns with the study objective which sought to assess the nature of community engagement strategies employed by BII. The findings resonate with the work of Simatele and Munsanje (2019), who noted that community ownership enhances infrastructure longevity. However, the study also identified gaps in community mobilisation, particularly the need for consistent communication and incentives to sustain participation throughout the project lifecycle.

Furthermore, the study highlighted that while community members appreciated being included in planning stages, their input was not always fully integrated into decision-making processes. This underscores the importance of building mechanisms and clear strategies for effective participatory planning, as emphasised in the literature by Banerji and Mili (2018). Addressing these gaps could enhance the effectiveness and sustainability of community-driven initiatives. Community engagement is widely regarded as a cornerstone of sustainable development in school infrastructure projects. Mansuri and Rao (2013) point out that community planning approaches allow local people to have even greater ownership while at the same time ensuring that the outcomes of the project are environment friendly. Such is the case with the findings of this study where Parent Teacher Committees P.T.C s were at the center of providing the materials and the labour during the construction phases of the project. However, this uneven participation raises the issue of lack of motivation and communication. Banerji and Mili (2018) recommend in addition effective community structures are very much maintained so that there is proper input from all the parties concerned in the decision-making. These gaps can be addressed by adopting more comprehensive participatory frameworks which may greatly enhance the achievability of the community-based interventions in the long run.

Despite participatory approaches, the findings highlighted inconsistencies in communication and motivation, affecting sustained engagement. This aligns with Banerji and Mili (2018), who stress the need for maintaining effective community structures and clear participatory frameworks. The findings support Mansuri and Rao (2013), emphasizing that local community ownership enhances sustainability and ensures project outcomes are environmentally appropriate. Building comprehensive participatory frameworks with clear communication strategies will enhance sustainability and participation throughout the project lifecycle.

5.2 Effectiveness of support mechanisms provided to communities by BII for the maintenance and sustainability of school infrastructure.

The community appreciated the resource management training and other BII activities focusing on community projects. The support through maintenance training provided an opportunity for the community members to get involved in the school infrastructure upgrade.

This work, which resonates with Adedokun et al. (2019)'s work, endorses self-sustaining strategies such as this one in a quest for sustainability. Such external sourcing of capital is at times deemed risky as the expected level of dominance isn't reached thus making self-sustainability management processes critical. Due to such issues, some schools were able to seek within the school the development of income-generating initiatives for the subsequent earnings which were more sustainable.

The study also showed that maintenance works are also a new area of focus that needs not only operation management programs but also technical assistance. To assist the engagement with the MoE at the district level in such a manner that promotes maintenance of the infrastructure on their funding, the meeting suggested more systems. Additionally, it was also stressed that engaging with other institutions for sustaining efforts is an important facilitating step. Further, it was recommended that the utilization of solar and other renewable energy options would help lower the costs of operation and extend the life of the infrastructure.

Such support mechanisms are very important in community building and maintenance processes. As Adedokun and Balschweid (2008) indicate, these include organising resource management workshops and doing some appropriate skill training that persuades the community towards caring for the infrastructure. This agrees with the findings in this investigation when participants stated training undergone with Build It International (BII) was helpful. On the other hand, the absence of mentorship some other support, and adequate set funding mechanisms were noted as one of the barriers to sustainability. As Njeru and Kihiu (2022) advocate that matters making facilities such as business rentals could be set up so that dependence on outside assistance is not so much. Such a strategy could contribute to ensuring community self-reliance plus maintaining the infrastructure in the long run.

However, the study identified gaps, such as the one-off nature of training sessions and the absence of mentorship programs, echoing the concerns raised by participants in focus group discussions and interviews.

The study supports Adedokun et al. (2019) and Njeru & Kihiu (2022), advocating for sustainable self-reliance mechanisms like income-generating activities to reduce dependency on external support. Capacity-building initiatives should be continuous, with refresher training sessions and mentoring programs. There is also a need to explore innovative funding mechanisms, such as school-based enterprises, to enhance sustainability.

