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AN INVESTIGATION INTO THE IMPACT OF ACCESS TO URBAN GREEN SPACES ON MENTAL HEALTH AND COMMUNITY ENGAGEMENT IN A DENSELY POPULATED AREA.A CASE STUDY OF MBARE, HARARE.ZIMBABWE

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MAY 2026

Approval Form

The undersigned certify that they have read this dissertation and have approved its submission for marketing after confirming that it conforms to departmental requirements

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Signature



DECLARATION FORM

I, Rumbidzai Tarara (Student No. B222392B), hereby declare that this dissertation titled "An Investigation into the Impact of Access to Urban Green Spaces on Mental Health and Community Engagement in a Densely Populated Area: A Case Study of Mbare, Harare, Zimbabwe" is my own original work. All sources used have been acknowledged by means of complete references. This work has not been previously submitted for any degree or examination at any other university.

Student	Supervisor
Signed: …RUMBIDZAI TARARA	Signed …….
Date: ……/……/……	Date ……/……/……

DEDICATION

To the resilient residents of Mbare, who endure overcrowding and environmental neglect yet still dream of safe, green spaces where community can flourish. This work is for you. Also dedicated to my family Mr and Mrs Tarara. l appreciates your unwavering support and love.

ACKNOWLEDGEMENTS

I extend my deepest gratitude to my supervisors for their expert guidance and patience. Special thanks to the Mbare community leaders, the residents' association, and all participants who entrusted me with their stories. I am grateful to my field assistants for their bravery and cultural insight. Finally, I thank my family for their unwavering support during this research.

May The Lord Bless You

ABSTRACT

This research investigated the impact of access to urban green spaces on mental health and community engagement in Mbare, Harare Zimbabwe's oldest and most densely populated high-density suburb. A survey of 50 adult residents, in-depth interviews with 15 participants, and systematic observation of 12 green spaces were conducted. The findings reveal severe environmental deprivation: 68% of respondents had no functional green space within walking distance, and 82% felt unsafe using available open spaces. Mean Perceived Stress Scale score was 28.4 (SD=6.2), indicating high stress levels, with a significant negative correlation between green space use and stress ($r=-0.42$, $p<0.01$). Residents described chronic sensory overload, lack of psychological respite, and weakened social cohesion. Only 24% reported frequent neighbourly interactions; the loss of shared gathering places like Stodart Hall grounds was cited as a key factor in eroding community bonds. Participants articulated clear demand for revitalised green spaces, prioritising safety, basic amenities, and community-led management. The study concludes that the absence of accessible, safe green spaces constitutes a significant environmental determinant of poor mental health and social fragmentation in Mbare. Recommendations include dedicated municipal green space units, integration of green spaces into mental health policy, and community-stewarded pocket parks.

ART	Attention Restoration Theory
CPTED	Crime Prevention Through Environmental Design
GIS	Geographic Information System
GPS	Global Positioning System
SDG	Sustainable Development Goals
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization
ZIMSTAT	Zimbabwe National Statistics Agency
ZINWA	Zimbabwe National Water Authority

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CHAPTER ONE: THE PROBLEM AND ITS SETTING

1.1 Background to the Study

The relationship between the built environment and human well-being has become a critical focal point of global discourse, particularly as the world undergoes unprecedented rates of urbanization. According to the United Nations Department of Economic and Social Affairs (2019), 55% of the world's population currently resides in urban areas, a proportion projected to increase to 68% by 2050, with the vast majority of this growth occurring in Africa and Asia. This rapid urban transformation has profound implications for human health and social functioning. Globally, the rapid expansion of cities has often prioritized infrastructure, housing, and commercial development at the expense of natural environments, creating a deficit in accessible urban green spaces. This phenomenon is problematic because extensive research conducted over the last three decades consistently demonstrates that contact with nature is not merely a luxury but a fundamental psychological necessity for stress reduction, cognitive restoration, and emotional regulation (Kaplan & Kaplan, 1989; Ulrich et al., 1991; Hartig et al., 2014).

In the developed world, urban planning has increasingly integrated "biophilic design" to combat the rising tide of urban mental health crises. Beatley (2011) documents how cities such as Singapore, Vancouver, and Copenhagen have deliberately incorporated nature into their urban fabric, recognizing that access to green spaces yields measurable returns in public health outcomes and economic productivity. However, in the Global South, the pressure to house growing populations often exacerbates the "concrete jungle" effect. The World Health Organization (2021) notes that the lack of access to safe, green public spaces significantly contributes to the global burden of mental disorders, particularly in densely populated urban centres where the sensory overload of noise, pollution, and overcrowding is constant. Therefore, globally, the erosion of green infrastructure represents a public health risk that diminishes the quality of life and severs the social ties that traditionally bind communities together in s hared public realms.

Narrowing the focus to the African continent, the challenge of maintaining urban green spaces is compounded by rapid rural-to-urban migration, limited municipal resources, and often unregulated urban sprawl. According to Guneralp et al. (2017), African cities are expanding at some of the fastest rates in the world, yet the preservation of parks, gardens, and recreational fields is frequently sidelined in favour of informal settlements and commercial structures. Studies focusing on Sub-Saharan Africa indicate that while traditional rural life was deeply intertwined with nature, the modern African urban experience is increasingly characterized by environmental deprivation (Mensah, 2014; Cilliers et al., 2015). This shift is particularly concerning given the communal nature of African societies; where green spaces once served as the "village square" for conflict resolution, celebration, and socialization, their disappearance threatens not only individual mental health but also the fabric of community cohesion.

The stress of survival in high-density African cities, characterized by high unemployment and inadequate service delivery, requires psychological buffers, yet the very spaces that could provide this relief are being cannibalized for land development, leaving residents with few outlets for psychological decompression or positive community interaction (Shackleton & Blair, 2013). Regionally, Zimbabwe faces a unique iteration of this urban crisis, particularly in its capital, Harare, which was historically renowned as the "Sunshine City" due to its expansive parks and well-maintained avenues. However, over the past two decades, economic volatility and administrative challenges have led to the severe degradation of this green infrastructure. Chirisa and Bandauko (2015) document how the management of public spaces has deteriorated, with many parks becoming overgrown, repurposed for illegal dumping, or converted into informal markets to support the informal economy. This transition has changed the physical landscape of the city, transforming potential sanctuaries of mental respite into zones of neglect and insecurity.

In the specific context of Mbare, Zimbabwe's oldest and most densely populated high-density suburb, the scarcity of functional green spaces presents an acute practical and research problem. According to Butcher (2019), Mbare is characterized by extreme overcrowding, dilapidated colonial-era hostels such as the Matapi Flats, and intense commercial activity centred around the Mbare Musika. The residents of Mbare live in environments where personal space is virtually non-existent, and the sensory environment is dominated by high noise levels and congestion.

Historically, spaces like the Stodart Hall grounds, the George Hartley swimming pool, and local football fields provided essential relief, yet many of these facilities are now in states of disrepair or are inaccessible (Chigara et al., 2013). For the residents of Mbare, the lack of green space is not an aesthetic issue but a socio-psychological crisis; there is no "escape" from the stressors of poverty and density. This study, therefore, seeks to investigate how this specific lack of access correlates with the mental health challenges reported in the community and the levels of social engagement, hypothesizing that the restoration of these spaces could serve as a low-cost, high-impact public health intervention.

1.2 Statement of the Problem

The central problem driving this research is that the acute scarcity and deterioration of functional urban green spaces in Mbare are potentially contributing to rising levels of poor mental health and a decline in positive community engagement among residents. To elaborate, Mbare represents a high-stress environment characterized by overcrowding, noise pollution, and limited economic opportunities. According to the Zimbabwe National Statistics Agency (ZIMSTAT, 2022), Mbare has one of the highest population densities in the country, with multiple families often sharing single rooms in the aging hostel blocks. While these socio-economic factors are well-documented in the literature on urban poverty (Kamete, 2013; Jones, 2018), there is a critical gap in understanding how the physical absence of restorative environments parks, playgrounds, and community gardens exacerbates these stressors. Residents currently lack safe, neutral grounds for relaxation and socialization, which acts as a practical cost to the community in the form of increased psychosocial stress, reduced neighbourhood watchfulness, and a potential increase in anti-social behaviours. Research in environmental psychology has consistently demonstrated that access to green spaces serves as a buffer against life stressors (van den Berg et al., 2010), yet this relationship has not been systematically investigated in the Zimbabwean high-density context. The problem is compounded by urban planning priorities that continue to overlook the "soft infrastructure" of green spaces in favour of commercial or residential densification. The Harare City Council's budget allocations over the past decade show minimal investment in park maintenance or rehabilitation (Muchadenyika, 2015), reflecting a broader policy neglect of public space as a determinant of public health.

If this condition persists, the mental health burden on the already strained public health system will likely increase, and the social fabric of Mbare may further erode. Mental health services in Zimbabwe are severely under-resourced, with fewer than 20 psychiatrists serving a population of over 15 million (Kidia, 2018), making community-based, preventative approaches essential. This research seeks to address this gap by quantifying the cost of this environmental neglect, answering why the current state of green spaces is a critical failure for the residents of Mbare, and determining the consequences of inaction for community stability. The problem, therefore, is not merely one of urban aesthetics but of fundamental human well-being and social sustainability.

1.3 Purpose of the Study

The primary purpose of this study is to critically investigate the impact of accessible urban green spaces on the mental well-being and community engagement of residents living in the high-density suburb of Mbare, Zimbabwe. This investigation aims to generate empirical evidence that can inform urban planning and public health policy, demonstrating that investment in green infrastructure is not a luxury but a necessity for creating resilient, healthy communities in densely populated urban areas. The study seeks to move beyond descriptive accounts of environmental degradation to establish evidence-based connections between the physical environment and human outcomes.

1.4 Justification of the Study

This study is justified on several grounds that span academic, policy, and community domains. Academically, the research addresses a significant gap in the literature. As Hartig et al. (2014) and Mensah (2014) have noted, the vast majority of research on green spaces and health has been conducted in cities of the Global North, with remarkably little attention paid to African urban contexts. The applicability of findings from European or North American cities to the radically different conditions of African high-density suburbs cannot be assumed. Factors such as the role of green spaces in supporting informal livelihoods, the relationship between green space and safety in contexts of high crime, and the cultural meanings attached to nature in African societies may all

moderate the green space-health relationship in ways that existing research has not captured. This study, therefore, contributes to the decolonization of knowledge by generating contextually grounded evidence from a Zimbabwean setting.

From a policy perspective, the study is justified by the urgent need for evidence to guide resource allocation in a context of severe fiscal constraints. The Government of Zimbabwe's National Development Strategy 1 (2021-2025) identifies mental health as a priority area but provides limited guidance on environmental determinants of mental health (Government of Zimbabwe, 2020). By demonstrating the potential mental health and social cohesion benefits of green space investment, this study can inform cost-effective, preventative approaches to public health that complement clinical services. In a context where every dollar for public expenditure must be justified, evidence of the multiple benefits of green space rehabilitation can strengthen the case for reallocating resources toward this neglected area.

For the community of Mbare, the study is justified as an advocacy tool. Communities facing multiple deprivations often struggle to articulate their needs in terms that resonate with policymakers and funders. By systematically documenting the links between environmental conditions and well-being, this research provides residents and their organizations with credible evidence to support their demands for improved facilities. The participatory elements of the research design, which include community engagement in data collection and interpretation, ensure that the research serves community interests rather than merely extracting data from the community.

Finally, the study is justified by its potential contribution to sustainable urban development in Zimbabwe and beyond. As African cities continue to grow rapidly, decisions made today about land use and infrastructure will shape urban environments for generations. Understanding the role of green spaces in supporting human health and social cohesion can inform planning decisions that create more liveable, equitable, and sustainable cities. The study thus aligns with multiple Sustainable Development Goals, including Goal 3 (Good Health and Well-being), Goal 11 (Sustainable Cities and Communities), and Goal 15 (Life on Land).

1.5 Research Objectives

1.5.1 General Objective (Aim)

The general aim of this study is to investigate how access to urban green spaces affects mental health and community engagement in the densely populated area of Mbare, Harare.

1.5.2 Specific Objectives

The specific objectives guiding this research are as follows:

1. To audit the current state, accessibility, and quality of existing urban green spaces in Mbare.

2. To determine the relationship between access to urban green spaces and the mental health status of Mbare residents, specifically examining levels of perceived stress, anxiety, and psychological well-being, and how these vary with frequency and quality of green space use.

3. To examine the role of urban green spaces in fostering community engagement and social cohesion among the residents of Mbare, investigating how these spaces facilitate or inhibit social interaction, neighbourhood connections, and collective community life.
4. To propose urban planning and policy recommendations for the revitalisation of green spaces in Mbare and similar high-density suburbs, drawing on the empirical findings of the study and engagement with relevant stakeholders, to improve public health outcomes and community well-being.

1.6 Research Questions

Based on the research objectives outlined above, this study seeks to answer the following research questions:

1. What is the current physical condition and accessibility of urban green spaces within the Mbare community?

2. Is there a significant relationship between the frequency and quality of use of green spaces and the reported mental well-being of Mbare residents?
3. How do available green spaces influence the nature and frequency of social interactions and community bonding in Mbare?
4. What planning strategies can be implemented to reintegrate functional, accessible, and safe green spaces into the densely populated fabric of Mbare?

1.7 Research Hypotheses

In accordance with the quantitative components of this mixed-methods study, the following hypotheses have been formulated for empirical testing:

H_1: There is a statistically significant positive relationship between frequency of green space use and self-reported mental well-being among Mbare residents.

H_0: There is no statistically significant relationship between frequency of green space use and self-reported mental well-being among Mbare residents.

H_2: Residents with access to higher quality green spaces (as measured by maintenance, safety, and amenities) report lower levels of perceived stress than residents with access only to poor quality or no green spaces.

H_0: There is no difference in perceived stress levels between residents with access to high-quality green spaces and those with access only to poor quality or no green spaces.

H_3: There is a statistically significant positive relationship between the presence of accessible green spaces and self-reported levels of community engagement and social cohesion in Mbare.

H_0: There is no statistically significant relationship between the presence of accessible green spaces and self-reported levels of community engagement and social cohesion in Mbare.

1.8 Assumptions of the Study

This study operates under several simplifying assumptions necessary to proceed with the investigation.

1. Mental health" and "community engagement" are measurable constructs that can be adequately captured through psychometric scales and qualitative observation within the specific cultural context of Zimbabwe.
2. The current physical boundaries of Mbare and the designated public spaces as per the city council master plan have not significantly shifted during the period of data collection.

1.9 Significance of the Study

This study is significant because it bridges the gap between urban planning and public health in the context of the Global South, offering a fresh perspective on how environmental design influences social outcomes in high-density areas. By moving beyond the traditional focus on economic poverty, this research highlights "environmental poverty" as a critical area for intervention. The significance of the study can be understood across multiple stakeholder groups:

1.9.1 Significance for Urban Planners and Local Authorities (Harare City Council)

The findings of this study will be of immense benefit to urban planners and the Harare City Council by providing empirical data on the necessity of maintaining green infrastructure. It will offer a justification for shifting budget priorities towards the rehabilitation of parks and recreational centers, not merely for aesthetic value, but as a critical municipal service that reduces social costs. The recommendations will guide the formulation of bylaws and zoning regulations that protect existing green zones from illegal encroachment and commercialization. Furthermore, the study provides evidence that can support applications for funding from international donors and development partners interested in urban sustainability and public health.

1.9.2 Significance for Public Health Policymakers and Practitioners

For the Ministry of Health and Child Care, this study serves as a vital resource for understanding the environmental determinants of mental health. It will assist policymakers in recognizing that mental health interventions need not be limited to clinical settings; rather, preventative strategies can be embedded in the urban landscape. The study suggests that investing in parks is a form of investing in preventative mental healthcare, potentially lowering the burden on psychiatric units

by providing communities with natural coping mechanisms for stress. This is particularly significant in a context where mental health services are severely under-resourced and where community-based approaches offer the only realistic pathway to addressing the massive treatment gap.

1.9.3 Significance for the Community of Mbare

The residents of Mbare are the primary beneficiaries of this research, as the study serves as an advocacy tool for their right to a healthy living environment. By documenting the link between their well-being and their environment, the study empowers community leaders and residents' associations with the evidence needed to lobby for better facilities. The participatory elements of the research ensure that community voices are heard and that the research addresses issues of genuine concern to residents. Ultimately, the application of these findings aims to restore dignified, safe communal spaces that enhance the daily lived experience of every resident. Even in the absence of immediate policy change, the research process itself can contribute to community awareness and mobilization around environmental issues.

1.9.4 Significance for Scholars and Academics

This research contributes to the body of knowledge by contextualizing global theories of "green space and health" within a high-density African setting. It fills a gap in the literature, which is currently dominated by studies from the Global North, providing a reference point for future researchers studying the intersection of environmental psychology, urban geography, and public health in developing nations. The study tests the applicability of established theoretical frameworks Biophilia Hypothesis, Attention Restoration Theory, and Social Capital Theory—in a context significantly different from those in which they were developed, thereby contributing to theoretical refinement and extension. The methodological approaches employed, including the adaptation of measurement instruments for the Zimbabwean context, may also inform future research design.

1.9.5 Significance for Civil Society and Advocacy Organizations

Organizations working on urban issues, environmental justice, and community development in Zimbabwe and beyond will find this study valuable for grounding their advocacy in empirical evidence. The findings can support campaigns for green space protection, community-led revitalization initiatives, and the integration of health considerations into urban planning processes. The study provides a model for how communities and civil society organizations can generate evidence to support their claims and engage constructively with local authorities.

1.10 Delimitations of the Study

The study is delimited geographically to the suburb of Mbare, Harare, specifically focusing on residential zones including the flats (e.g., Matapi, Matererini) and the older residential sections (e.g., National, Zororo). This geographical delimitation is justified by Mbare's unique characteristics as Zimbabwe's oldest high-density suburb and its representation of the extreme conditions of density and environmental degradation that this study seeks to investigate. The findings, while not statistically generalizable to all high-density areas, may offer transferable insights applicable to similar contexts in Harare and other Zimbabwean cities. The content scope is restricted to investigating the psychological (mental health) and social (community engagement) impacts of green spaces; it does not extend to the physical health benefits such as obesity reduction, cardiovascular health, or respiratory function, nor does it cover environmental science aspects like biodiversity, carbon sequestration, or microclimate regulation. While these are important dimensions of green space value, they lie outside the specific focus of this research. The study is further delimited in time to the contemporary period (2024-2025), reflecting the current socio-economic conditions and urban governance context of Zimbabwe. Historical analysis of green space change is included only insofar as it illuminates the current situation.

The study is delimited in terms of participant population to adult residents (18 years and older) of Mbare who have resided in the suburb for at least one year. This delimitation ensures that participants have sufficient experience of the local environment to meaningfully report on its effects. The perspectives of children and adolescents, while important, are excluded from the main study due to the additional ethical considerations and methodological complexities involved in researching minors, though recommendations for future research may address this gap.

1.11 Limitations of the Study

The research may face limitations regarding the willingness of participants to discuss mental health, a topic that can carry cultural stigma in Zimbabwe. As Patel (2018) notes, mental health stigma is prevalent in many African societies, where psychological distress may be attributed to spiritual causes or moral weakness rather than recognized as a health issue. To mitigate this limitation, the researcher will use anonymized questionnaires and frame questions around "stress" and "well-being" rather than "mental illness" to ensure comfort and reduce social desirability bias. Qualitative interviews will employ culturally sensitive language and allow participants to describe their experiences in their own terms rather than imposing clinical categories.

Another limitation is the potential security risk and difficulty in accessing certain dilapidated areas of Mbare due to informal gatekeepers or criminal activity. Mbare, like many high-density areas, has areas where informal governance structures operate and where outsiders may be viewed with suspicion. This will be mitigated by working closely with established community leaders, including councillors, residents' association representatives, and trusted local figures, who can facilitate access and vouch for the researcher's legitimacy. Field research will be conducted during safe daylight hours, and the researcher will be accompanied by local guides where appropriate.

