UNIVERSITY OF GHANA

DEPARTMENT OF GEOGRAPHY AND RESOURCE DEVELOPMENT

ASSESSING THE INFLUENCE OF SOCIO-SPATIAL FACTORS ON RESIDENTIAL SATISFACTION AMONG RENTAL HOUSEHOLDS: A CASE STUDY OF THE CAPE COAST METROPOLIS

BY

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MPHIL IN GEOGRAPHY DEGREE

SEPTEMBER, 2023

DECLARATION

I hereby declare that this thesis is the outcome of my own research work under the guidance of the under-listed supervisors and that except for the references which have been duly acknowledged, no part of it has been presented for another degree in this university or elsewhere.

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DEDICATION

I dedicate this thesis to all my family members, mentors, supervisors and friends. I am very grateful for all you have sacrificed for this work and the numerous commitments you have made to see me reach this height of the academic echelon.

ACKNOWLEDGEMENTS

"And we know that all things work together for good to them that love God, to them who are the called according to his purpose" (Romans 8:28).

I am very grateful to the Almighty God for giving me life, grace and favour to complete this thesis, without which I would not have come this far. I also show my utmost appreciation to my conscientious supervisors, Prof. Alex Boakye Asiedu and Dr. Mariama Zaami, who took time out of their tight schedules to provide immediate critical feedback to improve the work. I would like to also show my appreciation to all faculty members of the Department of Geography and Resource Development for their critical comments during seminar presentations and the words of encouragement I have occasionally received from them.

Furthermore, I extend my heartfelt gratitude to Drs Louis Kusi Frimpong, Seth Asare Okyere, Mathew Abunyewah and Stephen Kofi Diko for their support. I am much more grateful for the kind words of encouragement they continuously offered me to continue to be humble and work hard as more incredible things lie ahead of my career. I, without hesitation, extend my appreciation to Mr. John Ato Dadzie and Mrs. Grace Dadzie for their kind words and deeds towards me.

Lastly, I thank all my family members, friends and acquaintances for the good wishes, prayers and support in any form you granted me. Sometimes when the going gets tough, I am encouraged to do my best because of these acts of kindness and belief you continue to exhibit towards me. I also owe special thanks to my respondents across the study communities of Pedu Estate, Kakumdo and Ekon and the key informants within the metropolis for taking time out of their tight schedules to participate in the survey and the interviews.

ABSTRACT

Demand for rental housing continues to grow due to rapid urbanization in most African cities. Yet rental housing in these cities is largely characterized by poor housing conditions, high rental charges and tenants-landlord conflict. Residential satisfaction surveys are important exercises for assessing the conditions of residents' dwelling units, towards meeting their expectations and improving housing conditions. Socio-spatial factors such as social interactions and conditions of the built environment could also impact residential satisfaction. Ensuring them is critical for achieving SDG goal 11 which seeks to build sustainable, resilient, inclusive cities. This study sought to examine the socio-spatial determinants of residential satisfaction among households living in rental housing areas. The study used a mixed-method approach to gather quantitative data from 246 rental households, and 14 qualitative interviewees from rental households, assembly member's institutional representatives. The quantitative data was analysed using descriptive and multivariate statistics, whiles the qualitative data was transcribed and manually analysed using thematic content analysis. The key findings of the study indicate that there is a statistically significant relationship between community participation in social activities (β=-.379, $p<0.05$), quality of community life (β=.429, $p<0.01$) and (β=.231, $p<0.01$) and residential satisfaction. Further, there is a statistically significant relationship between a quiet environment (β=.561, $p<0.05$), aesthetic pleasantness (β=-.572, $p<0.05$), community layout and design (β=.413, $p<0.001$), and residential satisfaction in the three communities respectively. The qualitative interviews provided further insights into these relationships. The researcher recommends that residents increase engagement in community participation and social activities to improve residential satisfaction in high-income areas. Further rental housing owners should provide prepaid meters to each household instead of multiple households to one prepaid meter.

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LIST OF ABBREVIATIONS

CBD: Central Business District

CCMA: Cape Coast Metropolitan Assembly

COHRE: Centre on Housing Rights and Evictions

DV: Dependent Variable

EFA: Exploratory Factor Analysis

GS: Global South

GSS: Ghana Statistical Service

HBE: Home-Based Enterprises

IV: Independent Variables

KMO: Kaiser-Meyer-Olkin

LCHC: Low-Cost Housing Committee

NSS: National Shelter Strategy

PCA: Principal Component Analysis

PHC: Population and Housing Census

SHC: State Housing Company

SIC: State Insurance Commission

SSNIT: Social Security and National Insurable Trust

SSNIT: Social security and National Insurance Trust

TDC: Tema Development Corporation

UN: United Nations

UN-Habitat: United Nations Human Settlements Programme

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

As of 2015, about three-fourths of the world's urban population lived in the Global South (GS). Rapid urbanization accounted for about 95% of the increase in the world's urban population between 2010 and 2015, and about 27 of the 33 megacities in the world are in the GS (Smit, 2021). There is a difference in urbanization patterns among countries of the GS due to historical processes that have positioned cities as significant socio-cultural and political nodes. For instance, Asian countries have the largest number of urban dwellers, yet due to it large populations, there is relatively low level of urban growth (Songsore, 2009). Projections show that Africa and Asia would have the largest number of urban residents in the world by 2050, even though they are expected to be the least urbanized regions (Kundu & Pandey, 2020). Further, concerning Asia's urbanization rate of 1.4% annually, the continent is expected to account for over 50% of the world's population (Kundu & Pandey, 2020). The Latin American region have been largely urban since the last five decades (Montgomery, 2008). This trend has several positive outcomes but also dire implications for urban planning and management. Regarding the positive outcomes, rapid urbanization is associated with higher rate of education and healthcare provision as well as rapid economic development which manifest in the form of infrastructure development and the provision of urban services (Batty, 2013; Hoornweg & Freire, 2013). Negatively, it has given rise to several socio-spatial challenges (UN-Habitat, 2014), such as high crime wave, growing informal settlements, unemployment and poverty (UN-Habitat, 2013). Rapid urbanization has also given rise to several social problems and challenges. One such

severe social problem confronting city authorities is the problem of a poor housing environment (Yankson & Bertrand, 2012).

The African continent is considered one of the fastest urbanizing continents in the world. The continent will become the world's most rapid urban growth rate by 2050. Cities on the continent will also become home to an additional 950 million people. Much of this growth occurs in small and medium-sized communities (Organisation for Economic Cooperation and Development [OECD], 2020). The inability of African states to manage this growth adequately and the net consequence of this rapid urbanization has seen the increasing prevalence of gated housing development, growing informal settlements and slums, and inequalities (Smit, 2021). The lack of adequate management expertise has led to the high cost of urban land and housing, often in short supply and out of the reach of the majority of urban households. Incidentally, these urban households fall within the low-income category (Lanrewaju, 2012). African urban problems have become difficult to manage due to increasing urban residential mobility, which disorients social organization in urban areas (Keunen & Ley, 2022).

Housing continues to be a critical element accelerating most countries' economic growth (Danquah & Afram, 2014). Hence, rapid urbanization in most cities in the global south requires the provision of adequate housing for its inhabitants. In Ghana, the estimated number of housing units needed stands at 1.8 million (Ghana Statistical Service [GSS], 2021). The population increased from about 25 million in 2010 to about 31 million in 2021, and more than 30 percent of this increment live in its two biggest metropolitan cities, Accra and Kumasi (GSS, 2021). Yet, about 9 million of its total physical structures are fully completed of which less than 60% are for

residential purposes (GSS, 2021). Hence, the increase in population growth and urban residents will certainly demand the supply of more housing units (Kufuor, 2018). As a result, only about a quarter of households own a house, whiles the remainder either rent or live rent-free in a family house (Okyere et al., 2018; UN-Habitat, 2011). This disparity in housing ownership remains one of the country's fundamental socioeconomic challenges at the moment (Osumanu et al., 2018). Yet, a slight increase in housing supply has primarily met the housing needs of middle- and high-income earners and often at the expense of majority of the urban poor. Several housing research scholars have attributed this to growth in the real estate sector (Gillespie, 2020; Addo, 2016). The situation seems to affect housing quality negatively and the socio-spatial environment of urban households, as most of the urban poor are pushed out of the housing market by high rental prices and resort to sub-standard residential units to meet their housing needs (Moammeri et al., 2019). In addition to the housing supply challenges, existing conditions in most housing facilities continue to deteriorate due to pressure and high demand (Adewale et al., 2019).

The inadequate housing supply subtly propels most urban residents, who often have low-socioeconomic status, to resort to alternative housing provisions such as rental housing (Swope & Hernández, 2019). But housing determined by other factors and closely linked with residents' quality of life is a significant determinant in the socio-spatial organization of people's identity, social relationships and community goals (Moammeri et al., 2019; Spirkova et al., 2016). Given this, there is a growing interest in residential satisfaction research as an essential indicator for assessing the quality of housing conditions, the physical environment and neighbourhood attributes, and a few of these studies are (Addo, 2016; Baiden et al., 2011; Bandauko et al., 2022). Studies on residential satisfaction are critical because it is s a quality-of-life issue. People

should be happy with where they live and are more inclined to participate in social and economic activities. It gives them fulfilment and willingness to invest, which is even more critical for people living in rental housing units. Against this backdrop, this study problematizes the influence of social and built environment conditions on residential satisfaction. It examines how these conditions influence residential satisfaction in different socioeconomic urban communities. This study fits into the broader discussions on the changing sources of residential satisfaction in sub-Saharan African cities (Addo, 2016; Asiedu et al., 1991; Bandauko et al., 2022). It complements previous literature on residential satisfaction, particularly in sub-Saharan Africa and Ghana, by advancing the understanding of alternative factors such as social and built environment conditions' influence on residential satisfaction. It also serves as secondary literature for a spatial-temporal comparative analysis within medium-sized cities in Ghana. In addition, it offers valuable lessons for urban housing practitioners on the changing sources of residential satisfaction in urban neighbourhoods. This study helps devise strategies to improve housing satisfaction, a quality-of-life issue. This study also offers important suggestions for housing policymakers to improve current housing policies so that housing decisions not only become the aspiration of the state but also consider the aspirations of residents.