5.3 Role of Governance Structures and Educational Policies on the sustainability of community-led school infrastructure projects

The study found that governance structures, such as PTCs, were instrumental in overseeing the maintenance and functionality of school infrastructure. However, gaps in policy support and regulatory frameworks hindered their effectiveness. This directly addresses the objective which aimed to assess the influence of local governance structures and educational policies on the sustainability of community-led school infrastructure projects.

The uncertainty in defining community roles in maintenance activities resulted in missed opportunities to manage the work better. Separation of such roles would strengthen accountability, which is a policy reform need. These findings came out the same as what Mbasera et al. (2021) describe where authors advocate that such legal reforms are needed to integrate communities into the existing infrastructure.

Indeed, it was also necessary to improve the integration of BII's programs with the educational policies in the upgrade of the education infrastructure to improve education quality. Efforts at the community level such as these, which are not country-specific, would be increased by integrating them with the local government and the national education policies. In addition, this would improve efficiency in resource allocation and governance accountability, if, as Njeru and Kihiu (2022) proposed, it is based on a participatory approach.

The result of this study collaborates with international and local studies that center around the community's efforts toward having the infrastructure maintained. For instance, as stated by Banerji & Mili (2018), there is always a positive approach with 'fit and forget' strategies. Also, the research supports the Njeru and Kihiu (2022) findings on the importance of community participation in carrying out the projects and assisting with the upkeep on a timely basis.

However, the outcomes highlight the contextual elements, such as low funding and dependency issues, which are specific to Zambia. Such issues could be addressed by integrating local solutions that do not involve foreign assistance with other approaches. The composition of the governance structure and the enabling policies regarding education are very crucial for the effective nurturing of community-building initiatives in the school setting. In this case, according to Ostrom (1990), resource management within shared resource systems is more appropriately done within a governance structure that clearly defines the roles and responsibilities of all stakeholders. This study has shown that the maintenance of the school was the responsibility of the Parent-Teacher Committees (PTCs) but there is a need to enhance local resource mobilisation to make this more sustainable. Mbasera et al. (2021) have also suggested that legislation and policy reforms should come first to enable the citizens to increase their participation in building the needed infrastructure.

The joint action of Build It International (BII) and the local government authorities and the alignment of their programs with the country's educational policy, could make these governance systems better and guarantee the sustainability of the capacity-building activities.

The outcomes obtained in this study complement a cross-continental study assessing the role of the community in infrastructural sustainability. Banerji and Mili (2018) have identified that the participatory approaches facilitate the development of projects that are integrated and holistic. This was also evidenced in the active participation of the Parent-Teacher Committees (PTCs), which this study captured. Njeru and Kihiu (2022) also note that these projects can be completed and maintained within given lines of time due to the efficient mobilization of the communities. However, this research brings out some new issues in Zambia such as the underfunding and over-dependence on aid which is not the case with the many resource-endowed countries. Flexible local strategies will be needed to address issues such as the need to balance external support and local community capacity-building approaches, as articulated by Simatele and Munsanje (2019).

The Project managers from Build It Internation emphasised the need to strengthen capacity-building programs. The study also revealed that ongoing training and support are crucial for ensuring that communities can take ownership of and maintain school facilities over the long term. By investing in capacity-building, community members are empowered with the skills and knowledge needed to manage these facilities effectively.

Another important aspect that was revealed is the development of innovative funding mechanisms. Introducing school-based income-generating activities, such as facility rentals, can provide vital financial support for maintenance efforts. This approach not only generates revenue but also fosters a sense of responsibility within the community for the upkeep of their resources.

Establishing collaboration among different stakeholders is also significant. The collaborations with rural NGOs, local governments, and community members can strategize on resource use and focus on a single direction. Such pooled efforts make it possible to tap into the skills of each partner and adopt a more comprehensive strategy for the sustainability of the school's infrastructure.

The findings brought to light the need to decentralize by embedding the citizens in the governance systems, frameworks, and policies of the state. They argued that this embedding can enhance the accountability and reliability of the decision-making processes and foster the active participation of the citizens, ensuring that their voices are heard.