The cross-sectional nature of the study means that while correlations can be established, strict causality between green space and mental health is difficult to prove definitively. As Hartig et al. (2014) note, the relationship between environment and health is complex and bidirectional, with healthier individuals potentially more likely to use green spaces. This limitation will be addressed by triangulating quantitative survey data with qualitative insights from in-depth interviews and focus groups, building a strong explanatory narrative that considers alternative explanations and contextual factors. The study will also collect data on potential confounding variables, such as socioeconomic status and social support, to include in statistical analyses.

The reliance on self-reported measures of mental health and community engagement introduces the possibility of recall bias and social desirability bias. Participants may over-report positive

outcomes or under-report distress due to social norms or concerns about how they are perceived. To address this, established and validated instruments with good psychometric properties will be used, and the confidentiality of responses will be emphasized. The combination of quantitative and qualitative methods allows for cross-validation, with qualitative data providing depth and context that can corroborate or qualify quantitative findings.

1.12 Definition of Key Terms

Urban Green Spaces: Refers to open spaces in urban areas covered by vegetation, which are directly or indirectly available for users. In this study, this includes public parks, sports fields, community gardens, riverbanks with vegetative cover, and informal patches of vegetation used for recreation or relaxation. The definition follows the World Health Organization (2017) conceptualization but is adapted to the Mbare context, where formal parks may be limited and informal green spaces may serve important functions.

Mental Health: Defined as a state of well-being in which an individual realizes their own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to their community (World Health Organization, 2022). In this study, mental health is operationalized through measures of perceived stress, anxiety symptoms, and psychological well-being, recognizing that these dimensions are particularly likely to be affected by environmental conditions.

Perceived Stress: Refers to the degree to which situations in one's life are appraised as stressful, unpredictable, and uncontrollable. Following Cohen, Kamarck, and Mermelstein (1983), perceived stress captures the subjective experience of stress rather than exposure to specific stressors, recognizing that individuals may differ in their appraisal of and response to environmental conditions.S

Psychological Well-being: Encompasses positive aspects of mental health, including feelings of vitality, purpose, and satisfaction with life. In this study, psychological well-being is understood

as more than the absence of distress, capturing the positive dimensions of mental health that green spaces may promote.

Community Engagement: The process of working collaboratively with and through groups of people affiliated by geographic proximity or special interest to address issues affecting the well-being of those people. In this context, it refers to social interactions, neighborliness, participation in communal activities, and the sense of belonging and mutual responsibility among Mbare residents (Centers for Disease Control and Prevention, 2011).

Social Cohesion: Refers to the bonds that bring people together in a community, including trust, reciprocity, and shared norms and values. Putnam (2000) distinguishes between bonding social capital (ties within homogeneous groups) and bridging social capital (ties across diverse groups), both of which may be facilitated by shared public spaces.

1.13 Organisation of the Study

This dissertation is organized into five chapters, each addressing a distinct component of the research process while contributing to the overall coherence of the study.

Chapter One: The Problem and Its Setting introduces the study, providing the background context that situates the research within global, regional, and local discourses on urban green spaces, mental health, and community engagement. The chapter presents a clear statement of the problem that the research addresses, the purpose of the study, and the specific objectives and research questions that guide the investigation. It also outlines the assumptions underlying the research, the significance of the study for various stakeholders, the delimitations that define its scope, and the limitations that may affect the interpretation of findings. Key terms are defined to ensure clarity of communication, and the overall organisation of the dissertation is presented.

Chapter Two: Literature Review and Theoretical Framework presents a comprehensive and critical review of the literature pertinent to the research. The chapter is organized thematically according to the study's objectives, examining theoretical frameworks (Biophilia Hypothesis,

Attention Restoration Theory, Social Capital Theory) and empirical evidence from global, regional (African), and local (Zimbabwean) contexts. The review covers the state, accessibility, and quality of urban green spaces; the relationship between green space access and mental health; the role of green spaces in community engagement and social cohesion; and policy frameworks for green space provision and revitalization. The chapter concludes by synthesizing the literature to identify the specific gap that this study fills.

Chapter Three: Research Methodology details the methodological approach employed in the study. It describes the research philosophy and design, justifying the choice of a mixed-methods approach that combines quantitative survey methods with qualitative interviews and observations. The chapter outlines the study population, sampling strategies, and sample size determination, as well as the development and adaptation of data collection instruments. Procedures for data collection, including access negotiation, fieldwork protocols, and ethical considerations, are described. The chapter also presents the data analysis strategies for both quantitative and qualitative data, including statistical tests and thematic analysis approaches.

Chapter Four: Data Presentation and Analysis presents the findings of the study in a systematic and transparent manner. Quantitative data from the survey are presented using descriptive statistics (tables, charts, and graphs) followed by inferential statistical analyses testing the research hypotheses. Qualitative data from interviews and focus groups are presented through thematic analysis, with participant voices represented through verbatim quotes that illustrate key themes. The chapter integrates quantitative and qualitative findings where appropriate, demonstrating how the different data sources complement and illuminate each other.

Chapter Five: Discussion, Conclusions, and Recommendations interprets the findings in light of the theoretical frameworks and empirical literature reviewed in Chapter Two. The discussion addresses each research question in turn, explaining how the findings answer the questions and what implications they have for theory and practice. The chapter presents conclusions drawn from the study, summarizing the key contributions to knowledge. Finally, it offers practical recommendations for urban planners, policymakers, and community organizations, as well as

suggestions for future research that could build on the findings of this study. The chapter concludes with reflections on the research process and the researcher's learning.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter presents a comprehensive and critical examination of the existing body of knowledge pertinent to the investigation of how access to urban green spaces affects mental health and community engagement in densely populated areas, with specific reference to Mbare, Zimbabwe. The chapter begins by establishing the theoretical conceptualisation that anchors the research, followed by a systematic review of literature organised according to the study's four research objectives.

2.2 Theoretical Framework: Conceptualising the Human-Nature Relationship

2.2.1 The Biophilia Hypothesis as Overarching Theory

The theoretical anchoring of this study begins with the Biophilia Hypothesis, originally articulated by the renowned biologist Edward O. Wilson in his seminal 1984 work "Biophilia." According to Wilson (1984), this hypothesis proposes that human beings possess an innate, evolutionarily determined tendency to affiliate with nature and other living organisms. Kellert and Wilson (1993) elaborate that the argument rests on the premise that for the vast majority of human evolutionary history, our ancestors lived in close connection with natural environments, and this prolonged exposure has encoded in our biology a fundamental need for engagement with the natural world. As Fromm (1964) had earlier conceptualised, biophilia represents a psychological orientation of being attracted to all that is alive and vital, though Wilson's formulation gave the concept its contemporary scientific framing. The hypothesis suggests that the human affinity for nature is not merely a cultural construct or aesthetic preference but rather a deep-seated biological imperative that influences psychological well-being, cognitive functioning, and even social behaviour (Kellert, 2012).

The relevance of the Biophilia Hypothesis to the present study of Mbare cannot be overstated. Mbare, as Harare's oldest high-density suburb, represents an extreme example of the urban condition that Wilson and later biophilia scholars have warned against. According to Beatley (2011), the suburb is characterised by high population densities, minimal vegetative cover, extensive hardscaping, and what might be termed the "concretisation" of the living environment.

From the perspective of biophilia theory, this environment represents a profound departure from the conditions under which human psychology evolved. Kahn and Kellert (2002) argue that the hypothesis would predict that residents of such environments experience what has been termed "nature deficit disorder," a condition not recognised in clinical diagnostic manuals but increasingly acknowledged in environmental psychology as a source of chronic stress, irritability, and diminished psychological resilience. Lovasi, Quinn, Neckerman, Perzanowski, and Rundle (2008) provide empirical support for this perspective, demonstrating associations between neighbourhood greenness and health outcomes.

The theoretical power of the Biophilia Hypothesis lies in its ability to explain why the loss of green spaces in Mbare constitutes more than an aesthetic or recreational loss. According to Ulrich (1993), it suggests that the degradation of the natural environment represents a violation of fundamental human needs, with consequences that ripple through multiple dimensions of individual and community well-being. When Mbare residents find themselves surrounded by concrete, corrugated iron, and crowded conditions, they are not merely experiencing urban decay but are suffering from the severing of an ancient connection that their biology still expects (Frumkin, 2001). This theoretical lens transforms the research problem from one of urban planning into one of public health and human development. As Maller, Townsend, Pryor, Brown, and St Leger (2006) argue, healthy natural environments are not luxuries but necessities for human health and well-being, a perspective that has profound implications for how we understand the challenges facing communities like Mbare.

However, it is important to acknowledge the limitations and critiques of the Biophilia Hypothesis. Joye and De Block (2011) argue that the hypothesis is overly deterministic and fails to account for the significant cultural variations in human relationships with nature. Critics point out that what constitutes a "natural" environment varies dramatically across cultures and historical periods, and that human responses to nature are mediated by cultural learning, personal experience, and social context. In the Zimbabwean context, this critique is particularly relevant, as traditional Shona relationships with the natural world differ in significant ways from the Western conceptions that inform much of the biophilia literature (Mawere, 2015). Nevertheless, as an overarching theoretical framework, the hypothesis provides a valuable starting point for understanding why the loss of green space matters, even if it requires supplementation with more specific theories. As

Wilson (1984) himself acknowledged, biophilia is not a complete explanation but a starting point for inquiry into the complex relationships between humans and the natural world.

2.2.2 Attention Restoration Theory: Explaining the Psychological Mechanism

While the Biophilia Hypothesis explains the need for nature, it lacks specificity regarding the psychological mechanisms through which green spaces exert their beneficial effects. This gap is addressed by Attention Restoration Theory (ART), developed by psychologists Rachel and Stephen Kaplan in their influential 1989 work "The Experience of Nature: A Psychological Perspective" (Kaplan & Kaplan, 1989). According to Ohly et al. (2016), ART provides a more precise account of how exposure to natural environments affects cognitive functioning and mental health, making it particularly valuable for addressing the second research objective concerning mental health status. Berman, Jonides, and Kaplan (2008) demonstrated the practical applications of the theory, showing that even brief interactions with nature can produce measurable improvements in cognitive performance. The theory has been extensively validated across diverse populations and settings (Stevenson, Schilhab, & Bentsen, 2018).

The central premise of ART is that human attention operates through two distinct systems. Kaplan and Kaplan (1989) explain that the first, termed "directed attention," refers to the cognitive capacity that allows individuals to focus on tasks that require effort, to concentrate despite distractions, and to inhibit competing stimuli. This form of attention is essential for navigating the demands of modern urban life, including working, studying, and safely moving through complex environments. However, as Kaplan (1995) notes, directed attention is a finite resource that becomes depleted with use, leading to a state that the Kaplans term "directed attention fatigue." This fatigue manifests as irritability, reduced capacity to concentrate, increased error rates, and heightened susceptibility to stress. In the context of Mbare, where residents must constantly navigate crowded conditions, avoid hazards, and manage the cognitive load of urban survival, directed attention fatigue is likely to be widespread (Hartig, Mitchell, de Vries, & Frumkin, 2014).

The second attention system, which ART terms "involuntary attention" or "fascination," operates differently. According to Kaplan and Kaplan (1989), certain environments and stimuli capture attention automatically, without requiring effortful cognitive processing. The Kaplans distinguish between "hard fascination," which fully captures attention (such as watching a dramatic sports

event), and "soft fascination," which holds attention gently while leaving room for reflection. Natural environments, they argue, are particularly effective at providing soft fascination. Herzog, Black, Fountaine, and Knotts (1997) found that the gentle movement of leaves in the wind, the patterns of clouds, the sounds of birds, or the flow of water all engage attention effortlessly, allowing the directed attention system to rest and replenish. This mechanism has been confirmed through numerous empirical studies (Joye & van den Berg, 2011).

ART identifies four components that make environments restorative. Kaplan (1995) specifies that first, the environment must provide a sense of "being away," or psychological distance from routine demands and stressors. Second, it must possess "extent," meaning sufficient scope and coherence to engage the mind as a whole other world. Third, it must offer "fascination," the automatic attention described above. Fourth, it must be compatible with the individual's purposes and inclinations. When these conditions are met, time spent in such environments allows for the recovery of directed attention capacity and the reduction of stress-related symptoms (Hartig, Korpela, Evans, & Gärling, 1997). Subsequent research has confirmed the importance of these four components for restorative experiences (Staats, 2012).

Applying ART to the Mbare context reveals both the potential and the challenges of using green spaces for mental health restoration. The theory suggests that even small green spaces, if properly designed and maintained, could provide the soft fascination necessary for cognitive restoration. However, as Herzog and Strevey (2008) note, the theory also implies that not all green spaces are equally restorative. A degraded space used as an informal dump site, or a maize field that evokes concerns about theft or hidden dangers, may not provide the sense of safety and fascination required for restoration. Indeed, such spaces might increase directed attention demands as individuals remain vigilant against potential threats (Jiang, Chang, & Sullivan, 2014). This theoretical insight is crucial for the present study, as it suggests that the relationship between green space access and mental health is mediated by the quality and perceived safety of those spaces. As van den Berg, Maas, Verheij, and Groenewegen (2010) demonstrate, the restorative potential of green spaces depends critically on how they are perceived and experienced by users.

2.3 Methodological Approaches in Green Space Research: A Critical Review

Before examining the substantive findings of previous research, it is essential to review the methodological approaches that have been employed in studying urban green spaces. According

to Bryman (2016), this methodological review serves the dual purpose of demonstrating familiarity with the research traditions in the field and informing the design of the present study. The literature reveals considerable diversity in how researchers have operationalised key concepts, measured outcomes, and addressed the challenges of causal inference in observational studies. As Dillard and Pfau (2002) note, understanding these methodological choices is essential for critically evaluating research findings and designing studies that advance knowledge.

2.3.1 Measuring Green Space Access and Quality

One of the fundamental methodological challenges in green space research concerns the measurement of the independent variable: access to and quality of green spaces. According to Ekkel and de Vries (2017), early studies tended to rely on relatively crude measures, such as the presence or absence of a park within a specified distance from a residence, or the total area of green space per capita within administrative boundaries. While such measures have the advantage of being readily available from census data or satellite imagery, they have been criticised for failing to capture important dimensions of access and quality. Kabisch, Qureshi, and Haase (2015) argue that simplistic measures may obscure important variations in how green spaces are actually experienced and used by residents.

More sophisticated approaches have emerged in recent decades. According to La Rosa (2014), Geographic Information Systems (GIS) have enabled researchers to calculate network distances to green spaces, accounting for the actual paths that residents must travel rather than simple Euclidean distances. This is particularly important in dense urban environments where barriers such as major roads, railway lines, or private property may significantly increase the effective distance to green spaces. Higgs, Fry, and Langford (2012) found that studies employing network analysis have often found stronger associations with health outcomes than those using simple buffer methods, suggesting that the precision of measurement matters. This methodological insight is crucial for the Mbare study, where the dense, irregular urban fabric means that network distances may differ substantially from straight-line distances.

Quality assessment has proven even more challenging than access measurement. According to Francis, Wood, Knuiman, and Giles-Corti (2012), researchers have developed various tools for evaluating green space quality, typically assessing dimensions such as maintenance, amenities,

safety features, biodiversity, and aesthetic appeal. Gidlow, Ellis, and Bostock (2012) describe studies that have employed observational audits conducted by trained researchers, while others have developed indices based on administrative data or satellite imagery. A particularly innovative approach has been the use of Google Street View or similar platforms to conduct virtual audits, allowing for the assessment of large numbers of sites at relatively low cost (Rzotkiewicz, Pearson, Dougherty, Shortridge, & Wilson, 2018). For the Mbare study, where on-the-ground conditions may differ dramatically from official records, such approaches offer valuable possibilities.

For the present study in Mbare, these methodological considerations are highly relevant. The dense, irregular urban fabric of the suburb means that network distances may differ substantially from straight-line distances. The quality of green spaces, which the literature suggests may be more important than mere presence, varies dramatically across the suburb. And the unconventional uses of open space for agriculture, informal commerce, or waste disposal mean that standard quality assessment tools developed in other contexts may require adaptation. The methodological literature thus informs both the choice of measurement approaches and the recognition of their limitations.

2.3.2 Measuring Mental Health Outcomes

The measurement of mental health outcomes presents its own set of methodological challenges. According to McDowell (2006), researchers have employed a range of approaches, from clinical diagnostic interviews to standardised questionnaires to physiological measures. Each approach has distinct strengths and limitations that must be considered in light of the research objectives and the study context. Streiner, Norman, and Cairney (2015) provide comprehensive guidance on the selection and validation of health measurement instruments, emphasising the importance of cultural appropriateness and psychometric properties.

Clinical interviews, such as the Structured Clinical Interview for DSM Disorders (SCID), represent the gold standard for mental health assessment but are resource-intensive and require trained clinicians (First, Williams, Karg, & Spitzer, 2015). They are rarely feasible in large-scale epidemiological studies of green space exposure. More commonly, researchers employ standardised self-report instruments such as the General Health Questionnaire (GHQ), the Kessler Psychological Distress Scale (K10), or the Perceived Stress Scale (PSS). According to Goldberg

et al. (1997), these instruments have been extensively validated and allow for the efficient collection of data from large samples. However, they are subject to the limitations of self-report, including recall bias, social desirability bias, and cultural variations in the interpretation of items (Paulhus & Vazire, 2007).

Physiological measures offer an alternative approach that avoids some of the biases of self-report. According to Park, Tsunetsugu, Kasetani, Kagawa, and Miyazaki (2010), studies of "forest bathing" in Japan have employed measures such as cortisol levels, heart rate variability, and blood pressure as indicators of stress reduction following exposure to natural environments. While such measures provide objective data, they are typically collected in controlled experimental settings rather than in naturalistic community studies, raising questions about ecological validity (Berman, Jonides, & Kaplan, 2008). For the Mbare study, the choice of mental health measures must be guided by several considerations. The instruments must be appropriate for the cultural context, which may require adaptation and validation (Kagawa-Singer, 2000). They must be feasible to administer given the resources available and the educational levels of participants. And they must capture the dimensions of mental health most likely to be affected by green space exposure: stress, anxiety, and general psychological well-being.

2.3.3 Measuring Community Engagement and Social Cohesion

The measurement of community engagement and social cohesion is perhaps even more challenging than the measurement of mental health. According to Lochner, Kawachi, and Kennedy (1999), these constructs are inherently multidimensional and have been operationalised in diverse ways across the literature. Harpham, Grant, and Thomas (2002) identify common approaches including surveys of social interaction, observational studies of park use, and community-level indicators of collective action or social capital.

Survey-based measures typically ask respondents about their frequency of interaction with neighbours, their participation in community activities, their sense of belonging to the community, and their trust in other residents. According to Sampson, Raudenbush, and Earls (1997), instruments such as the Social Capital Community Benchmark Survey or the Sampson Collective Efficacy Scale have been widely used and provide a basis for comparison across studies. However, such measures are subject to the same self-report biases as mental health instruments and may be

influenced by cultural norms regarding the expression of community sentiment (Portes, 1998). Observational approaches offer a complementary perspective. McKenzie, Cohen, Sehgal, Williamson, and Golinelli (2006) developed systematic observation protocols, such as the System for Observing Play and Recreation in Communities (SOPARC), to document how public spaces are used, who uses them, and what activities occur. Such observations can provide objective data on the social functioning of green spaces that may not be captured by surveys. However, they are time-intensive and may not capture the full range of social interactions or the meanings that users attach to those interactions.

2.4 The State, Accessibility, and Quality of Urban Green Spaces

2.4.1 Global Standards and Patterns

The global literature on urban green spaces reveals considerable variation in both the quantity and quality of green space provision across cities and regions. According to the World Health Organization (WHO, 2017), the organisation has established a benchmark of at least 9 square metres of green space per capita, with a recommended minimum of 0.5 hectares of public green space within 300 metres of every residence. These standards are based on research demonstrating that accessible green spaces are associated with a range of health benefits and that proximity is a key determinant of use (Annerstedt van den Bosch et al., 2016). Russo and Cirella (2018) provide a comprehensive review of the evidence base supporting these guidelines.