1.2 Problem Statement

Studies on housing in Ghana have expanded in the last three decades (*see* Asiedu et al., 1991; Obeng-Odoom, 2011; Yankson & Gough, 2014; Owusu-Ansah et al., 2018). These studies demonstrate the importance of this research area and indicate the range of housing themes that have received research attention. Examples of these housing themes relate to rental housing dynamics (Yankson, 2012), housing supply challenges (Yirenkyi, 2014), and pricing and

affordability (Addo, 2014). Further, studies have also explored policies and proposals for improving affordable housing (Awuvafoge, 2013), reducing barriers to reasonable housing provision (Adjei et al., 2015), and the sources of residential satisfaction (Addo, 2016; Asiedu et al., 1991). Inadequate housing supply is often viewed in terms of housing numbers, even though it is not the only determinant of residential dissatisfaction (Asiedu et al., 1991; Bah et al., 2018), as it partly influences it. Against this background, socioeconomic inequalities play a critical role in access to housing and residential satisfaction. This is because it often pushes the urban poor (i.e. those with low socioeconomic status and little power) to seek alternative housing arrangements, such as rental housing and informal structures, to meet their housing needs (Scheba et al., 2021). Nevertheless, most of these residential units are often sub-standard and characterized by deteriorating housing conditions, low neighbourhood quality and lack of access to essential social services (Addo, 2016). Yet, critical factors such as inadequate interior space and quality and small room sizes have emerged as essential determinants of residential dissatisfaction (Adewale et al., 2019), even though these are closely related to the quality of life of residents (Danquah & Afram, 2014).

In terms of studies on residential satisfaction, the study by Addo (2016) in selected low-income communities in Accra revealed that dwelling features negatively influence residential satisfaction. The literature further point to studies in gated communities; for instance, a study by Danquah and Afram (2014) revealed that neighbourhood facilities such as sanitation, security and water supply had a varied influence on the satisfaction levels of residents. Similarly, Asiedu and Arku (2009) revealed that while a crime-free environment positively correlate with residents' satisfaction, restrictions on residents' utilization of environmental facilities have a weak relationship with residential satisfaction. Because of the aforementioned, Eyiah-Botwe et al.

(2014) reported the influential role of building design features on residential satisfaction. Other studies on residential satisfaction have also examined it from different perspectives, including satisfaction among different age groups (Baiden et al., 2011) and the duration of stay in neighbourhoods of a resettlement town (Danquah et al., 2014). Recent studies have also examined the influence of sociodemographic and housing characteristics on residential satisfaction, using satisfaction with privacy as a proxy in gated communities (Bandauko et al., 2022).

The studies mentioned above are significant for advancing our knowledge and understanding of how neighbourhood, dwelling unit support features, and facilities in inhabited environments influence residential satisfaction in Ghana. Yet, little attention has been given to understanding how the everyday social interactions between residents affect residential satisfaction. However, elsewhere studies point to a significant relationship between social interactions and residential satisfaction (Riazi & Emami, 2018). Social interactions with neighbours are essential because social problems influence an individual's decision to relocate to a place (Clark et al., 2017). Social interaction significantly affects social attachment, an essential determinant of residential satisfaction among different socioeconomic groups (Li & Wu, 2013). Social interactions between neighbours are even more important for an individual's residential satisfaction because it enhances community engagement, a critical avenue for building trust within the dwelling and neighbourhood residential environment (Walker, 2016).

Furthermore, there is little understanding of how conditions of the built environment such as community layout and design, influence residential satisfaction. Yet elsewhere, the literature points out that other factors, including safety, affect residential satisfaction (Bonaiuto & Fornara, 2017). The conditions of the urban built environments are essential to residential satisfaction

because it determines residents' comfort and place attachment (Shin, 2016). Place attachment is even more critical because it establishes the relationship between residents and a particular place in which they live (Yu et al., 2015). Because of this, the role of the conditions of the built environment is justified because highlighting the relationship between conditions of the built environment and residential satisfaction from an individual and community sustainable point of view (Chen et al., 2019) is critical for improving the quality of housing conditions in urban communities.

In order to address this gap in previous studies, this study adds to the existing studies on residential satisfaction in Ghana by examining the role of the conditions of the social and built environments on residential satisfaction among households of private rental housing units in different socioeconomic neighbourhoods in the Cape Coast Metropolis. The choice of the study location and private rental housing units was borne out of the realization from the literature, and to the best of my knowledge, that most studies on residential satisfaction in Ghana have been undertaken mainly in Accra and Kumasi, with limited attention given to other metropolitan areas, particularly Cape Coast. Therefore, for a start, this study seeks to bring out the perspective on this critical housing evaluation survey from a location outside these two major metropolitan areas in Ghana, beginning with private rental housing units within the Cape Coast Metropolis.

1.3 Study Objective

Aim: This study's overarching objective (aim) sought to examine the effects of socio-spatial factors on residential satisfaction in the Cape Coast Metropolis.

Specific objective (s):

1. To assess the levels of residential satisfaction in the selected neighbourhoods.

2. To assess the levels of social interaction and conditions of the built environment.
3. To examine the effect of the levels of social interactions on residential satisfaction.
4. To examine the effect of the built environment conditions on residential satisfaction.

1.4 Research Question (s)

The following research questions will guide the study;

1. What are the levels of residential satisfaction among the different neighbourhoods?
2. To what extent are the levels of social interaction and conditions of the built environment?
3. To what extent do levels of social interactions influence residential satisfaction?
4. To what extent do conditions of the built environment influence residential satisfaction?

1.5 Hypotheses

Hypothesis 1

H_0: There is no statistically significant relationship between community participation in social activities and residential satisfaction.

H_A: There is a statistically significant relationship between community participation in social activities and residential satisfaction.

Hypothesis 2

H_0: There is no statistically significant relationship between a quiet environment and residential satisfaction.

H_A: There is a statistically significant relationship between a quiet environment and residential satisfaction.

1.6 Significance of the Study

The contributions of this study are as follows: firstly, it complements previous literature on residential satisfaction, particularly in sub-Saharan Africa and Ghana, by serving as a reference material for spatial and temporal comparative analysis on residential satisfaction (Asiedu et al., 1991). The study also advances our understanding of how social and spatial issues, such as community participation in social activities and quite an environment, influence residents' satisfaction within a place. Secondly, the study offers valuable lessons for urban housing practitioners, such as the rent control department, on the changing sources of residential satisfaction in urban communities. The findings will help devise measures to improve housing satisfaction, a quality-of-life issue. Lastly, this study will offer essential suggestions for housing policymakers to improve current housing policies so that housing decisions not only become the state's aspiration but also consider residents' aspirations.

1.7 Scope of the Study

The study was conducted in the Cape Coast Metropolitan Area, the capital city of the Central Region of Ghana. It interrogated socio-spatial factors and their effects on residential satisfaction among households of private rental housing in three different socioeconomic neighbourhoods. The respondents were households who were renting and stakeholders who knew the research topic in the metropolis. Because of this, the study's findings should be limited to the selected study communities, even though mention could be made of the results within and outside other areas in the metropolis. Notwithstanding this, the study provided an excellent start to interrogate the factors influencing residential satisfaction among households of private rental housing units in the Cape Coast Metropolis, which have received little attention from previous studies.

1.8 Definition of Key Concepts

Residential satisfaction: An indication of the quality of life of residents and a measure by which residents feel that their dwelling conditions provide opportunities for them to achieve their aspirations (Addo, 2016).

Private Rental Housing: This refers to any residential property where the whole or part has been rented out to an individual at a fee. Private individuals predominantly own these types of residential property.

Socio-Spatial: This refers to dimensions of the social and physical environment interacting with the residential environment.

Social interaction: The social relationships between a group of people living in a particular geographical area. It refers to both in-house and neighbourhood social interactions.

Built environment: The spatial interaction of residents with neighbourhood attributes such as recreational facilities.

1.9 Arrangements of Chapters

The thesis is organized into six chapters. Chapter One presents the general introduction of the thesis. It includes the background to the study, the problem statement follows and brings out the gaps in previous studies and the motivation for the conduct of this study. It is then followed by related sections such as the study objective, research questions, hypothesis and the scope of the study. Chapter Two presents a review of related literature, concepts and theories on residential satisfaction. It focused on related issues such as the conceptual overview of residential

satisfaction and the relationship between social interactions, built environment conditions and residential satisfaction. Chapter Three presents the study area and the research methodology. The study area section focuses on the overview of the study area, such as the geographical location and the socio-spatial characteristics, and the research methodology section focuses on themes such as philosophical orientation, research design and data sources. The data collection procedures and analytical strategy follow next.

Chapters Four and Five present the results and discussion of the study. The fourth chapter is devoted to research questions one and two. It focuses on the levels of residential satisfaction, social interactions and conditions of the built environments in the selected neighbourhoods, whiles the fifth chapter is devoted to research question three and four. It focuses on the relationship between levels of social interactions, conditions of the built environments, and residential satisfaction. The last chapter presents the summary of key findings, the conclusion and recommendations of the study, and suggestions for future research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviews related literature, theories and concepts that advance understanding of the social and spatial determinants of residential satisfaction or dissatisfaction. The review was conducted in lign with the objectives of the study and it is in two parts comprising the conceptual review and the theoretical review. The conceptual review was done to review concepts, principles and issues related to the thesis topic. It covers related themes such as housing and rental housing problems in cities of developing countries and the determinants of residential satisfaction or dissatisfaction. The theoretical review provides an overview of related theories which underpin this study. The penultimate section of the chapter presents the review of empirical literature followed by the conceptual framework, which contextualizes how social and spatial factors influence residential satisfaction or dissatisfaction.

2.2 An Overview of Urbanization in Developing Countries

For the first time in the annals of the world's urbanisation, more than half of the population was living in urban areas by 2010 (United Nations, 2018). Six years later, the proportion of the world's urban population had increased to about 55% (UN-Habitat, 2016). The factors accounting for this growth have been closely linked with the economic development of geographic regions and demographic drivers such as natural increase and migration (UN-Habitat, 2010). In recent times, whereas urbanization has stagnated for most of the developed world, that of the developing world, especially Africa and Asia, has been increasing (United Nations, 2018).