One of the lessons learned was the importance of developing effective monitoring and an evaluation system. Such systems provide follow-up strategies that can determine the effectiveness of the training and the support given, thus enabling the community to be dynamic.

The research further observed gains that come from increasing the use of renewable energy options such as solar power on school premises. They pointed out that such technologies can save the schools in running costs and reduce their negative environmental effects while at the same time saving on costs.

Another aspect addressed was the creation of maintenance manuals for schools and communities. Effective and easy-to-read manuals can simplify maintenance procedures and encourage community participation in the maintenance of the facilities. It was also suggested that periodic reviews of the infrastructure would be required. For the period of three to five years after the handover, annual inspections would enable the community to recognise emerging issues and address them.

The results suggest the existence of a gap between the aim and the actual practice focusing on the sustainability of community school infrastructure projects. Kerzner (2017) notes that there is a need for stronger capacity-building initiatives if communities are to be successful in maintaining the existing infrastructure, a view that BII project managers have echoed throughout this study. Furthermore, incorporating school-based sustainable income activities like facility rental would complement maintenance as it would lower dependency on external funding (Adedokun and Balschweid, 2008). In addition, resource allocation efficiency by strengthening the alliances of NGOs, Local Governments, and the communities could be maximised as they work towards common objectives. Furthermore, installing renewable energy solutions like solar panels encourages cost-effective practices that enhance environmental sustainability.

The findings support Mbasera et al. (2021) and Ostrom (1990), who stress the importance of clear governance structures and enabling policies to promote accountability and resource management. Local governance structures require enhanced capacity-building, financial autonomy, and clear mandates to manage infrastructure projects effectively. Policy reforms should be prioritized to define community roles in infrastructure maintenance, strengthen PTC governance, and integrate NGO initiatives with local and national policies.

5.4 Challenges observed in the sustainability of community-led school infrastructure projects

The study also revealed challenges in ensuring long-term sustainability, particularly the lack of maintenance and a sense of ownership within communities. The infrastructure was viewed often as something ‘provided’ rather than ‘belonged’. As a result, some people disregarded it. To remedy this concern empowerment of leaders was deemed necessary which meant continuity of community involvement and regular contact with community leaders was required. The existence of some guarantee of maintenance, legitimacy building within the community, and the role of the technical support visit and refresher training sessions were greatly underscored. Also, one of the good practices described was the establishment of a periodic inspection of transferred assets one after the transfer.

In this case, it has been pointed out that there is a need for the community to actively engage and participate, even after the project comes to an end. Involving oneself actively towards the success of the management on the community from the start to the end of the project begins with frequent contact with community leaders.

The prioritization of a holistic perspective in project execution together with their locations, adequate construction techniques and post-construction support to make these projects viable was also stressed in the study.

The problem of project ownership and maintenance which should be arranged to ensure the community can sustain these construction projects in the future, is lacking and is at the centre of the community-based projects being raised here. Community projects exist and self-sustain if there is a demand for the structure and service provided, pretty (1995) cautioned on this. Instead of the community perception over the provided infrastructure enhancing their sense of ownership, it could be argued that the equipment and building are treated as non-personal assets, and therefore, would be neglected. This problem was made worse because of the lack of funds and lack of clear plans for maintenance of such investments as pointed out by Tiwari and Saxena (2011) in their observation of rural infrastructure projects.

The use of community engagement is “always on” in terms of planning and strategies. Methods of engaging leaders of the communities and members of the communities in maintenance and overall ownership were identified. The trust that communities wielded in the implementing organizations and the organizations functionality was greatly bolstered using refreshers and hands-on visits. Similarly, check-ups with communities every three or five years after the project had been handed over greatly assisted in enforcing accountability and resolving emerging new issues. In this regard, Kerzner (2017) supports and emphasizes that the end of a project should include adequate provisions for follow-up activities.

In the case of Accountability, the use of community members during the projects, together with check-ups after the project, has greatly reduced concerns about the misuse of funds. This research addresses this issue of mistrust in many developing countries by clarifying the specific challenges Zambia faces and suggesting ways to enhance the sustainability of civil works in the school infrastructures.