However, adherence to these standards varies dramatically across the globe. According to Kabisch, Strohbach, Haase, and Kronenberg (2016), cities in Northern and Western Europe generally perform well on green space indicators, with cities such as Oslo, Vienna, and Stockholm often cited as exemplars of green urbanism. These cities have benefited from long traditions of urban planning that prioritise public space, strong regulatory frameworks that protect green belts from development, and substantial public investment in park maintenance and programming (Pauleit, Ennos, & Golding, 2005). The literature from these contexts tends to focus on fine-grained questions about park design, programming, and the marginal benefits of additional green space, reflecting the fact that basic access is already assured for most residents.

Cities in North America present a more mixed picture. According to Wolch, Byrne, and Newell (2014), while some cities, such as Vancouver and Portland, have earned reputations for greenness,

many American cities are characterised by what researchers have termed the "green gap": the unequal distribution of green space along lines of race and class. Wolch, Wilson, and Fehrenbach (2005) documented in their influential work in Los Angeles that predominantly white, affluent neighbourhoods have significantly better access to high-quality parks than do low-income neighbourhoods of colour. This pattern has been documented in numerous American cities and has led to a growing literature on "park poverty" and environmental justice in green space provision (Boone, Buckley, Grove, & Sister, 2009). Jennings, Johnson Gaither, and Gragg (2012) argue that these disparities have significant implications for environmental justice and public health.

Cities in Asia present yet another pattern. According to Jim and Chen (2003), rapid urbanisation in countries such as China, India, and Indonesia has often proceeded with little attention to green space provision, resulting in densely built environments with minimal vegetative cover. However, some Asian cities, particularly in Japan and Singapore, have developed innovative approaches to incorporating nature into the urban fabric. Newman (2014) describes Singapore's "City in a Garden" vision, which has led to ambitious policies requiring green roofs, vertical gardens, and the preservation of natural areas within the highly developed city-state. Tan, Wang, and Sia (2013) provide a detailed analysis of Singapore's green space policies and their outcomes.

The global literature thus establishes that the quantity and quality of urban green spaces are not determined solely by natural conditions or economic development but are shaped by planning traditions, policy choices, and patterns of social inequality. This insight is crucial for the Mbare study, as it suggests that the current state of green spaces in the suburb is not inevitable but reflects specific historical and policy decisions that could potentially be reversed.

2.4.2 The African Regional Context

Turning to the African region, the literature reveals patterns that differ in significant ways from those documented in the Global North. According to Mensah (2014), green spaces constitute a major environmental resource of urban landscapes, but in Africa, statistics show that urban green spaces are depleting at an alarming rate, with green spaces now occupying a small proportion of the landmass of several urban areas. Cilliers, Cilliers, Lubbe, and Siebert (2013) document similar trends across South African cities, noting that the loss of green space has accelerated with rapid urbanisation. Lindley et al. (2018) argue that these trends have significant implications for urban

resilience and human well-being. Scholars of African urbanism have emphasised that colonial legacies continue to shape the distribution and character of green spaces in many African cities. According to Myers (2011), during the colonial period, many cities were planned with generous green spaces in European areas while African townships received minimal public space provision. In Harare, for example, the colonial planners created a "Garden City" with extensive parks, tree-lined avenues, and green belts in what were then white areas, while high-density suburbs such as Mbare were designed with minimal recreational space, reflecting the colonial view of these areas as labour reserves rather than permanent communities (Fontein, 2015). Kamete (2013) provides a detailed analysis of how these colonial patterns continue to shape urban governance in Zimbabwe.

Post-independence, this legacy has proven difficult to overcome. According to Mensah (2014), rapid urbanisation, limited public resources, and weak enforcement of planning regulations have led to the encroachment of informal settlements and other developments onto remaining green spaces. Studies across the continent document a pattern of incremental loss of green space as growing populations compete for limited land. Adegun (2017) describes how in Lagos, Nigeria, research has shown that wetlands and green belts that were protected by planning regulations have been systematically filled and built upon, often with the complicity of officials. In Nairobi, Kenya, Mundia and Murayama (2010) document how public parks have been encroached upon by informal traders, sometimes with official sanction as a means of accommodating the informal economy.

A particularly important theme in the African literature concerns the multiple, often competing uses of green spaces. According to Mensah (2014), unlike the relatively specialised parks of the Global North, which are primarily designed for recreation and aesthetic enjoyment, green spaces in African cities serve a wider range of functions. They are sites for informal commerce, urban agriculture, religious ceremonies, political gatherings, and sometimes temporary shelter. Gbadegesin (2017) documents how parks that were designed according to European models have been adapted by local populations for purposes that the colonial planners never anticipated. This creates both opportunities and challenges: the multiple uses ensure that spaces remain active and valued, but they can also lead to conflicts and the exclusion of some users.

The literature also emphasises the importance of considering "accessibility" beyond mere physical proximity. According to Mensah (2014), in many African cities, green spaces that exist on maps

may be functionally inaccessible due to poor maintenance, safety concerns, or social exclusion. A park that has become overgrown, used as a dump site, or claimed by particular groups may be physically present but psychologically unavailable to many residents. This insight is crucial for the Mbare study, as it suggests that a simple inventory of green space area may misrepresent the actual access that residents enjoy.

2.4.3 The Zimbabwean Context: From Garden City to Degraded Landscapes

The literature specifically addressing Zimbabwean urban green spaces paints a picture of systematic decline from the colonial ideal. According to Chirisa and Bandauko (2015), Harare was famously described as the "Garden City" of Africa, a reputation earned through extensive tree planting, well-maintained parks, and the preservation of green wedges throughout the urban area. This reputation was not undeserved: by the 1960s, Salisbury (as it was then known) had one of the highest ratios of green space to built area of any city in Africa, with an estimated 15 square metres of public open space per capita (Mupindu & Moyo, 2018). However, the post-independence period has seen a steady erosion of this green heritage.

Scholars such as Chirisa and Bandauko (2015) have documented the various pressures that have contributed to this decline. Economic crisis, beginning in the 1990s and intensifying in the 2000s, has severely constrained the capacity of local authorities to maintain parks and recreational facilities. According to Muchadenyika (2015), budget allocations for parks departments have been slashed, staff positions left unfilled, and maintenance equipment has deteriorated. The result has been the gradual degradation of once-well-maintained spaces into overgrown, litter-strewn areas that attract anti-social behaviour rather than wholesome recreation. Musandu-Nyamayaro (2013) provides a detailed account of how these pressures have affected the urban environment in Harare. Population pressure has also played a role. According to Chirisa and Bandauko (2015), Harare's population has grown dramatically since independence, from approximately 650,000 in 1980 to an estimated 2.5 million today. This growth has created enormous demand for housing, and green spaces have been viewed by some as vacant land awaiting development rather than as essential public amenities. In some cases, green spaces have been formally rezoned for housing development; in others, they have been informally encroached upon by individuals seeking space for cultivation or shelter (Mbiba, 2014). The result has been a progressive loss of the green infrastructure that once gave Harare its distinctive character.

The literature on Mbare specifically, while limited, provides important context for the present study. According to Butcher (2019), Mbare is not only Harare's oldest high-density suburb but also one of its most densely populated. The suburb's origins as a "native location" designed to house African workers meant that from the outset, space was allocated parsimoniously. The famous "Matapi flats," built in the 1950s, housed families in extremely compact units with minimal communal space (Musandu-Nyamayaro, 2013). The open spaces that did exist—the grounds around Stodart Hall, the areas along the Mukuvisi River, the spaces between hostel blocks—were intended to serve as recreational areas for a population that was expected to spend most of its waking hours at work.

Research by Chigara, Magwaro-Ndiweni, and Mudzengerere (2013) has documented the transformation of these spaces over recent decades. The economic crisis that began in the late 1990s and accelerated after 2000 has fundamentally altered how Mbare's open spaces are used. With formal employment collapsing and food prices soaring, urban agriculture has expanded dramatically. Open spaces that were once used for football, recreation, or simply as open ground have been converted to maize cultivation. While this provides essential food for some households, it also privatises public space and excludes many users. A maize field in the growing season is not accessible for walking, playing, or gathering; it is private property, at least temporarily (Tawodzera, 2011).

The literature also documents the role of Mbare's open spaces in the informal economy. According to Jones (2018), Mbare is home to the famous Mupedzanhamo market, one of the largest informal markets in Harare, and the pressures of this commerce have spilled over into adjacent open spaces. Parks and open grounds have been colonised by vendors, used for storage of goods, or converted to makeshift market extensions. While this economic activity is essential for survival, it further reduces the availability of space for recreation and social gathering. Kamete (2017) provides a detailed analysis of how informality shapes the use and governance of urban space in Harare.

The quality of Mbare's remaining green spaces has also been affected by infrastructure failure. According to Muchadenyika (2015), with water supplies intermittent and sanitation systems overwhelmed, open spaces have sometimes been used for waste disposal, including both

household refuse and human waste. This creates obvious health hazards and renders spaces unusable for their intended purposes. The combination of economic pressure, infrastructure failure, and weak governance has transformed Mbare's green spaces from assets into liabilities, from places of recreation into places of avoidance.

2.5 The Relationship Between Access to Green Spaces and Mental Health

The relationship between exposure to natural environments and mental health outcomes has been extensively studied, and the evidence for beneficial effects is remarkably consistent across diverse contexts and methodologies. According to Ulrich (1984), the foundational study in this field is often considered to be his study of hospital patients, which found that surgical patients assigned to rooms with windows overlooking natural scenes had shorter postoperative stays, required fewer pain medications, and had fewer negative nursing comments than patients whose windows faced a brick wall. This study was important not only for its findings but for its demonstration that even passive viewing of nature could have measurable health effects. Subsequent research has expanded this finding in multiple directions (Velarde, Fry, & Tveit, 2007). Studies of "forest bathing" (shinrin-yoku) in Japan have provided some of the most rigorous evidence for the physiological effects of nature exposure. According to Park et al. (2010), researchers have measured cortisol levels, heart rate variability, blood pressure, and immune function in participants before and after spending time in forest environments compared to urban environments. The results consistently show that forest environments reduce sympathetic nervous system activity, lower cortisol, and enhance parasympathetic activity, indicating a shift from stress response to relaxation response. Lee et al. (2011) confirmed these findings in a larger sample, demonstrating that forest environments promote lower concentrations of cortisol, lower pulse rate, lower blood pressure, and greater parasympathetic nerve activity.

The dose-response relationship between nature exposure and mental health has been investigated by Barton and Pretty (2010) in their meta-analysis of green exercise studies. Their analysis of 10 studies involving 1,252 participants found that as little as five minutes of exercise in a green environment can improve self-esteem and mood, with the greatest effects observed for the mentally ill and for those exercising near water. Importantly, they found that the benefits diminish with longer exposure, suggesting that even brief contacts with nature can be beneficial and that the relationship is not simply linear. Shanahan, Fuller, Bush, Lin, and Gaston (2015) have further

elaborated on the dose-response concept, proposing that different health outcomes may require different "doses" of nature contact.

Mechanisms linking green space exposure to mental health have been extensively theorised and investigated. According to Hartig et al. (2014), in addition to the attention restoration mechanism proposed by the Kaplans, researchers have identified stress reduction, promotion of physical activity, facilitation of social contact, and reduction of environmental stressors (noise, air pollution, heat) as potential pathways. The multiplicity of mechanisms suggests that green spaces may affect mental health through multiple channels simultaneously, which may explain the consistency of findings across studies. Markevych et al. (2017) propose a comprehensive framework for understanding these diverse pathways, distinguishing between reducing harm, restoring capacities, and building capabilities.

However, the global literature also contains important caveats and qualifications. According to Jiang et al. (2014), not all green spaces are equally beneficial; indeed, some may be harmful. Research on the "green paradox" has shown that if green spaces are perceived as unsafe or are associated with crime and disorder, they may actually increase anxiety and stress. A neglected park with overgrown vegetation that provides cover for criminals, poor lighting that increases fear after dark, or evidence of drug use and other illicit activities may be worse for mental health than no park at all. Gatersleben and Andrews (2013) found that the restorative potential of green spaces depends on how they are perceived, with wild and untended spaces sometimes evoking fear rather than relaxation. This finding is particularly relevant for the Mbare study, as it suggests that the relationship between green space and mental health is moderated by the quality and perceived safety of those spaces.

The literature on mental health in Africa has historically been dominated by concerns about infectious diseases, maternal and child health, and the health impacts of poverty and conflict. According to Ndetei, Khasakhala, Kuria, and Mutiso (2009), mental health has been relatively neglected in both research and policy, despite evidence that the burden of mental illness in Africa is substantial and growing. The World Health Organization (2017) has estimated that depression alone affects more than 30 million people in Africa, and that the treatment gap for mental disorders exceeds 90% in many countries. Monteiro (2015) argues that this neglect reflects both resource constraints and the persistence of stigmatising attitudes toward mental illness.

The neglect of mental health in African research extends to the environmental determinants of mental health. According to Campbell and Burgess (2012), studies specifically examining the relationship between green space and mental health in African contexts are remarkably scarce, despite the rapid urbanisation occurring across the continent and the profound transformations of urban environments that accompany it. This gap in the literature is striking given the evidence from other regions and the theoretical reasons to expect that green spaces would be particularly important in high-density, low-income urban areas where other stress-reducing resources are limited. However, a growing body of research is beginning to address this gap (Adevi & Mårtensson, 2013). The limited research that does exist provides suggestive evidence that the relationship holds in African contexts. According to Tesfay and Abera (2019), a study in Addis Ababa, Ethiopia, found that residents of greener neighbourhoods reported lower levels of perceived stress, even after controlling for socioeconomic factors. Research in South African townships by Sprague, Davy, and Coetzee (2017) has suggested that the lack of private outdoor space in crowded housing makes public green spaces particularly important as outlets for stress relief and psychological escape. These studies, while limited in number and scope, suggest that the green space-mental health relationship is not merely a phenomenon of wealthy countries but may be generalisable across contexts.

The African literature also highlights factors that may moderate the green space-mental health relationship in ways that differ from the Global North. According to Shackleton and Blair (2013), the economic function of green spaces, for example, may complicate their psychological effects. A space that provides food through urban agriculture may reduce stress related to food insecurity even if it does not provide the aesthetic and recreational benefits associated with parks in the Western context. Conversely, conflicts over access to green spaces for economic purposes may create stress even as the spaces themselves provide resources. These complexities suggest the need for context-specific research that takes seriously the multiple meanings and uses of green space in African cities.

The literature on mental health in Zimbabwe provides crucial context for the present study. According to Kidia (2018), Zimbabwe has experienced profound economic and social upheaval over the past two decades, with consequences for population mental health that have been

documented by a small but important body of research. The economic crisis that began in the late 1990s and intensified dramatically after 2000 has been associated with rising rates of depression, anxiety, and substance abuse. Langhaug, Pascoe, Mavhu, Woelk, and Cowan (2010) documented the psychological toll of hyperinflation, unemployment, food insecurity, and the breakdown of social services. High-density suburbs such as Mbare have borne the brunt of these stresses. According to Butcher (2019), research by Zimbabwean psychologists and social workers has documented the multiple stressors facing residents: overcrowded housing, inadequate sanitation, food insecurity, exposure to violence, and the constant struggle for survival in an economy that provides few opportunities for stable employment. The concept of "social depression" has been invoked to describe the collective psychological state of communities facing prolonged adversity, a state characterised by hopelessness, withdrawal, and the erosion of social bonds (Mawere, 2015).

The specific contribution of the physical environment to this psychological burden has received less attention. According to Chirisa and Bandauko (2015), while the literature acknowledges that Mbare's residents live in conditions of extreme density and environmental degradation, the psychological consequences of this environment have not been systematically investigated. The loss of green spaces, in particular, has been treated as an urban planning or environmental issue rather than as a mental health issue. This gap in the literature is precisely what the present study seeks to address.

Anecdotal evidence and the observations of local practitioners suggest that the absence of accessible, safe green spaces in Mbare may be contributing to the mental health burden in ways that have been overlooked. According to Hartig et al. (2014), the concept of "decompression" space is relevant here: in environments of extreme density and constant social contact, individuals need spaces where they can escape, even temporarily, from the demands of social interaction and the pressures of overcrowding. Green spaces can serve this function, providing opportunities for solitude, reflection, and psychological distance. When such spaces are absent, residents may have no outlet for the cumulative stress of daily life, leading to increased irritability, conflict, and psychological distress (Kaplan & Kaplan, 1989).

The conversion of potential green spaces to other uses may have unintended psychological consequences. According to Tawodzera (2011), the transformation of recreational grounds into maize fields, for example, may provide food but also removes space for play, relaxation, and social

gathering. Children who might have played football on open ground are now constrained to even smaller spaces, increasing the density of their environment and reducing opportunities for the kind of free play that supports healthy development. Adults who might have gathered in the evening to relax and socialise now find those spaces occupied by crops or claimed by vendors, reducing opportunities for the casual social contact that builds community and buffers stress.

2.6 The Role of Urban Green Spaces in Community Engagement and Social Cohesion

The relationship between public spaces and community life has been a central concern of urban sociology since the discipline's origins. According to Tonkiss (2013), early urban theorists such as Georg Simmel and the Chicago School sociologists were concerned with the effects of urban density and anonymity on social relationships, arguing that the city transformed the nature of human connection in fundamental ways. Jane Jacobs, in her influential 1961 work "The Death and Life of Great American Cities," made the case for the importance of public spaces, particularly streets and parks, in creating the conditions for vibrant, safe, and cohesive urban communities (Jacobs, 1961).

Jacobs (1961) argued that the casual, repeated encounters that occur in well-used public spaces create what she termed "public character" a web of informal relationships and mutual recognition that underpins community safety and cohesion. When people see the same faces regularly, when children play in spaces overlooked by residents, when shopkeepers know their customers and neighbours watch out for one another, a kind of informal social control emerges that is more effective than formal policing. According to Sampson et al. (1997), Jacobs's observations have been supported by subsequent research demonstrating that the physical design of neighbourhoods influences social interaction, trust, and collective efficacy.

The concept of "third places," developed by Ray Oldenburg (1989), provides a more specific framework for understanding how spaces distinct from home and work contribute to community life. Oldenburg (1989) argues that third places cafés, bars, barbershops, parks, community centres are essential for the health of civil society because they provide neutral ground where people can gather, interact across social boundaries, and build the weak ties that hold communities together. Oldenburg and Brissett (1982) characterise third places by their accessibility, their welcoming atmosphere, and their role as settings for conversation and sociability. When third places are absent

or degraded, Oldenburg (1989) argues, community life suffers and individuals become isolated in their private spheres.

2.6.1 Empirical Evidence on Green Spaces and Social Cohesion

Empirical research on the relationship between green spaces and social cohesion has generally supported the theoretical claims outlined above. According to Maas, van Dillen, Verheij, and Groenewegen (2009), studies in multiple countries have found that residents of greener neighbourhoods report higher levels of social contact, stronger neighbourhood ties, and greater sense of community than residents of less green areas. Research in the Netherlands, for example, has shown that the amount of green space in the residential environment is positively associated with social cohesion, even after controlling for socioeconomic characteristics of residents and neighbourhoods (Groenewegen et al., 2006).

The mechanisms through which green spaces promote social cohesion have been investigated in several studies. According to Kuo et al. (1998), first, green spaces provide settings for encounter, increasing the likelihood that neighbours will meet and interact. Second, they provide settings for shared activities, whether organised (such as community gardening or sports) or informal (such as children's play that brings parents together). Third, they may enhance the aesthetic quality of the neighbourhood, increasing residents' pride in their community and willingness to invest in social relationships. Fourth, they may provide settings for intergenerational and intercultural contact that might not occur in other contexts (Peters, Elands, & Buijs, 2010).