Among the continents of the Global South, Asia is the most urbanized, with approximately 2.3 billion urban population (United Nations, 2018). By 2025, the region's urban population is expected to increase from 48% to 54% (UN-Habitat, 2016). It is followed by Africa, which has an urban population share of 548 million, and has seen a sharp increase in its urban population from 23% in 1970 to approximately 41% (UN-Habitat, 2016). This places the African continent as the most urbanizing of the world with an annual growth rate of 3.7% between 1995 and 2015 (UN-Habitat, 2016). Asia and Africa will have the largest urban population in the world by 2050, even though they will be the least urbanized geographic regions (United Nations, 2018).

Regarding the African region, there are significant spatial differences in the number of people living in urban areas. Estimations from worldometer, a website which compiles population statistics at the global level, show that South Africa is the most urbanized sub-region in Africa as at 2020 with approximately 67% of its total population being urban. It is then followed by the North African sub-region, with about 52% of its total population being urban as of 2019. The third region, Middle Africa, follows next with 51% of its total population being urban as of 2019. The fourth is the West African sub-region, with an urban population share of approximately 48% as of 2019. The Eastern African sub-region is the least urbanized, with an urban population share of 30% as of 2019 (Worldometer, 2022).

The pattern of urbanization in Ghana mirages that of the African continents, as demonstrated above, even though inter-regional disparities exist (Frimpong, 2019). For instance, as of 1970, approximately 29% of the total population was urbanized (Owusu & Oteng-Ababio, 2015). The population increased to 32% in 1984, 44% in 2000, 51% in 2010 and 57% in 2021 (Owusu & Oteng-Ababio, 2015; GSS, 2021). Regarding regional differences, the proportion of the urban population in the Greater Accra Region is the highest. It stands at 92%, whiles that of the Upper

East Region is the lowest and approximately stands at 25%. Furthermore, seven out of sixteen regions are urbanized, implying that more than half of the population in those regions live in urban areas. (GSS, 2021). Regarding rural-urban variations, the urban and rural populations in all regions increased except the Eastern and Ahafo regions, which experienced a decline in the rural population (GSS, 2021). Given this narrative, the following section contextualizes population growth, housing demand and the rental housing situation from the lens of developing countries such as Ghana.

2.3 Population Growth, Housing Demand and Rental Housing

The urban built environment in many developing countries has been on the decline in recent times. This phenomenon has been attributed to factors such as rapid urbanization, the decay of urban infrastructure and poor housing quality (World Bank, 2020). However, this decline in the face of the growing urban population has not been accompanied by a corresponding supply of adequate housing units, basic social amenities, and infrastructure (Akeem et al., 2017). Whiles this assertion appears to be accurate, housing is an issue that touches on the life of an individual and the nation. Hence great importance must be placed on the role it plays in engendering human comfort (Rana, 2020). According to Fields (2015), housing represents a product of goods and services, which promotes and enhances good living and is critical for preserving neighbourhood quality. Badmos et al. (2020) further add that housing is a combination of features which provides a unique home within any neighbourhood. An important part of these is features of the social and the built environment, such as community participation in social activities and proximity to workplaces.

Regarding rental housing, approximately 40% of the world's urban residents were renters, while two-thirds of housing stock in developing countries were for rental purposes (Peppercorn & Taffin, 2013). This translates to about 1.2 billion people, yet the global policy trend has been in favour of home ownership (Gilbert, 2016). In most advanced countries, renting has been on the decline, while in poorer countries, it has been on the increase (Gilbert, 2016). The phenomenon of renting is essentially an urban tenure, and this is because as many people move to cities, the proportion of tenants increases (Gilbert, 2016). Until recently, the private housing market dominated the housing stock of most cities in the Global South. For instance, since 1960, a paltry 21% of residents living in Mexico City owned their houses. The situation is indifferent in cities like Accra and Bogota, where most households live in rental housing units (Gilbert, 2016).

Most people in Asia and Africa live in poor housing environments (Gilbert, 2016). This has been compounded by a rapid population growth rate of 3% per annum and an urban annual growth rate of above 5% in the face of a rising housing deficit (Gilbert, 2016). The inability of the housing market to meet the demand of the growing urban population has implications on critical human attributes such as the maintenance of social facilities, which are critical for developing social capital (UN-Habitat, 2022). Rental housing offers numerous benefits to different categories of urban residents. For instance, it helps new urban migrants such as students, permanent and temporary workers, and business people to find shelter to address their accommodation challenges (Peppercorn & Taffin, 2013). Urban residential mobility has led to a decline in family and social ties and even made it more unstable as separating partners, and mature children prefer to move into rental housing (Agyemang et al., 2018). But as more people move into rental housing, problems such as a deteriorating residential environment, overcrowding in rental homes, exploitation by landlords, and the attitudes of difficult tenants

pose barriers to developing social capital, a critical determinant of residential satisfaction (Addo, 2016).

In Ghana, rental accommodation is the most common type of tenancy in large metropolitan areas (Arku et al., 2012). For instance, approximately two-thirds of households in the capital, Accra, rent their housing lives in rental housing (Yankson & Gough, 2014). Several challenges, such as the high and rising cost of home ownership, constraint in land acquisition, low earnings and severe housing shortages, have been adduced to account for the shortfall in rental housing supply (Arku et al., 2012). The literature indicates that approximately 60% of Accra's residents live in overcrowded, deteriorated and low-income rental houses without critical facilities such as proper sanitation, water supply or waste disposal systems (Grant & Yankson, 2003). In addition to the challenges above, another problem is the actions of landlords taking arbitrary decisions without input from tenants (Centre on Housing Rights and Evictions [COHRE], 2008). The rental housing market is also characterized by sharing items, living space and services such as toilets, bathrooms and housing space among household members (Yankson & Bertrand, 2012). Rental housing in Ghana is also rarely maintained and likely to be poorly managed (Addo, 2016). In response tenants are likely to express dissatisfaction with their residential and neighbourhood environment and are more likely to relocate (Addo, 2016). Urban residential mobility is the outcome of neglect by stakeholders such as landlords to provide conducive housing conditions in favour of their monthly rental fees (Addo, 2016). These challenges have implications on residents' comfort which directly have effects on their levels of residential satisfaction.

2.4 Housing Policies and Interventions in Ghana

The colonial administration in Ghana did not have any housing policy. During this period, the focus was on providing decent housing for the British colonial officials so that they do not

contract diseases such as yellow fever and Malaria (Tipple & Korboe, 1998). This resulted in most European houses been built on high grounds and having the bungalow type design (Yankson & Gough, 2014). During this period, the colonial administration had little interest in the housing and sanitation issues of the locals, and only started to give it a consideration after the outbreak of the rat plague in Kumasi in 1942 and the earthquake in Accra in 1939 (Tipple & Korboe, 1998). The British colonial administration also had interest in housing provision due to the need to provide housing for the returned veterans of the Second World War (Arku, 2009). A conscious attempt to develop the housing sector began in 1951, with emphasis on the provision of formal housing for the public sector (Ayumu, 2021). This period saw the completion of seven subsidized housing schemes in Accra, Kumasi and Takoradi, with focus on providing high- and middle- income earners with decent accommodation (Ayumu, 2021). Likewise, many housing initiatives, housing interventions by the colonial administration failed to meet the housing needs of the growing urban population. Most projects in this era met the needs of the high-income households, leaving middle- and low-income households to resort to living in slums, shacks and dilapidated houses (Kugbega, 2015).

Policies and interventions in the housing sector took a new turn after Ghana gained independence in 1957; the housing sector was in distress as a result of rapid population growth and urbanization. Housing therefore became one of the priorities of government social policies (Ayumu, 2021). According to Tipple and Korboe (1998), the government saw housing as a social welfare commodity and as a result devoted much effort to providing public housing and loans schemes to facilitate housing delivery. For instance, a five-year (1959-1964) plan was tabled to provide 6,700 housing units over the period (Arku, 2009). Between (1964-1970), the government also planned to put up 60,000 housing units across the country. Concerning loan schemes, the

Roof Loan Scheme, supervised by the Department of Rural Housing was provided to support individuals who have built housing to the roofing level to complete them. The Wall Protection Loan was also made available to rural folks to protect their walls through the plastering and painting of their walls as well as to control erosion. Similar loan schemes were initiated in the urban areas for the completion of windows and doors.

The Government of Ghana got involved in housing provision through the establishment of many institutions such as the Tema Development Cooperation (TDC), State Housing Company (SHC) and the Social Security and National Insurance Trust (SSNIT). Further, the Bank for Housing and Construction, State Insurance Commission (SIC), First Ghana Building Society and Low-Cost Housing Committee (LCHC) were established to facilitate housing delivery (Ayumu, 2021). The TDC constructed houses in the industrial city of Tema, whereas the SHC provided housing in large towns throughout the country. For instance, the SSNIT housing flat project also built 7,000 dwelling units between 1988 and 2000 in large towns across the country (UN-Habitat, 2011). The National Redemption Council military government also between 1972-1978, through the LCHC constructed a little above 6,000 out of 23,000 housing units across the country. The occupants of most of the housing project provided by these institutions who had interest to own their dwellings were provided subsidies to do so. Most of these institutions withdrew from public housing provisions due to low rent, which resulted in the difficulty of recouping their cost of investment. According to Harris and Arku (2007) and Harris and Giles (2003), the role of housing shifted in the 1970s from a social good to promote economic growth, resulting in the housing sector liberalization which required that government provided the needed environment to facilitate housing provision by the private sector. In recent times, public housing delivery have stalled due to political reasons. For example, the Saglemi Housing Project have

been left at the mercy of the weather due to misunderstanding on the total cost of the project. Even though the intention of these interventions have been to provide housing for low-income households, it has rather been the middle- and high-income households who have benefitted from these initiatives (Kugbega, 2015). Private sector participation has also heightened over the years through the creation of private urban enclaves manifesting in the form of gated communities and real estate's yet their services and facilities are beyond the purchasing abilities of low-income earners. In response, private rental housing has become the alternative to meet housing needs for low-income households, with some of these rental housing not meeting the residential satisfaction levels of rental households.