These findings resonate with Pretty (1995) and Tiwari and Saxena (2011), who argue that community perception and ownership are critical to maintaining infrastructure investments. Focus group discussions highlighted the negative impact of free education policies on parental contributions and community participation. Regular monitoring and evaluation systems should be implemented to ensure sustained engagement and accountability. Community sensitization and empowerment strategies are required to strengthen ownership and active participation.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter provides the concluding remarks of the study and presents actionable recommendations based on the findings discussed in Chapter Five. The conclusions are drawn by revisiting the study objectives, while the recommendations are aimed at addressing identified gaps and enhancing the sustainability of community-driven school infrastructure projects in Chibombo.

6.1 Conclusion

This study conducted a comprehensive analysis of community-based strategies and support mechanisms aimed at enhancing the sustainability of school infrastructure projects, with a particular focus on the initiatives implemented by Build It International in the Chibombo region. The findings underscored the pivotal role of effective community engagement, highlighting how active participation from local stakeholders can significantly contribute to the success and longevity of such projects (Adedokun et al., 2019; Banerji & Mili, 2018). It was observed that strong support mechanisms, including local partnerships and resource-sharing agreements, are essential for fostering an environment conducive to sustainability (Mwamba & Zulu, 2021; Klopp & Petrescu, 2017).

Additionally, the study emphasised the importance of fostering enabling governance structures. These structures facilitate accountability and transparency, ensuring that community members feel empowered to take ownership of the projects (Mansuri & Rao, 2013; Hunja, 2018). Despite these positive findings, the study identified several critical challenges that must be addressed for sustainable outcomes to be fully realized. Notably, gaps in capacity-building hinder the ability of local communities to manage and maintain infrastructure independently (Makuwira, 2021; Njeru & Kihiu, 2022). Furthermore, issues related to financial independence—such as reliance on external funding—pose significant risks to the continuity of the projects (Juliet, 2018; World Bank, 2022). Lastly, a lack of alignment between existing policies and the goals of community projects has been identified as a barrier that complicates the achievement of comprehensive sustainability in school infrastructure initiatives (Shaeffer, 2019; UNICEF, 2017). Community engagement strategies employed by Build It International on the long-term sustainability of school infrastructure projects

In addressing the first objective, the study found that participatory planning and the active involvement of Parent-Teacher Committees (PTCs) significantly contributed to fostering a sense of ownership and investment among community members in the educational process (Jones & Smith, 2019; Adedokun, 2019). This engagement not only empowered parents and teachers to collaborate but also helped build stronger relationships within the community (Banerji & Mili, 2018; Hunja, 2018). However, the study also revealed a critical need to enhance the integration of community input into decision-making processes. Many participants expressed the desire for more substantial and meaningful engagement, suggesting that deeper and more systematic inclusion of their perspectives could lead to more effective and responsive educational initiatives (Islam et al., 2013). This feedback highlights the importance of establishing mechanisms that ensure ongoing dialogue and collaboration, ultimately aiming to strengthen the impact of educational planning on the community (Ledwith, 2020; Makuwira, 2021).

Effectiveness of support mechanisms provided to communities in Chibombo by BII for the maintenance and sustainability of school infrastructure projects

The second objective of the study focused on the effectiveness of capacity-building initiatives delivered by Build It International. The findings demonstrated that these programs significantly enhanced the skills of community members, empowering them with the necessary knowledge and tools for effective maintenance and management of local resources and infrastructure (Marteache et al., 2019). However, the study also identified a critical challenge: the lack of ongoing support and follow-up mechanisms (Adedokun et al., 2019). This absence hindered the sustainability of the skills and knowledge gained, raising concerns about the long-term viability of the initiatives (Lungo et al., 2017). Without continued guidance and resources, the community members faced difficulties in applying what they had learned and effectively managing projects, which underscores the need for a structured support system to ensure the longevity of these capacity-building efforts (Build It International, 2024).

Local governance structures and educational policies on the sustainability of community-led school infrastructure projects.