Research by Kuo and colleagues in Chicago public housing developments provided particularly compelling evidence for the social effects of green space. According to Kuo and Sullivan (2001), in a series of studies, they found that residents of buildings with trees and grass outside reported stronger social ties, greater use of common spaces, and lower levels of aggression and violence than residents of buildings without vegetation. Kuo et al. (1998) found that the studies suggested that green spaces encouraged residents to spend time outside, which in turn created opportunities for social contact and the development of relationships. The findings were particularly striking because the buildings were otherwise identical in design and population, isolating the effect of vegetation. Kuo (2003) later synthesised this body of work, demonstrating the consistent pattern of findings across multiple studies.

However, as with the mental health literature, research on green spaces and social cohesion has identified important qualifications and boundary conditions. According to Peters et al. (2010), not all green spaces promote social cohesion; those that are poorly maintained, unsafe, or dominated by particular groups may actually undermine cohesion by creating conflict or exclusion. Seeland, Dübendorfer, and Hansmann (2009) found that research has shown that green spaces can become sites of intergroup tension when they are perceived as belonging to one group rather than another, or when activities favoured by one group conflict with those favoured by others. The design and management of green spaces matters for their social effects, not merely their presence.

2.6.2 Community Life and Public Space in Mbare

The literature on community life in Mbare presents a complex picture of both cohesion and fragmentation. According to Butcher (2019), historically, Mbare was known for its strong sense of community identity and the vibrant social life that centred on its public spaces. The suburb was more than a dormitory for workers; it was a community with its own institutions, its own social networks, and its own forms of mutual support. The famous "Mbare style" of music, the football clubs that drew support from across the suburb, the markets that brought people together for commerce and socialising all of these reflected and reinforced a distinctive community identity.

The Stodart Hall grounds, in particular, played a central role in Mbare's community life. According to Butcher (2019), built in the colonial period as a recreational facility for African residents, Stodart Hall hosted dances, concerts, meetings, and celebrations that drew residents together across the lines of ethnicity, language, and origin that might otherwise have divided them. The surrounding grounds provided space for football, for children's play, for family outings, and for the casual socialising that built community bonds. For generations of Mbare residents, Stodart Hall was the heart of the community. The deterioration of these spaces in recent decades has been accompanied by changes in community life that the literature suggests may be related. According to Kamete (2013), researchers have documented the erosion of social cohesion in Mbare, the weakening of informal social control, and the retreat of residents into private spaces. The concept of "collective efficacy" the willingness of community members to intervene for the common good appears to have declined, as residents have become less familiar with their neighbours and less confident that others will act when problems arise (Sampson et al., 1997).

Several factors beyond green space degradation have contributed to these changes. According to Jones (2018), the economic crisis has forced residents to devote more time and energy to survival, leaving less for community engagement. Political polarisation, particularly in the turbulent 2000s, has divided communities and undermined trust. The HIV/AIDS epidemic, at its peak, removed a generation of community leaders and left many households focused on caregiving rather than community participation. Nevertheless, the loss of public spaces where community could be enacted and reinforced may have played an important role in the broader erosion of social cohesion.

The current uses of Mbare's remaining open spaces raise complex questions about their social functions. According to Tawodzera (2011), the conversion of spaces to urban agriculture provides food but may not support social cohesion in the same way as recreational spaces. Agricultural plots are typically used by individuals or families, not by groups, and during the growing season they are not available for the kinds of group activities that build community. The informal markets that have expanded into open spaces bring people together for economic transactions, but these are often characterised by competition rather than cooperation, and they may exclude those who are not participating in commerce. The spaces that remain as open ground are often those that are least desirable for other uses too rocky, too steep, too prone to flooding and these may not attract the kind of use that builds community.

The safety concerns associated with Mbare's open spaces further complicate their social role. According to Butcher (2019), spaces that are perceived as dangerous are avoided by precisely those residents women, children, the elderly whose presence and use would make them safer. The "eyes on the street" that Jane Jacobs (1961) identified as crucial for public safety are absent when spaces are empty, and the emptiness itself becomes a signal of danger. This creates a vicious cycle: spaces become unsafe because they are unused, and they are unused because they are unsafe. Breaking this cycle requires interventions that address both the physical condition of spaces and the perceptions of potential users.

2.7 Urban Planning and Policy Frameworks for Green Space Provision and Revitalisation

2.7.1 International Policy Frameworks and Best Practices

The international policy landscape for urban green spaces has evolved considerably over recent decades, reflecting growing recognition of their importance for public health, environmental sustainability, and quality of life. According to the United Nations (2015), the Sustainable Development Goals (SDGs), adopted by the United Nations in 2015, include specific targets relevant to green space provision. SDG Target 11.7 calls for providing "universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities" by 2030. This target recognises that green spaces are not merely amenities but essential infrastructure for inclusive, sustainable cities (UN-Habitat, 2016).

The World Health Organization has been particularly active in developing guidance on green space provision. According to WHO (2017), the WHO's 2016 report on "Urban Green Spaces and Health" synthesised the evidence on health benefits and provided recommendations for policy and practice. The report emphasised that green spaces should be accessible within a reasonable walking distance (typically 300 metres), should be of sufficient size to accommodate a range of activities, and should be designed to be safe and welcoming for all population groups. The WHO has also highlighted the importance of green space quality, noting that poorly maintained spaces may not provide health benefits and may even be detrimental (WHO, 2016).

Cities around the world have developed innovative approaches to green space provision that offer potential lessons for Mbare. According to Nordh and Østby (2013), the concept of "pocket parks" small green spaces inserted into dense urban fabric has been successfully implemented in cities such as New York, London, and Tokyo. These spaces, often created on vacant lots or underutilised sites, provide accessible green space in areas where large parks are not feasible. The pocket park approach recognises that in dense urban environments, many small spaces may be more effective than a few large ones, particularly if they are distributed throughout the residential fabric (Peschardt, Schipperijn, & Stigsdotter, 2012).

The "green corridor" approach, exemplified by cities such as Medellín, Colombia, and Singapore, seeks to connect green spaces into networks that facilitate movement, support biodiversity, and extend the benefits of nature throughout the urban area. According to Cárdenas, Ordoñez, and Fergusson (2019), Medellín's green corridors project, implemented in response to the city's heat island effect and air quality problems, has created a network of vegetation-lined streets and connected parks that has reduced temperatures, improved air quality, and enhanced the quality of

public space throughout the city. The project demonstrates that green space interventions can address multiple urban challenges simultaneously when integrated into a comprehensive strategy.

Community engagement in green space design and management has emerged as a key principle in international best practice. According to Francis et al. (2012), research has consistently shown that green spaces are more likely to be used, valued, and maintained when local communities are involved in decisions about their design and ongoing management. Participatory approaches, such as community design workshops, volunteer stewardship programmes, and community gardening initiatives, can build local ownership and ensure that spaces meet the needs of diverse users. The "Ladder of Citizen Participation," originally developed by Arnstein (1969), remains a useful framework for thinking about the depth and authenticity of community involvement in green space governance.

2.7.2 African Urban Policy and the Implementation Gap

The African policy context for urban green spaces is characterised by what scholars have termed the "implementation gap" the disconnect between policy aspirations and on-the-ground reality. According to Mensah (2014), many African cities have planning documents that include provisions for green space preservation and development, but these provisions are routinely violated or ignored in practice. The reasons for this gap are multiple and interconnected: limited institutional capacity, inadequate funding, corruption, competing priorities, and the sheer pressure of rapid urbanisation. Watson (2009) argues that the implementation gap reflects deeper problems with the transfer of Western planning models to African contexts.

The African Urban Agenda, developed by UN-Habitat and African regional organisations, provides a framework for sustainable urban development that includes attention to public spaces. According to UN-Habitat (2014), the Agenda recognises that the rapid growth of African cities creates both challenges and opportunities for green space provision, and calls for proactive planning to ensure that growing cities remain liveable. However, the translation of this Agenda into national and local policy has been uneven, and implementation has lagged far behind rhetoric (Parnell & Pieterse, 2014).

Research by Cobbinah, Erdiaw-Kwasie, and Amoateng (2015) in Ghana has documented the political economy of green space loss in African cities. Their work shows that green spaces are

often viewed by developers and even some government officials as "wasted" land that could be put to more productive use. The short-term financial gains from converting green space to housing or commercial development often outweigh, in the calculations of decision-makers, the long-term public benefits of preservation. This is particularly true in contexts where public budgets are tight and where the benefits of green space are diffuse and difficult to quantify.

The role of customary land tenure systems in green space governance adds another layer of complexity in many African cities. According to Ubink (2008), in contexts where land is held under customary tenure, or where customary and statutory systems overlap, decisions about green space use may involve multiple actors with different interests and different sources of legitimacy. Research in cities such as Kumasi, Ghana, and Dar es Salaam, Tanzania, has shown that unclear tenure arrangements can create opportunities for encroachment on green spaces, as neither customary authorities nor formal institutions have clear jurisdiction or enforcement capacity (Kombe, 2005).

2.7.3 The Zimbabwean Planning Framework and Its Limitations

The legal and policy framework for urban planning in Zimbabwe remains substantially shaped by colonial-era legislation. According to Kamete (2013), the Regional, Town and Country Planning Act of 1976, which still provides the primary legal basis for planning in Zimbabwean cities, was designed for a very different urban context than exists today. The Act's provisions for green space preservation, while adequate on paper, have proven insufficient to prevent the degradation and loss documented in cities like Harare. Chirisa and Bandauko (2015) argue that the Act's rigid approach to land use zoning is ill-suited to the dynamic, informal realities of contemporary Zimbabwean urbanism.

The Act requires that local authorities prepare master plans that designate land uses, including open space, and that development conform to these plans. According to Kamete (2013), in principle, this provides a mechanism for protecting green spaces from inappropriate development. In practice, however, the enforcement of planning regulations has weakened dramatically over recent decades. Local authorities lack the resources for effective enforcement, and political interference has sometimes overridden planning decisions. The result has been a pattern of

incremental encroachment on designated open spaces, with each small violation creating a precedent for further incursions.

The governance of Harare's green spaces is complicated by the multiple institutions with responsibility for different types of spaces. According to Musandu-Nyamayaro (2013), the City of Harare's Department of Parks and Amenities has primary responsibility for public parks, but spaces along rivers and streams fall under the jurisdiction of the Zimbabwe National Water Authority, while spaces associated with public housing are managed by the Department of Housing and Community Services. This institutional fragmentation makes coordinated management difficult and creates opportunities for spaces to fall through the cracks of responsibility.

The fiscal crisis of local government has been particularly damaging for green space maintenance. According to Muchadenyika (2015), the City of Harare's budget for parks and recreation has been severely constrained, with most available funds directed to what are perceived as more urgent priorities such as water supply and sanitation. Maintenance of parks has been reduced to minimal levels, with grass cutting, tree care, and infrastructure repair often neglected for years at a time. The visible deterioration of parks reinforces the perception that they are not valued, which in turn encourages further neglect and encroachment.

Recent policy initiatives offer some grounds for hope. According to the Government of Zimbabwe (2021), the Zimbabwe National Human Settlements Policy (2020) provides a comprehensive framework for sustainable human settlements, with attention to green space provision. The policy addresses crucial aspects such as spatial planning, urban densification, and environmental sustainability, with a strong emphasis on inclusivity and alignment with global frameworks including the SDGs. The City of Harare's 2019 "Harare Outlook" strategy included commitments to green space rehabilitation and the development of a "Green City" action plan. Civil society organisations, including the Harare Residents Trust and various environmental NGOs, have advocated for greater attention to green spaces and have initiated pilot projects demonstrating what can be achieved with community engagement. However, these initiatives remain limited in scale and have not yet been translated into sustained, adequately resourced programmes.

2.8 The Nexus Between Urban Agriculture and Green Space Utility

The relationship between urban agriculture and green space is complex and contested in the global literature. According to Lovell (2010), in cities of the Global North, community gardens and urban farms are generally viewed as positive additions to the urban landscape, providing opportunities for recreation, social interaction, and local food production. Cities such as Berlin, Detroit, and Vancouver have actively promoted community gardening as a form of green space that combines the benefits of nature contact with the productive use of land. Hou, Johnson, and Lawson (2009) document the diverse forms that urban agriculture takes in North American cities and the multiple benefits it provides.

The literature from these contexts emphasises the multiple benefits of urban agriculture. According to Wakefield, Yeudall, Taron, Reynolds, and Skinner (2007), community gardens have been shown to provide mental health benefits through "therapeutic horticulture" the psychological benefits of working with plants and soil. They provide settings for social interaction across generations and cultural groups, building the bridging social capital that Putnam describes. They can improve food security for participants, particularly in low-income neighbourhoods where access to fresh produce may be limited. And they contribute to urban biodiversity and environmental sustainability when managed with ecological principles (Goddard, Dougill, & Benton, 2010).

However, even in the Global North, tensions can arise between different uses of green space. According to Lovell (2010), the designation of space for community gardening means that space is not available for other uses, such as passive recreation, children's play, or organised sports. Conflicts can arise when gardeners and other users have different expectations about how space should be used and managed. Research has shown that successful integration of urban agriculture into green space systems requires careful planning, clear rules, and mechanisms for resolving conflicts among users.

In the African context, urban agriculture takes on a different character and significance. According to Crush, Hovorka, and Tevera (2011), for the urban poor in African cities, agriculture is often not a hobby or a form of recreation but a crucial livelihood strategy that provides food for household consumption and, in some cases, income from sale of surplus. Research across the continent has documented the scale and importance of urban agriculture, with studies showing that a substantial proportion of urban households engage in some form of food production. Zezza and Tasciotti

(2010) found that urban agriculture makes a significant contribution to household food security in many developing countries.

The drivers of urban agriculture in African cities are multiple. According to Crush et al. (2011), economic liberalisation and structural adjustment programmes of the 1980s and 1990s reduced formal employment and increased food prices, pushing households toward self-provisioning. Rapid urbanisation has brought large numbers of people with agricultural backgrounds into cities, bringing their knowledge and skills with them. Climate variability and the rising cost of food imports have made urban food production increasingly important for food security at both household and city levels.

In Zimbabwe, urban agriculture expanded dramatically during the economic crisis of the 2000s. According to Crush et al. (2011), research has documented the scale of this expansion and its importance for household survival. In Harare, cultivation of vacant land, road verges, and any available open space became widespread as households sought to supplement inadequate incomes and cope with food price inflation. Tawodzera (2011) found that for many households, urban agriculture made the difference between bare survival and moderate food security.

2.8.3 Reconciling Agriculture and Recreation in Mbare

The challenge for Mbare, and for similar high-density areas, is to find ways of reconciling the legitimate need for urban agriculture with the equally legitimate need for recreational and social space. According to Lovell (2010), the literature provides some guidance on potential approaches, though none is a complete solution. One approach is to designate specific areas for agriculture while protecting others for recreation. According to Tawodzera (2011), this requires a planning process that assesses the demand for both uses and allocates space accordingly. In Mbare, this would mean identifying which open spaces are most suitable for agriculture and which are most needed for recreation, then managing them accordingly. The challenge is that such planning requires both institutional capacity to make and enforce decisions and community acceptance of the resulting allocations.

Another approach is to integrate agriculture into green space design in ways that preserve some recreational functions. According to Hou et al. (2009), community gardens can be designed with paths, seating areas, and spaces for gathering that allow them to serve multiple purposes. The

aesthetic quality of agricultural spaces can be enhanced through thoughtful design, making them attractive places to be even when they are not directly used for recreation. The involvement of gardeners in managing the space for multiple uses can build the social capital that supports broader community cohesion.

A third approach is to recognise seasonality in the use of spaces. According to Tawodzera (2011), in Mbare, the most intense agricultural use occurs during the rainy season, when crops are growing. During the dry season, the same spaces might be available for other uses. Managing spaces for seasonal multi-use requires coordination and agreement among users but could allow for both food production and recreation to occur in the same spaces at different times. For the present study, understanding how Mbare residents navigate these trade-offs how they decide what spaces to use for what purposes, how they negotiate conflicts between different uses, and what kinds of spaces they most value is essential for developing realistic policy recommendations. The literature suggests that there are no simple solutions, but that community engagement in decision-making is crucial for finding locally appropriate approaches.

2.9 Gender, Safety, and the Fear of Crime in Public Spaces

2.9.1 Gendered Experiences of Public Space

The literature on gender and public space reveals systematic differences in how men and women experience, use, and are affected by urban environments. According to Valentine (1989), feminist geographers have documented that public spaces are not neutral but are gendered in their design, their meanings, and their patterns of use. Women's experiences of public space are shaped by concerns about safety, by the demands of care work that often accompany them, and by social norms that may restrict their presence in certain spaces or at certain times. Koskela (1999) argues that fear of violence is a fundamental constraint on women's mobility and use of public space. Research has consistently shown that women are more likely than men to report fear of crime in public spaces, and that this fear constrains their use of parks, streets, and other public areas. According to Pain (2001), the fear is not irrational; women are at greater risk of certain types of violence, particularly sexual violence, and this risk shapes their behaviour. However, the fear is often disproportionate to the actual risk, reflecting the broader social context of gender inequality and the messages women receive about their vulnerability (Stanko, 1995).

The design and maintenance of public spaces can either mitigate or exacerbate women's fears. According to Wekerle and Whitzman (1995), research on Crime Prevention Through Environmental Design (CPTED) has identified design features that can reduce fear and increase safety: good lighting, clear sightlines, the presence of other people, and evidence of care and maintenance. Spaces that are neglected, overgrown, or isolated send signals of danger and are likely to be avoided by women. The "refuge-prospect" theory, which suggests that humans prefer environments where they can see without being seen, implies that spaces with dense vegetation that provides hiding places are particularly likely to evoke fear (Appleton, 1975).

In the context of Mbare, these gender dynamics are likely to be pronounced. According to Butcher (2019), the combination of dense vegetation in some areas (particularly along the Mukuvisi River), poor lighting, and the presence of groups of young men who may be perceived as threatening creates conditions that many women will avoid. The literature suggests that for a woman in Mbare, walking through a secluded green area might trigger stress and hyper-vigilance rather than relaxation, undermining any potential mental health benefits.

2.9.2 Safety, Crime, and the Stigmatisation of Public Space

The relationship between green spaces and crime is complex and has been extensively studied. According to Kuo and Sullivan (2001), early research suggested that vegetation might increase crime by providing cover for criminals and reducing visibility, but more recent studies have found that well-maintained green spaces can actually reduce crime by attracting legitimate users whose presence deters criminal activity. The key factor appears to be maintenance: neglected spaces attract crime, while cared-for spaces deter it. Kuo (2003) found that greener areas around public housing developments in Chicago were associated with fewer reported crimes. In many African cities, public parks have become stigmatised as dangerous places associated with criminal activity. According to Sprague et al. (2017), research in Nairobi and Johannesburg has documented how neglected parks become hubs for drug dealing, mugging, and other crimes, leading "respectable" citizens to avoid them. The stigmatisation of these spaces is often reinforced by media coverage that highlights crimes occurring in parks while ignoring the many positive uses that could occur if the spaces were safe (Lemanski, 2004).

The stigmatisation extends beyond actual crime to the perception of certain groups as dangerous. According to Jones (2018), young men, particularly those who are unemployed and spend time in public spaces, are often viewed with suspicion and may be labelled as "idlers" or "thugs." This labelling can become self-fulfilling, as young men who are excluded from legitimate economic opportunities may turn to illegal activities, and as their presence in public spaces becomes a justification for further exclusion.

In Mbare, the association between open spaces and criminal activity is well-established in the local discourse. According to Butcher (2019), the open grounds are known as places where drug use occurs, where stolen goods are traded, and where gangs operate. Whether these perceptions reflect the actual distribution of crime or are influenced by stigma and prejudice is an empirical question that the present study may help to answer. What is clear from the literature is that these perceptions shape behaviour, leading many residents to avoid spaces that could otherwise serve positive functions.