Following the above initiatives, the National Shelter Strategy (NSS) was introduced in 1993 to promote private sector participation in housing delivery. The strategy was formulated by the Ministry of Water Resources, Works and Housing with the support of the United Nations (Government of Ghana, 1993). It sought to among other objectives improve the quality of shelter and the environment for human settlements. In addition, the National Housing Policy of 2015 was first introduced in 2005 after extensive consultation with various stakeholders. Likewise, the NSS, it sought to increase private sector participation in housing delivery (Government of Ghana, 2015). In summary, Ghana's attempt to address housing delivery through housing policies and interventions have been fragmented, piece-meal and incomprehensive. This is rooted in the needless experimentation of housing policies and interventions by successive government, which has resulted in the failure of most housing projects in the country (Kugbega, 2015), such as the Saglemi Housing Project in the Greater Accra Region.

2.5 Residential Satisfaction

2.5.1 Definition of Residential Satisfaction

The term residential satisfaction has been subjected to varied definitions from scholarship. While some scholars define it as separate or combined, others have explained it from a single or multi-dimensional perspective (Mohit & Al-KhanbashiRaja, 2014). For instance, Francescato et al. (1987), define "residential" as a residential unit exhibiting the combination of the overall physical and social elements that make up the housing system and not an individual's dwelling units only. Similarly, Shlay (1998), as cited in (Mohit & Al-KhanbashiRaja, 2014), define it as a multi-dimensional phenomenon which includes tenure, such as owning or renting, location and political boundary, such as where one stays and structural types, such as single-family home or multihabitat home. Concerning "satisfaction", Parker and Mathew (2001), as cited in Mohit & Al-KhanbashiRaja (2014), define it as the process of evaluating between the actual outcome they received and the expected outcome they envisaged of their dwelling environments. Also, Campbell et al. (1976) define it as the perceived discrepancy between an actual individual outcome they received and the expected outcome they envisaged of their dwelling environment. These expected outcomes range from the perception of fulfilment to that of deprivation. While the aforementioned definitions provide a significant context for measuring residential satisfaction, empirical studies have shown that residential satisfaction is not only conditioned by physical aspects of the neighbourhood environment but is also directly influenced by social interactions (Williamson, 1981) as cited (Mohit & Al-KhanbashiRaja, 2014). This has led to the suggestion that satisfaction is a subjective response to an objective environment (Potter & Cantarero, 2006).

Following the above are definitions which demonstrate the single-dimensional nature of residential satisfaction. For instance, Onibokun (1974) defined residential satisfaction as a spatial issue involving satisfaction with the dwelling units and the built environment. Similarly, Ogu (2002) described it as a tool for evaluating residents' perceptions of and feelings for the dwelling units and the built environment. It could then be said that, residential satisfaction involves a range of residents' attitudes and cognitive constructions (Fernández-Portero et al., 2017). These perceptions and attitudes involve residents' aspirations and contentment with their living and neighbourhood environment (Addo, 2016; Fernández-Portero et al., 2017). The social conditions of dwelling units also play an essential role in residential satisfaction. It has become an important social indicator used by housing practitioners and policy makers for measuring residents satisfaction with their residential environment (Mohit & Azim, 2012). These social conditions explicate the vital role of social interactions in residential satisfaction research (Riazi & Emami, 2018). Regarding the multi-dimensional nature of residential satisfaction, Huang and Du (2015) have underscored the importance of a household's social environment in addition to housing and neighbourhood characteristics. In essence, it could be said that residential satisfaction entails residents' response to their living environment (Buys & Miller, 2012). According to Francescato et al. (1987), the living environment entails the physical aspect of the housing setting, such as dwelling and neighbourhood units and the social and institutional factors.

2.5.2 Measuring Residential Satisfaction

According to Smrke et al. (2018), residential satisfaction is better understood if it is adequately measured. However, to do this depends on the critical assessment of three main individual elements. These are cognitive, affective and behavioural (Mohit & Al-KhanbashiRaja, 2014).

Providing the details of these elements, the cognitive process, according to Potter & Cantarero (2006), refers to an individual's perception and beliefs about their housing environment. These can be deduced through purposive evaluation or comparative evaluation. Purposive evaluation involves assessing factors such as quality of residence and allied accompaniment. In contrast, comparative evaluation involves measuring residential satisfaction as the outcome of the discrepancy between present and ideal residencies and the disparity between present and past residences (Mohit & Al-KhanbashiRaja, 2014). These discrepancies involve the individual's perception of fulfilment or deprivation within the residential environment (Mohit & Al-KhanbashiRaja, 2014).

The affective process refers to residents' attitudes and perceptions toward their socio-spatial environment. This includes personal characteristics, objective attributes and subjective attributes of the residential environment (Mohit & Al-KhanbashiRaja, 2014). Concerning behavioural process, it refers to all the adaptive and non-adaptive behaviours that residents exhibit in response to their dissatisfaction with their residential environment (Mohit & Al-KhanbashiRaja, 2014). According to Porter and Cannaro (2006), this process measures behavioural intentions such as recommendations and desire to stay in a residence or move to a new residence. In lieu of this, the behavioural responses to residential dissatisfaction can be grouped into residential mobility, residential modification and social interaction (Coulton et al., 2012). In essence, Francescato et al. (1987) view residential satisfaction as an individual's attitude influenced by the abovementioned elements.

2.5.3 Importance of Residential Satisfaction Studies

Taking residential satisfaction evaluation in mainly urban areas has numerous benefits for housing researchers and practitioners (Addo, 2014; Baiden et al., 2011; Asiedu & Arku, 2009). Although the determinants of residential satisfaction vary by tenure, housing types, cultures, countries and different socioeconomic neighbourhoods (Mohit et al., 2010), the influential roles of these variables have been underscored (Huang & Du, 2015). They, therefore, validate the need for further studies on a case-specific basis to guide public policies and housing research (Mohit et al., 2010). It is also crucial for geographic areas which have remained unexamined by previous literature. Residents' input could be critical for improving residential satisfaction. This is even more important because it allows them to meet their housing expectations (Jansen, 2014). Residential satisfaction surveys have also been widely accepted as a way to empower housing clients (Riazi & Emami, 2018). It underscores residential satisfaction as essential to life satisfaction, wellbeing and general quality of life (Wang & Wang, 2016). Therefore, evaluating conditions of the housing environment helps to determine the way individuals respond to them Smrke (2018), especially households living in rental housing areas.

Empirical studies on residential satisfaction outside of Africa have shown a significant relationship between dwelling unit features such as living room sizes and the availability of kitchen space and residential satisfaction. For instance, Mohit et al. (2010) revealed moderate and high levels of satisfaction with dwelling unit conditions and home support services such as living areas, bedrooms and dining spaces among low-income households in Malaysia. They further revealed that residents were highly dissatisfied with the conditions of the neighbourhood environment, such as proximity to workplaces and the availability of schools and hospitals.

Similar studies conducted in developed countries such as Japan also found residents varying levels of satisfaction with certain features of their rental housing units, such as living space (Minami et al., 2022). In Africa, related studies in Nigeria have also shown that certain features of the housing environment comprising living room space influences levels of residential satisfaction (Ibem & Amole, 2013; Jiboye, 2012; Ogu, 2002). Related studies in Ghana have revealed mixed findings between housing conditions and residential satisfaction. For instance, a survey by Danquah et al. (2014) and Baiden et al. (2011) revealed residents' high levels of satisfaction with the conditions of their dwelling units and the social environment, such as the availability of water closets and opportunities for community meetings. Addo (2016) also revealed higher levels of residents' dissatisfaction with the conditions of their dwelling units, such as living room sizes. These studies are essential for highlighting significant relationships between housing conditions and residential satisfaction in different contexts, such as gated and low-income communities. Yet, limited research has explored the relationship between the social and spatial environment and residential satisfaction, especially among rental housing units. This thesis fills this void left by previous studies by examining the influence of socio-spatial factors on residential satisfaction among private rental housing units.

2.5.4 Levels of Social Interaction and Residential Satisfaction

Social interactions, as used in this study, denote the social relationships between individuals living in a particular geographical area. It involves in-house and neighbourhood activities that foster cohesion and cooperation among household and community members. Examples of these activities are the exchange of pleasantries, meeting in community gatherings and participation in community social activities such as communal labour. It is crucial because the decisions of one individual will be influenced by the behaviour and characteristics of others (William & William,

2016). The social relationships between an individual and others are influenced by two factors, which are contextual and endogenous (Vera-Toscano & Ateca-Amestoy, 2008). Contextual factors refer to the characteristics that are exhibited between a group of people. On the other hand, endogenous factors refer to how individuals are affected by the behavioural choices of group members (Vera-Toscano & Ateca-Amestoy, 2008). Both aspects are evident in residential neighbourhoods and form a significant component of the literature on social interactions. Therefore, there is increasing recognition of social interactions as a determinant of a range of individual behaviour in the residential environment (Nelson & Prilleltensky, 2010; Teck-Hong, 2012; Vera-Toscano & Ateca-Amestoy, 2008).

Housing as a commodity satisfies dwelling needs and other intangibles such as family relationships and social status. This accounts for why some individuals demand specific housing units to meet their need for social space to interact and socialise with people around them (Vera-Toscano & Ateca-Amestoy, 2008). This social dimension of the housing environment places housing beyond the traditional status of a dwelling unit, to a commodity that provides critical services such as security, privacy, and personal and community social relations (William & William, 2016). Being ill-housed could therefore imply deprivation of these essential services (Coates et al., 2015). The role of community cohesion in residential satisfaction has been underscored in the literature as it can reduce or increase a person's psychological well-being and quality of life and influence their decisions to move out of a place (Amole, 2009). A sense of community established through social ties could also benefit new tenants (Grillo et al., 2010), as it helps them cope with the stressors associated with relocation to a new place (Amole, 2009). Evidence in the literature suggests a positive relationship between social interactions and residential satisfaction. For instance, a study conducted in Beijing by Wang and Wang (2016)

found a significant relationship between the daily interactions among residents and residential satisfaction. Another study conducted in Iran by Riazi and Emami (2018) found that neighbours who engage in frequent interactions are satisfied with their residential unit compared to those with little interaction. Another study by Grillo et al. (2010) in the United States found a positive relationship between social engagements and residential satisfaction. Addo (2016) also found high satisfaction levels with social networks such as community support among residents in Accra. In essence, the literature suggests that social interactions between residents is more likely to influence their levels of residential satisfaction.