Finally, the third objective of the study underscored the essential importance of regulations, resulting in inconsistencies in resource allocation and accountability measures (Hunja, 2018; UNESCO, 2019). Such discrepancies not only hinder effective implementation but also jeopardize the overall sustainability goals sought by organizations and stakeholders involved (Shaeffer, 2019). The findings align with global literature that underscores the importance of community-driven approaches and highlights unique contextual challenges in Zambia (UNICEF, 2017). These include financial constraints, dependency on external funding, and limited integration of community roles within formal governance structures (Miller et al., 2017; Build It International, 2024). Addressing these challenges is essential for ensuring that investments in school infrastructure yield lasting benefits for education and community development (Makuwira, 2021; World Bank, 2022). Robust governance structures and well-defined policies in promoting sustainability initiatives (Mansuri & Rao, 2013; Makuwira, 2021). The role of Public Trust Corporations (PTCs) was identified as crucial in providing oversight and guidance in these efforts (Jones & Smith, 2019). However, the study highlighted significant challenges stemming from an inadequate understanding of existing policy frameworks (Mwanza, 2020). This gap often led to misalignments with government

The study provided a comprehensive and in-depth analysis of a holistic approach to project implementation, placing a strong emphasis on the critical importance of community engagement throughout every phase of the process (Ledwith, 2020; Bowen et al., 2010). It thoroughly examined various sustainable construction techniques that are designed to minimize environmental impact while simultaneously promoting resource efficiency (Miller et al., 2017). By focusing on methods such as the use of renewable materials, energy-efficient designs, and waste-reduction practices, the study highlighted innovative solutions that can lead to more eco-friendly construction practices (Build It International, 2024).

In addition to these pre-construction elements, the study also brought to light the significance of post-construction support (Adedokun et al., 2019). It outlined a range of strategies aimed at ensuring the long-term sustainability and maintenance of infrastructure projects, suggesting that ongoing community involvement and education play vital roles in the upkeep of these initiatives (Lungo et al., 2017; Njeru & Kihiu, 2022). The study proposed practical frameworks for regular maintenance checks, community training workshops, and the establishment of local stewardship groups to oversee the infrastructures' health and longevity (Klopp & Petrescu, 2017; Makuwira, 2021).

By integrating these multifaceted elements, the study aspires to create a robust framework that not only addresses the immediate goals of various projects but also fosters enduring benefits for both the local community and the environment at large (UNESCO, 2019; Miller et al., 2017). The goal is to build resilient infrastructures that contribute to community well-being and ecological balance over the long term (Shaeffer, 2019; UNICEF, 2017).

6.2 Recommendations

Based on the findings, the following recommendations are proposed:

1. Strengthening Community Engagement: Build It International working with the Ministry of Education should enhance participatory planning processes by incorporating structured mechanisms to integrate community input into decision-making. This ensures community input is consistently integrated into decision-making (Ledwith, 2020). Regular feedback sessions and workshops can ensure that community voices are heard and valued.

2. Enhancing Capacity-Building Initiatives: Build It working with the infrastructure department at the District Level under DEBS should expand training programs to include advanced maintenance and management skills and establish mentorship programs for ongoing support. These initiatives should focus on building self-reliance within communities. Continuous skills development fosters community self-reliance (Marteache et al., 2019).

3. Developing Sustainable Funding Models: Schools should introduce income-generating activities, such as renting school facilities or initiating school-based enterprises, to provide consistent funding for maintenance and repairs. This approach would reduce dependency on external funding. This reduces reliance on external funding and ensures funds for maintenance (Njeru & Kihiu, 2022).

4. Strengthening Governance and Policy Frameworks: Build It to collaborate with the Ministry of Education to align community-driven projects with national policies. Establish clear guidelines that define community roles and responsibilities, ensuring accountability and resource allocation. Clear roles and responsibilities promote accountability and improve governance (Mbasera et al., 2021).

5. Monitoring and Evaluation Systems: Build working with the Ministry of Education at the District level to develop comprehensive monitoring and evaluation systems to track the effectiveness of community engagement and support mechanisms. This will help identify areas for improvement and ensure that interventions remain responsive to community needs. This ensures accountability and identifies areas for improvement (Creswell & Plano Clark, 2011).