2.9.3 Implications for Access and Use in Mbare

The literature on gender and safety has profound implications for understanding access to green spaces in Mbare. According to Valentine (1989), "access" cannot be measured simply by distance or even by physical presence; it must be understood in terms of who feels able to use a space, under what conditions, and for what purposes. A space that is theoretically available to all may in practice be accessible only to certain groups at certain times. For women in Mbare, access to green spaces is likely constrained by safety concerns that vary by time of day, by the presence or absence of other users, and by the physical characteristics of the space. According to Pain (2001), a well-maintained park that is open and visible may be used by women during daylight hours, while a neglected space with dense vegetation may be avoided entirely. The same woman may feel comfortable using a space when others are present but unsafe when it is empty. These patterns of use and avoidance have implications not only for individual well-being but for the social functioning of the community as a whole.

For children, access to green spaces is mediated by parents' perceptions of safety. According to Valentine and McKendrck (1997), if parents believe that parks are dangerous, they will keep their children away, depriving them of opportunities for play and outdoor activity that are essential for

healthy development. The loss of safe play spaces may contribute to the phenomenon of "containerised" childhoods, in which children are confined to indoor spaces for fear of what might happen outside. For the elderly, access to green spaces may be constrained by both safety concerns and physical accessibility. According to Sugiyama and Ward Thompson (2007), benches, paths, and other amenities that support use by older adults are largely absent from Mbare's remaining open spaces. The combination of physical barriers and safety concerns may effectively exclude elderly residents from the potential benefits of green space contact.

The literature thus suggests that improving access to green spaces in Mbare requires not only physical interventions clearing vegetation, improving lighting, providing amenities—but also social interventions that address the perceptions and realities of safety. According to Kuo (2003), community-based approaches that involve residents in monitoring and managing spaces may be more effective than purely physical improvements, as they build the social fabric that underpins lasting safety.

2.10 Summary of Knowledge Gaps and Contribution of the Present Study

The preceding review has examined a substantial body of literature spanning multiple disciplines and geographical contexts. This section synthesises the findings to identify the specific gaps that the present study is designed to fill, thereby demonstrating the original contribution that this research will make to knowledge.

2.10.1 Gaps in Literature

The global literature on urban green spaces, while extensive, exhibits certain limitations that are relevant to the present study. According to Hartig et al. (2014), the overwhelming majority of research has been conducted in cities of the Global North, particularly in Europe, North America, and high-income Asia. The theories, concepts, and measures developed in these contexts may not travel seamlessly to African cities, where the meanings of green space, the patterns of use, and the constraints on access are qualitatively different. There is a need for research that takes seriously the specificity of African urbanism and that develops contextually appropriate concepts and methods (Myers, 2011).

The African literature on urban green spaces, while growing, remains limited in both quantity and scope. According to Mensah (2014), much of the existing research has focused on the physical and

environmental dimensions of green space their loss to development, their role in urban ecosystems rather than on their social and psychological functions. Studies that explicitly examine the relationship between green space and mental health in African cities are extremely rare, despite the rapid urbanisation occurring across the continent and the growing burden of mental illness (Campbell & Burgess, 2012).

The Zimbabwean literature is even more limited. According to Chirisa and Bandauko (2015), while there is research on urban agriculture in Harare, on the informal economy in Mbare, and on the housing crisis in high-density suburbs, the specific question of how green spaces affect mental health and community engagement has not been systematically investigated. The few studies that touch on green spaces tend to treat them as environmental or planning issues rather than as public health or social issues, and they rarely engage with the lived experiences of residents.

2.11 Chapter Summary

This chapter has provided a comprehensive and critical review of the literature pertinent to the study of urban green spaces, mental health, and community engagement in high-density areas, with particular attention to the Mbare context. The theoretical framework section established the Biophilia Hypothesis as the overarching theory, explaining the fundamental human need for nature that makes green spaces matter for well-being. The review of empirical literature, organised by the study's four objectives, revealed stark contrasts between global standards for green space provision and the reality of degradation in Mbare.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a detailed and systematic account of the research methodology employed to investigate the impact of access to urban green spaces on mental health and community engagement in Mbare, Zimbabwe. The chapter is organised according to the structure recommended for methodological exposition, providing sufficient detail to enable an independent researcher to duplicate the research and to evaluate the appropriateness of the methods used. A well-documented methodology section serves as the blueprint for the entire research process, demonstrating the rigour and trustworthiness of the investigation. The chapter begins with an overview of the research design, followed by a comprehensive description of the materials and instruments used, a step-by-step account of the procedures followed, the methods of observation and interpretation employed, and finally, a detailed plan for data processing and analysis. This structure ensures that the methodology is presented in a logical, transparent, and replicable manner, addressing the requirement that an independent researcher should be able to duplicate the research based on the information provided.

3.2 Research Design

The research design adopted for this study is a case study design embedded within a mixed-methods approach. A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, particularly when the boundaries between phenomenon and context are not clearly evident. Mbare was selected as the specific case due to its status as one of Zimbabwe's oldest and most densely populated suburbs, presenting a unique critical case of urban decay, spatial contestation, and environmental deprivation. The case study design was chosen because it allows for a focused, intensive analysis of a specific bounded system rather than a broad, shallow survey of multiple sites. By isolating Mbare as the unit of analysis, the study enables the intricate mapping of causal links between the specific lack of green infrastructure in this area and the localized mental health and community engagement outcomes.

The research design incorporates both quantitative and qualitative components within the case study framework, following a convergent mixed-methods design. In this design, quantitative and

qualitative data are collected concurrently, analysed separately, and then merged during interpretation to provide a comprehensive understanding of the research problem. The quantitative component, employing a cross-sectional survey design, was used to measure the breadth of the issue, such as the frequency of green space usage and reported stress levels, while the qualitative component, employing a phenomenological approach, was used to provide depth, explaining why certain spaces alleviate stress or foster community. The convergence of these two data streams allows for triangulation, where statistical trends regarding mental health can be corroborated and elaborated by the rich, narrative descriptions of the residents, ultimately providing a holistic view of the Mbare urban landscape.

The case study design was justified on several grounds. First, case studies are particularly appropriate when the research seeks to answer "how" and "why" questions, as this study does in investigating how green spaces affect mental health and why these effects occur. Second, the complexity of the relationship between environment and well-being requires the kind of contextual depth that only a case study can provide. Third, Mbare represents a revelatory case, a situation previously inaccessible to scientific investigation, as no systematic study of green spaces and mental health has been conducted in this context. The mixed-methods approach was justified by the need to capture both the objective patterns of association through quantitative methods and the subjective meanings and experiences through qualitative methods that together constitute the full picture of the phenomenon under investigation.

3.2.1 Description of Study Area

Mbare is a strategically significant urban locale situated approximately 5 km south of Harare’s Central Business District, serving as Zimbabwe’s primary gateway for both inter-city commerce and regional migration. Established as the city's first high-density suburb, the area is defined by a complex spatial layout that integrates the nation's largest agricultural market and bus terminus, Mbare Musika, with intensive informal manufacturing zones like Magaba and high-density residential clusters such as the Matapi and Shawasha flats. From an International Political Economy perspective, the study area functions as a critical node in the informal economy, characterized by high population density, aging colonial-era infrastructure, and a vibrant network

of small-scale traders and artisans who underpin the city's socio-economic resilience despite significant logistical and infrastructural challenges.

FIGURE 1: SPATIAL EXTENT AND LOCALITY MAP OF MBARE, HARARE

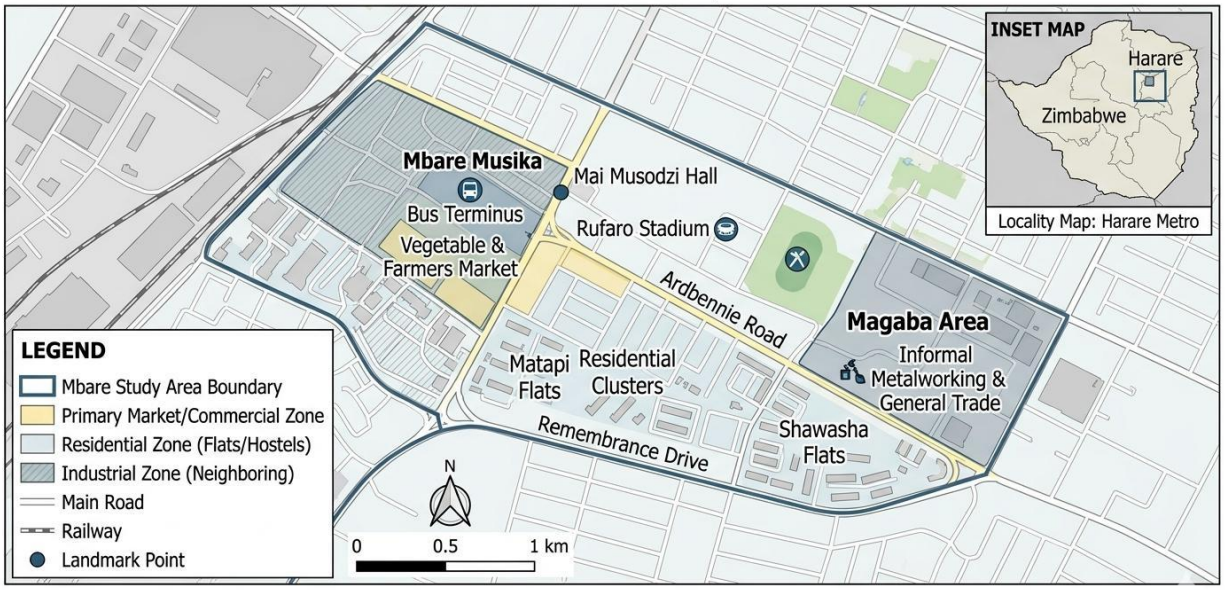

Figure 1: Map of the Study Area showing key landmarks, commercial hubs, and transport routes in Mbare, Harare. Base map data source: OpenStreetMap/GIS, modified for analysis.

Figure 3.1: Mbare Study Area

Source: Google Maps

3.3 Materials

This section provides a comprehensive description of the materials, instruments, and equipment used in the conduct of the research. The descriptions are provided with sufficient accuracy and detail to enable readers to obtain or develop similar materials for replication purposes.

A semi-structured questionnaire was developed as the primary instrument for collecting quantitative data. The questionnaire was designed to gather information on four main categories: demographic characteristics, access to and use of green spaces, mental health status, and community engagement. The questionnaire consisted of both closed-ended questions using Likert scales and multiple-choice formats and a limited number of open-ended questions to allow for

elaboration where necessary. The questionnaire was developed through a multi-stage process. First, existing validated instruments were reviewed, including the Perceived Stress Scale developed by Cohen, Kamarck, and Mermelstein, the World Health Organization Well-Being Index, and items from the European Social Survey measuring social capital and community engagement. These instruments were adapted for the Zimbabwean context, with careful attention to linguistic and cultural appropriateness. Second, the draft questionnaire was reviewed by research supervisors and colleagues with expertise in survey design. Third, the questionnaire was pilot-tested with a small sample of residents from a comparable high-density suburb to identify any ambiguities, culturally inappropriate items, or logistical problems in administration.

The final questionnaire comprised 42 items organised into five sections. Section A gathered demographic information including age, gender, length of residence in Mbare, employment status, education level, household composition, housing type, and approximate distance to the nearest green space. Section B measured access to and use of green spaces through items on frequency of visits, duration of visits, activities engaged in, reasons for visiting or not visiting, perceptions of safety, and satisfaction with available green spaces. Section C assessed mental health status using an adapted Perceived Stress Scale measuring stress levels over the past month, supplemented by items on general psychological well-being. Section D measured community engagement through items on frequency of social interactions with neighbours, participation in community activities, sense of belonging, and perceptions of neighbourhood cohesion. Section E provided open-ended reflections allowing respondents to elaborate on their experiences, suggestions for improvement, and any additional comments.

A semi-structured interview guide was developed to facilitate in-depth qualitative interviews with a subset of participants. The guide was designed to explore the lived experiences of Mbare residents in relation to their environment, probing the meanings they attach to green spaces, their experiences of stress and coping, and their perceptions of community life. Semi-structured interviews are particularly appropriate when researching sensitive topics and when the goal is to understand participants' perspectives in their own words. The interview guide was developed based on the research objectives and the theoretical frameworks underpinning the study. It comprised a set of open-ended questions organised thematically, with follow-up probes to encourage elaboration. The main themes covered included experiences of daily life in Mbare, including

challenges and sources of stress; memories and current use of green spaces, parks, and open areas; perceptions of how the environment affects personal well-being; observations about community life, social interactions, and changes over time; and visions for improved green spaces and community facilities. The guide was designed flexibly, allowing the interviewer to follow emergent lines of inquiry while ensuring that all key topics were covered.

An observation checklist was developed to systematically document the physical characteristics and usage patterns of green spaces in Mbare. The checklist was adapted from established tools such as the System for Observing Play and Recreation in Communities and the Neighbourhood Green Space Tool, modified for the Mbare context. The checklist captured information on the location and size of green spaces, physical condition and maintenance level, available amenities such as benches, paths, and play equipment, evidence of use including the presence of users, worn paths, and litter, safety features including lighting, visibility, and fencing, and competing uses such as agriculture, informal trading, and waste dumping.

The following equipment and materials were used in the conduct of the research. For data collection, printed questionnaires on A4 paper, printed interview guides and observation checklists, pens and clipboards for field administration, a digital audio recorder with backup batteries for recording interviews, a smartphone with camera for photographing green spaces and research activities with consent, a GPS device for recording coordinates of green spaces, and a notebook for field observations and reflexive journaling were used. For data processing and analysis, a laptop computer with Microsoft Office Suite, IBM SPSS Statistics version 27 for quantitative data analysis, NVivo 12 qualitative data analysis software, an external hard drive for data backup, and stationery for coding and categorisation during manual analysis phases were used. For participant communication and engagement, information sheets printed in both English and Shona explaining the research, consent forms printed in both English and Shona, and thank-you cards and small tokens of appreciation for participants were used.

3.4 Procedure

This section provides a step-by-step account of the procedures followed in conducting the research. The description is sufficiently complete to enable replication while avoiding unnecessary repetition of standard procedures. Each step is explained with sufficient detail, and where questions about the rationale for particular steps might arise, explanations are provided. Prior to

commencing data collection, ethical approval was sought and obtained from the relevant institutional review board. Following institutional approval, formal permissions were sought from the Harare City Council and the local councillor for Mbare Ward. These permissions were necessary to demonstrate that the research had official sanction and to facilitate access to the community. Recognising that Mbare is a community with complex social dynamics and where outsiders may be viewed with suspicion, a deliberate community entry strategy was implemented. Initial contact was made through the local councillor's office, which introduced the researcher to key community leaders, including the chairperson of the Mbare Residents' Association, leaders of informal trader organisations, and elders in the community. These leaders were briefed on the purpose of the research and their advice sought on culturally appropriate ways to engage with residents. This step was crucial for building trust and legitimacy.

Two field assistants were recruited from the local community to assist with data collection. The assistants were selected based on their familiarity with the area, their fluency in both English and Shona, and their ability to build rapport with residents. They received training on the purpose and objectives of the research, ethical principles including confidentiality and informed consent, administration of questionnaires, basic interview techniques, and safety protocols for fieldwork. The use of locally based field assistants served multiple purposes: it facilitated access to participants, reduced suspicion, and ensured that language and cultural nuances were appropriately handled.

All identified green spaces within the Mbare residential area were mapped and documented. Using the City of Harare master plan and local knowledge, a comprehensive list of potential green spaces was compiled. From this list, a purposive sample of spaces was selected for detailed observation, ensuring representation of different types of spaces including formal parks, sports fields, riverbanks, and informal open areas and different conditions including well-maintained, moderately maintained, and severely degraded. A total of 12 green spaces were selected for systematic observation.

Participants for the survey were recruited using a combination of purposive and snowball sampling techniques. Purposive sampling was used to ensure that the sample included individuals with diverse characteristics relevant to the research questions, including different age groups, genders, lengths of residence, and proximity to green spaces. Within each purposively identified category,

snowball sampling was used to recruit additional participants, as this technique is particularly effective in communities where trust is required for participation. The sampling process continued until the target sample size of 50 participants was achieved, with ongoing monitoring to ensure diversity across key demographic variables. From the survey participants, a subset of 15 individuals was purposively selected for in-depth interviews. Selection criteria included willingness to participate in a longer interview, diversity across demographic characteristics, variation in patterns of green space use, and potential to provide rich, information-rich data based on initial survey responses. This approach ensured that the qualitative component captured a range of perspectives and experiences.

Questionnaires were administered face-to-face to accommodate varying levels of literacy among participants and to ensure high response rates. The administration followed a standardised protocol. The researcher or field assistant introduced themselves and explained the purpose of the research. The information sheet was provided and read aloud if necessary. Participants were given the opportunity to ask questions about the research. Written informed consent was obtained from all participants prior to data collection. For participants with limited literacy, the information was read aloud, and consent was documented verbally with a witness present. The questionnaire was administered, with the researcher reading questions aloud and recording responses on the printed form. For participants who preferred to complete the questionnaire independently, this option was offered, though the researcher remained available to clarify any questions. Upon completion, participants were thanked and offered a small token of appreciation. Each questionnaire administration took approximately 30 to 45 minutes. Questionnaires were conducted in the language preferred by the participant, either English or Shona, with the Shona version developed through translation and back-translation to ensure accuracy.

Interviews were conducted at times and locations convenient for participants, with preference given to private settings where confidentiality could be maintained. The interview procedure followed these steps. The purpose of the research and the voluntary nature of participation were reaffirmed. Separate consent for audio recording was obtained; where recording was declined, detailed notes were taken. The semi-structured interview guide was used to explore key themes, with flexibility to follow emergent topics. Active listening and probing were employed to encourage elaboration and depth. Interviews ranged from 45 minutes to 90 minutes in duration. At

conclusion, participants were thanked and their contributions acknowledged. All interviews were conducted by the primary researcher, ensuring consistency in approach. Field notes were written immediately after each interview to capture initial impressions and contextual details.

Observations of green spaces were conducted at different times of day, including morning, afternoon, and evening, and on different days of the week, including weekdays and weekends, to capture variation in usage patterns. The observation procedure involved systematic walking of the site to assess physical characteristics using the observation checklist, recording of observations on the checklist supplemented by photographs where appropriate and with attention to privacy, brief periods of stationary observation of 15 to 20 minutes to document usage patterns and activities, and note-taking on any notable events, interactions, or features not captured by the checklist. Observations were conducted by the primary researcher, accompanied by a field assistant for safety and to provide local knowledge where needed.

At the end of each day of data collection, the following procedures were implemented. Questionnaires were checked for completeness and any missing responses noted. Audio recordings were transferred from the recorder to password-protected computer files. All data files were backed up to an external hard drive. Field notes were typed up while memories were fresh. Any identifying information was removed from data files, with pseudonyms assigned to participants. Audio recordings of interviews conducted in Shona were transcribed directly in Shona and then translated into English. Translation was performed by the researcher, who is fluent in both languages, with regular consultation with field assistants to ensure accuracy of nuanced expressions. A sample of translated transcripts was reviewed by an independent bilingual speaker to verify translation quality. Transcripts were anonymised, with all identifying information removed.

3.5 Methods of Observation and Interpretation

Quantitative data were observed through the administration of standardised questionnaires. Participants' responses to questionnaire items were recorded directly on the printed forms. For Likert-scale items, responses were treated as ordinal data, with higher scores indicating greater frequency of green space use, higher stress levels, or greater community engagement. Care was taken to ensure consistent administration across participants, with all questions read exactly as worded and clarification provided only when specifically requested.

