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**BY**

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**UNDERSTANDING THE PSYCHOSOCIAL DETERMINANTS OF LITTERING  
BEHAVIOR. A CASE STUDY OF MBARE MUSIKA.**

**JUNE 2025**

**SUPERVISED BY: DR P. MUKWENYI**

## DECLARATION

I, Mieyolah C Nyamunokora declared that this research project was done in my own work and has not copied or lifted from any source without acknowledgment of the source.

DATE: 24 JUNE 2025

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SIGNATURE:

## APPROVAL FORM

The undersigned certify that they have supervised the student Mieyolah C Nyamunokora's B212994B dissertation entitled Understanding the Psychosocial Determinants of Littering Behavior. A case study of Mbare Musika Submitted in partial fulfillment of Bachelor of Science Honors' Degree in Development Studies.

Supervisor: Dr. P. Mukwenyi

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Chairman: Dr. J. Bowora

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Date 24 JUNE 2025

## DEDICATION

This dissertation is dedicated to my family for their unwavering support, and to the hardworking communities of Mbare Musika, whose resilience and daily experiences inspired this study. May this work contribute, even in a small way, to building cleaner, healthier, and more conscious urban environments

## ACKNOWLEDGEMENTS

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## ABSTRACT

Littering behavior remains a persistent environmental challenge globally, with significant public health, economic, and ecological implications. In urban informal markets such as Mbare Musika in Harare, Zimbabwe, the problem is particularly pronounced due to high human traffic, informal waste management systems, and socio-economic vulnerabilities. While various interventions have been attempted, the issue persists, suggesting deeper psychosocial dimensions that influence individual and collective behavior. Despite the growing body of environmental research, there is a noticeable gap in literature addressing the psychosocial determinants of littering, particularly within the context of informal market settings in developing countries. This study aims to fill that gap by examining the underlying psychosocial factors contributing to littering behavior at Mbare Musika.

The main objective of the study was to explore the psychosocial determinants that influence littering behavior among vendors, customers, and residents at Mbare Musika. To achieve this, a mixed-methods research design was employed, combining qualitative and quantitative approaches to ensure triangulation and depth of data. Semi-structured interviews, focus group discussions, and questionnaires were used to collect data from a purposively and randomly selected sample of 50 participants, including market traders, residents, municipal workers, and environmental officers. Thematic and descriptive analysis were employed to interpret the data.

Findings from the study reveal that littering behavior at Mbare Musika is shaped by a complex interplay of attitudes, social norms, perceived behavioral control, lack of environmental awareness, and institutional inefficiencies. Cultural beliefs, peer influence, and a perceived absence of consequences were identified as key psychological and social drivers of littering. Moreover, inadequate infrastructure, such as limited bins and irregular waste collection, compounded the problem. These findings underscore the need for multifaceted interventions that go beyond infrastructure provision to address behavioral and social norms.

The implications of the study are significant for policymakers, environmental educationists, and local authorities. It highlights the importance of incorporating behavioral change strategies, community engagement, and participatory governance into waste management policies. Ultimately, the research provides valuable insights that can inform targeted environmental interventions and contribute to more sustainable urban waste practices in Zimbabwe and beyond.

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## **ABBREVIATIONS**

**TPB Theory of Planned Behavior**

**UNEP United Nations Environmental Program**

**EMA Environmental Management Agency**

**WHO World Health Organization**

**OECD Organization for Economic Co-operation and Development**

**NGOs Non-Governmental Organization**

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## **CHAPTER ONE: INTRODUCTION**

### **Introduction**

This chapter provides an overview of study on the psychosocial determinants of littering behavior, focusing on Mbare Musika Harare, Zimbabwe. It introduces the research background, problem statement research questions and objectives. The chapter further highlights the significance of the study assumptions, limitations, delimitations and definition of key terms. It concludes with a summary that encapsulates the key elements discussed.

### **Background of The Study**

Littering is a global environmental issue that affects both developed and developing countries. Worldwide, the production of solid waste has increased due to rapid population growth, urbanization and consumerism. According to the World Bank (2018), more than 2,01 billion tons of solid waste are generated every year, with at least 33% not managed in a sustainable way. In cities like Mumbai, New York and Nairobi littering poses challenges to waste management authorities, contributing to water way blockages, land degradation and public health crises. While global initiatives such as the UN sustainable development goal advocate for responsible consumption and environmental sustainability, behavioral challenges like littering continue to undermine progress.

Around Africa, littering is exacerbated by informal trading activities, inadequate waste collection system and weak enforcement of environmental policies. In many urban centers, waste disposal infrastructure is either overwhelmed or inaccessible, pushing residents and vendors to dispose waste irresponsibly (Adebayo and Olayiwola, 2020). A study conducted in Lagos, Nigeria found that attitudes lack of environmental education and poor governance structures significantly contribute to littering behaviors (Okafor, 2018). Similar patterns are observed in cities like Accra, Addis Ababa and Johannesburg where street vending and street vending and commuter activity concentrate waste generation in specific hotspots (Munyoro and Dlamini 2019).

Mbare Musika is one of the busiest markets and transport centers in Harare. It serves as a vital economic hub, for traders, farmers, commuter and small-scale transport operators. However, it also suffers from chronic littering due to high human traffic, insufficient waste bins and low environmental awareness amongst the population. Despite frequent clean up campaigns and finds from municipal police, the environment constantly polluted, raising questions about the deeper causes of such behavior.

Previous research has linked littering behavior to factors such as lack of awareness, poor infrastructure and institutional failure (Miller and Thomas, 2017). Studies in other African context have also highlighted the role of attitudes, social norms and peer influence in shaping individual behavior (Adeoye and Olatunji 2019; Kassa and Asfaw, 2021). Moreover, international literature increasingly emphasizes the importance of behavioral approaches to waste management as more sustainable and human centered solution (Chen et al.,2020; World Bank, 2022)

Despite a growing body of research, few studies in Zimbabwe have explored psychosocial factors such as attitudes, perceived norms, behavioral control, environmental identity as key determinants of littering behavior (Chikanda and Ndlovu, 2020). This study aims to fill a geographical gap. The absence of focused studies o littering behavior in Mbare Musika, a critical urban space with significant environmental challenges.

### **1.3 Statement of Problem**

Littering remains a visible and persistent challenge despite various efforts by Harare city council to address solid waste issues in Mbare Musika. While infrastructural and logistical constraints are often cited, there are limited research focusing on behavioral and social psychological drivers behind this phenomenon. Little has been done to understand why, despite the presence of some waste bins and awareness campaigns, individuals continue to litter in this bustling market place. Without addressing the root behavioral causes, waste management interventions remain unsustainable. This study seeks to fill the gap by exploring the psychosocial determinants influencing littering behavior market users in Mbare Musika, with aim of proposing evidence-based recommendations for behavior change and policy improvement.

### **1.4 Research Questions**

1. What are the attitudes and perceptions of the population towards littering at Mbare Musika?
2. How do social norms and peer influences affect littering behavior in Mbare Musika?
3. What interventions could be implemented to promote responsible waste disposal at Mbare Musika?

### **1.5 Research Objectives**

1. To analyse the attitudes and perceptions to Mbare Musika users towards littering.

2. To assess the influence of social norms and peer pressure on littering behavior at Mbare Musika.
3. To propose interventions that can promote behavior change and reduce littering at Mbare Musika.

### **1.6 Significance of the Study**

This study holds significant value for a wide range of stakeholders, including policymakers, city authorities, environmental organizations, community members, and the academic and research community. Understanding the psychosocial determinants of littering behavior in a high-traffic informal market setting like Mbare Musika offers an opportunity to create more effective, context-specific interventions aimed at promoting sustainable environmental practices.

For policymakers and city authorities, particularly the Harare City Council and national environmental regulators, the findings of this research can provide critical insights into the underlying behavioral drivers of littering. Rather than adopting generic or punitive strategies that may not resonate with the lived realities of local populations, policymakers can use this study to design more nuanced and culturally appropriate behavioral interventions. This includes campaigns that leverage social norms, attitudes, and perceived behavioral control to shift public behavior. Furthermore, these findings can assist in the development of integrated waste management policies that are not only technically sound but also behaviorally informed.

Environmental organizations, including non-governmental organizations (NGOs) and civil society groups involved in waste management and environmental education, will also benefit greatly from this study. By shifting the focus from infrastructure-heavy solutions to those that emphasize behavioral change, these organizations can refine their programs to better engage market users and local communities. Campaigns and outreach programs can be restructured to target specific psychosocial motivators such as group identity, habit formation, and social pressure, leading to more sustainable outcomes in reducing littering.

Community members, particularly vendors, shoppers, and residents in and around Mbare Musika, stand to gain directly from the implementation of insights derived from this study. Cleaner, more hygienic market environments not only enhance public health and safety but also contribute to improved livelihoods, especially for those whose businesses are affected by unsanitary conditions. By involving community members in the co-creation of anti-littering



strategies and promoting community ownership of waste management practices, sustainable behavior change can be cultivated from the grassroots level.

Finally, the academic and research community will find this study a valuable addition to the growing body of literature on environmental psychology, behavioral science, and urban studies. It contributes to scholarly discussions on environmental behavior within the unique context of urban informal markets, which are often underrepresented in academic research. The study's findings, methodology, and theoretical framework can serve as a foundation for future research, including comparative studies in other urban settings or investigations into other forms of environmental degradation. As such, this research not only fills a critical knowledge gap but also opens new avenues for interdisciplinary inquiry and evidence-based policy formulation.

### **1.7 Assumptions of the study**

All participants will be truthful and honest in sharing their perspectives on littering. Littering behavior is influenced by both individual psychological and social context. Mbare Musika is representative of urban markets in terms of waste generations and behavioral patterns.

### **1.8 Limitations of the Study**

Despite the value and relevance of this study, several limitations were encountered that may have influenced the research process and findings. One key limitation was related to accessing respondents, particularly vendors and customers at Mbare Musika. Many of these individuals operate under intense time pressures due to the fast-paced nature of informal market activities. As a result, some were unwilling or unable to participate in the study, which may have affected the overall sample size and representativeness. To mitigate this challenge, data collection was scheduled during off-peak hours when market activity was relatively low. In addition, the use of a concise and straightforward questionnaire helped minimize the time burden on participants, increasing the likelihood of cooperation.

Another limitation stemmed from the potential for response bias, particularly social desirability bias, where participants may have provided answers they perceived as acceptable or favorable rather than reflecting their true behaviors and attitudes toward littering. This risk is common in behavioral studies involving socially sensitive issues. To reduce the impact of this bias, respondents were assured of strict confidentiality and anonymity. They were informed that their responses would be used solely for academic purposes and would not be traceable to them.

individually. This approach was intended to create a safe space for honest disclosure and reduce the pressure to conform to socially acceptable norms.