2.5.5 Conditions of the Built Environment and Residential Satisfaction

The conditions of the urban built environment have become an important determinant of residential satisfaction, as they provide opportunities for residents to meet personal needs and aspirations (Smith, 2011). These conditions comprise aspects of the physical environment, such as the availability of community and sanitation services (Grillo et al., 2010). Hence, residents' assessment of the conditions of the built environment is a critical determinant of residential satisfaction (Sebastien, 2020). It presents bottom-up feedback to meet their aspirations, including quality of life and well-being (Smith, 2011). The conditions of the urban built environment can also influence household relocation decisions (Rohe & Lindblad, 2013). For instance, distance from home to workplace, schools and police stations affects the quality of life and mental well-being and could influence residential satisfaction (Gibson et al., 2011).

The literature points to several studies revealing the significant relationship between conditions of the urban built environment and residential satisfaction. For instance, a study by Yin et al. (2019) in China showed a positive relationship between distance to the Central Business District

(CBD) and residential satisfaction. Another study by Grum (2017) in Slovenia found a positive relationship between aspects of the built environment and residential satisfaction. A similar study by Huang and Du (2015) in China also found a positive relationship between residential satisfaction and community services such as recreational centres. These findings have also been corroborated by Azimi and Esmaeilzadeh (2017) in Iran, who revealed a significant relationship between satisfaction with neighbourhood characteristics and residential satisfaction. Aspects of the built environments such as adequate public, open and green spaces have also been found to have a significant relationship with residential satisfaction in Brazil and France (Reis & Lay, 2010; Rioux & Werner, 2011). Erdogan et al. (2020) also found in their study in Turkey a significant relationship between aspects of the physical environment and residential satisfaction.

Related studies in Africa have revealed varying relationships between conditions of the urban built environment and residential satisfaction. For instance, Ibem and Aduwo (2013) found a generally high level of dissatisfaction with the conditions of the built environment among residents of public housing units in Nigeria. On the other hand, Ibem and Amole (2013) revealed in a related study a generally high level of residents' satisfaction with conditions of the built environment, such as proximity to workplaces and the availability of open spaces. Other aspects of the built environment, such as water supply, sanitation and safety issues, have also been influential determinants of residential satisfaction in Ghana (Danquah et al., 2014).

2.6 Review of Empirical Literature

Residential satisfaction studies in Ghana have received considerable attention from scholars. Some of these studies have been undertaken in gated communities, mining-induced resettlements towns and low-income communities (Bandauko et al., 2022; Abankwa et al., 2020; Addo, 2016;

Danquah et al., 2014; Baiden et al., 2011). For instance, the study by Bandauko et al. (2022) examined the influence of sociodemographic and housing characteristics on residents' satisfaction with privacy in gated communities in Accra. According to Ibem and Aduwo (2013), satisfaction with privacy is a crucial indicator of residential satisfaction measurements. It was a quantitative study which surveyed 183 respondents across three selected gated communities. The study's findings revealed that age and level of education and regular renovations of homes had a positive relationship with satisfaction with privacy. The study findings were relevant for informing decisions involving multiple stakeholders in the housing sector. It is imperative that stakeholders in housing provision such as the state and private sector comprising real estate, private individuals and banks, understand the different sociodemographic and housing characteristics that could influence residential satisfaction or dissatisfaction. This will ensure a synergistic pathway for achieving the aspiration of residents, including tenants. The rise of gated communities has concerns for ecological sustainability and rising prices. These gated communities are beyond the economic reach of most Ghanaians, including renters. Similarly, Danquah & Afram (2014) examined the determinants of residential satisfaction and the levels of satisfaction and dissatisfaction among residents living in two selected gated communities in Accra. It was a mixed methods study which used the Habitability Index formula to measure residential satisfaction. The study revealed that residential satisfaction was generally high among the residents. It, however, found that they were dissatisfied with neighbourhood facilities. Danquah and Afram (2014) recommended collaboration between stakeholders in the built environment sector comprising the government, metropolitan authorities and built environment professionals to ensure that residents' feedback on real estate projects is incorporated in the design of future housing projects that meet their aspirations.

A similar study by Asiedu and Arku (2009) examined the factors that inform the motivation and contentment of residents living in gated communities with social interactions. It was a mixed methods study involving 146 respondents drawn from three selected communities. Their findings revealed that residential satisfaction among the residents was influenced by perceived concern for security. Asiedu and Arku (2009) also revealed high levels of interaction between residents of the selected gated communities. This interaction involved exchanging pleasantries, socializing at gatherings and discussing issues of common interest. The study concludes by recommending future studies look into the sustainability of the increasing development of gated communities and its implications on urban governance in Ghana. In contrast, studies have also been conducted in mining-induced resettlement towns. For instance, Abankwa et al. (2020) examined the residential satisfaction levels of residents of a mining-induced displacement and resettlement town in the Ellembelle District of Ghana. It was a quantitative study involving the sampling of 229 household heads. The findings revealed that satisfaction with the physical features of the dwelling units, such as the size of living spaces and the size and location of the kitchen, was high. In contrast, satisfaction with community facilities, such as available schools and hospitals and the neighbourhood environment, such as the proximity of the home to work and the maintenance of facilities, was moderate. The study concluded by recommending that future studies consider the opportunities available for actual residential satisfaction among residents living in mining-induced resettled communities.

The rapid deterioration and erosion of the coastal environment in Ghana have attracted considerable research attention (Oteng-Ababio & Owusu, 2011; Addo, 2009). Coastal communities have become vulnerable to climate-induced sea erosion due to high-rise tides and anthropogenic activities. This has resulted in the construction of resettlement and Sea Defence

project in some parts of Ghana. Given this, Danquah et al. (2014) explored residential satisfaction among residents of the Keta Sea Defence Resettlements Project in the Volta Region. This quantitative study involved 228 housing units from three different communities where the Keta Sea Defence Resettlements Project have been undertaken. The study's finding revealed that residents were generally satisfied with the infrastructural project and the introduction of new dwelling unit features such as water closet. The residents were, however, dissatisfied with dwelling unit features such as the size of sleeping rooms. The study by Danquah et al. (2014) also revealed a positive correlation between length of stay and residential satisfaction. It also showed a positive relationship between community participation in social activities and residential satisfaction. Based on these findings, Danquah et al. (2014) recommended collaborative engagement with residents before the implementation of resettlements projects to ensure such projects provide the needed satisfaction for dwellers.

Another study by Eyiah-Botwe et al. (2014) assessed factors influencing residents' perception of satisfaction with the performance of housing development. This study was conducted on Social Security and National Insurance Trust (SSNIT) Housing in Kumasi. It used a quantitative method to survey residents living in 38 flats. The study found that residents were generally satisfied with building design features. However, the designs did not consider vulnerable groups such as the disabled and the aged. The study also revealed that residents were dissatisfied with the location of the housing project along a busy road. Eyiah-Botwe et al. (2014) concluded their study by recommending gated community designs and measures to ensure reduced noise. In a related study, Baiden et al. (2011) examined residential satisfaction among residents living in three selected communities in Accra. Their study was a cross-sectional survey of 562 respondents, which used logistics regression to analyze the relationship between

sociodemographic characteristics and housing features. It revealed a significant relationship between age and residential satisfaction, as younger people, compared to older people, were more likely to have higher levels of residential satisfaction. Their study also revealed that residents were dissatisfied with their dwelling units if they lived in compound houses. Given the findings, Baiden et al., 2011 recommended the construction of more affordable housing to complement housing provision and ease overcrowding in Accra. They also recommended policy guidelines for managing landlord-tenant conflict in Accra. Similarly, Addo (2016) examined residential satisfaction among multi-habited households selected from five low-income communities in Accra. The study used a mixed methods approach. The findings revealed that dwelling unit features such as room size and privacy in the compound negatively influence residential satisfaction. The study also found that households were highly satisfied with social indicators such as community support and proximity to friends and relations. The respondents were also moderately satisfied with neighbourhood characteristics such as proximity to workplaces, community standpipes and markets. Given these findings, socio-spatial factors such as participation in community social activities are critical factors that requires attention in residential satisfaction research, especially among rental households.

Notwithstanding the importance of the studies above in highlighting the various residential satisfaction studies undertaken in Ghana, few studies have examined the determinants of residential satisfaction among rental households. This study, therefore, fills this void left by previous studies to explore the socio-spatial determinants of residential satisfaction among households living in private rental housing units in the Cape Coast Metropolis. This study is significant because it complements existing studies by highlighting the factors influencing residential satisfaction among private rental households. It is also significant because the

findings provide important lessons for developing strategies that ensure residents are satisfied with their dwelling unit conditions.

2.7 Theoretical and Conceptual Frameworks

This section of the chapter reviews the theoretical and conceptual frameworks underpinning the study. The section is in three-part; the first part presents the housing needs theory (Rossi, 1955), which position housing as one of the eminent needs of households as they progress through life cycle changes. It posits that households not satisfied with the conditions of their residential environment, such as small room sizes and living space, will relocate to meet these aspirations. The second part presents the housing deficit theory (Morris & Winter, 1978), which posits that the inability of actual housing conditions such as living space to meet expected housing conditions such as adequate living space by households leads to dissatisfaction with their residential environment. The housing deficit theory is a progression of the housing needs theory; hence in the penultimate part of this section, a combined justification and relevance of the theories are provided. The third part of the section presents the conceptual framework, which illustrates the connections between the various variables used in this thesis and how they lead to satisfaction or dissatisfaction with conditions of the residential environment among rental households.

2.7.1 Housing Needs Theory

The theory of housing needs was conceptualized by Rossi (1955) to demonstrate how households' progression from one cycle to another requires that they meet specific aspirations. The inability to fulfil these aspirations leads to dissatisfaction with their residential environment. In response, households relocate to other neighbourhoods or new residences to meet these

residential needs (Mohit & Al-KhanbashiRaja, 2014). For instance, life cycle changes will require that households have spacious rooms, proximity to social facilities and adequate open and green spaces. As a result, families are likely to be dissatisfied with their residential environment if they do not meet these needs and aspirations (Mohit & Al-KhanbashiRaja, 2014).