Qualitative observations were conducted through multiple methods. During interviews, careful attention was paid not only to the content of participants' responses but also to non-verbal cues, emotional expressions, and the overall tenor of the conversation. Field observations of green spaces involved systematic attention to physical characteristics, usage patterns, and social interactions. Throughout the research process, reflexive observations were recorded in a research journal, documenting the researcher's own responses, assumptions, and evolving understanding of the context.

Quantitative data were interpreted using both descriptive and inferential statistical techniques. Descriptive statistics were used to summarise the characteristics of the sample and the distribution of key variables. For continuous variables such as age and years of residence, means and standard deviations were calculated. For categorical variables such as gender and employment status, frequencies and percentages were computed. For ordinal variables such as stress scores and frequency of green space use, medians and interquartile ranges were reported. Inferential statistics were used to test the research hypotheses. Pearson's correlation coefficient was used to examine the relationship between continuous variables, such as frequency of green space use and perceived stress scores, after confirming that assumptions of normality were met. Spearman's rank correlation coefficient was used for ordinal data or when normality assumptions were violated. Independent samples t-tests were used to compare mean stress scores between groups, such as frequent versus infrequent green space users. Chi-square tests of independence were used to examine associations between categorical variables, such as gender and frequency of park use. Multiple regression analysis was planned to examine the combined effects of multiple independent variables on mental health outcomes, controlling for potential confounders such as age, income, and social support. All statistical tests were two-tailed, with significance set at $p < 0.05$. Analyses were conducted using IBM SPSS Statistics version 27.

Qualitative data were interpreted through thematic analysis, following the six-phase approach described by Braun and Clarke. Familiarisation with the data involved reading and re-reading transcripts multiple times, with initial thoughts and observations recorded in memos. Generation of initial codes involved identifying segments of data relevant to the research questions and assigning codes that captured their essential meaning. Searching for themes involved grouping codes into potential themes, with attention to patterns, relationships, and overarching concepts.

Reviewing themes involved checking themes against the coded data and the entire dataset to ensure they accurately represented the material. Defining and naming themes involved clearly defining each theme, with its scope and content specified. Producing the report involved presenting themes in the findings chapter, illustrated with verbatim quotes from participants. Throughout the analysis, attention was paid to disconfirming evidence, instances that challenged emerging patterns, to ensure that interpretations were not overly selective. The analysis was conducted using NVivo 12 software, which facilitated the systematic organisation and retrieval of coded data.

Following separate analysis, quantitative and qualitative findings were integrated to provide a comprehensive understanding of the research questions. Integration occurred at the interpretive level, with qualitative findings used to elaborate, explain, and contextualise quantitative patterns. For example, where statistical analysis revealed a correlation between green space use and lower stress, qualitative data were examined to understand the mechanisms through which this effect occurred, whether through opportunities for relaxation, social contact, or escape from overcrowded conditions.

3.6 Data Processing and Analysis

Data sorting was conducted to organise the raw data into a manageable and analysable format. For quantitative data, each completed questionnaire was assigned a unique identification number to enable tracking and to maintain anonymity. Responses were entered into an Excel spreadsheet, with each row representing a participant and each column representing a variable. Variable names were clearly labelled, and a data dictionary was created documenting the coding scheme for each variable. Data were sorted by relevant categories such as gender, age group, and frequency of green space use to facilitate preliminary inspection and to identify any obvious patterns. For qualitative data, interview transcripts were saved as separate files, each labelled with the participant's pseudonym and interview date. Files were organised in a folder structure that distinguished between raw data, including original recordings and unedited transcripts, and processed data, including coded and analysed transcripts. Transcripts were sorted according to participant characteristics such as frequent versus infrequent green space users to facilitate comparative analysis.

Quality control was implemented at multiple stages of data processing to ensure the accuracy, completeness, and reliability of the data. During data entry, a random sample of 20 percent of

questionnaires was entered twice by two different individuals, and the entries were compared to identify and correct errors. For each quantitative variable, range checks were performed to identify values falling outside expected ranges, such as age greater than 100 or stress scores outside the possible range of 0 to 40. Out-of-range values were checked against the original questionnaire and corrected. The proportion of missing data for each variable was calculated, and where missing data exceeded 5 percent for a particular variable, the pattern of missingness was examined to determine whether it was random or systematic. During qualitative transcription, a sample of transcribed interviews amounting to 20 percent was checked against the original audio recordings by an independent reviewer to verify transcription accuracy. A sample of translated transcripts amounting to 20 percent was reviewed by a bilingual speaker not involved in the original translation to verify the accuracy and cultural appropriateness of the translation. All transcripts were checked to ensure that identifying information such as names and specific locations had been successfully removed or pseudonymised. During coding, a sample of transcripts amounting to 20 percent was independently coded by two researchers, the primary researcher and a research assistant. Coding was compared, and discrepancies were discussed and resolved. Cohen's kappa was calculated to assess the level of agreement, with a target of kappa greater than 0.70 indicating acceptable reliability. A codebook was developed documenting all codes used, their definitions, and examples of their application, ensuring consistency in coding over time and across transcripts. Throughout the coding process, memos were written documenting analytical decisions, emerging interpretations, and reflections on the coding process, serving as an audit trail for the analysis.

Data processing involved transforming raw data into formats suitable for analysis through categorisation and coding. For quantitative data, negatively worded items in scales, such as reverse-scored items on the Perceived Stress Scale, were reverse-coded so that higher scores consistently indicated higher levels of the construct being measured. Composite scores were computed for multi-item scales, including the Perceived Stress Scale, the WHO-5 Well-Being Index, and the Community Engagement Scale, by summing or averaging individual item scores. Internal consistency reliability was assessed using Cronbach's alpha, with alpha greater than 0.70 considered acceptable. Where appropriate, continuous variables were transformed into categorical variables for specific analyses, such as age grouped into categories and frequency of green space use grouped into frequent, occasional, and rare or never categories. A master data file was created

in SPSS format, containing all cleaned and processed quantitative data, serving as the primary data source for all statistical analyses. For qualitative data, an initial coding scheme was developed based on the research questions, theoretical frameworks, and preliminary reading of transcripts. This scheme included both deductive codes derived from theory and inductive codes emerging from the data. All transcripts were coded systematically using NVivo 12 software, with each segment of text relevant to the research questions assigned one or more codes. Codes were grouped into categories based on conceptual similarity. For example, codes related to stress from overcrowding, noise as a stressor, and lack of privacy were grouped under the category of environmental stressors. Categories were further organised into themes that captured broader patterns in the data, with themes reviewed and refined through an iterative process of moving between the data, the codes, and emerging conceptualisations. A qualitative data master file was created, documenting all codes, categories, themes, and their relationships, including illustrative quotes for each theme organised by participant characteristics.

For the analysis of research question one, concerning the current physical condition and accessibility of urban green spaces within the Mbare community, descriptive statistics were calculated for all variables related to green space characteristics and accessibility. Frequencies and percentages were computed for categorical variables such as the presence of amenities and types of uses observed. Means, medians, and ranges were computed for continuous variables such as distance to the nearest green space and size of green space. GIS mapping was used to create visual representations of the distribution of green spaces in relation to residential areas, highlighting areas of high and low accessibility. Observation data were summarised narratively, describing the physical condition, maintenance level, and usage patterns of each observed green space, with photographs selected to illustrate key findings regarding green space condition and use.

For the analysis of research question two, concerning the relationship between the frequency of use of green spaces and the reported mental well-being of Mbare residents, bivariate correlations were calculated between frequency of green space use measured as times per week and mental health outcomes including perceived stress scores and well-being scores. Pearson's r was used for normally distributed continuous variables, while Spearman's rho was used for ordinal variables or when normality assumptions were violated. Independent samples t-tests compared mean stress scores between groups defined by frequency of green space use, such as frequent users versus

infrequent or non-users. One-way ANOVA was used to compare stress scores across multiple categories of green space use, including daily, weekly, monthly, and rarely or never, with post-hoc tests using Tukey's HSD to identify specific group differences where the overall F-test was significant. Multiple regression analysis was conducted to examine the relationship between green space use and mental health while controlling for potential confounders such as age, gender, employment status, and household crowding. The model took the form where mental health was regressed on green space use, age, gender, employment, and crowding. Qualitative analysis of interview data explored participants' own accounts of how green spaces or their absence affected their mental state, providing explanatory depth for the statistical findings.

For the analysis of research question three, concerning how available green spaces influence the nature and frequency of social interactions and community bonding in Mbare, descriptive statistics summarised quantitative measures of community engagement, including frequency of neighbourly interactions, participation in community activities, and sense of belonging, and their variation by proximity to and use of green spaces. Chi-square tests examined associations between green space use and categorical indicators of community engagement, such as whether participants reported knowing most of their neighbours. Qualitative thematic analysis of interview data explored the social functions of green spaces, including spaces as settings for encounter and interaction, the role of green spaces in children's play and parenting networks, green spaces as venues for community events and gatherings, how the deterioration of spaces has affected social life, and differences in how various groups by gender, age, and occupation use spaces for social purposes. Observational data on social interactions in green spaces were analysed to identify patterns of use, who uses spaces together, and what kinds of social activities occur.

For the analysis of research question four, concerning what planning strategies can be implemented to reintegrate functional green spaces into the densely populated fabric of Mbare, synthesis of findings from all previous analyses was conducted to identify key issues that any revitalisation strategy must address, such as safety concerns, competing uses, and maintenance challenges. Analysis of participant suggestions from open-ended questionnaire items and interviews identified recurring recommendations and innovative ideas from residents themselves. Comparative analysis with documented successful interventions in similar contexts from the literature review identified transferable principles. Stakeholder analysis considered the interests, capacities, and constraints

of different actors who would need to be involved in implementation, including the Harare City Council, community organisations, the private sector, and donors. Recommendations were developed structured around physical interventions including design, infrastructure, and amenities; management and governance arrangements; community engagement and ownership; policy and regulatory changes; and phasing and prioritisation.

Following separate analyses, findings were integrated through a process of weaving, where quantitative and qualitative results were presented together thematically. For each key theme or research question, quantitative patterns were presented first, followed by qualitative elaboration that explained, illustrated, or contextualised those patterns. Where qualitative findings contradicted quantitative patterns, these discrepancies were examined and discussed as sources of insight into the complexity of the phenomenon.

3.7 Ethical Considerations

Throughout the research process, strict adherence to ethical principles was maintained to protect the rights, dignity, and well-being of all participants. Informed consent was obtained from all participants, who were provided with detailed information about the purpose of the research, the procedures involved, the voluntary nature of participation, and their right to withdraw at any time without consequence. Written informed consent was obtained from all participants prior to data collection, and for participants with limited literacy, the information was read aloud and consent was documented verbally with a witness present.

Confidentiality and anonymity were assured to all participants. Participants were assured that their responses would be treated confidentially and that no identifying information would be included in any reports or publications. Pseudonyms were used in all transcripts and in the reporting of findings. Data were stored in password-protected files accessible only to the research team.

Protection from harm was prioritised throughout the research process. Given the potentially sensitive nature of discussions about mental health, care was taken to conduct interviews in a supportive, non-judgmental manner. Participants who showed signs of distress were offered the option to pause or terminate the interview. Information about local mental health support resources was available should any participant have requested it, though this was not needed during the research.

Community engagement was conducted with respect for the community and its norms. Community leaders were consulted prior to data collection, and their advice on culturally appropriate ways of engaging with residents was followed. The research aimed to be of benefit to the community, not merely to extract data, and findings will be shared with community members in accessible formats.

Researcher safety was ensured through established protocols. Given the potential security risks in some areas of Mbare, fieldwork was conducted during daylight hours, with field assistants accompanying the researcher. A safety protocol was established, including regular check-ins with a contact person. Institutional approval was obtained from the relevant institutional review board prior to commencing data collection. Permission was also obtained from the Harare City Council and local community authorities.

3.8 Chapter Summary

This chapter has provided a comprehensive and detailed account of the research methodology employed in this study. Following the structure recommended for methodological exposition, the chapter presented the research design as a case study embedded within a convergent mixed-methods approach, justified by the need to capture both the breadth and depth of the phenomenon under investigation. The materials used in the research, including questionnaires, interview guides, observation checklists, and equipment, were described with sufficient accuracy to enable replication. The procedures were detailed step by step, from pre-fieldwork preparations through to post-fieldwork data management, providing a clear roadmap of how the research was conducted. Methods of observation and interpretation were explained, including the statistical techniques employed for quantitative analysis and the thematic approach used for qualitative analysis. A comprehensive data processing and analysis plan was presented, addressing data sorting, quality control, processing, and analysis for each research question. Finally, ethical considerations were outlined, demonstrating the commitment to conducting research that respects and protects the rights and well-being of all participants. The methodology described in this chapter provides the foundation for the systematic, rigorous investigation of the impact of urban green spaces on mental health and community engagement in Mbare, ensuring that the findings presented in subsequent chapters are credible, trustworthy, and capable of informing evidence-based policy and practice.

CHAPTER FOUR

FINDINGS

4.1 Introduction

This chapter presents the empirical findings derived from the fieldwork conducted in Mbare, Harare. The data were collected using a mixed-methods approach, comprising a structured survey of 50 adult residents, in-depth semi-structured interviews with 15 participants, and systematic observation of green spaces within the study area. The chapter is organised thematically according to the research objectives, with descriptive statistics first presented to characterise the sample, followed by integrated quantitative and qualitative findings for each objective. Throughout the presentation, participant voices are represented through verbatim extracts, coded as P1 through P15 for interview participants, and survey respondents are identified by respondent number. The analysis incorporates comparison with the theoretical frameworks and empirical literature reviewed in Chapter Two, providing interpretation that situates the findings within the broader scholarly discourse on urban green spaces and well-being.

4.2 The Physical Condition and Accessibility of Green Spaces in Mbare

This section addresses the first research objective: to audit the current state, accessibility, and quality of existing urban green spaces in Mbare. Participants were asked about their perceptions of available green spaces, including their location, condition, safety, and ease of access. The findings reveal a stark picture of environmental neglect, with residents reporting that Mbare's green spaces are largely inaccessible, poorly maintained, and in many cases, have disappeared entirely.

When asked about the availability of green spaces in their immediate environment, the majority of survey respondents (68.0 percent) reported that there were no functional green spaces within walking distance of their homes. A further 20.0 percent indicated that while spaces existed, they were in such poor condition that they could not be used for recreation or relaxation. Only 12.0 percent of respondents reported having access to a green space that they considered usable. This

pattern was echoed across the qualitative interviews, where participants consistently described the degradation of spaces that once served as community assets.

Participant P1, a 52-year-old resident who has lived in Mbare for over thirty years, described the transformation she had witnessed:

> *"When I first came to Mbare as a young bride, there was Stodart Hall grounds. That was our place. We would go there on Sundays, the children would play football, we would sit and talk, watch the matches. The grass was cut, there were benches, there was life there. Now? You cannot go there. The grass is up to here [gesturing to waist height]. People dump rubbish there. You hear stories of people being robbed. It is not a place for a decent person anymore." (P1, female, 52 years)*

This narrative illustrates the process of decline that has transformed a once-vibrant community asset into a space of neglect and perceived danger. The loss is not merely physical but represents the erosion of a space that held significant social and psychological value. P1's reference to "a place for a decent person" also points to the way that degraded spaces become stigmatised, associated with undesirable activities and populations, further reducing their accessibility for law-abiding residents.

The issue of safety emerged as a dominant theme across interviews, with participants describing how fear of crime has rendered even physically accessible spaces psychologically inaccessible. Participant P4, a 28-year-old mother of two, explained:

> *"There is an open space near my house, but I cannot take my children there. There are men who sit there drinking and smoking. They make loud noises. I have heard that people have been robbed there. Even during the day, I would not go there alone. My children stay inside or play right outside our door where I can see them. I would like a place where they could run and play safely, but there is none." (P4, female, 28 years)*

This account resonates with the findings of research on safety and public space in African cities, which has documented how neglected spaces become associated with criminal activity and are avoided by those who might otherwise use them (Lemanski, 2004). The consequence for P4's

children is a constricted childhood, confined to the immediate vicinity of their home, with limited opportunities for the kind of free play that supports healthy development. This finding also aligns with Valentine and McKendrck's (1997) observations about how parental fear constrains children's outdoor play.

The question of accessibility extended beyond physical proximity to encompass the quality of the walking environment. Participants described how the routes to what green spaces remained were often unsafe or unpleasant, particularly for women and older adults. Participant P7, a 63-year-old grandmother, stated:

> *"There is a place near the river where there are some trees. But to get there, you must walk where there are no proper paths, through areas where people have dumped rubbish. The smell is bad, and you never know who might be hiding in the bushes. I used to go there sometimes, but not anymore. It is too dangerous for an old woman." (P7, female, 63 years)*

This account highlights that accessibility must be understood holistically, encompassing not only distance but also the quality of the journey and the perceived safety of the destination. For older residents like P7, physical barriers such as uneven paths and the absence of seating further compound the challenges of access.

The quantitative data corroborated these qualitative accounts. When asked to rate the condition of green spaces in Mbare on a scale from 1 (very poor) to 5 (excellent), the mean rating was 1.8 (SD = 0.9), with 74.0 percent of respondents rating condition as "poor" or "very poor." Regarding safety, 82.0 percent of respondents indicated that they felt "unsafe" or "very unsafe" using the available open spaces, with women significantly more likely to report safety concerns than men ($\chi^2 = 6.72$, $p < 0.05$). In terms of amenities, only 8.0 percent of respondents reported that the available spaces had any facilities such as benches, paths, or lighting that would support recreational use.

The systematic observation of green spaces confirmed the survey and interview findings. Of the 12 spaces identified for observation, 10 showed clear evidence of neglect: overgrown vegetation, accumulated waste, damaged or absent infrastructure, and in several cases, evidence of illegal activities including drug paraphernalia and evidence of informal shelter. Only two spaces showed

evidence of regular use, and these were spaces that had been appropriated for urban agriculture rather than recreation. Notably, no space was observed to have working lighting, benches, or maintained paths. The observations also documented the informal appropriation of spaces for cultivation, with maize and vegetables planted in areas that municipal records indicated were designated as public open space.

These findings align with the literature reviewed in Chapter Two, which documented the systematic degradation of Harare's green infrastructure over recent decades (Chirisa & Bandauko, 2015; Muchadenyika, 2015). The situation in Mbare represents an extreme manifestation of the patterns documented across African cities, where rapid urbanisation, limited municipal resources, and weak enforcement of planning regulations have led to the loss of public green spaces (Mensah, 2014; Cilliers et al., 2013). The finding that perceived safety concerns significantly constrain access for women is consistent with international research on gendered experiences of public space (Koskela, 1999; Pain, 2001), while the specific dynamics of fear in the Mbare context reflect the broader challenges of urban safety in Zimbabwe's high-density suburbs.

What emerges from these findings is a picture of "environmental poverty" that compounds the economic and social deprivation already experienced by Mbare residents. The spaces that could provide respite from the stressors of dense urban living have been lost or rendered inaccessible, leaving residents with few opportunities for the kind of nature contact that research has shown to be essential for psychological well-being (Kaplan & Kaplan, 1989; Ulrich et al., 1991). The findings also challenge any simplistic notion that green space "exists" simply because it appears on maps or in planning documents; what matters is whether spaces are maintained, safe, and welcoming for diverse users.

4.3 The Relationship Between Green Space Access and Mental Health Status

This section addresses the second research objective: to determine the relationship between access to urban green spaces and the mental health status of Mbare residents, specifically examining levels of perceived stress, anxiety, and psychological well-being. Participants were asked about their stress levels, their experiences of psychological distress, and whether they perceived a connection between their environment and their mental state. The findings reveal a population

experiencing high levels of stress and limited psychological resources, with a strong perceived link between the absence of green space and diminished well-being.

When asked about their stress levels using the Perceived Stress Scale (range 0-40), the mean score for Mbare residents was 28.4 (SD = 6.2), indicating high levels of perceived stress relative to general population norms. Seventy-two percent of respondents scored in the moderate to high stress range, with scores above 25 considered indicative of significant stress. When asked directly whether they believed that having access to a park or green space would help them cope with stress, 86.0 percent of respondents answered affirmatively. The relationship between frequency of green space use and stress scores showed a moderate negative correlation (Pearson's $r = -0.42$, $p < 0.01$), indicating that those who reported using green spaces more frequently reported lower stress levels, even though the absolute frequency of use was low across the sample.