While these limitations did not undermine the overall validity of the study, they are important to acknowledge as they may influence how the findings are interpreted and applied. Future studies might consider using a mixed-methods approach or incorporating observational data to further triangulate responses and enhance reliability.

### **1.9 Delimitation of The Study**

Despite the value and relevance of this study, several limitations that may have negative effects on the research process and findings. One key limitation was related is accessing respondents, particularly vendors and customers at Mbare Musika. Many of these individuals operate under intense time pressures due to the fast-paced nature of informal market activities. As a result, some were unwilling or unable to participate in the study, which may have affected the overall sample size and representativeness. To mitigate this challenge, data collection was scheduled during off-peak hours when market activity was relatively low. In addition, the use of a concise and straightforward questionnaire helped minimize the time burden on participants, increasing the likelihood of cooperation.

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While these limitations may not undermine the overall validity of the study, they are important to acknowledge as they may influence how the findings are interpreted and applied. Future studies might consider using a mixed-methods approach or incorporating observational data to further triangulate responses and enhance reliability.

### **1.10 Definition of key terms**

Littering is the act of improperly disposing of waste in public spaces. According to UNEP (2019), Littering includes dropping of items such as bottles, rappers or plastic bags. Working definition; any act of improper waste disposal by individuals in Mbare Musika.

Psychosocial determinants; factors that involve both psychological aspects (like beliefs and attitudes) and social aspects like norms and peer pressure WHO (2015) defines them as interrelation of individual behavior and the social environment.

Working definition; the combination of mental and emotional and social factors influencing littering behavior

### **1.11 Summary of the chapter**

This chapter introduced the study, presenting its context, background, main problem to be investigated. It outlined the research objectives, significance assumptions guiding the study. It also addressed the study limitations and delimitations and clarified key terms. The next chapter will focus on reviewing literature related to psychosocial theories and empirical studies of littering behavior.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter reviews literature related to psychosocial determinants of littering behavior. It begins by discussing theoretical frameworks underpinning the study, followed by background information on littering behavior globally and locally. The chapter further explores key themes aligned with research questions and objectives, including individual attitudes towards littering, the influence of social norms, peer pressure and effective interventions aimed at behavioral change. The chapter concludes with the identification of knowledge gaps that justify the need for current study.

### **2.2 Theoretical Framework**

This study is anchored on the theory of planned behavior (TPB), developed by Icek Ajzen (1991). The TPB argues that human behavior is guided by three kind of considerations: behavioral beliefs (attitudes towards the behavior), normative beliefs (perceived social pressure), and control beliefs (perceived ease or difficulty of performing the behavior). These beliefs shape an individual's behavioral intention, which is the most immediate predictor of actual behavior (Ajzen 1991). In the context of littering, the TPB helps explain why individual choose to litter or dispose of waste properly based on their attitudes, social expectations and perceived ability to act responsibly.

Recent studies have employed the TPB to investigate littering behavior across various contexts. For instance, Zheng and Zhao (2023) applied the TPB in urban Chinese context and found that perceived behavioral control and subjective norms significantly influence citizens waste disposal habits. Similarly, Maphosa and Ncube (2021) used the TPB to examine the environmental behaviors among Zimbabwean youths and reported that peer influence and environmental education where key drivers of intention to avoid littering.

The strengths of the TPB lie in its ability to predict intentional behavior across different cultural and environmental setting, offering a structured way to understand how psychosocial influence action (Fishbein and Ajzen 2010). It is especially useful in public health environmental studies and social psychology due to its clarity and adaptability.

However, the TPB also has notable weaknesses. It assumes that behavior is always the result of rational planning and overlooks spontaneous and habitual or emotional driven actions (Sniehotta et al, 2014). Moreover, the theory may under represent environmental and infrastructural constrains that affect behavior regardless of intention.

Despite the weakness, the TPB remains suitable for this study because it captures the psychosocial dimensions central to littering behavior particularly attitudes, perceived norms and personal agency within a structured framework. Its application enables the study to not only assess what people believe and say about littering but also how those beliefs translate into actions in the complex setting of Mbare Musika.

### **2.2.1 Strengths of the Theory of Planned Behaviour (TPB)**

The Theory of Planned Behavior (TPB) is widely regarded as one of the most robust and influential frameworks for understanding and predicting human behavior, particularly in the domain of pro-environmental actions. One of its most recognized strengths is its predictive accuracy. Numerous empirical studies have demonstrated that TPB reliably forecasts individuals' behavioral intentions across a wide range of contexts, including environmental conservation, recycling, and waste disposal behaviors. As noted by Fishbein and Ajzen (2010), the TPB provides a clear and empirically validated pathway from attitudes, subjective norms, and perceived behavioral control to behavioral intention, which in turn predicts actual behavior. This makes it a valuable tool for understanding littering behavior, which is often the outcome of complex psychological and social interactions.

Another notable strength of the TPB is its applicability across different cultural and social contexts. The theory has been successfully applied in various settings globally, from industrialized nations to developing countries, and from formal institutional environments to informal community spaces. This adaptability enhances its relevance to the current study, which is set in the diverse and dynamic urban context of Mbare Musika in Zimbabwe. According to Soutar and Ridley (2008), the TPB's flexible structure allows researchers to incorporate culturally specific beliefs and values without compromising the core tenets of the model, making it suitable for exploring behavior in multicultural and informal market settings.

In addition to its flexibility, the TPB is praised for its clarity and conceptual simplicity. The theory is relatively easy to understand and apply, which makes it highly useful not only in academic research but also in the design of public education campaigns and policy interventions. Its straightforward structure—linking behavioral intention to three core determinants (attitude, subjective norms, and perceived behavioral control)—enables policymakers and practitioners to identify specific leverage points for behavior change. As Yuriev et al. (2020) assert, this simplicity allows the TPB to be translated into actionable

strategies that can guide the development of communication tools, awareness campaigns, and community outreach programs targeting pro-environmental behavior.

Furthermore, the TPB demonstrates considerable flexibility in integrating with other psychological and sociological constructs, which broadens its explanatory power. For instance, researchers have successfully extended the TPB to include variables such as personal habits, emotional responses, moral obligations, and identity-related factors. Klöckner (2013) highlights that the inclusion of these additional constructs enhances the model's ability to capture the full range of influences on human behavior, particularly in complex social environments. This integrative capacity makes TPB an ideal framework for psychosocial studies such as this one, where multiple internal and external factors contribute to littering behavior.

Overall, the Theory of Planned Behavior stands out as a versatile and empirically grounded model that offers strong predictive capabilities, cultural adaptability, conceptual clarity, and theoretical flexibility. These strengths make it particularly well-suited for examining the psychosocial determinants of littering behavior in an urban informal market context like Mbare Musika, and for informing the design of effective, behaviorally informed environmental interventions.

### **2.2.2 Limitations of the Theory of Planned Behavior (TPB)**

While the Theory of Planned Behavior (TPB) has proven to be a valuable framework in understanding behavioral intentions, it is not without limitations. One major critique of the TPB is its assumption of human rationality. The theory presumes that individuals make logical and conscious decisions based on reasoned planning, which can significantly underestimate the role of spontaneous, habitual, or emotionally driven behaviors. In real-world settings, especially in informal urban environments such as Mbare Musika, behaviors like littering often occur automatically or impulsively, without deliberate reflection (Sniehotta, Pesseau, & Araújo-Soares, 2014). This suggests that TPB may not fully capture the unconscious drivers of environmentally harmful behaviors.

Another limitation lies in the TPB's underemphasis on structural and environmental barriers. Although perceived behavioral control is intended to account for such constraints, the model does not adequately incorporate tangible external factors such as the availability of waste disposal facilities, poor infrastructure, or weak enforcement of sanitation regulations. These contextual elements can heavily influence whether or not an individual is able to act on their

intentions, regardless of their attitudes or social norms (Conner & Sparks, 2005). For example, even if someone intends to dispose of waste responsibly, the absence of nearby bins or functional waste management systems may hinder that action.

Lastly, the TPB faces criticism for its limited predictive power regarding actual behavior. While it is effective in forecasting intentions, there is often a noticeable gap between intention and behavior, commonly referred to as the “intention-behavior gap.” This gap suggests that good intentions do not always translate into real-world actions, due to unforeseen circumstances, competing priorities, or lapses in motivation (Webb & Sheeran, 2006). As a result, relying solely on TPB may lead to an overestimation of the likelihood that individuals will engage in

### **2.2.3 Justification for the Use of the Theory of Planned Behavior (TPB)**

Despite its noted limitations, the Theory of Planned Behavior (TPB) remains highly appropriate and relevant for this study, particularly in the context of understanding littering behavior at Mbare Musika. One of the primary strengths of the TPB is its ability to capture the psychosocial dimensions of behavior, including attitudes toward littering, perceived social pressure or subjective norms, and an individual’s sense of control over their actions (perceived behavioral control). These elements are central to the behavioral dynamics within informal urban markets, where social influence, personal beliefs, and perceived obstacles interact to shape everyday practices.

Mbare Musika, as a densely populated and economically vibrant informal market, presents a complex setting where both individual and collective behaviors are influenced by a range of psychological and contextual factors. In such an environment, the TPB provides a structured yet flexible framework for analyzing how vendors, customers, and local residents make decisions about waste disposal. For example, peer behavior and group norms can strongly influence littering tendencies, while personal beliefs about cleanliness and accountability may determine whether individuals feel motivated to act responsibly. The TPB’s ability to reflect this interplay between individual cognition and social context strengthens its applicability in this study.

Furthermore, the adaptability of the TPB allows for the integration of supplementary variables that enhance its explanatory power. In this study, constructs such as peer influence, environmental constraints (e.g., absence of bins or poor waste infrastructure), and even emotional or moral considerations can be incorporated without undermining the core model.

This flexibility makes TPB particularly suitable for use in informal settings like Mbare Musika, where behavior is rarely governed by formal rules alone, but by a blend of personal disposition and collective culture. By accommodating these realities, the TPB provides a nuanced and context-sensitive approach to understanding and addressing littering behavior in urban Zimbabwe.

### **2.3 Littering at Global level**

Littering is a pervasive environmental issue that affects the ecosystems, public health and economies worldwide. The global generation of municipal solid waste, (MSW) is approximately 2.01 billion tonnes annually with projections indicating an increase to 3,40 billion tones of by 2050 if current trends persist (World Bank, 2018). A significant portion of this waste is improperly managed, leading to wide spread littering in both urban and rural areas.