6. Promoting Awareness and Ownership: Conduct regular awareness campaigns to emphasize the importance of community participation and ownership in maintaining school infrastructure. Targeted outreach efforts can foster a culture of responsibility and proactive involvement. This fosters a culture of shared responsibility (Mansuri & Rao, 2013).

6.3 Addition to the Body of Knowledge

This study adds to the body of knowledge by providing an in-depth analysis of community-based strategies for sustaining school infrastructure projects in the Zambian context. While global literature often highlights the importance of community engagement and capacity building, this study emphasizes the unique challenges and opportunities specific to rural Zambia. Key contributions include:

By examining the role of Parent-Teacher Committees (PTCs) and community engagement strategies employed by Build It International, the study offers practical insights into how participatory planning can be effectively implemented in resource-constrained environments the study brings out contextualised insights.

The study highlights gaps in financial models and governance frameworks, offering actionable recommendations for integrating income-generating activities and renewable energy solutions. This practical focus extends existing theories by addressing sustainability from both technical and community perspectives.

The study underscores the need for alignment between community-led initiatives and government policies, contributing to the discourse on governance structures and policy support in education infrastructure sustainability.

By applying Community Development Theory and Project Management Theory, the study bridges the gap between academic discourse and field practices, enriching the understanding of how theoretical principles translate into real-world outcomes

6.4 Areas for Future Studies

- Longitudinal studies: These play a crucial role in understanding the long-term outcomes of community-led school infrastructure projects, particularly those that span over a decade. By tracking these projects over time, researchers can gather valuable insights into their sustainability, effectiveness, and impact on educational outcomes, providing a comprehensive view of how such initiatives evolve and influence communities.
- Comparative studies: These would offer a unique opportunity to conduct cross-regional or cross-country analyses within sub-Saharan Africa. These studies aim to understand the effectiveness of various community engagement models in diverse contexts, highlighting key factors that contribute to successful implementation. By comparing different approaches, researchers can identify best practices and challenges faced by different communities, ultimately enhancing the frameworks for community involvement in educational initiatives.
- Exploring gender: Dynamics is essential in examining the role of gender in community participation and decision-making processes. Specifically, it is important to focus on the involvement of women in Parent-Teacher Committees (PTCs) and school governance structures. Understanding how gender influences these dynamics can help identify barriers to women's participation and promote more inclusive decision-making processes that benefit all stakeholders in the educational landscape.

- Policy implementation: These studies are critical in assessing how national education policies can be better aligned with community-based infrastructure initiatives. By investigating the gaps between policy intentions and on-the-ground realities, these studies can inform policymakers about the necessary adjustments needed to facilitate the collaboration between national frameworks and local community efforts. This alignment is essential for ensuring that educational infrastructure projects meet the needs of the communities they serve.

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Appendices

Appendix I: Information sheet

Title of the Project: Community-Based Strategies and Support for Improving the Sustainability of School Infrastructure Projects in Chibombo: A Case of Build It International

Name of Study: Praise Luwaile

Name of Organization: University of Lusaka

Hello. My name is Praise Luwaile. I am a student at the University of Lusaka pursuing a Master of Science in Project Management. I am currently working on a study project aimed at examining Community-Based Strategies and Support for Improving the Sustainability of School Infrastructure Projects, particularly within the context of Build It International's efforts in Chibombo, Zambia.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information, and I will take time to explain. If you have questions later, you can ask them to me. Please also be informed that there is no direct benefit to your participation in the study. However, the information you will provide is vital to helping Build It International review its community-based strategies and support for improving the sustainability of school infrastructure projects in the community in which the organization works.

Confidentiality:

What will happen to the information you give?

The information collected will be used purely for academic purposes and it will be kept confidential. The study will only link you individually to what you will say if you give consent.

Additional information

If you have any questions about the study, please feel free to contact me at 0978689332 or email: beracah1998@gmail.com

Consent

Participation in the study is voluntary. Please take your time to decide whether or not you would like to participate. If you decide to participate, please note that you are free to withdraw at any time. Your decision made in the study will not affect you in any way.