Considering the growing middle- and high-income earners in Ghana, rental households are likely to have a change in consumption patterns as they require a conducive residential environment. The desire to meet these residential needs, which border on quality of life and well-being, is likely to influence their decisions to relocate to new residences or neighbourhoods (Spirkova et al., 2016). The preceding explanation underscores the adoption of this theory which has been used to confirm or repudiate the study's findings. Next is the housing deficit theory, which explains how the discrepancy between rental households' expected and actual outcomes leads to dissatisfaction with their residential environment.

2.7.2 Housing Deficit Theory

The theory of housing deficit was conceptualized by Morris and Winter (1978) to demonstrate how the discrepancy between the expected outcome and actual outcome as households occupy new residence or neighbourhood leads to dissatisfaction. According to Mohit & Al-KhanbashiRaja (2014), this discrepancy leads to unmet needs and aspirations and will likely lead to dissatisfaction with the residential environment. In response, households might have to adjust to the new residential environment or consider immediate relocation to meet their aspirations and needs (Mohit & Al-KhanbashiRaja, 2014). According to Campbell et al. (1976), satisfaction in this regard is conditioned by the perceived discrepancy between expected aspirations, such as

spacious rooms and actual achievements, such as small room sizes in the residential environment.

The housing needs theory and the housing deficit theory are also very crucial in understanding the cognitive, affective and behavioural dimensions of residential satisfaction. Concerning, the cognitive and affective dimensions, the perception, attitude and belief of a rental household about the quality of the dwelling environment either through purposive or comparative evaluation influence their decision to stay at a dwelling unit or move out of a dwelling unit. If the household perceive the dwelling unit environment to be good and meet their aspirations, it is likely to result in residential satisfaction, whiles if they perceive the dwelling unit environment to be poor, it is likely to lead to residential dissatisfaction and hence move out of the dwelling unit. Regarding the behavioural dimension, this encapsulate the adaptive and non-adaptive responses to residential dissatisfaction. Households resort to residential mobility, residential modification and social interaction when they are dissatisfied with their dwelling unit conditions (Coulton et al., 2012). In all, the theories point to the fact that, a households feeling of contentment with the residential environment leads to residential satisfaction whiles the feeling of discontentment with the residential environment leads to residential dissatisfaction.

Few studies have applied these theories to examine the determinants of residential satisfaction. For instance, Amerigo (2002) found that notwithstanding the considerable discrepancy between the actual and ideal environment in a low-quality residential environment, residents still exhibited a high level of residential satisfaction. Also, Jansen (2014) revealed that the discrepancy between residents' expected outcome and the actual outcome does not necessarily decrease residential satisfaction, especially when the value of that discrepancy is minute. Against this backdrop, Parkes et al. (2002) underscores the critical role of the main principles underlying

the theories mentioned earlier (i.e. needs and expectations) in residential satisfaction. Hence, the adoption of these theories to examine the objectives of this study is justified as it helps to extend their application to residential satisfaction in another geographical context (Emami & Sadeghlou, 2021). This is crucial, especially in Ghana's metropolitan areas where residential satisfaction studies have previously not been undertaken.

Likewise, any other theory utilized in geographical research, the housing needs theory and the housing deficit theory, have limitations. First, the two theories do not account for the politico-institutional factors in urban residential satisfaction. The theories limit residential satisfaction to the outcome of the desire of households to meet their needs. However, not all residential satisfaction is underlined by this factor, as residential relocation could result from forced ejection by the state or private individuals, especially on a state or privately-owned land. This is more likely to happen in Ghana, where many lapses characterize housing and land tenure arrangements. Second, the theories do not account for the role of employment-based residential satisfaction, where people relocate to specific residences or neighbourhoods due to job-related factors such as job transfers. These factors are external to individual household aspirations and therefore they have little or no control over them.

Notwithstanding those mentioned above, the use of these theories in this thesis is significant and justified because they emphasize multiple aspects of the residential environment that could influence residential satisfaction (Morris & Winter, 1975). While both theories have weaknesses, their combined use in this study is significant in identifying multiple factors that could account for residential satisfaction (Emami & Sadeghlou, 2021).

2.7.3 Conceptual Framework

Urban residential mobility is a common feature in most metropolitan areas in Ghana. This is happening because most rental households have needs and aspirations that require satisfaction as life stages progress (Rossi, 1955). Some of these aspirations are the levels of satisfaction they derive from the residential environment as they occupy new residences or neighbourhoods. The inability of the new residential environment to provide adequate satisfaction is likely to lead to dissatisfaction. Figure 2.1 shows the original conceptual framework which was adopted from Adewale et al. (2019). It shows that residential satisfaction is a composite term made up of internal dwelling unit features and external dwelling unit features. It also shows that an individual's satisfaction with the residential environment which include satisfaction within the housing environment and the neighbourhood is influenced by socio-demographic characteristics such as sex, age, income, education, household size, and length of stay in the residence.

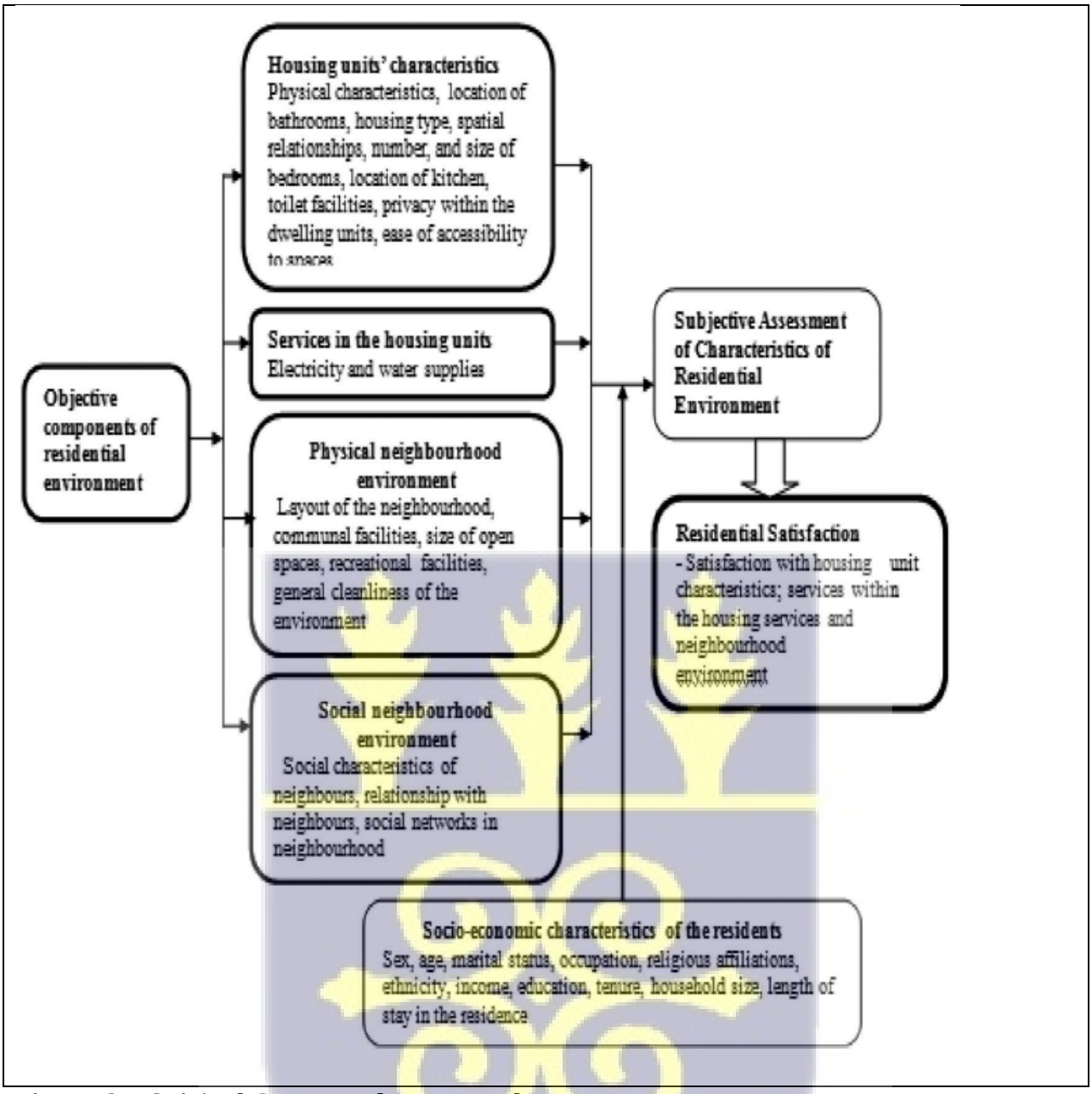


Figure. 2.1 Original Conceptual Framework

Source: Adewale et al. 2019

In view of the above, the conceptual framework in Figure 2.2 below is based on the notion that residential satisfaction is a composite term that entails satisfaction with internal and external dwelling unit features (Mohit et al., 2010). The internal dwelling units' features include but are not limited to living room space, availability of kitchen space and the size of room entrance. In

contrast, the external dwelling units' features involve elements of the social and neighbourhood environment. Examples of elements of the social and built environments include but are not limited to exchanging pleasantries with community members, participation in community social activities and the proximity to workplaces (Mohit et al., 2010).

Rental households in their current residential units have pressing needs and aspirations, such as the desire to have spacious living spaces and bedrooms. They also desire to have access to basic household services such as water supply and electricity. The absence of these conditions lead to their dissatisfaction with their internal dwelling environments. The desire to have the social space to have regular interactions with neighbours and engage in community social activities is a crucial element of the social environment. However, the inability of their current external dwelling environment to provide these needs leads to residential dissatisfaction and triggers the desire to relocate to another place or residence. Nevertheless, rental households also anticipate certain conditions or outcomes in the eventual situation that they relocate or intend to relocate to another area. The inability of their expected conditions, such as adequate living space and bedroom sizes, to be commensurate with the actual conditions they meet or receive, such as small living and bedroom sizes, leads to dissatisfaction with their residential units. For this thesis, the rising needs of rental households amidst life stages progression and the evaluation of expected aspirations against the actual reality is limited to the conditions of the internal and external dwelling units comprising the social and the built environment.