Plastic waste constitutes a substantial component of global litter. According to the organization for economic cooperation and development (OECD), global plastic waste generation more than doubled from 2000 to 2019, reaching 353 million tones. Of this only 9% was recycled while 22% was mismanaged, resulting in environmental contamination (OECD, 2022). Mismanaged plastic waste often ends up in terrestrial and aquatic environments, exacerbating polluting and harming wildlife.

In the United States, the keep America beautiful 2020 national litter study estimated nearly 50 billion pieces of litter along road ways and water ways, equating to approximately 152 items per resident (Keep America Beautiful, 2020). The study also highlighted that cigarette butts remain the most littered item, although their prevalence has decreased by almost 70% over the past decade.





*Figure 1 (Source: United Nations Environmental Program UNEP, 2021; World bank, 2022)*

## **2.4 Continental perspective: Africa**

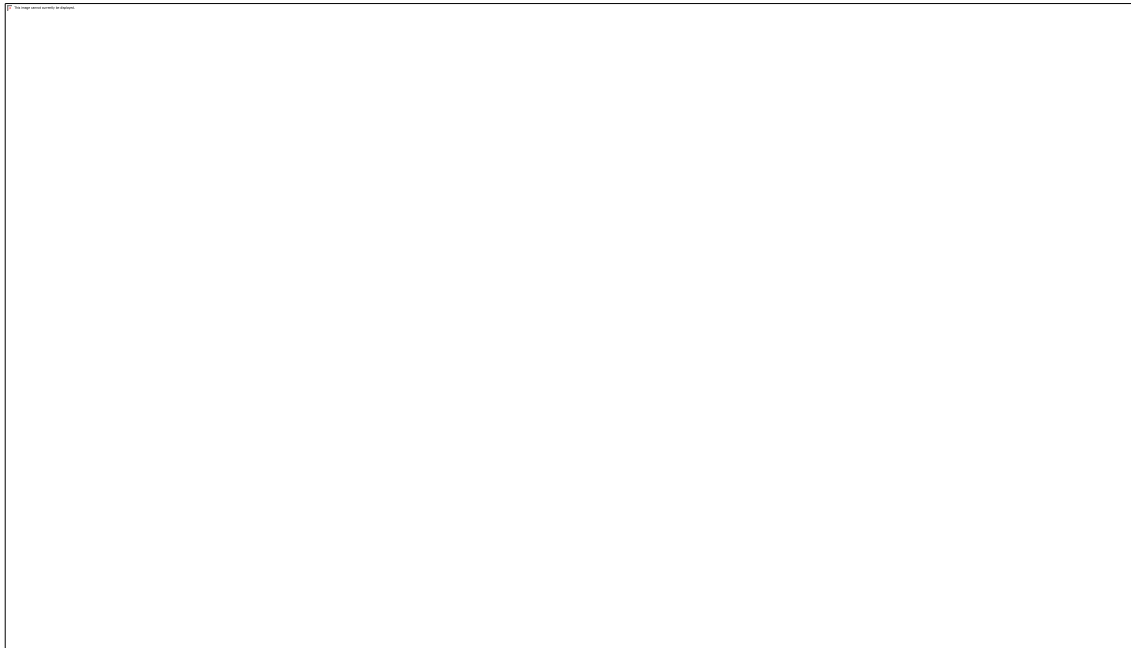
Littering is a pervasive environmental issue in sub Saharan Africa, exacerbated by rapid urbanization, population growth and inadequate waste management infrastructure. The region generates approximately 7 million tons of plastic waste annually, yet only 12 % of this is recycled, leading significant environmental pollution (Jesuton, 2023)

Projections indicate that by 2060, sub Saharan Africa could produce up to 116 tones of plastic waste annually, a six-fold increase from 2019 levels. This surge is primarily driven by increased demand for plastic products amid rising income and population growth (McVeigh, 2023).

A significant portion of plastic waste in the region is mis managed. In 2018, 64% of plastic waste was either dumped or lost in the environment, while only 30% ended up in the land fills the highest rate globally compared to the global average of 22% (Alliance for science, 2023).

The environmental consequences of littering are profound. In South Africa alone, between 90, 000 and 250, 000 tones are dumped into the oceans annually harming marine life and affecting coastal communities (UNEP, 2020).

Efforts to combat littering in sub Saharan Africa include legislative measures such as bans of plastic bags and taxes on plastic products. However, the success of these initiatives has been limited due to informant challenges and lack of public awareness (Alliance for Science, 2023).



*Figure 2 UNEP AFRICAN WASTE OUTLOOK (2020)*

## **2.5 Zimbabwean context: Littering at national Level**

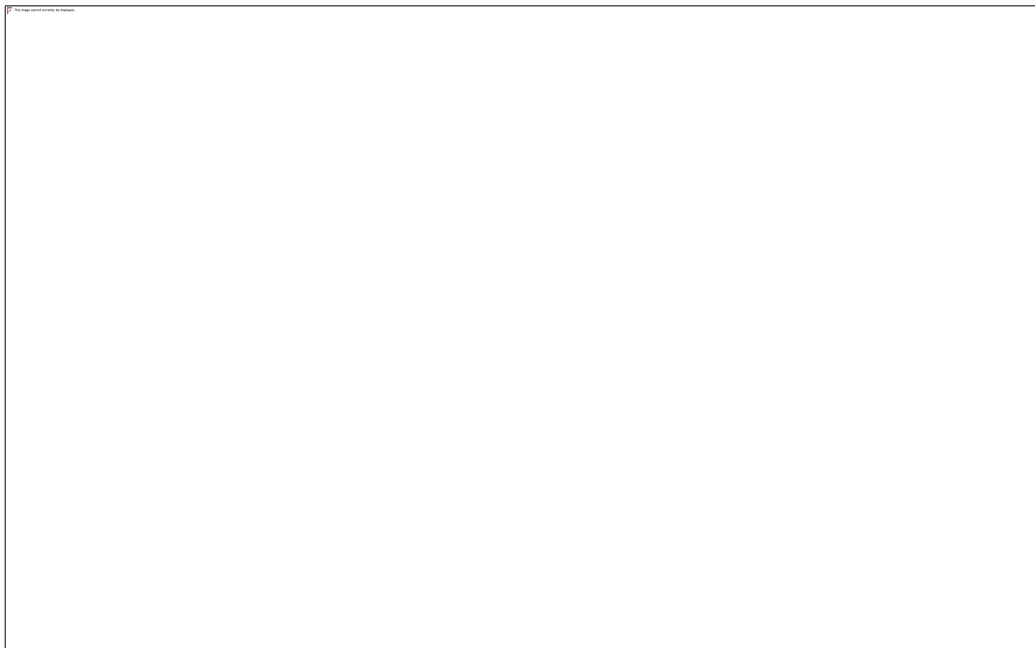
Littering remains a pressing environmental concern in Zimbabwe, particularly in urban areas such as Harare, Bulawayo and smaller trading hubs like Mbare Musika. The increasing urban population, combined with inadequate waste management systems has exacerbated the problem. According to a report by the environmental management agency (EMA), Zimbabwe generates approximately 1,65 million tones of solid waste annually and near 60% is un collected resulting in widespread littering and illegal dumping (EMA, 2020).

The urban informal sector including street vendors and open markets, contributes significantly to daily waste production. In Mbare Musika one the largest markets in Harare plastic packaging, food waste and other non-biodegradable materials are frequently discarded on the streets due to insufficient bins and poor public attitudes towards cleanliness (Chanza and Musakwa, 2016). A study by Zvidzanai (2021) indicated that only 35% of Harare residents

regularly use designated waste disposal systems, highlighting a gap in public engagement and civic responsibility.

The psychosocial aspect of littering behavior is also not worthy. Social norms, lack of environmental education and perceived inefficiency of municipal services influence individual decisions to litter (Mapira and Mugwini, 2018). Furthermore, limited enforcement of environmental bylaws has made it difficult for authorities to hold individuals accountable, further normalizing the act of littering in public spaces.

In response to the growing challenge, Zimbabwe has initiated several awareness campaigns such as the National Clean Up Day, observed on the first Friday of every month. These efforts, while commendable, have yet to significantly reduce littering behavior in densely populated areas. This underscores the need for a deeper understanding of the underlying psychosocial drivers of littering, especially in communities in



*Figure 3 Source Environmental Management Agency (EMA), 2022*

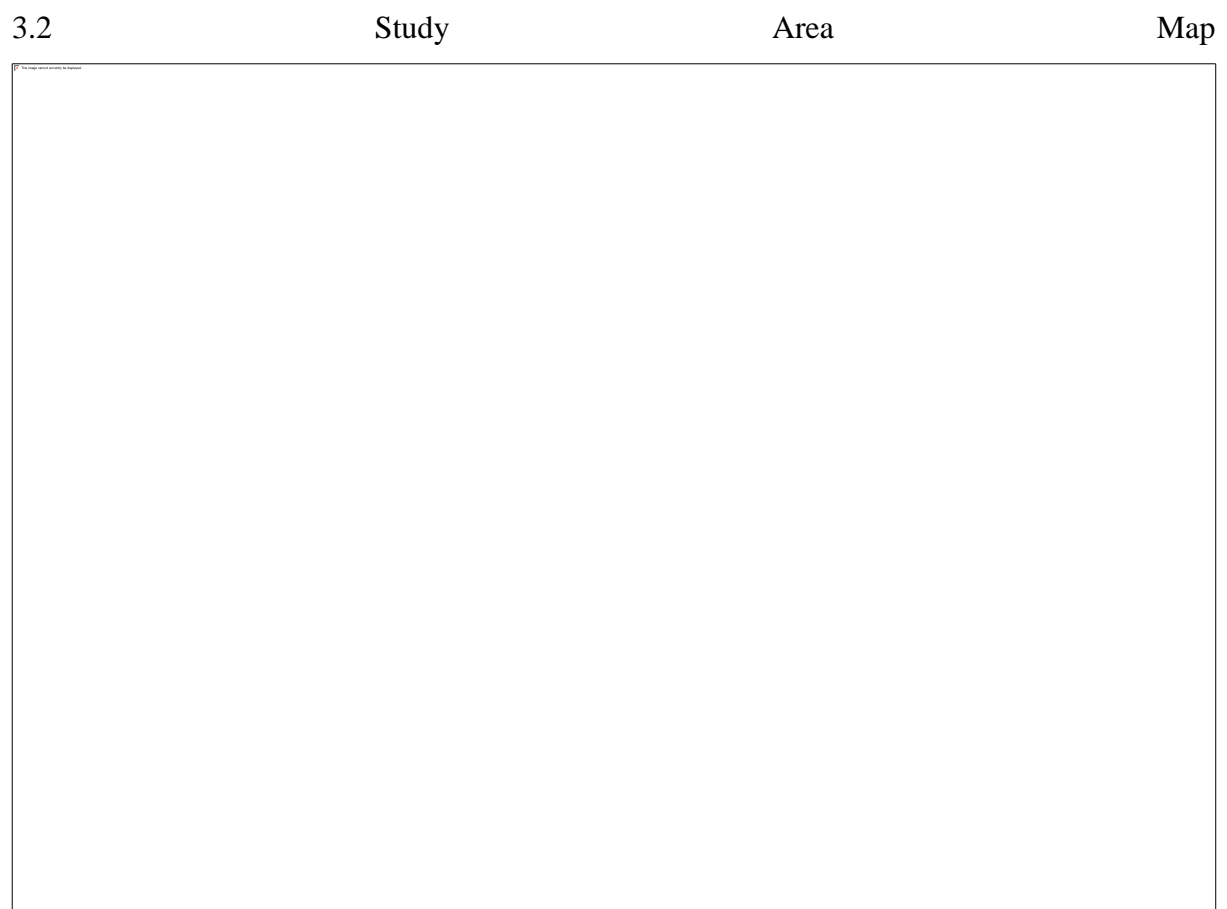
## **2.6 Summary of chapter**

This chapter reviewed theories underpinning the study, discussed the background of littering behavior globally, regionally, then locally and explored literature related to individual attitudes, social norms, peer influence and interventions aimed at reducing littering. The next chapter will discuss the research methods adopted.