Do you wish to participate in the study?

Yes [ ]   No [ ]

Respondent's Signature   Date

Appendix III

Section 1: Closed-Ended Responses

Section 1: Demographics

1. Gender

☐ Male

☐ Female

☐ Other

2. Age Group

☐ Under 18

☐ 18-25

☐ 26-35

☐ 36-45

☐ 46-55

☐ 56 and above

3. Educational Level

☐ No formal education

☐ Primary education

☐ Secondary education

☐ Tertiary education

☐ Other: _______

4. Occupation

☐ Farmer

☐ Trader

☐ Teacher

☐ Health worker

☐ Student

☐ Unemployed

☐ Other: _______

Section 2: Community Engagement and Participation

5. How did you first hear about Build It International's school infrastructure projects in your community?

☐ Community Meeting

☐ Radio/TV

☐ Word of mouth

☐ social media

☐ Other: _______

6. Were you or your community involved in the planning or decision-making stages of the project?

☐ Yes

☐ No

☐ Not sure

7. If yes, what kind of involvement did you have?

....
....

8. How would you rate the level of communication regarding the project objectives?

☐ Very clear

☐ Clear

☐ Somewhat clear

☐ Not clear

Section 3: Support Mechanisms and Capacity Building

9. Were you or other community members provided with training or resources to maintain the school infrastructure?

☐ Yes

☐ No

10. If yes, what type of support was provided (e.g., training, financial assistance)?

....
....

11. How effective do you believe the support mechanisms (training, resources) have been in ensuring the long-term maintenance of the school infrastructure?

☐ Very effective

☐ Effective

☐ Neutral

☐ Ineffective

☐ Very ineffective

Section 4: Local Governance and Educational Policies

12. Do you believe local governance structures (e.g., Parent Teacher Committees) play a role in maintaining school infrastructure?

☐ Yes

☐ No

☐ Not sure

13. How would you rate the effectiveness of local governance in ensuring the sustainability of the school buildings?

☐ Very effective

☐ Effective

☐ Neutral

☐ Ineffective

☐ Very ineffective

Section 5: Sustainability of School Infrastructure

14. Since the completion of the school infrastructure, have there been improvements in its condition (e.g., maintenance, repairs)?

☐ Significant improvements

☐ Some improvements

☐ No change

☐ Worsened

15. What do you think is the most important factor in ensuring the long-term sustainability of school infrastructure?

....
....

Section 6: Challenges and Recommendations

16. What challenges have you observed in the community regarding the maintenance of school buildings?

....
....

17. What recommendations would you make to improve the sustainability of school infrastructure projects in your community?

....
....

Thank you for your time and participation

Appendix II: Interview Guide for Focused Group Discussion – Parents (PTC)

Date of interview ___________________________________

Place of discussion ___________________________________

Total number of Participants present ________________

Section A: Awareness and Involvement in School Projects

1. There are some school infrastructure projects being undertaken by Build It International. How did you first come to know about it?

____
____
____

2. Are there any planning or construction activities in your school's infrastructure, where you were a participant?

____
____
____

Section B: Community Responsibility and Support

3. What do you think is required from the community so that the new school infrastructure is taken care of?

____
____

____
……………………………………………………………..

5. Were you or any parent offered any help in such a way that the school infrastructure was taken care of?

____
____

6. Section C: Impact on Education and the Community

7. 5. In regard to the school infrastructure projects carried out, how have the education of your children been affected? _

____
____

8. 6. Would you say that the new school infrastructure has contributed to the community in any way?

____
____

Section D: Challenges and Solutions

9. Are there times when you have faced problems in regard to maintaining the school infrastructure?

____
____

10. 8. In your opinion, what do you think can be done by the community to better the maintenance of the school buildings and facilities?

____
____ Section E: Local Leadership and Policies

11. 9. In your opinion, do you feel, the Parent Teacher Committee (PTC) or any other local structures have provided adequate support towards ensuring there is proper maintenance on the school infrastructure.