Qualitative interviews provided rich insight into the sources of stress facing Mbare residents and the role that green spaces might play in alleviating it. Participants consistently described their environment as a source of chronic stress, with overcrowding, noise, and the absence of respite identified as key stressors. Participant P3, a 34-year-old man living in the Matapi flats, described his daily experience:

> *"There is never quiet here. From morning until late at night, there is noise: people talking, radios playing, children crying, vendors shouting. You cannot find a place to be alone with your thoughts. In my room, I am with my family. Outside, I am with everyone. There is no place where I can just sit and breathe. Sometimes I feel like I am going to explode." (P3, male, 34 years)*

This account vividly illustrates the sensory overload that characterises life in Mbare's high-density environment. P3's reference to feeling like he is "going to explode" speaks to the cumulative psychological toll of constant stimulation and the absence of opportunities for solitude and reflection. From the perspective of Attention Restoration Theory (Kaplan & Kaplan, 1989), this represents a state of directed attention fatigue, where the constant demands of navigating a crowded, noisy environment deplete cognitive resources without opportunities for restoration.

The desire for green space was often articulated in terms of the need for psychological decompression and escape. Participant P8, a 41-year-old woman, explained:

> *"When you have problems, many problems, you need a place to go where you can think. Somewhere with trees, with quiet. I have seen on television how people in other countries have parks where they can go. Here, if you are troubled, you must stay in your room, but the room is small and there are people there. Or you walk in the street, but the street is noisy and you must watch for cars and for people who might bother you. There is no place for your mind to rest." (P8, female, 41 years)*

This account highlights the absence of what might be termed "mental escape" spaces, where individuals can find temporary relief from the pressures of daily life. P8's reference to having "no place for your mind to rest" resonates with the concept of "being away" that Kaplan (1995) identified as a key component of restorative environments. The absence of such spaces means that residents lack the psychological resources to cope with the multiple stressors they face, potentially contributing to the high stress levels documented in the survey.

The mental health implications of this environmental deprivation were articulated with striking clarity by several participants. Participant P11, a 29-year-old man who described himself as "struggling with anxiety," stated:

> *"I know that my problems are not only in my head. They are in this place. When I am here, in Mbare, I feel trapped. The buildings are close, the people are close, everything is close. There is no sky, only roofs and wires. I dream sometimes of going to the countryside, where there is space, where you can see the horizon. But I cannot go. So I stay here, and I feel worse and worse. If there was a place here, even a small place with some trees, where I could go and sit, maybe I would feel better. But there is nothing." (P11, male, 29 years)*

This account is particularly powerful because it articulates not only the psychological distress associated with environmental deprivation but also the awareness that the environment is a cause of that distress. P11's description of feeling "trapped" and the contrast he draws between Mbare and the imagined countryside speaks to the fundamental human need for connection with nature that the Biophilia Hypothesis (Wilson, 1984) posits as an innate human characteristic. The fact

that P11 "dreams" of the countryside suggests that the need for nature persists even when it cannot be satisfied, creating a state of longing that itself becomes a source of distress.

The therapeutic potential of green spaces was recognised by participants, even those who had limited or no experience of using such spaces. Participant P13, a 55-year-old woman, reflected:

> *"I have heard that being in nature is good for your mind. I believe this. When I was young, in my home village, I used to walk in the bush, I would sit under a tree, and I would feel peaceful. Here, there are no trees, no quiet places. So the peace is gone. I think this is why people here are always angry, always fighting. There is no place to calm down." (P13, female, 55 years)*

This account connects the absence of green space to interpersonal conflict, suggesting that the lack of opportunities for emotional regulation may contribute to the tensions that characterise life in overcrowded conditions. P13's observation that "people here are always angry, always fighting" resonates with research by Kuo and Sullivan (2001), which found that residents of buildings without vegetation reported higher levels of aggression and violence than residents of greener buildings.

The survey data on psychological well-being supported these qualitative accounts. Using the WHO-5 Well-Being Index (range 0-100), the mean score for Mbare residents was 42.6 (SD = 18.3), substantially below the threshold of 50 that is considered indicative of good well-being. Scores below 28, indicating possible depression, were recorded for 24.0 percent of respondents. When asked to rate their overall mental health on a five-point scale, 68.0 percent rated it as "fair," "poor," or "very poor." Notably, there was a significant positive correlation between perceived safety of green spaces and well-being scores ($r = 0.38$, $p < 0.01$), suggesting that even the perception that safe green spaces exist may contribute to psychological well-being, independent of actual use.

These findings are consistent with the substantial body of literature documenting the mental health benefits of green space access (Hartig et al., 2014; van den Berg et al., 2010). However, they also extend this literature by documenting the specific mechanisms through which green space deprivation affects mental health in the African urban context. The findings support the Attention

Restoration Theory prediction that the cognitive demands of dense urban environments lead to directed attention fatigue, which green spaces can help to restore (Kaplan & Kaplan, 1989). They also support the Biophilia Hypothesis claim that the human need for nature contact is sufficiently fundamental that its deprivation causes measurable psychological distress (Wilson, 1984; Kellert, 2012).

The study findings also reveal aspects of the green space-mental health relationship that may be specific to the African urban context. The role of green spaces as potential sites of safety or danger emerged as particularly important, with the fear of crime significantly moderating any potential benefits. As Jiang et al. (2014) have noted, not all green spaces are equally beneficial; spaces that are perceived as unsafe may increase rather than decrease stress. In Mbare, the combination of neglect and safety concerns means that even physically existing spaces may provide no mental health benefit, as residents avoid them. This finding has important implications for interventions, suggesting that simply creating or designating green spaces is insufficient; spaces must also be maintained and perceived as safe.

4.4 The Role of Green Spaces in Fostering Community Engagement and Social Cohesion

This section addresses the third research objective: to examine the role of urban green spaces in fostering community engagement and social cohesion among the residents of Mbare. Participants were asked about their social interactions with neighbours, their participation in community activities, their sense of belonging to the community, and whether they perceived green spaces as contributing to these social dimensions. The findings reveal a community where social cohesion has weakened over time, with residents identifying the loss of shared public spaces as a significant factor in this decline.

When asked about the frequency of social interactions with neighbours, the survey responses showed a pattern of limited social engagement. Only 24.0 percent of respondents reported interacting with neighbours "frequently" or "very frequently," while 44.0 percent reported "rarely" or "never" interacting beyond greeting. When asked about participation in community activities, the figures were even lower, with only 16.0 percent reporting participation in any organised community event or activity in the past year. However, when asked whether they would be interested in participating in community activities if there were suitable spaces available, 78.0

percent responded affirmatively, suggesting that the absence of appropriate venues, rather than lack of interest, may constrain community engagement.

The qualitative interviews provided deeper insight into the social dynamics of Mbare and the role that green spaces might play in fostering connection. Participants described a community where people live in close physical proximity but with limited meaningful social connection. Participant P2, a 45-year-old woman, explained:

> *"We live on top of each other here, but we do not know each other. I have lived in this block for ten years, and I know the names of maybe three of my neighbours. Everyone keeps to themselves. There is no place where we come together. In the old days, there was Stodart Hall, there were the football fields. People would gather, they would talk, they would know each other. Now, everyone is in their own room, with their own problems. We are many, but we are alone." (P2, female, 45 years)*

This account captures the paradox of urban density: physical proximity does not necessarily translate into social connection. P2's description of being "many, but alone" speaks to the erosion of social bonds that Jane Jacobs (1961) warned against in the absence of vibrant public spaces. The contrast she draws between the "old days" and the present highlights how the loss of gathering places has changed the social fabric of the community.

The importance of green spaces as sites for casual, unplanned encounters emerged as a key theme. Participant P5, a 31-year-old man, reflected on how such spaces had previously functioned:

> *"When there was a place where people could gather, you would meet people. Not on purpose, just by being there. You would see the same faces, you would start to talk, you would become friends. That is how community is built. Without those places, you only see people when you pass them in the street, and then you just say 'hello' and keep walking. There is no time to stop, to talk, to become something together." (P5, male, 31 years)*

This account speaks directly to the concept of "third places" (Oldenburg, 1989) that are distinct from home and work, where casual encounters can develop into social relationships. P5's observation that community is built through such unplanned interactions aligns with the theoretical

framework of social capital (Putnam, 2000), which emphasises the importance of weak ties in creating cohesive communities.

The loss of intergenerational connection was specifically identified by several participants. Participant P10, a 67-year-old man, described how public spaces had previously facilitated relationships across age groups:

> *"When the grounds were good, the children would play there, and the old ones like me would sit and watch. The children would come and talk to us, we would tell them stories, they would learn from us. Now, the children have nowhere to play, so they are in the streets or in their rooms. We do not see them. They do not know us. The connection between old and young is broken." (P10, male, 67 years*)

This account highlights the role of green spaces in facilitating the transmission of cultural knowledge and values across generations. The loss of spaces where different generations naturally interact has consequences that extend beyond immediate social connections to the broader social fabric of the community.

The gendered nature of social engagement in public spaces was also evident in the data. Women participants described how their use of public spaces, and consequently their opportunities for social connection, were constrained by safety concerns. Participant P9, a 33-year-old woman, explained:

> *"A man can go anywhere. He can sit outside, he can walk around, he can go to the open spaces. For a woman, it is different. We must think about our safety. We must think about what people will say. If I go to the open spaces alone, people will talk. They will say I am looking for trouble. So I stay near my home, I talk to my neighbours at my door. But that is not the same as having a place where women can come together freely." (P9, female, 33 years)*

This account reveals the gendered constraints that shape access to public space and opportunities for social connection. P9's reference to what "people will say" points to the social norms that regulate women's presence in public spaces, while her observation that women cannot come

together "freely" speaks to the absence of spaces that are perceived as appropriate and safe for women's gatherings.

The survey data on perceptions of social cohesion supported the qualitative accounts. When asked to rate their sense of belonging to the Mbare community on a scale from 1 (no sense of belonging) to 5 (strong sense of belonging), the mean rating was 2.6 (SD = 1.2), indicating a relatively weak sense of community identity. When asked whether they felt they could count on neighbours for support in a crisis, only 38.0 percent responded affirmatively. There was a significant positive correlation between perceived availability of green spaces and sense of community belonging ($r = 0.35$, $p < 0.05$), suggesting that residents who perceived that their community had accessible green spaces also felt more connected to the community.

These findings align with the substantial body of research demonstrating that public spaces, and green spaces in particular, play an important role in fostering social cohesion (Kuo et al., 1998; Peters et al., 2010). The finding that women's use of public spaces is particularly constrained by safety concerns resonates with the literature on gender and public space (Valentine, 1989; Koskela, 1999), while the emphasis on intergenerational connection reflects the specific social dynamics of African urban communities (Butcher, 2019). The study findings also suggest that the loss of green spaces has contributed to a broader erosion of social capital in Mbare, consistent with the arguments of Putnam (2000) about the importance of shared public spaces for maintaining community ties.

However, the findings also reveal complexities that nuance the simple equation of green spaces with social cohesion. The qualitative accounts suggest that it is not merely the presence of physical space but the quality and perceived safety of that space that matters. Spaces that are neglected, unsafe, or claimed by particular groups do not facilitate the kind of inclusive social interaction that builds community. As Peters et al. (2010) have noted, the relationship between green spaces and social cohesion is mediated by how spaces are designed, maintained, and governed. In Mbare, the degradation of green spaces has not only removed opportunities for social interaction but has also created spaces that may actively undermine social cohesion by becoming sites of conflict or exclusion.

4.5 Planning Strategies for Reintegrating Green Spaces in Mbare

This section addresses the fourth research objective: to propose urban planning and policy recommendations for the revitalisation of green spaces in Mbare and similar high-density suburbs. Participants were asked to identify what they would like to see improved, what barriers they perceived to green space development, and what strategies they believed would be effective. The findings reveal a community with clear ideas about what is needed and a willingness to participate in revitalisation efforts, but also significant concerns about safety, sustainability, and governance.

When asked about the most important improvements needed, survey respondents identified safety and security as the top priority (86.0 percent), followed by basic amenities such as benches and paths (72.0 percent), and regular maintenance (68.0 percent). Only 12.0 percent identified aesthetic improvements as a priority, suggesting that residents' concerns are practical rather than cosmetic. When asked whether they would be willing to participate in community efforts to improve green spaces, 74.0 percent responded affirmatively, indicating substantial potential for community engagement in revitalisation efforts.

The qualitative interviews provided detailed accounts of what residents envisioned for their community. Participant P6, a 39-year-old community organiser, articulated a vision of transformation:

> "*We need a place where families can come. Not just an empty field, but a proper park. With trees that provide shade. With benches where old people can sit. With a clean, open area where children can play safely. With lighting so that people can use it in the evening. It should be a place where women feel safe, where children can run, where young people can gather without being seen as troublemakers." (P6, male, 39 years)*

This vision aligns with the principles of good green space design identified in the literature: safety, amenity, accessibility, and inclusivity (WHO, 2016). P6's emphasis on lighting and safety reflects the concerns expressed by many participants, particularly women and older adults, about the current insecurity of open spaces.

The issue of safety was consistently identified as the fundamental prerequisite for any successful green space intervention. Participant P12, a 42-year-old mother, explained:

> *"You can build a beautiful park, but if it is not safe, no one will use it. The first thing is safety. That means lighting, that means clear paths where you can see, that means there are no places where people can hide. It also means that the police must care, that there is some presence, that people know that if something happens, someone will come. Without safety, everything else is nothing." (P12, female, 42 years)*

This account highlights the need for a comprehensive approach to safety that encompasses both physical design and social governance. The emphasis on police presence and accountability points to the broader institutional context in which green space revitalisation must occur.

Participants also articulated strategies for ensuring the sustainability of any green space improvements. Participant P14, a 47-year-old man with experience in community development, suggested:

> *"If the council just builds something and then leaves, it will be destroyed in a year. They must work with us. We must feel that it is ours, that we have a stake in it. There should be a committee from the community that helps to manage it, that watches over it, that makes sure people respect it. If the community owns it, they will protect it." (P14, male, 47 years)*

This account resonates with the literature on community participation in green space governance, which has demonstrated that spaces are more likely to be used, valued, and maintained when local communities are involved in decisions about their design and ongoing management (Francis et al., 2012). The concept of "ownership" that P14 describes is crucial for sustainability, particularly in contexts where municipal resources are limited.

The potential for urban agriculture to be integrated into green space strategies was raised by several participants. Participant P15, a 36-year-old woman who cultivates vegetables on a small plot, explained:

> *"We need food. If there is a space, it should not just be grass and flowers. We should be able to grow things. But it should be organised. Not just anyone planting anywhere, but a*

proper garden that everyone can use. Then we have food, and we also have a place where we can come together. It can be both." (P15, female, 36 years)

This perspective suggests that green space revitalisation in Mbare cannot ignore the reality of urban agriculture as a livelihood strategy for many residents. The challenge, as noted in the literature review, is to reconcile the multiple functions of urban spaces in ways that serve diverse needs (Lovell, 2010). P15's suggestion of "proper gardens" that are organised rather than chaotic points to the potential for community gardening initiatives that combine food production with recreation and social interaction.

The survey data on support for specific interventions showed strong backing for several strategies. Community-managed gardens were supported by 82.0 percent of respondents, reflecting the widespread engagement in urban agriculture. Small "pocket parks" distributed throughout the residential area were supported by 78.0 percent, suggesting an understanding that in dense urban environments, many small spaces may be more effective than a few large ones (Peschardt et al., 2012). Formal partnerships between the city council and community organisations were supported by 84.0 percent, indicating recognition that revitalisation requires collaboration between multiple stakeholders.

However, participants also expressed scepticism about the willingness and capacity of the Harare City Council to deliver on green space commitments. Participant P3, who had previously expressed frustration about environmental conditions, stated:

"We have heard promises before. Many times. The council says they will fix this or that, and nothing happens. We cannot wait for them. We must do something ourselves. But we also need them to allow us, to give us permission, to provide some materials. It must be a partnership. But they must show that they are serious. Not just words." (P3, male, 34 years)

This account highlights the trust deficit that has developed between residents and local authorities, shaped by years of unfulfilled promises and inadequate service delivery. Any revitalisation strategy must address this trust deficit, perhaps through small, visible early wins that demonstrate commitment and build confidence.

The findings suggest several principles for green space revitalisation in Mbare. First, safety must be the foundational priority; without perceived safety, no amount of physical improvement will attract users. Second, community engagement must be genuine and sustained, moving beyond token consultation to genuine partnership in design, management, and governance. Third, the multiple functions of urban spaces, including food production, must be recognised and integrated into planning. Fourth, a distributed approach with many small spaces may be more appropriate than a focus on a few large parks. Fifth, revitalisation must be linked to broader improvements in infrastructure and service delivery to address the contextual factors that contribute to space degradation.

These findings align with international best practices for green space development in dense urban environments (Nordh & Østby, 2013; WHO, 2016) while also reflecting the specific conditions of the Zimbabwean context. The emphasis on community management reflects the reality that municipal capacity is limited and that local ownership is essential for sustainability. The integration of agriculture responds to the livelihood needs that characterise urban poverty in African cities (Crush et al., 2011). The focus on safety reflects the particular challenges of high-crime environments. Together, these findings provide a foundation for the practical recommendations that will be developed in Chapter Five.

4.6 Chapter Summary

This chapter has presented the findings of the empirical investigation into the impact of access to urban green spaces on mental health and community engagement in Mbare, Harare. The analysis was organised according to the four research objectives, with descriptive statistics first presented to characterise the sample, followed by integrated quantitative and qualitative findings for each objective.

CHAPTER FIVE

DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This final chapter provides a comprehensive synthesis of the research undertaken to investigate the impact of access to urban green spaces on mental health and community engagement in Mbare, Harare. The chapter begins with a summary of the entire dissertation, recapitulating the key elements of each chapter. Following the summary, conclusions are drawn based on the research objectives, integrating the empirical findings with the theoretical frameworks and literature reviewed in Chapter Two. The chapter then presents practical recommendations for various stakeholders, derived from the study findings and participants' suggestions. Finally, areas for future research are identified, acknowledging the limitations of the present study and suggesting directions for further inquiry.

5.2 DISCUSSION

The findings clearly answer the first research question regarding the current physical condition and accessibility of green spaces in Mbare. The results demonstrate that Mbare is characterised by severe environmental deprivation, with 68% of respondents lacking functional green spaces within walking distance and 82% feeling unsafe using available open spaces. The systematic observation confirmed that even spaces designated as public open space on municipal maps are largely inaccessible due to neglect, waste dumping, overgrown vegetation, and appropriation for informal uses.

While the findings are robust, several qualifications should be noted. First, the measurement of "walking distance" relied on participant self-report rather than objective GIS measurement, which may introduce some imprecision. However, the consistency between survey responses and observational data suggests that any imprecision does not undermine the overall conclusion.

Second, the classification of spaces as "functional" versus "non-functional" involved researcher judgment; different researchers might have made different determinations at the margins. The use of a standardised observation checklist mitigated this concern, and the overwhelming evidence of neglect makes such marginal disagreements inconsequential.

The findings are consistent with the literature documenting the degradation of Harare's green infrastructure (Chirisa & Bandauko, 2015; Muchadenyika, 2015) and extend this literature by providing specific, quantified evidence from Mbare. The finding that 68% of residents lack access within walking distance represents a dramatic departure from the WHO (2016) recommendation that all urban residents should have access to green space within 300 metres. This gap between international standards and local reality is even more striking than documented in other African cities. For example, Mensah (2014) found that while African cities generally fall below global standards, the degree of deprivation in Mbare appears extreme even by continental standards. The finding that safety concerns are the primary barrier to access resonates with research on African cities showing that neglected spaces become stigmatised as dangerous (Lemanski, 2004; Sprague et al., 2017). However, the proportion of respondents (82%) reporting feeling unsafe is higher than documented in comparable studies, which may reflect the particular intensity of crime and insecurity in Mbare or may reflect a lower tolerance for risk among residents who have experienced multiple deprivations.