## CHAPTER 3: RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter outlines the research methodology adopted for the study. It discusses the research paradigm, research approach, research design, population sample, sampling procedures, research instruments, data collection procedures, data analysis plan, validity of the instruments, pilot testing and ethical considerations. Each section is structured sequentially to provide clarity on the procedures used to investigate the psychosocial determinants of littering behavior at Mbare Musika.



*Figure 4 Study area map*

### 3.3 Study Area Description

Mbare Musika is located in Harare, Zimbabwe on one of the busiest and most densely populated markets, with an estimated population of over 100 000 people, including vendors, transport operators and residents. The area is characterized by crowded spaces poor waste management infrastructure and high human traffic. Physically, it consists of market stalls bus ranks and flats. Economically, Mbare Musika thrives on informal trading, small-scale agriculture produce sales, transport services. These activities generate large volumes of waste daily. This study focused on how understanding the psychosocial determinants such as attitudes, beliefs, peer influence and environmental awareness influence littering behavior in this context.

### 3.4 Research Paradigm

A research paradigm refers to a philosophical framework that underpins how a study is conceptualized and conducted. It encompasses the researcher's assumptions about the nature of reality (ontology), how knowledge can be acquired (epistemology), and the appropriate methods for gaining that knowledge (methodology) (Shamoo & Resnik, 2020). For this study, an interpretivist paradigm was adopted. This paradigm is grounded in the belief that reality is socially constructed and that individuals interpret their experiences based on personal and contextual factors. It emphasizes the importance of understanding phenomena from the perspective of the people involved, rather than seeking objective or generalizable truths.

The interpretivist approach is particularly well-suited to this study, which seeks to explore the psychosocial determinants of littering behavior within the informal and socially complex environment of Mbare Musika. Littering is not merely a physical act but is shaped by subjective meanings, cultural norms, social interactions, and individual attitudes. The interpretivist paradigm thus allows the researcher to delve into the lived experiences and perceptions of market users—vendors, customers, and community members—and to understand the deeper motivations and influences behind their actions. This paradigm supports qualitative methods such as interviews and observations, which are essential for capturing rich, context-specific data.

By choosing an interpretivist lens, the study recognizes that human behavior, particularly in informal urban settings, is dynamic and influenced by multiple overlapping realities. This perspective enables a nuanced exploration of littering behavior that goes beyond surface-level explanations, allowing for a more holistic understanding of the social and psychological factors

at play. Ultimately, the interpretivist paradigm was selected because it aligns with the study's goal of uncovering the meanings and motivations behind littering in a way that is grounded in the everyday experiences of the people affected.

### **3.3 Research Approach**

The choice of research approach is fundamentally shaped by the underlying research paradigm and the nature of the research questions being addressed. As noted by Mangal (2019), the selected approach must align with the philosophical worldview of the study to ensure methodological coherence. Given that this study is grounded in the interpretivist paradigm—which emphasizes understanding human experiences from the participants' perspectives—a qualitative research approach was adopted. This approach is particularly appropriate for studies that aim to explore complex social phenomena that are deeply embedded in individual experiences, meanings, and interactions.

A qualitative approach enables the researcher to gain in-depth insights into the psychosocial determinants of littering behavior among individuals operating within Mbare Musika, an informal urban market characterized by diverse social dynamics. Unlike quantitative methods, which focus on numerical data and generalizability, qualitative research emphasizes rich, descriptive accounts of human behavior, allowing for a nuanced understanding of attitudes, beliefs, and motivations. Johnson and Christensen (2014) highlight that qualitative methods are especially effective in exploring issues that are context-dependent and not easily reduced to statistical variables—such as personal agency, perceived social norms, and environmental influences.

Through tools like semi-structured interviews, direct observations, and thematic analysis, the qualitative approach facilitated the exploration of participants' lived experiences, enabling the researcher to interpret how cultural, psychological, and situational factors shape littering practices in a real-world setting. This depth of understanding would not be achievable through quantitative methods alone. Therefore, the qualitative research approach was deemed most suitable for the study's goal of capturing the subjective and contextual nature of littering behavior in an informal urban market context.

### **3.4 Research Design**

The research design serves as a strategic blueprint that guides the overall process of data collection, analysis, and interpretation in a systematic and coherent manner. It ensures that the research questions are addressed effectively and that the methodology aligns with the study's objectives and philosophical orientation. For this study, a case study design was adopted. As defined by Willies (2012) and Creswell (2018), a case study is an in-depth investigation of a single, bounded system—such as an individual, group, institution, or community—within its real-life context. This design is especially useful for exploring complex social phenomena where multiple variables interact in unique and context-dependent ways.

The selection of a case study design was motivated by the need to closely examine the psychosocial determinants of littering behavior within the specific setting of Mbare Musika, one of Harare's most prominent and densely populated informal markets. This site presents a rich and dynamic environment where social norms, cultural practices, and individual behaviors converge, making it an ideal case for exploring how these factors influence environmental practices. By focusing on a single, well-defined location, the researcher was able to gain holistic insights into the lived experiences of market users—vendors, customers, and community members—regarding littering and waste disposal.

Moreover, the case study design allowed for the integration of multiple data sources including interviews, observations, and informal conversations, thereby facilitating triangulation and enhancing the credibility and depth of the findings. This approach enabled the researcher to uncover the contextual nuances and psychosocial patterns that might be overlooked in broader, less focused designs. As such, the case study method provided a comprehensive and contextually grounded framework for investigating behavior within the socio-economic and cultural fabric of Mbare Musika.

### **3.5 Population and Sample**

#### **3.5.1 Population**

In research, the term "population" refers to the entire group of individuals or elements that possess the characteristics relevant to a particular study. According to Chiromo (2009), a population encompasses all subjects who meet the criteria for inclusion in a research inquiry. For this study, the target population included all individuals who either operate at or frequently use the Mbare Musika market. This consisted of vendors, buyers, municipal workers, and

commuters who interact within the market environment on a daily basis. Mbare Musika, being one of Zimbabwe's largest and busiest informal markets, represents a microcosm of urban social and economic activity. Therefore, the population is diverse in terms of demographic characteristics, socio-economic backgrounds, and behavioral patterns. This diversity provided a rich foundation for investigating the psychosocial determinants of littering behavior within a real-world urban context.

### **3.5.2 Sample**

A sample, as defined by Kumar (2012), is a smaller group selected from the population to participate in the research process. The sample is meant to represent the broader population and is chosen based on its relevance to the research objectives. In this study, the sample comprised vendors, municipal workers, customers, and commuters who were present at Mbare Musika during the fieldwork period. Efforts were made to ensure that the sample reflected a mix of gender, age, and roles within the market setting in order to capture a range of perspectives and experiences related to littering and waste management. This diversity in sampling was crucial for enhancing the richness, depth, and reliability of the data collected, as recommended by Cohen, Manion, and Morrison (2018). By incorporating views from various stakeholders who interact differently with the market environment, the study was better positioned to uncover nuanced psychosocial factors influencing littering behavior.

### **3.6 Sampling Procedure**

The process of determining how participants are selected for a study is known as the sampling procedure. Greene (2007) emphasizes that the choice of sampling method must align with the study's objectives and research design. For this research, a combination of purposive and convenience sampling techniques was employed to effectively reach participants who were both relevant and accessible. Purposive sampling was used to deliberately select individuals who were likely to possess valuable insights into littering behavior—such as long-term vendors, municipal workers involved in waste collection, or commuters who frequently pass through the market (Chiromo, 2009). These participants were selected based on specific criteria, such as length of exposure to the market, type of activity conducted at the site, or proximity to litter-prone areas.

On the other hand, convenience sampling was utilized during field visits to approach individuals who were readily available and willing to participate in the study. This included



customers and casual vendors who may not have been pre-identified but offered relevant information. As noted by Cohen et al. (2018), convenience sampling can be particularly useful in crowded, informal settings where structured sampling is difficult to implement. The use of both techniques allowed the researcher to balance targeted inquiry with practical field access, ensuring that data collection was both efficient and comprehensive. This dual approach facilitated a broader understanding of the behavioral patterns and social influences surrounding littering at Mbare Musika.

### **3.7 Research Instruments**

Research instruments are the tools or mechanisms through which data is collected in a study, and their selection plays a critical role in ensuring the depth and accuracy of the findings. According to Babbie (2020), the choice of instruments should align with the research paradigm and objectives. For this study, semi-structured interviews and non-participant observations were utilized as the primary data collection instruments. Semi-structured interviews allowed the researcher to guide conversations using predetermined questions while still permitting flexibility for participants to elaborate on their responses. This was particularly useful in capturing the subjective meanings, perceptions, and lived experiences of vendors, municipal workers, commuters, and buyers regarding littering behaviors at Mbare Musika.

In addition to interviews, non-participant observations were conducted to capture the real-time behaviors, interactions, and environmental conditions at the market. This method enabled the researcher to verify and complement the data obtained through interviews by providing visual and contextual cues. As Patrick (2018) emphasizes, the use of multiple instruments strengthens research through methodological triangulation, which enhances the credibility and robustness of the findings. This view is supported by Tichapondwa (2013) and Creswell & Creswell (2022), who argue that triangulating data sources helps reduce bias and provides a more comprehensive understanding of the research problem.