____
____

Section F: Future Directions & Recommendations

10. What would you say to Build It International or other organizations in order to enhance the sustainability in future school infrastructure projects?

.... what do you see as the main role of the government in ensuring the sustainability of the school infrastructure in the longer term?

Appendix IV: Key Informant Interview – School Administrator

Date of interview ....

Place of interview...

Name (if consent is given) ....

Section A: Overview of School Infrastructure Projects

1. Can you provide an overview of the school infrastructure projects that were implemented by Build It International in your school?

....
....

2. How would you describe your involvement and the school's involvement in the planning and implementation of these infrastructure projects?

....
....

Section B: Maintenance and Sustainability

3. What measures have been put in place to ensure the long-term maintenance of the new infrastructure?

....
....

4. Have you received any support or resources from Build It International, the government, or the community to help maintain the infrastructure?

....
....

5. What challenges does the school face in maintaining the infrastructure?

....
....

Section C: Community Engagement

6. How does the local community, including parents and community members, contribute to the maintenance and sustainability of the school infrastructure?

....
....

7. What role does the Parent-Teacher Committee (PTC) play in the maintenance of the school infrastructure?

....
....

Section D: Role of Policies and Governance

8. How do government policies and local governance structures, such as the Ministry of Education or local councils, support or hinder the sustainability of the school infrastructure?

....
....

9. In your opinion, what more could be done at a policy level to improve the sustainability of school infrastructure in your area?

....
....

Section E: Recommendations for Improvement

10. What additional support or resources do you think are needed to improve the sustainability of the school infrastructure?

....
....What recommendations would you make to Build It International or similar organizations for future projects?

....
....

Thank you for your time and participation

Appendix IV: Key Informant Interview – BII Construction Staff

Date of interview ....

Place of interview..

Name (if consent is given) ....

Section A: Project Planning and Implementation

1. Can you provide an overview of Build It International's approach to planning and implementing school infrastructure projects?

....
....

2. How does Build It ensure that the infrastructure is suitable for the local environment and community needs?

....
....

Section B: Community Involvement in Construction

3. How does Build It collaborate with local governments, schools, or community leaders to ensure the infrastructure is maintained?

....
....
....

4. How do you perceive the effectiveness of the community's role in maintaining the infrastructure after construction?

....
....

Section C: Maintenance and Sustainability of Infrastructure

5. What construction techniques or materials are used to ensure the durability and sustainability of the school infrastructure?

....
....

6. What post-construction support does Build It provide to the community or school for maintaining the infrastructure?

....
....

Section D: Challenges and Opportunities

7. What challenges have you encountered in ensuring the sustainability of the school infrastructure projects in rural communities like Chibombo?

....
....

8. What opportunities do you see for improving the long-term sustainability of future projects?

....
....

Section E: Partnerships and Support Mechanisms

9. How does Build It collaborate with local governments, schools, or community leaders to ensure the infrastructure is maintained?

....
....

10. How do you perceive the effectiveness of the community's role in maintaining the infrastructure after construction?

....
....

Section F: Recommendations for Future Projects

11. What improvements would you suggest for Build It's construction projects to enhance sustainability and community ownership?

....
....
....

12. What role do you think Build It should play after the handover of infrastructure to ensure sustainability?

Thank you for your time and participation

Appendix IV : Submission Form

UNIVERSITY OF LUSAKA

SCHOOL OF POSTGRADUATE STUDIES

SUBMISSION OF DISSERTATION FOR EXAMINATION

Name of student: Praise Luwaile

Student number: MSCPM 23119765

Programme of study: Project Management

Dissertation title: Community-based Strategies and Support for Improving the Sustainability of School Infrastructure Projects in Chibombo: A Case of Build It International.

Signature of student: ....

Date: 18th Jan, 2025

Supervisor's Comments:

I recommend/ do not recommend this dissertation for submission for examination (If you do not recommend, kindly provide a written report and attach hereto).

Name of Supervisor: Charles Kapekele Chileya

Signature of Supervisor: ....

Date: 18/01/2025

Appendix VI: Submission Form

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