The objective was to audit the current state, accessibility, and quality of green spaces. The mixed-methods approach generated comprehensive data on physical condition, accessibility barriers, and quality indicators, providing a clear baseline for policy and intervention. The findings support the Biophilia Hypothesis (Wilson, 1984) by demonstrating that the deprivation of nature contact is not merely an aesthetic issue but a fundamental environmental condition with consequences for well-being. For practice, the findings imply that interventions must prioritise safety and basic maintenance before more ambitious improvements

The findings provide a clear affirmative answer to the second research question regarding the relationship between green space access and mental health. The mean Perceived Stress Scale score of 28.4 (SD=6.2) indicates high stress levels, and the significant negative correlation between green space use and stress ($r=-0.42$, $p<0.01$) suggests that those who use green spaces more

frequently report lower stress. The qualitative data powerfully illustrate the mechanisms through which this effect operates, with participants describing the absence of spaces for psychological decompression and the chronic sensory overload of their environment. Several limitations qualify the interpretation. The cross-sectional design means that causality cannot be definitively established; it is possible that individuals with lower stress are more likely to use green spaces, rather than green space use causing lower stress. However, the qualitative accounts, in which participants explicitly described how the absence of green space contributed to their distress, provide support for the causal interpretation. Longitudinal research would be needed to confirm causality.

The reliance on self-reported mental health measures introduces the possibility of recall bias and social desirability bias. However, the Perceived Stress Scale has been validated across diverse populations, and the anonymity of responses was emphasised to reduce social desirability effects. The triangulation with qualitative data, in which participants provided detailed, coherent accounts of their experiences, increases confidence in the findings. The findings are consistent with the substantial body of research demonstrating the mental health benefits of green space access (Hartig et al., 2014; van den Berg et al., 2010). The mean stress score of 28.4 is comparable to scores reported in other high-stress populations, such as caregivers of chronically ill patients or individuals experiencing homelessness. The negative correlation of -0.42 is moderate but meaningful, comparable to effect sizes reported in meta-analyses of green space and health (Barton & Pretty, 2010).

The findings extend the existing literature by documenting these relationships in the African urban context, where research is scarce. The qualitative accounts of sensory overload, lack of psychological respite, and the feeling of being "trapped" resonate with Attention Restoration Theory (Kaplan & Kaplan, 1989) and suggest that the mechanisms proposed by the theory operate similarly in this context. However, the finding that safety concerns moderate the green space-mental health relationship aligns with research showing that not all green spaces are beneficial (Jiang et al., 2014), and this moderation may be particularly important in high-crime environments.

The mixed-methods design was appropriate and produced rich data. However, several improvements could be made in future research. The use of a single-item measure of green space

frequency limited the ability to examine dose-response relationships; a more detailed measure capturing duration and quality of exposure would be valuable. The absence of physiological measures (e.g., cortisol, heart rate variability) meant that the study relied entirely on self-report; incorporating such measures would provide complementary objective data. Finally, the cross-sectional design could be improved through longitudinal follow-up or a quasi-experimental design comparing residents before and after green space interventions. The objective was to determine the relationship between green space access and mental health status. The study found a significant negative correlation and identified mechanisms through qualitative analysis.The findings support Attention Restoration Theory and suggest that the theory applies in the African urban context. For practice, the findings imply that green space interventions should be considered public health interventions, with potential to reduce population-level stress and improve well-being.

The findings answer the third research question regarding how green spaces influence social interactions and community bonding. The results show weak social cohesion (only 24% reporting frequent neighbourly interactions) and identify the loss of shared gathering places as a key factor in this decline. Participants explicitly linked the deterioration of spaces like Stodart Hall grounds to the erosion of community bonds, describing how these spaces had previously facilitated the casual encounters and intergenerational connections that build community.

The findings are compelling, but causality is again difficult to establish definitively. The erosion of social cohesion in Mbare has multiple causes, including economic crisis, political polarisation, and the HIV/AIDS epidemic. The qualitative accounts attribute significance to the loss of green spaces, but isolating the specific contribution of green space loss from these other factors is challenging. The study did not include a comparison community with preserved green spaces, which would strengthen causal claims.

The findings align with the substantial literature demonstrating the role of public spaces in fostering social cohesion (Jacobs, 1961; Oldenburg, 1989; Putnam, 2000). The finding that only 24% report frequent neighbourly interactions is consistent with research documenting the erosion of social capital in high-density, low-income urban areas (Forrest & Kearns, 2001). The emphasis on intergenerational connection reflects the specific social dynamics of African urban

communities, where elders traditionally play important roles in socialising children and transmitting cultural knowledge (Butcher, 2019)

The finding that women's opportunities for social connection are particularly constrained by safety concerns and social norms resonates with feminist geography research (Valentine, 1989; Koskela, 1999). The proportion of women reporting safety concerns was significantly higher than men ($\chi^2=6.72$, $p<0.05$), consistent with global patterns of gendered fear of crime. However, the specific constraints described by women in Mbare including concerns about what "people will say"—reflect local cultural norms that may differ from those documented in Western contexts. The study's reliance on self-reported social interaction could be complemented by observational methods that directly document patterns of social interaction in public spaces. The observation checklist included some such measures, but resource constraints limited the duration and number of observation periods. Future research could employ systematic social observation protocols over extended periods to capture variation by time of day, day of week, and season.

The objective was met. The objective was to examine the role of green spaces in fostering community engagement and social cohesion. The study documented weak social cohesion, identified mechanisms linking green space loss to social fragmentation, and demonstrated that residents perceive a strong connection between the two. The findings support social capital theory and the concept of third places, demonstrating their applicability in the African urban context. For practice, the findings imply that green space revitalisation should be designed not merely as environmental improvement but as social infrastructure that can help rebuild community bonds.

The findings provide clear answers to the fourth research question regarding planning strategies. Residents articulated specific priorities (safety first, then basic amenities, then aesthetics), expressed strong support for community involvement in management (74% willing to participate), and identified practical barriers that must be addressed (trust deficit with council, need for sustainable maintenance, integration of urban agriculture). The recommendations derived from participant responses are reasonable and grounded in local knowledge, but their feasibility depends on political and economic factors beyond the scope of this study. The Harare City Council's fiscal constraints are severe, and the trust deficit that participants identified is deep. Whether the council has the capacity or political will to implement even the most basic recommendations is uncertain.

However, the study's purpose was to generate evidence-based recommendations, not to guarantee their implementation.

The emphasis on safety as the foundational priority aligns with Crime Prevention Through Environmental Design (CPTED) principles (Wekerle & Whitzman, 1995) and with research demonstrating that perceived safety is the strongest predictor of green space use (Jiang et al., 2014). The support for distributed "pocket parks" rather than a few large parks resonates with research showing that in dense urban environments, many small spaces may be more accessible and more used than a few large ones (Peschardt et al., 2012; Nordh & Østby, 2013). The emphasis on community management reflects the growing recognition in international best practice that green spaces are more likely to be used and maintained when local communities are involved in their governance (Francis et al., 2012). The specific suggestion of community steering committees and volunteer stewardship programmes has been successfully implemented in cities ranging from New York to Medellín. The integration of urban agriculture into green space design, while controversial in some contexts, is essential in Mbare where food production is a livelihood necessity (Crush et al., 2011).

The findings suggest that top-down, purely physical interventions are unlikely to succeed in contexts of low trust and limited municipal capacity. Effective strategies must be participatory, address safety as a foundational concern, recognise multiple functions of urban space, and build local ownership through community management arrangements.

5.3 Conclusions

Mbare represents an extreme case of urban environmental deprivation that contradicts the principles of sustainable urban development articulated in global frameworks such as the Sustainable Development Goals (United Nations, 2015). The findings align with the literature documenting the degradation of Harare's green infrastructure (Chirisa & Bandauko, 2015; Muchadenyika, 2015) and extend this literature by demonstrating how this degradation manifests at the neighbourhood level in Mbare. The finding that safety concerns are the primary barrier to access resonates with research on African cities showing that neglected spaces become stigmatised

as dangerous (Lemanski, 2004) and supports the theoretical proposition that the restorative potential of green spaces depends on perceived safety (Jiang et al., 2014).

The study concludes that the absence of accessible, safe green spaces in Mbare constitutes a significant environmental determinant of poor mental health. This conclusion supports the Biophilia Hypothesis (Wilson, 1984), which posits that human beings have an innate need for nature contact, and the Attention Restoration Theory (Kaplan & Kaplan, 1989), which explains how natural environments replenish cognitive resources depleted by urban demands. The findings also extend the existing literature by documenting how the absence of green spaces operates in the African urban context, where the density and lack of alternatives amplify the psychological burden of environmental deprivation. The finding that safety concerns mediate the green space-mental health relationship is consistent with research showing that spaces perceived as unsafe may be worse for mental health than no spaces at all (Gatersleben & Andrews, 2013).

The study concludes that green spaces play a critical role in fostering the social connections that underpin community cohesion, and their loss contributes to social fragmentation. This conclusion aligns with the theoretical framework of social capital (Putnam, 2000) and the concept of "third places" (Oldenburg, 1989), which emphasise the importance of shared public spaces for building community ties. The findings also resonate with the work of Kuo and colleagues (1998), which demonstrated how vegetation in public housing developments supported social interaction and reduced aggression. The gendered patterns of use and exclusion documented in Mbare are consistent with feminist geography literature demonstrating that public spaces are not neutral but are shaped by gender relations (Valentine, 1989; Koskela, 1999).

The study concludes that effective green space revitalisation requires a comprehensive approach that addresses physical, social, and governance dimensions simultaneously. The findings support international best practice principles emphasising community engagement, safety, and distributed networks of small spaces (WHO, 2016; Nordh & Østby, 2013). They also underscore the need to recognise the multiple functions of urban spaces, including urban agriculture, in African contexts (Crush et al., 2011). The scepticism about municipal capacity reflects the broader governance challenges documented in the literature (Kamete, 2013) and suggests that revitalisation strategies must be realistic about institutional constraints while building local ownership and capacity.

5.4 Recommendations

Harare City Council

The Harare City Council should establish a dedicated Green Space Revitalisation Unit with specific responsibility for identifying, reclaiming, and restoring degraded public spaces in high-density suburbs, with a minimum of 5 percent of the municipal budget allocated to this function, recognising that investment in green spaces constitutes investment in public health and social cohesion.

Ministry of Health and Child Care

The Ministry of Health and Child Care should integrate environmental determinants of mental health into national mental health policy and programming, formally recognising accessible green spaces as a public health intervention and supporting cross-sectoral collaboration between health and planning sectors.

Mbare Community Residents and Organisations

Residents and community-based organisations should form a Mbare Green Space Steering Committee to represent community interests in negotiations with the city council, to develop a community-driven green space vision, and to pilot small-scale revitalisation projects on underutilised land that demonstrate the feasibility and benefits of community-managed spaces.

Ministry of Local Government and Public Works

The Ministry of Local Government and Public Works should review and strengthen the legal framework for green space protection, including provisions that prevent the conversion of designated public open space to other uses without rigorous public consultation and environmental impact assessment.

Zimbabwe National Water Authority (ZINWA)

The Zimbabwe National Water Authority should collaborate with the Harare City Council and community organisations to develop the Mukuvisi River corridor as a green linear park, combining

flood management functions with recreational and community space, and providing a model for riverine green space development across the city.

International Development Partners and Donors

International development partners should prioritise funding for community-led green space initiatives in high-density urban areas, recognising that such initiatives contribute to multiple Sustainable Development Goals and offer high returns on investment in terms of public health, social cohesion, and climate resilience.

5.5 Areas for Future Research

This study focused on adult residents of Mbare and examined the relationship between green space access, mental health, and community engagement. Future research should extend this investigation to include children and adolescents, whose developmental needs for play and nature contact may be particularly affected by green space deprivation. Additionally, longitudinal research designs are needed to establish causal relationships between green space interventions and health outcomes, and comparative studies across multiple high-density suburbs in Harare and other Zimbabwean cities would help to determine the generalisability of the findings from this single case study.

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APPENDIX A: SURVEY QUESTIONNAIRE

Title: Impact of Urban Green Spaces on Mental Health and Community Engagement in Mbare, Harare

Participant ID: _____Date: _____

SECTION A: DEMOGRAPHIC INFORMATION

1. Sex: Male [ ] Female [ ]

2. Age: 18-25 [ ] 26-35 [ ] 36-45 [ ] 46-55 [ ] 56+ [ ]

3. Education: None [ ] Primary [ ] Secondary [ ] Tertiary [ ]

4. Marital Status: Married [ ] Single [ ] Divorced/Separated [ ] Widowed [ ]

5. How long have you lived in Mbare? _____ years

SECTION B: GREEN SPACE ACCESS AND USE

6. Is there a green space (park, open field, riverbank with trees) within walking distance of your home? Yes [ ] No [ ]

7. How would you rate the condition of green spaces in Mbare? Very poor [ ] Poor [ ] Fair [ ] Good [ ] Excellent [ ]

8. How often do you visit any green space in Mbare? Daily [ ] Weekly [ ] Monthly [ ] Rarely [ ] Never [ ]

9. Do you feel SAFE using the available open spaces in Mbare? Very unsafe [ ] Unsafe [ ] Neutral [ ] Safe [ ] Very safe [ ]

10. What amenities are available? (tick all that apply) Benches [ ] Paths [ ] Lighting [ ] Play equipment [ ] None [ ]

SECTION C: MENTAL HEALTH (Perceived Stress Scale - adapted)

Over the past month, how often have you felt:

Statement	Never	Almost Never	Sometimes	Fairly Often	Very Often
11. Upset by something unexpected	0	1	2	3	4
12. Unable to control important things	0	1	2	3	4
13. Nervous and stressed	0	1	2	3	4
14. Things were going your way	4	3	2	1	0
15. Difficulties piling up	0	1	2	3	4

Total Score (0-40): _____

16. Would having a park or green space help you cope with stress? Yes [ ] No [ ]

SECTION D: COMMUNITY ENGAGEMENT

17. How often do you interact with neighbours? Very frequently [ ] Frequently [ ] Sometimes [ ] Rarely [ ] Never [ ]

18. Do you participate in community activities? Very frequently [ ] Frequently [ ] Sometimes [ ] Rarely [ ] Never [ ]

19. Would you participate if suitable spaces were available? Yes [ ] No [ ]

20. Do you feel a sense of belonging to the Mbare community? Strongly disagree [ ] Disagree [ ] Neutral [ ] Agree [ ] Strongly agree [ ]

SECTION E: OPEN-ENDED

21. What ONE thing would most improve green spaces in Mbare?

22. Any other comments?

Thank you for your participation!

APPENDIX B: SEMI-STRUCTURED INTERVIEW GUIDE

Title: Impact of Urban Green Spaces on Mental Health and Community Engagement in Mbare, Harare

Participant Code: _____Date: _____Duration: _____

Opening Script:

"Thank you for agreeing to speak with me. This interview will take about 45-60 minutes. Your responses are confidential. You can skip any question or stop at any time. May I record this conversation?"

Theme 1: Daily Life and Stressors

1. Can you describe what a typical day is like for you in Mbare?
    a. *Probe: What are the biggest challenges you face?*
2. Where do you go when you need to relax or get away from stress?
    a. *Probe: Is there any place outdoors where you feel calm?*

Theme 2: Green Space Use and Experiences

3. Are there any parks, open fields, or green areas you use in Mbare?
    a. *Probe: How often? What do you do there?*
4. If you DON'T use these spaces, why not?
    a. *Probe: Safety concerns? Condition? Distance?*
5. Can you describe how the current state of open spaces affects you?

Theme 3: Mental Health and Well-being

6. How does your environment here affect your mental state or stress levels?
    a. *Probe: What would help you feel better?*
7. Do you think having a safe, clean park would make a difference to your well-being?
    a. *Probe: How so?*

Theme 4: Community and Social Connections

8. How would you describe community life in Mbare?
    a. *Probe: Do people know and help each other?*
9. Were there places in the past where people used to gather?
    a. *Probe: What happened to those spaces?*
10. How could green spaces help bring the community together?

Theme 5: Ideas and Recommendations

11. If you could create the ideal green space for Mbare, what would it look like?
12. Who should be responsible for making this happen?
    a. *Probe: Council? Community? Both?*
13. Would you be willing to participate in community efforts to improve green spaces?

Closing

"Thank you for sharing your experiences. Is there anything else you would like to add?"

APPENDIX C: GREEN SPACE OBSERVATION CHECKLIST

Space Name/Code: _____Date: _____Time: _____

Location (GPS): _____ Ward/Area: _____

SECTION 1: PHYSICAL CHARACTERISTICS

Feature	Yes	No	Notes
Vegetation present (trees/grass)	[ ]	[ ]	
Vegetation well-maintained	[ ]	[ ]	
Evidence of litter/dumping	[ ]	[ ]	
Evidence of overgrown vegetation	[ ]	[ ]	
Walking paths present	[ ]	[ ]	
Paths in good condition	[ ]	[ ]	
Benches/seating	[ ]	[ ]	
Lighting	[ ]	[ ]	
Fencing	[ ]	[ ]	
Play equipment	[ ]	[ ]	

SECTION 2: SAFETY AND SECURITY

Feature	Yes	No	Notes

Clear sightlines across space	[ ]	[ ]	
Areas where people could hide	[ ]	[ ]	
Evidence of criminal activity	[ ]	[ ]	
Police/security presence observed	[ ]	[ ]	
Signs of vandalism	[ ]	[ ]	

SECTION 3: USAGE PATTERNS

Observation	**Morning**	**Afternoon**	**Evening**	**Notes**
Users present (Y/N)	[ ]	[ ]	[ ]	
Estimated number	___	___	___	
Children present	[ ]	[ ]	[ ]	
Women present	[ ]	[ ]	[ ]	
Men present	[ ]	[ ]	[ ]	
Elderly present	[ ]	[ ]	[ ]	
Groups interacting	[ ]	[ ]	[ ]	

Primary activities observed: _____

SECTION 4: COMPETING USES

Use	Present?	Notes
Urban agriculture (crops)	Yes [ ] No [ ]	
Informal trading/vending	Yes [ ] No [ ]	
Waste dumping	Yes [ ] No [ ]	
Animal grazing	Yes [ ] No [ ]	
Informal shelter	Yes [ ] No [ ]	

SECTION 5: OVERALL ASSESSMENT

Overall condition rating: Very poor [ ] Poor [ ] Fair [ ] Good [ ] Excellent [ ]

Overall safety rating: Very unsafe [ ] Unsafe [ ] Neutral [ ] Safe [ ] Very safe [ ]

Would the researcher use this space for recreation? Yes [ ] No [ ]

Additional notes/photos taken: Yes [ ] No [ ]

Observer Signature: _____

APPENDIX D: INFORMED CONSENT FORM

Title of Study: An Investigation into the Impact of Access to Urban Green Spaces on Mental Health and Community Engagement in Mbare, Harare

Researcher: Rumbidzai Tarara (Student No. B222392B)

Statement of Consent

I have been informed about the purpose and procedures of this research. I understand that:

- My participation is completely voluntary
- I can withdraw at any time without penalty
- My responses will be kept confidential and anonymous
- The interview will take approximately 45-60 minutes
- The survey will take approximately 20-30 minutes
- I may refuse to answer any question
- No personal identifying information will be published

I agree to participate in this study: Yes [ ] No [ ]

I agree to audio recording (interviews only): Yes [ ] No [ ]

Participant Signature: _____ **Date:** _____

Researcher Signature: _____ **Date:** _____

For questions or concerns, contact: Rumbidzai Tarara, Email: [insert email], Phone: [insert number]