### **3.8 Data Collection Procedures**

Data collection is a crucial phase in the research process, involving the systematic gathering of information that answers the research questions. MacMillan and Schumacher (2020) define it as a process that must be both ethical and methodologically sound. In this study, data collection was preceded by obtaining the necessary approvals and ethical clearance from Bindura University of Science Education and the relevant municipal authorities responsible for

overseeing operations at Mbare Musika. These permissions were important to ensure that the study adhered to ethical guidelines, especially concerning voluntary participation, informed consent, and confidentiality.

Once authorization was granted, the researcher proceeded with field visits to Mbare Musika, where both interviews and observations were conducted. The semi-structured interviews were carried out in discreet and accessible locations within or near the market, depending on the comfort and availability of participants. All interviews were conducted with prior consent, and participants were assured of their anonymity and the confidentiality of their responses. To complement the interviews, the researcher took detailed field notes during observation sessions, focusing on aspects such as the placement of litter bins, instances of littering, community interactions around waste disposal, and any visible signage or enforcement mechanisms. These notes were later coded alongside the interview data during the analysis stage.

### **3.9 Data Presentation, Interpretation and Analysis Plan**

The analysis and presentation of data involve organizing raw information in a meaningful manner to draw valid and insightful conclusions. According to Bell (2018), qualitative data analysis is an interpretive process that seeks to identify patterns and themes that emerge from the collected data. For this study, a thematic analysis approach was adopted, which is well-suited for interpretivist research that seeks to explore human experiences and social meanings. Thematic analysis involved carefully reading through interview transcripts and observational notes to identify recurring concepts, ideas, and patterns relevant to the psychosocial determinants of littering behavior.

Data coding was done manually and systematically, beginning with open coding to capture initial concepts, followed by axial coding to identify relationships between codes, and eventually selective coding to form coherent themes. These themes were then organized to reflect the research objectives and questions. The use of themes allowed for a structured yet flexible interpretation, ensuring that the analysis remained grounded in the data while also being analytically insightful. This analytical plan was consistent with the interpretivist paradigm and qualitative research approach, allowing the findings to capture the rich, subjective realities of life at Mbare Musika.

### **3.10 Data Validity**

Validity refers to the accuracy, truthfulness, and authenticity of research findings, and it is a critical measure of the quality of a study. Chiromo (2009) emphasizes that validity must be addressed at both the design and implementation stages of research. To enhance external validity, which refers to the generalizability of findings within the context under study, participants were drawn from diverse subgroups within the Mbare Musika ecosystem. This included long-term vendors, casual traders, commuters, and municipal workers, ensuring that multiple perspectives were captured.

Internal validity was promoted through triangulation, whereby data was gathered from more than one source—namely, semi-structured interviews and non-participant observations. This allowed for the cross-verification of information and helped reduce the impact of potential biases associated with single-source data collection. In addition, member checking was informally conducted by clarifying responses with participants during interviews, which helped ensure that their views were accurately represented. Together, these measures helped reinforce the trustworthiness and credibility of the research findings.

### **3.11 Data Reliability**

Reliability concerns the consistency and dependability of research instruments and procedures. According to Springer (2010), a reliable study produces stable and consistent results even when repeated under similar conditions. In this study, efforts to enhance reliability began with the pilot testing of the data collection instruments, which provided valuable insights into how questions and observation protocols would perform in the field. Based on feedback from the pilot, the interview guide was reworded to improve clarity, avoid ambiguity, and ensure cultural appropriateness.

Similarly, the observation checklist was structured and standardized, allowing for consistent data recording across different observation sessions. This included specific criteria for noting behaviors such as improper waste disposal, interaction with litter bins, and the presence of litter-related signage. By ensuring that the tools were refined and standardized, the researcher was able to minimize variations in data collection, thereby improving the reliability of the study outcomes.

### **3.12 Pilot Testing**

Pilot testing is a preparatory step that allows researchers to test and refine their instruments before deploying them in the actual study. Tichapondwa (2013) notes that a pilot study is essential for identifying flaws in instrument design and improving the overall quality of data collection. In this study, a pilot test was conducted with five participants who shared similar characteristics with the target population but operated outside the Mbare Musika area, thereby ensuring the integrity of the actual sample. The purpose of this pre-testing phase was to assess the clarity, relevance, and effectiveness of the interview questions and observation checklist.

Feedback from the pilot participants revealed certain ambiguities and redundancies in the wording of questions, which were subsequently addressed by refining the language and restructuring the guide for better flow. According to Bak (2020), such refinements are key to developing instruments that are not only methodologically sound but also ethically and culturally sensitive. Ultimately, the pilot test played a vital role in enhancing the validity and reliability of the research instruments, contributing to the overall rigor of the study.

### **3.13 Ethical Considerations**

Ethical considerations are fundamental to the integrity and credibility of any research undertaking, particularly when human participants are involved (Tichapondwa, 2013). In this study, several key ethical principles were strictly observed to ensure the protection, dignity, and rights of all participants throughout the research process. First and foremost, informed consent was obtained from all participants. Before taking part in the study, participants were fully briefed on the nature, purpose, procedures, and potential risks of the research. They were given the opportunity to ask questions and only those who voluntarily agreed to participate signed a consent form, thereby indicating their informed willingness to be involved in the study.

Secondly, the principle of confidentiality was rigorously upheld. To protect the identities and personal information of participants, pseudonyms were used in all data records and publications, and no identifying information was disclosed. All data collected were securely stored and only accessible to the researcher, ensuring privacy and discretion throughout the study. Furthermore, voluntary participation was a central ethical standard, meaning that participants were not coerced or pressured into participating. They were informed of their right to withdraw from the study at any stage without facing any negative consequences or penalties.

Lastly, great care was taken to minimize harm to participants. The research was designed to avoid any physical, psychological, or emotional distress. Participants were treated with respect and sensitivity, and efforts were made to create a safe, non-judgmental environment for sharing their views and experiences. Ethical clearance was also sought from relevant institutional authorities before the research commenced. By adhering to these ethical guidelines, the study ensured that participants were respected as autonomous individuals, and that their wellbeing was prioritized throughout the research process.

### **3.14 Limitations of the study**

Every research study is subject to limitations that may affect its findings. In this study, several limitations were encountered some included, limited generalisability as a case study focused solely on Mbare Musika, the findings may not be generalizable to other markets or urban settings. Also, participant bias, some participants may have altered their responses to present themselves in a favorable light, particularly during interviews. Access challenges, gaining permission from some municipal authorities posed delays and challenges that limited the number of respondents despite these limitations, steps such as triangulation and pilot testing were taken to mitigate their impact and ensure credible findings.

### **3.15 Conclusion**

This chapter outlined the methodology employed to investigate the psychosocial determinants of littering behavior at Mbare Musika. It discussed the research paradigm, research approach, research design, target population, sampling procedure, research instruments, data collection methods, data analysis techniques, validity and reliability strategies, ethical considerations, and limitations. These methodological choices provided robust foundation for the study and ensured that the data collected were credible, trustworthy and ethically sound. The next chapter presents the data collected offers an analysis of the findings.

## **CHAPTER 4: DATA PRESENTATION, INTERPRETATION AND DISCUSSION OF RESEARCH FINDINGS**

### **Introduction**

This chapter presents and analyzes the findings obtained from the study conducted at Mbare Musika, focusing on the psychosocial factors that contribute to littering behavior. The chapter is structured to show demographic characteristics of respondents, major findings from both quantitative and qualitative data, a discussion of the findings in relation to existing literature and the implications of the results. Data are represented using tables and graphs to strengthen interpretation and support findings.

### **4.2 Response Rate**

The study targeted a total of sixty participants including vendors, customers a market authority at Mbare Musika. Out of these 52 participants completed and returned the questionnaire and interviewed responses, resulting in the response rate of 86,7%. This is considered adequate for qualitative and quantitative studies, as Babbie (2020) asserts that a response rate above 50% is acceptable for reliable analysis and generalizability of findings and social science research.

The high response rate may be attributed to the face to face method of questionnaires administration and the willingness of market participants to share their views on environmental and social issues affecting their business and environment. Furthermore, rapport building and ethical assurance of anonymity also encouraged participation (Creswell and Poth, 2018). The responses gathered provide a sufficient data set for interpretation and triangulation with key informant interviews.

Understanding the demographic characteristics of respondents is critical for interpreting littering behaviors from a psychosocial perspective. The demographic profile of the participants included variables such as age, gender, occupation, level of education and length of time operating or interacting within Mbare Musika.

Gender: Of the 52 respondents, 30 (58%) were female and 22 (42%) were male. This reflects the gender dynamics at Mbare Musika, where activities compared to men

Table 1 Gender Distribution of Respondents (n = 52)

Gender	Frequency	Percentage
Female	30	58%
Male	22	42%
Total	52	100%

Age Distribution Respondents ranged from 18 to 60 years. The highest concentration (42%) was in the 31 to 40 age brackets followed 27% in the 21 to 30 group, 19% in the 45 to 50 group, and 12% above 50 years. This indicates that the market is predominantly operated by middle aged adults, who are economically active and socially influential.

*Table 2 Age Distribution of Respondents*

Age Range (years)	Frequency	Percentage
21-30	14	27%
31-40	22	42%
45-50	10	19%
51 and above	6	12%
Total	52	100%

Occupation: The majority of respondents (65%) identified as informal vendors, while 25% were regular customers and 10% were market officials or cleaners. This distribution ensured that the views gathered reflected diverse roles within the market ecosystem.

*Table 3 Occupation of Respondents*

Occupation	Frequency	Percentage
Informal vendors	34	65%
Regular customers	13	25%
Market Officials/ Clean	5	10%
Total	52	100%

Education level: 34.6 % of the respondents had attained secondary education, 28.8% had completed primary education and 25% had tertiary qualification. The remaining 11.6% had no formal education. This shows a varied literacy level amongst the respondents, which could influence awareness and attitudes towards littering behavior.

Table 4 : Level of Education Among Respondents

Educational levels	Frequency	Percentage
No formal Education	6	11.6%
Primary Education	15	28.8%
Secondary Education	18	34.6%
Tertiary Education	13	25%
Total	52	100%



Years spent in market: 48% had been active at Mbare Musika for more than 5 years, 32% for 2 to 5 years, and 20% for less than 2 years. Those with longer durations of exposure were more knowledgeable about the waste management challenges and psychosocial dynamics influencing behavior in the area.

Table 5 Duration of Time Spent at Mbare Musika

Years at Mbare Musika	Frequency	Percentage
Less than 2years	10	20%
2-5 years	17	32%
More than 5 years	25	48%
Total	52	100%

These demographics are instrumental in understanding how psychosocial determinants such as social norms, peer influence and attitudes may vary across different population segments (Ajzen, 1991, Bandura, 2016). For example, education level and length of exposure in the market can significantly shape one's attitude and practices regarding littering.