The relationship between satisfaction with internal dwelling units, social interaction and conditions of the built environment, as adapted and modified from Adewale et al. (2019), has been illustrated in Figure 2.2. Amidst these interactions is the critical role of sociodemographic variables on the influence of social-spatial factors on residential satisfaction. Given this, Figure

2.2 demonstrates that the combined effects of the interaction between households' needs and the discrepancy between their expected aspirations and the actual conditions in their social and built environment has implications on their level of residential satisfaction. Yet, their level of satisfaction with these conditions could be impacted by sociodemographic variables.

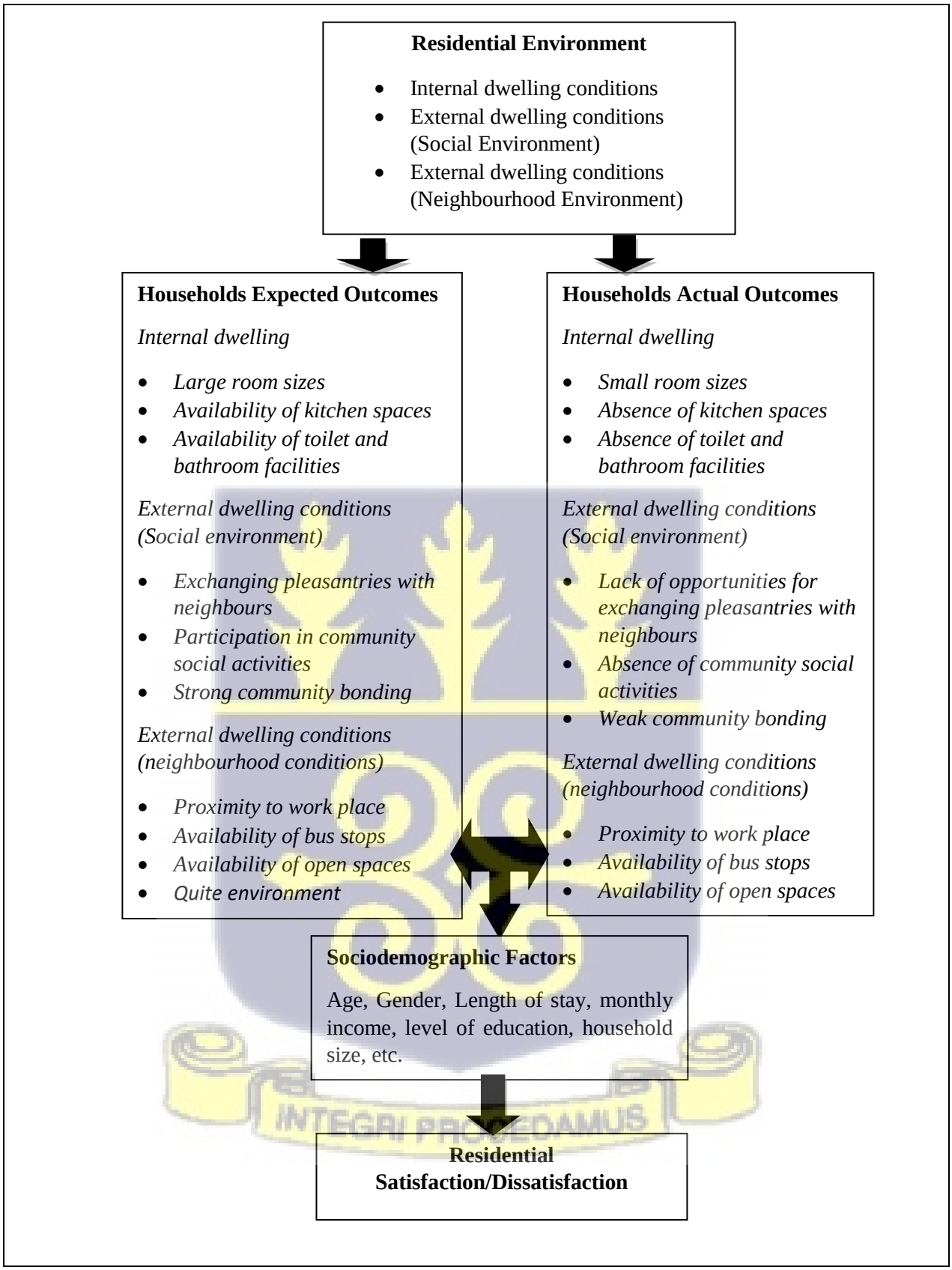


Figure 2.2 Conceptual Framework of Residential Satisfaction

(Source: Adapted from Adewale et al., 2019)

2.8 Summary

The literature review revealed that residential satisfaction is a quality-of-life issue and hence affects the well-being of residents. It also shows that the housing needs theory and the housing deficits theory are two important theories that explain the relationships between several variables and residential satisfaction, including conditions of the social and built environment. The review demonstrated that the changes in households' life cycle and the anomaly between their expected outcome against the actual outcome they receive leads to satisfaction or dissatisfaction with their residential environment.

CHAPTER THREE

PROFILE OF STUDY AREA AND METHODOLOGY

3.1 Introduction

This chapter presents the profile of the study area and the research methodology followed in conducting the study. The chapter is presented in two parts, with the first part profiling the study area. In this part, contextual issues such as the location characteristics, socio-spatial and housing characteristics are presented. The second part presents the methodology, which further discusses issues such as the philosophical orientation of the study, research design, data sources, target population, data analytical strategies and the findings. The chapter then concludes with a summary.

3.2 The Geography of Cape Coast Metropolis

3.2.1 Location Characteristics

The Cape Coast Metropolis herein referred to as "the metropolis", which is the capital of the Central Region of Ghana, is bounded to the north by the Twifo-Heman Lower-Denkyira district and to the south by the Gulf of Guinea. It is bordered to the west by the Komenda-Edina-Eguafo Abrem municipality and to the east by the Abura-Asebu-Kwamankese district (Figure 3.1). The metropolis is located on latitude 5^0 06' N and longitude 1^0 15' W and covers an area of approximately 122 square km (Ghana Statistical Service [GSS], 2014). The metropolis covers a total area of roughly 122 km sq. It is administratively divided into Cape Coast North and Cape Coast South sub-metros to deepen decentralization. The fulcrum of this division is the main road

from Accra to Sekondi-Takoradi. The metropolis is also located between three major metropolitan areas of Ghana that is Accra, Kumasi and Sekondi-Takoradi. This has presented opportunities for developing its service sector for socioeconomic growth and development (CCMA, 2018).

The metropolis has an undulating landscape characterized by batholith as the significant feature. It has steep slopes in many of its neighbourhoods. This affects physical development such as housing, roads and construction activities. The steep slopes also affect mobility, such as human and vehicular movement and the provision of utility services, such as the laying of telephones and pipelines (CCMA, 2018). Several valleys with varying sizes and morphologies lie between the steep slopes. Some of the valleys serve as the channel for rivers and streams to flow in the metropolis. The major river in the metropolis is the Kakum river, and it enters the sea at the estuary at Etre, a community lying very close to the sea. The streams end up in wetlands and the Fosu Lagoon at Bakaano, a coastal community. Most of the wetlands in the metropolis have a high-water table with an average of 1.2 meters below the surface. This makes them susceptible to flooding (CCMA, 2018). The inability of the wetlands to contain the excess water causes flooding in adjoining communities, leading to the seasonal destruction of lives and properties and a stall in economic activities. Residents, including renters living in these adjoining communities, are likely to be dissatisfied with the residential environments.

Concerning climatic conditions, the metropolis is located in the littoral anomalous zone of Ghana and experiences high temperatures throughout the year. The hottest periods are experienced in February and March, while the coolest period is experienced between June and August. Climate variability in the metropolis is influenced mainly by rainfall than temperature (CCMA 2018, GSS, 2014). The metropolis experiences double maxima rainfall, with a total annual

precipitation between 750mm and approximately 1000mm. The highest rainfall in the history of the metropolis was 1719mm, and it was recorded in 1979. The lowest rainfall is 372mm, and it was recorded in 1983. The metropolis experiences a minor rainy season between November and January (CCMA, 2018). Concerning humidity, the metropolis has a mean monthly relative humidity between approximately 85% and 99% in the morning. Humidity varies from about 50% during the dry season to 80% during the wet season. The high humidity in the metropolis creates foggy conditions on coastal roads, reducing visibility and making driving dangerous, especially on the streets in coastal communities. The high humidity and sea breeze negatively affect building materials and vehicles (CCMA, 2018). It accelerates rusting of these materials, especially in coastal communities, and some of these materials and vehicles belong to renters. This is likely to lead to dissatisfaction among the residents.

The geology of the metropolis is characterized by the formation of Birimian, which consists of schist, granites and pegmatite. The valleys in the metropolis are characterized by clayey gravel with lateritic soils, while the hills are characterized by sandy and clayey silts (CCMA, 2018; GSS, 2014). Road and building construction activities have been greatly affected by the undulating topography of the metropolis. This has caused erosion along the slopes, and sedimentation, and flooding in low-lying communities (CCMA, 2018; GSS, 2014). In the past, the vegetation of the metropolis supported various types of wildlife, such as monkeys and antelopes. This wildlife has been killed or forced to go into extinction and migrate into few remaining forest areas in surrounding communities, such as Kakum-Atadanso and Amosima, due to extensive cultivation, hunting, trapping, and roads and housing construction (CCMA, 2018; GSS, 2014).