#### **4.3.1 Drivers of the psychosocial determinants of littering behavior at Mbare Musika.**

Table 6 Key Psychosocial drivers of littering behavior

Psychosocial Driver	Description
Perceived behavioral control	Lack of bins leads to perceived helplessness in waste management (Ajzen 1991)
Environmental cues	Littering surroundings normalize the act of littering (Keizer et al, 2018)
Lack of enforcement	Minimal penalties reduce accountability and deterrence
Socializing and learning	Childhood exposure to poor waste practices reinforces bad habits (Bandura, 2016)

The study identified several psychosocial drivers contributing to littering behavior at Mbare Musika, including perceived behavioral control, environmental cues, lack of enforcement, and learned behaviors. These factors interact with individual and group psychology to shape routine actions.

Perceived lack of infrastructure such as bins and waste collection points were the most cited reason for improper waste disposal. Vendors and customers reported that they feel they have no other option but to dispose of litter on ground due to absence or inaccessibility of proper disposal facilities. According to Ajzen's (1991) Theory of Planned Behavior, perceived behavioral control how much control individual believe they have over their actions directly influences whether they engage in responsible waste disposal. At Mbare Musika, limited control due to poor infrastructure increases the likelihood of littering.

Another driver is environmental modelling. The more litter that accumulates in an area, the more people perceive littering as acceptable. This aligns with the broken windows theory which suggest that disorder breeds further disorder (Keizer, Lindenberg and Steg, 2018). In Mbare Musika the abundance of litter acts as an environmental cue that normalizes the behavior.

The lack of consistent enforcement and civic education has also reduced accountability. Interviews reviewed that people seldom face penalties for littering, reducing the social and legal deterrent that might otherwise inhibit such behavior. Additionally, many individuals cited having grown up in environments where waste disposal was not emphasized, indicating that learned behavior from childhood and socialization plays a significant role (Bandura, 2016). Thus, the drivers of littering behavior at Mbare Musika are multifaceted, embedded in perceptions of control, social norms, environmental design, and enforcement mechanism.

#### **4.3.2 Attitudes and perceptions towards littering at Mbare Musika**

Table 7 Attitudes and perceptions towards littering

Theme	Key findings
Indifference and normalization	Littering is viewed as a routine and unavoidable
Infrastructure and blame	Inadequate bins cited as cause for non-compliance
Health awareness	Linked litter to cholera/ typhoid, common among youth and health workers

Responsibility externalization	Belief that waste management is municipality's job
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The findings indicate that attitudes and perceptions towards littering at Mbare Musika are generally characterized by indifference normalization and in some cases, resignation. Most vendors and customers interviewed admitted to littering regularly, citing convenience and lack of better options. This suggests a passive attitude shaped by environmental conditions and shared social norms.

Many participants perceived littering as an inevitable part of daily life at the market. Some stated that even if they attempted to use bins, the few available ones were often full or located far from their stall. This led to a sense of futility, which has contributed to a collective belief that littering is unavoidable and socially acceptable. According to Schultz et al. (2016), when individuals perceive a behavior as common and not harmful, they are less likely to change it.

However, a minority of respondents, particularly younger individuals and a few community health workers, expressed concern over the impact of littering. They linked it to health hazards, such as cholera and typhoid outbreaks. This awareness reflects a small but growing shift in perception among certain demographic groups, possibly due to exposure to environmental eradication or personal experiences with disease outbreaks (Taru et al, 2019).

Still, the prevailing attitude is shaped by a lack of ownership and responsibility. Many believe that the duty of cleaning lies with municipal authorities, not the market users themselves. This externalization of responsibility significantly hinders any self-driven behavioral change and underlines the need for participatory waste management programs and awareness campaigns that focus on individual responsibility and collective accountability.

#### **4.3.3 How social norms and peer influences affect littering behavior in Mbare Musika**

Influence type	Observation
Descriptive Norms	Littering is common and accepted
Injunctive norms	Little to no social disapproval for littering
Peer reinforcement	Littering is socially tolerated and rarely challenged
Fear of inclusion	Those who oppose litter are mocked or ignored

Youth influence	Some young vendors show environmental concern but feel pressure to conform
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*Table 8 Influence of social norms and peer pressure*

The findings from interviews and observations revealed that social norms and peer influence play a significant role in shaping littering behavior at Mbare Musika. Social norms, both descriptive (what people typically do) and injunctive what people approve or disapprove of), strongly dictate individual behaviors in this busy market place. when people perceive that others frequently litter or do not face consequences for doing so, they are more likely to engage in the same behavior (Cialdini et al, 2015). This aligns with the idea that littering becomes normalized in environments where it is widespread and unchallenged.

Many respondents indicated that they often observe others discarding waste carelessly and overtime this behavior is acceptable as normal. In such context, peer influence further reinforces these behaviors. For example, some vendors and buyers reported that their peers do not criticize them for littering, instead it is seen as a convenient way to deal with waste in an environment perceived to lack proper disposal infrastructure. When anti littering behavior is not modeled or rewarded socially, there is little incentive for individuals to act differently (Schultz, 2016).

Interestingly, a minority of the participants, particularly younger traders and vendors, expressed a desire to conform to prevailing group behavior. This highlights the power of peer dynamics and fear of social exclusion in determining environmental practices (Zhou et al, 2020). A few respondents who attempted to discourage littering among peers reported being mocked or ignored, showing how peer reported being mocked or ignored, showing how peer norm norms can override individual environmental values.

In Mbare Musika, therefore, the reinforcement of littering through social norms and peer expectations poses a significant barrier to behavior change. Any intervention must address these social structures by promoting positive role models, community champions, and collective clean up actions to gradually reshape the norms around waste disposal.

#### **4.4 Discussion of findings**

These findings align with previous studies in both African and global context. For instance, in a study conducted in Lagos markets, Olowu and Okonkwo (2018) found that social modeling

heavily influenced littering behavior. Comparatively, Mbare Musika's socio cultural environment amplifies this effect due to population density and limited civic education.

The low perception of personal responsibility mirrors findings from Cairo's markets, where Nassar et al. (2017) observed similar behavior patterns. Factors such as urban poverty, inadequate enforcement and minimal community engagement also seem to contribute, reinforcing the need for localized solutions. Strengths of the TPB include its ability to integrate psychological constructs with observable behavior, its empirical support across various disciplines, and its adaptability to different environmental and cultural contexts. It allows research to quantify psychological drivers and tailor interventions aimed at behavior change.

However, the TPB also has limitations. It assumes that behavior is the result of rational decision making, which may not fully account for spontaneous, habitual or emotionally driven actions (Klockner, 2015). Additionally, some critics argue that the TPB may over simplify complex social and environmental influences and it may not always capture external constraints such as infrastructure inadequacies or policy limitations (Steg and Vlek 2017).

Despite these weaknesses, the TPB is particularly relevant for this study. Littering behavior especially in marketplaces like Mbare Musika, often involves a combination of individual beliefs, social pressures and situational limitations. The TPB provides a structured lens through which these psychosocial dimensions can be analyzed. Moreover, its constructs align well with the study's objectives of identifying attitudes, social norms and perceived behavioral control factors influencing littering.

Additionally, unlike other regions with stronger recycling cultures e.g. Cape town, Harare's informal sector has limited integrated with environmental policy frameworks (Gumbo and Nhapi, 2020). Cultural attitudes that normalize environmental degradation also emerged as a barrier to behavior to behavior change.

## **4.5 Conclusion**

This chapter presented and interpreted data collected at Mbare Musika, focusing on the psychosocial factors driving littering behavior. Major themes included lack of infrastructure, negative social norms and limited personal accountability. These findings are consistent with regional and intentional studies and suggest the need for targeted behavior change

interventions. The next chapter will focus on conclusions, recommendations and areas for future research.

## **CHAPTER 5: DISCUSSION, CONCLUSION, RECOMMENDATIONS**

### **5.1 Introduction**

This chapter discusses the findings presented in chapter 4, draws conclusions based on research objectives and questions, and provides recommendations for addressing the psychosocial determinants of littering behavior at MBARE MUSIKA. It also suggests areas for future research.

### **5.2 Discussion of Findings**

The discussion of the findings is anchored in the study's research objectives, supported by the literature reviewed, and interpreted through the lens of Ajzen's (1991) Theory of Planned Behavior (TPB). The TPB posits that behavior is a function of intentions, which are influenced by attitudes, subjective norms, and perceived behavioral control. This framework proved especially relevant in understanding the psychosocial determinants of littering behavior at Mbare Musika. The study also draws on Bandura's (1986) Social Cognitive Theory and various empirical studies to contextualize the findings.

#### **5.2.1 Knowledge and Awareness of Littering**

The findings revealed that a majority of participants demonstrated a basic understanding of the environmental and health-related consequences of littering. Respondents were aware that litter contributes to blocked drainage systems, foul smells, and the proliferation of disease vectors such as rats and flies. However, this environmental knowledge did not consistently translate into corresponding responsible behavior. For instance, several individuals admitted to littering despite being aware of its negative implications, citing reasons such as the absence of nearby bins or the urgency of their commercial activities.

This gap between knowledge and action is well accounted for by the Theory of Planned Behavior. According to Ajzen (1991), knowledge alone does not lead to behavior change unless it is accompanied by strong behavioral intentions and a favorable attitude towards the behavior in question. The intention to dispose of waste responsibly may be present, but if the perceived behavioral control (i.e., the belief in one's ability to perform the behavior under existing circumstances) is low due to infrastructural limitations, the desired behavior is unlikely to occur. Thus, while knowledge may inform intentions, it does not guarantee action in the absence of enabling conditions.

These findings are consistent with research conducted in other African contexts. For instance, studies by Moqsud, Rahman, and Mahmud (2011) in Nigeria and South Africa reported that although awareness of environmental issues is relatively high, it seldom results in consistent pro-environmental behavior. This has been attributed to weak enforcement of waste management laws, lack of community participation, and insufficient waste management infrastructure. Therefore, it is clear that while knowledge is necessary, it is not sufficient to induce behavioral change in the absence of systemic support and enabling environments.

### **5.2.2 Attitudes Towards Littering**

Attitudes toward littering among participants at Mbare Musika were generally neutral to tolerant. Many respondents rationalized their littering behavior by pointing to the inadequate number of waste bins, the overwhelming volume of waste generated, and the fast-paced nature of market life. This suggests that negative environmental attitudes are often overridden by perceived convenience and the immediate demands of daily survival. Some participants even admitted that littering was easier than walking long distances to find a bin, especially when dealing with perishable goods or packaging materials.

This finding aligns with Schultz et al. (2013), who argued that personal attitudes towards littering are more often shaped by situational convenience and prevailing social norms than by abstract environmental ethics. In essence, individuals are more likely to engage in littering if they perceive it to be the socially accepted or expected behavior within their immediate environment. The TPB also emphasizes that attitudes are critical in shaping intentions, which in turn guide behavior. If individuals perceive littering as a minor or inconsequential act, their attitude is likely to support, rather than deter, such behavior.

Moreover, some participants justified their actions by asserting that they were not solely responsible for the state of the environment and that local authorities and other vendors were equally culpable. This diffusion of responsibility further weakened any personal motivation to act differently. These attitudes reflect a collective disempowerment where individual actions are viewed as insignificant in the broader environmental context. Thus, while participants may understand that littering is wrong, their attitudes—shaped by convenience, normalization, and systemic neglect—undermine their intention to behave otherwise.

### **5.2.3 Influence of Social and Community Norms**

The influence of social and community norms emerged as one of the most powerful determinants of littering behavior at Mbare Musika. Many participants indicated that their actions were influenced by the behavior of others around them. In a context where littering is both visible and common, individuals felt less inclined to deviate from what appeared to be accepted social behavior. This normalization of littering behavior in public spaces was evident in the expressions of some respondents who said, “everyone is doing it” or “it’s already dirty anyway,” thus justifying their actions based on the observed actions of others.

Bandura’s (1986) Social Cognitive Theory provides a useful explanation for this phenomenon. According to the theory, individuals learn behaviors through observing and imitating others, especially when those behaviors appear to be socially reinforced or go unpunished. In environments where littering is ubiquitous and unregulated, individuals internalize it as normal or even expected behavior. Observational learning thus plays a critical role in shaping social expectations and subsequent actions.

In contrast, countries such as Singapore offer a stark example of how social norms, when reinforced by strict laws and effective public campaigns, can shape behavior in a more positive direction. Tan and Loke (2012) found that in Singapore, the combination of heavy fines for littering, extensive public education, and high social expectations has resulted in remarkably clean public spaces. This highlights the potential for social norms to be transformed through policy interventions and sustained public engagement. In the case of Mbare Musika, however, the absence of consistent enforcement and positive role models has allowed harmful behaviors to become deeply ingrained.



#### **5.2.4 Economic and Environmental Factors**

The study also identified strong links between littering behavior and underlying economic and environmental factors. Participants noted that the market environment is characterized by overcrowding, informal vending, and inadequate municipal services. These structural deficiencies create conditions where littering becomes a coping mechanism rather than a deliberate act of environmental disregard. Waste accumulates rapidly in areas with limited cleaning services, while street vendors operate without access to basic sanitation infrastructure.

Economic hardships were also frequently cited as a contributing factor. Most participants, particularly informal traders, expressed that their primary concern was economic survival, not environmental protection. For them, minimizing costs and maximizing income often meant cutting corners on waste disposal or relying on informal dumping sites. The overwhelming pressure to make a living in a highly competitive environment left little room for prioritizing environmental responsibility. This corresponds with the “survivalist” behavior often found in urban informal economies, where environmental concerns are perceived as luxuries secondary to daily sustenance.

These findings corroborate those of scholars such as Alam and Ahmade (2013), who noted that in many low-income urban settings, poor waste management is both a cause and consequence of poverty. When municipal support is absent, individuals act in self-interested ways that unintentionally harm the collective good. At Mbare Musika, this is further exacerbated by the transient nature of the population, where many users feel little sense of ownership or long-term responsibility for the cleanliness of the area.

Moreover, the lack of accountability and enforcement from local authorities contributes to a permissive environment where there are few consequences for irresponsible behavior. The perceived absence of punishment reduces the urgency to comply with expected waste disposal practices. This lack of perceived behavioral control—a key component of Ajzen’s TPB—undermines the likelihood of intentional pro-environmental behavior.

#### **5.3 Conclusion**

The findings of this study reveal that littering behavior at Mbare Musika is not merely a result of ignorance or lack of knowledge about the environmental consequences of such actions. Instead, it is deeply rooted in a complex interplay of psychosocial factors that include weak

and often unenforced community norms, negative individual and collective attitudes towards cleanliness, a perceived lack of personal control or responsibility, and the influence of broader environmental conditions such as insufficient waste disposal infrastructure. These dynamics foster a setting where littering becomes normalized and socially accepted, perpetuating a cycle of environmental neglect and public health risks.

The study highlights that the most effective interventions must go beyond conventional awareness campaigns. While knowledge dissemination is important, it is insufficient on its own to trigger sustained behavioral change. Transformative efforts must address the underlying psychosocial drivers of littering behavior. Specifically, there is a need to strengthen positive social norms that discourage littering and promote community ownership of public spaces. This can be achieved through community-led clean-up initiatives, consistent messaging that promotes pro-environmental behavior, and the involvement of local leaders and influencers in shaping attitudes.

Moreover, investment in waste management infrastructure is crucial. Without accessible and well-maintained bins, people are left with limited choices for proper waste disposal, regardless of their intentions. Attitude transformation, particularly in youth and vendors who form a large proportion of the population at Mbare Musika, must also be prioritized through participatory educational programs that link personal behavior to environmental outcomes. Importantly, the study also underscores the necessity of stronger law enforcement and policy implementation to create an environment of accountability and deterrence for littering.

In sum, reducing littering behavior at Mbare Musika requires a holistic and sustained approach that integrates psychosocial change, infrastructure development, and policy enforcement. Only through such a multi-pronged strategy can lasting behavioral change be achieved, contributing to a cleaner, healthier, and more dignified environment for vendors, consumers, and the broader Mbare community.

## **5.4 Recommendations**

The results of this study clearly indicate that addressing the psychosocial determinants of littering at Mbare Musika requires a multi-pronged approach, involving coordinated efforts at individual, community, institutional, and policy levels. Sustainable change will not emerge from isolated efforts but rather from integrated interventions that simultaneously address knowledge, attitudes, social norms, environmental structures, and enforcement mechanisms.

The following expanded recommendations offer a comprehensive roadmap toward tackling the persistent littering problem at Mbare Musika.

#### **5.4.1 Educational and Awareness Campaigns**

Education and awareness initiatives remain fundamental to changing littering behavior. However, to be truly effective, these campaigns must evolve beyond traditional top-down information dissemination. There is a pressing need for the development of community-led educational programs that not only inform the public about the environmental and health hazards of littering but also work to shift entrenched attitudes and behaviors. These programs should be participatory in nature, engaging community members directly in designing, delivering, and evaluating the interventions.

Utilizing influential local figures—such as community leaders, popular vendors, musicians, youth leaders, and religious representatives—can help ensure that the messages resonate with different segments of the population. These figures often hold cultural capital and social influence that can challenge negative behavioral norms and help promote a new culture of environmental responsibility. Social norms are powerful drivers of behavior, especially in close-knit environments like Mbare Musika; thus, campaigns must focus on transforming the narrative around littering from being a socially acceptable act to being frowned upon and publicly discouraged.

Educational efforts should also integrate practical components, such as demonstration events (e.g., clean-up drives) and environmental workshops, to cultivate a sense of agency and community ownership. Schools, market stalls, and transport hubs can serve as key nodes for these educational outreach activities. Moreover, these campaigns must be continuous rather than one-off efforts, and should include clear monitoring mechanisms to assess progress and adapt strategies accordingly. Involving youth through school programs or peer-to-peer initiatives will be critical in cultivating long-term change.

#### **5.4.2 Improve Waste Management Infrastructure**

One of the most visible enablers of littering behavior in Mbare Musika is the poor state of waste management infrastructure. Even with the best intentions, individuals may find it challenging to dispose of waste responsibly when bins are scarce, inconveniently located, or overflowing. Therefore, a significant recommendation emerging from this study is the urgent need for the

City of Harare and relevant urban authorities to enhance waste disposal infrastructure within and around the market.

This should begin with a comprehensive environmental audit of the market to identify key zones where waste accumulation is most pronounced. Based on this audit, waste bins should be placed at strategic, high-traffic points—particularly near vendor stalls, entrances and exits, transport loading zones, and food courts. The bins provided must be durable, accessible, and clearly labeled to encourage use and proper sorting of recyclable versus non-recyclable materials. A color-coded system, supported by visual infographics in local languages, could help promote basic recycling awareness and participation even in low-literacy contexts.

Furthermore, regular and reliable waste collection schedules must be enforced. It is counterproductive to install bins if waste collection is inconsistent or infrequent, as overflowing bins often lead to surrounding littering and the re-emergence of negative disposal habits. Public-private partnerships may be explored to supplement municipal efforts, particularly in areas where council resources are overstretched. For instance, local businesses and vendors' associations could be incentivized to sponsor bins or co-manage designated waste points. Additionally, introducing mobile waste collection units during peak hours may help address temporary surges in waste generation.

#### **5.4.3 Strengthen Community Enforcement**

Beyond education and infrastructure, enforcement is critical to reinforcing environmental norms and deterring habitual littering. This study recommends the establishment of community-based environmental patrols, potentially modeled after “green teams” or “environmental stewards,” which operate as local enforcement and advocacy agents. These patrols could consist of trained community volunteers, youth, and representatives from market vendors' associations. Their mandate would be to monitor behavior, promote best practices, issue gentle reminders, and, where necessary, report persistent violations to relevant authorities.

Such patrols would not only serve an enforcement role but also become a visible presence that continuously affirms environmental consciousness and civic responsibility. To function effectively, they must receive training in communication, conflict resolution, and basic environmental law, and be equipped with clear guidelines on how to handle offenders.

Community members are more likely to comply with rules and accept feedback when enforcement is locally grounded and less punitive in tone.

Where littering persists despite educational and community pressure, the City of Harare should implement proportionate spot fines or penalties for offenders. This should be guided by legal frameworks and ensure due process, but the presence of clear consequences can help deter recurrent behaviors. Drawing lessons from Rwanda’s Umuganda initiative—which combines community work with social cohesion—Mbare Musika could organize regular community clean-up events that are both participatory and compulsory. Offenders may be required to engage in clean-up activities as a form of restorative justice, rather than being fined directly, particularly in low-income contexts.

#### **5.4.4 Policy Recommendations**

Finally, the study highlights the critical need for supportive policies that institutionalize and sustain behavior change initiatives. First, market authorities and local government units must be held accountable for the cleanliness and environmental management of spaces like Mbare Musika. This could be done through performance-based contracts, where market cleanliness becomes a key deliverable in the authorities’ administrative duties. Independent environmental audits could be conducted regularly to assess compliance and inform corrective action.

Second, there is a need to embed environmental education and hygiene standards into the licensing process for vendors. Before being granted vending licenses or renewing them, vendors should attend a short, practical training on waste management, hygiene, and their civic responsibilities within the market. This training could be facilitated by local NGOs, city health departments, or the Environmental Management Agency (EMA), and could be tied to visible recognition, such as certification stickers for compliant stalls.

Additionally, policy frameworks must support inter-agency coordination among city councils, EMA, health departments, and community groups. A collaborative environmental task force could be created specifically for Mbare Musika and similar high-traffic markets, to streamline enforcement, harmonize education efforts, and respond quickly to emerging challenges.

There is also scope for developing environmental bylaws tailored to market contexts, which are informed by local realities rather than generic urban statutes. These bylaws should be developed through consultative processes that include vendors, transport operators, shoppers,

and waste management actors. Finally, national policies must prioritize informal markets in urban environmental management strategies, recognizing their economic importance and the unique challenges they face.

In conclusion, a sustainable reduction in littering at Mbare Musika requires a deeply integrated approach—rooted in education, supported by robust infrastructure, enforced through community involvement, and guided by responsive policy. These recommendations, if implemented collectively and with commitment, offer a pathway to transforming Mbare Musika into a cleaner, safer, and more dignified space for all its users.

### **5.5 Recommendations for Future Research**

While this study has contributed valuable insights into the psychosocial determinants of littering behavior at Mbare Musika, there remains significant scope for further research to deepen understanding and inform more effective interventions. One promising area for future studies involves the exploration of incentive-based programs, such as "cash for trash" initiatives, which reward individuals—particularly informal traders and youth—for collecting and properly disposing of waste. These programs have been piloted in other African countries and have shown potential to reduce littering while simultaneously generating livelihood opportunities. Future research could examine the feasibility, effectiveness, and sustainability of such models within the socio-economic context of Mbare Musika and similar urban marketplaces in Zimbabwe.

Additionally, longitudinal studies are needed to assess the enduring impact of social norm interventions on littering behavior. Since this study has highlighted the role of social norms and peer influence as key drivers of littering, it would be valuable to track changes in community behavior over time following specific norm-shifting interventions. For instance, researchers could investigate whether increased visibility of clean-up efforts, public shaming of littering, or positive reinforcement strategies result in sustained behavioral change. Measuring these effects over extended periods—beyond the initial novelty phase—would provide critical data on the durability of psychosocial interventions.

Moreover, comparative studies between rural and urban settings could shed light on how context influences littering behavior and attitudes toward waste management. Rural communities often have different environmental values, waste disposal methods, and social structures compared to densely populated urban areas like Mbare Musika. Understanding these

differences would enable the design of context-specific and culturally appropriate interventions that reflect the lived realities of diverse Zimbabwean communities. For example, while urban areas may require infrastructure-heavy solutions, rural regions might benefit more from traditional community mobilization and oral environmental education campaigns.

Lastly, future research could also examine the role of gender, age, and educational background in influencing littering tendencies. Disaggregated data could help identify which demographic groups are most vulnerable to engaging in or tolerating littering, and why. Such insights would allow for more targeted educational and policy responses.

In conclusion, future research should aim not only to build upon the findings of this study but also to test practical, scalable solutions that are aligned with Zimbabwe's socio-economic and cultural landscape. The integration of interdisciplinary approaches—combining behavioral science, environmental management, urban planning, and public health—will be vital in developing holistic strategies for addressing littering and promoting sustainable urban cleanliness.

## **5.6 Summary of The Chapter**

This chapter is the research findings in relation to the theoretical and literature framework, concluded with key points about the psychosocial determinants of littering in Mbare Musika and proposed practical and policy recommendations for addressing the issue. recommendations for future research were provided.

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## **APPENDICES**

### **Appendices 1 Interview Schedule**

Title: Psychosocial Determinants of Littering Behavior at Mbare Musika

Purpose:

To explore the attitudes, knowledge, social influences, and environmental factors influencing littering behaviors among market vendors and visitors at Mbare Musika.

## Instructions to Interviewer:

Ask open-ended questions, encourage elaboration, and record responses accurately. Maintain neutrality and avoid leading the participant.

## Interview Questions

### Section 1: Knowledge and Awareness

1. What do you understand by the term "littering"?
2. Are you aware of any environmental impacts caused by littering?
3. Do you know of any laws or rules against littering in this area?

Section 2: Attitudes and Perceptions 4. How do you personally feel about littering in public spaces? 5. In your view, what causes people to litter here at Mbare Musika?

Section 3: Social and Community Norms 6. Do you think the behavior of others around you influences your decision to litter or not? 7. How do people react when they see someone littering here?

Section 4: Environmental and Structural Factors 8. Are there enough bins around the market for waste disposal? 9. How often is waste collected from this area?

Section 5: Personal Behavior 10. What motivates you (or demotivates you) to properly dispose of your litter? 11. What suggestions do you have for reducing littering at Mbare Musika?

## Closing

Thank you for your participation. Is there anything else you would like to add regarding littering behavior?

## **Appendices 2 Questionnaire**

Title: Psychosocial Determinants of Littering Behavior at Mbare Musika

Instructions:

Please answer all questions honestly. There are no right or wrong answers. Your responses will be kept confidential and used solely for academic purposes.

## Section A: Demographic Information

1. Gender:

☐ Male

☐ Female

☐ Prefer not to say

2. Age Group:

☐ Below 20 years

☐ 21–30 years

☐ 31–40 years

☐ 41–50 years

☐ Above 50 years

3. Occupation:

☐ Vendor

☐ Customer

☐ Other (Please specify): \_\_\_\_\_

4. How long have you been visiting or working at Mbare Musika?

☐ Less than 1 year

☐ 1–3 years

☐ 4–6 years

☐ Over 6 years

## Section B: Knowledge and Awareness

5. Littering negatively affects the environment.

☐ Strongly Agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly Disagree

6. I am aware of local rules or laws against littering.

☐ Yes

☐ No

#### Section C: Attitudes

7. I believe that it is acceptable to litter if there are no bins nearby.

☐ Strongly Agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly Disagree

8. I feel guilty when I litter.

☐ Always

☐ Sometimes

☐ Rarely

☐ Never

#### Section D: Social Influence

9. Most people around me throw litter on the ground.

☐ Strongly Agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly Disagree

10. I would feel embarrassed if someone saw me littering.

☐ Yes

☐ No

#### Section E: Environmental Factors

11. There are enough waste bins available at Mbare Musika.

☐ Strongly Agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly Disagree

12. Waste is collected regularly from the market.

☐ Strongly Agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly Disagree

Section F: Personal Behavior

13. How often do you use a bin when you have litter?

☐ Always

☐ Often

☐ Sometimes

☐ Rarely

☐ Never

14. What do you think should be done to stop littering at Mbare Musika?

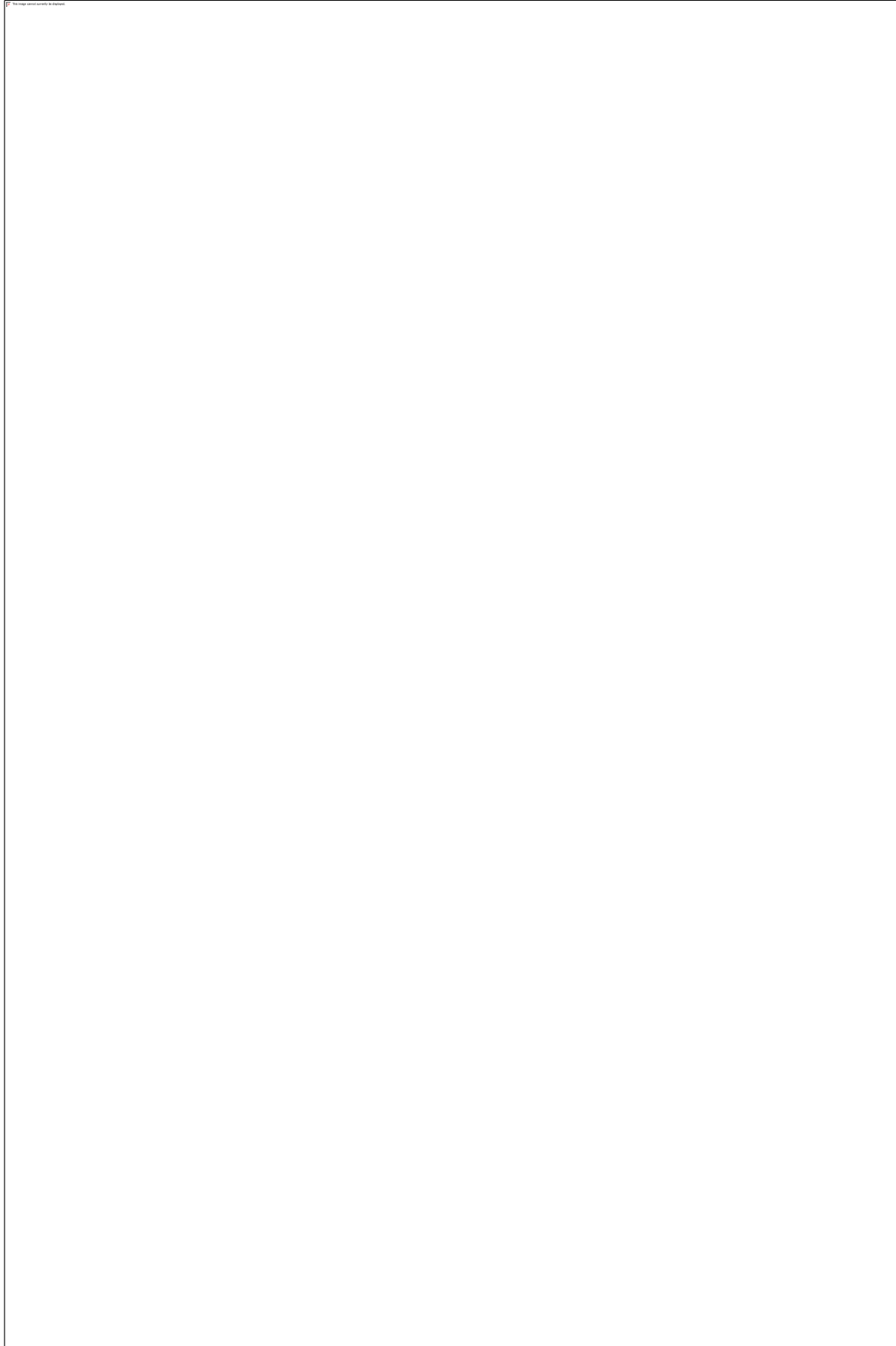
(Open-ended) \_\_\_\_\_

END OF QUESTIONNAIRE

***Appendices 3 ETHICAL CLEARANCE FOR SEEKING INFORMATION FOR RESEARCH PROJECT***



## **Appendices 4 ETHICAL CLEARANCE FOR AUTHORITY TO UNDERTAKE RESEARCH**

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## ***Appendice 5* PLAGERISM REPORT**