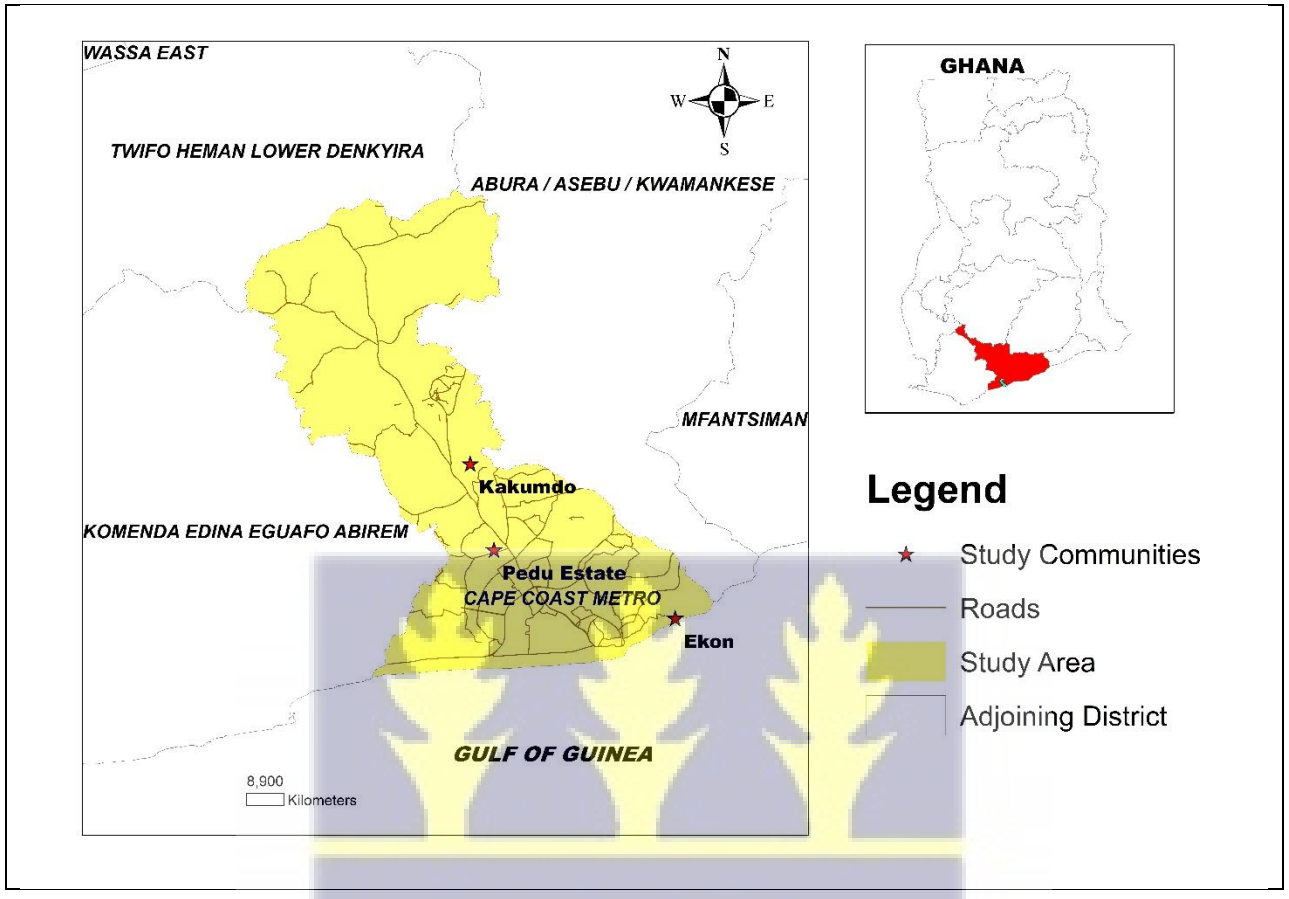


Figure 3.1 A Map of the Study Area

(Source: Author's Construct, 2022)

3.2.2 Socio-Spatial Characteristics

The choice of Cape Coast Metropolis for this study is primarily due to empirical evidence that much of the previous studies on residential satisfaction in Ghana have largely been undertaken in the two largest metropolises of Accra and Kumasi, with a particular focus on low-income and gated communities. Some of these studies are Addo (2016), Asiedu and Arku (2009), and Baiden et al. (2011). This study for a start begins with households living in private rental housing among

three different socioeconomic neighbourhoods in the Cape Coast Metropolis. This is important because residential satisfaction is a quality-of-life issue, and hence continuous research, especially in areas previously unexamined, is required to meet the changing housing needs of urban residents (Spirkova et al., 2016). The metropolis has recently undergone significant social and spatial transformation due to changing socioeconomic conditions of the residents. In response to rapid urbanization is the growth in housing development at the peripheries of the metropolis and the provision of critical urban infrastructure in certain areas (CCMA, 2018). Social activities such as community soccer, weekend meetings and the activities of masquerader clubs have gained momentum. The socio-spatial transformation of the metropolis depicts that of other Ghanaian towns, such as the Wa municipality, which have experienced urban decline for a long time (Osumanu & Akomgbangre, 2020).

The highest political and administrative unit in the metropolis is the Cape Coast Metropolitan Assembly, which serves and provides guidance to affiliated administrative units. The metropolis derives and exercises its executive and legislative functions under the Local Government Act 462 (1993). It comprises related departments such as physical planning, social welfare, community development, and disaster prevention. The metropolis is one of the oldest local governing units in Ghana. It was elevated to the status of a municipality in 1987 and upgraded to a metropolitan status in 2007 by Legislative Instruments (LI) 1373 and 1927 respectively. The traditional name of the metropolis is 'Oguaa', which means market. The metropolis was named 'Carbo' Corso by the Portuguese, which means short cape. The name was later changed to Cape Coast by the British (GSS, 2014). It comprises sixty-seven assembly members comprising the metropolitan chief executive, forty-five elected assembly members, and nineteen presidents appointed by the presidents in consultation with interest groups such as traditional authorities

(GSS, 2014). The metropolis has two members of parliament representing the Cape Coast North and Cape Coast South constituencies respectively (GSS, 2014).

The metropolis is characterized by the spatial distribution of basic infrastructure and amenities such as electricity, water, educational institutions, markets, health facilities and police posts. Other services in the metropolis are postal and banking services (CCMA, 2018). It has a total road network of 72km, with a road density of 0.62km. This is relatively efficient, suitable and adequate for the movement of people and goods and services, such as commodity flow, linkage with adjoining communities, health, banking and education (CCMA, 2018). Development activities in the metropolis in concentrated in the southern sector compared to the northern sector. The northern sector is characterized by inadequate sanitation facilities. The majority of the population relies on public toilets, while residents in low-income communities' resort to the beaches and the bushes to attend to nature's call. The metropolis generates approximately 144 metric tonnes of solid waste daily. This translates into about 52,560 tonnes yearly. The kinds of solid waste generated include plastics, paper, glass, textiles and organic materials (CCMA, 2018). The drains in the metropolis are frequently choked with plastics, which make it difficult for water to flow. This leads to flooding when it rains and other health hazards. This has negative implications on environmental sanitation (CCMA, 2018), and is likely to cause residential dissatisfaction among residents. With regard to electricity, approximately 85% of households have access to an electricity supply, but intermittent power fluctuations characterize even it. Intermittent power fluctuations in the metropolis result from increased demand due to additional power requirements from newly developing areas (CCMA, 2018). Several rural settlements and peri-urban communities are yet to be connected to the national grid. The lack of access to

electricity in these communities has negatively affected economic growth and physical development (CCMA, 2018).

The primary source of domestic water supply for agricultural and industrial purposes in the metropolis is the Kakum River. It is dammed, treated and distributed from Birimso, a suburb in the north-eastern part of Cape Coast (CCMA, 2018). There are several communities along the river basin, such as Akotokyir, Amamoma and Esuekyir. The metropolis has been experiencing perennial water shortages due to anthropogenic activities such as housing development, inappropriate farming practices and poor planning schemes along the river's basin. This has negatively impacted on the sustainability of the river (CCMA, 2018). The unsustainable management of the Kakum River basin has led to the pollution and degradation of the river. This has led to a rise in Bilharzia cases from communities along the river's catchment area, requiring baseline surveys along the river basin to generate data to control the situation (CCMA, 2018). Renters living in the metropolis are likely to be dissatisfied with their immediate and neighbourhood environments due to the intermittent water supply. The lack of potable water predisposes residents to preventable diseases such as cholera and diarrhoea. These diseases negatively affect productivity and stall progress in local economic development (CCMA, 2018). The main challenges hampering water supply in the metropolis include perennial drying of the Kakum River and Dam, the use of old equipment, non-payment and irregular payment of water tariffs, and frequent power outages (CCMA, 2018). These require urgent attention to provide safe and regular domestic water supply in the neighbourhoods, especially for renters.

The metropolis is endowed with many primary, secondary and tertiary schools. These schools attract people from different areas within and outside Ghana who pursue varying academic and professional programs (GSS, 2014). It is home to the first elementary and secondary schools in

Ghana, the Philip Quacoe Boys School and the Mfantsipim School. The metropolis is also home to the University of Cape Coast and the Cape Coast Technical University. About health facilities, the metropolis is home to the Cape Coast Teaching Hospital, the Cape Coast Metropolitan Hospital, the University of Cape Coast Hospital and various hospitals, polyclinics, clinics and Community-Based Health Planning Services (CHPS) facilities providing healthcare services to the residents. The Cape Coast Teaching Hospital serves as the referral centre for the Central Region (GSS, 2014). Some of the communities in the metropolis, such as Abura and Kakumdo, are characterized by poor layouts, a lack of recreational facilities, haphazard development and slums. The communities along the coast, such as Ekon and Amanful, are characterized by frequent sand wining activities, open defecation along the beach, lack of toilet facilities in the houses and poor environmental designs, such as the absence of bus stops (CCMA, 2018). Sand winning activities along the coast have led to coastal erosion and flooding in some coastal communities, especially at Amanful and Ola. The construction of a sea defence wall is ongoing to protect vulnerable communities from further destruction from coastal flooding. The metropolis does not have adequate market centres. It is also common to see some of the traders at it two biggest market centres, that is, the "Kotokoruba Market" and "Abura Market", trading along the roadsides (CCMA, 2018). The "Anaafo" and the "Eyawda Guam" market are undergoing reconstruction to give them a facelift. Home-Based Enterprises (HBEs) are common within the communities in Cape Coast as almost every house could be seen with a stall trading varying goods and services.

3.2.3 Historical Perspective

The spread of elements of European culture and civilization to other geographical areas in Ghana began in Cape Coast due to its long and intensive interaction with European traders (Agyei-

Mensah, 2006; Arhin, 1995). It was the vanguard of nationalist agitations in the Gold Coast and its related activities such as; the Fante Confederation of 1870-1872 and the Aborigine's Right Protection Society of 1897 (CCMA, 2018, GSS, 2014). The metropolis was the earliest experiment of municipal governance, which started in the 1850s. It was also the centre of secondary education in the Gold Coast, hence becoming the grounds for the training of teachers and catechist for the Catholic and Basel missions (CCMA, 2018; GSS, 2014). The metropolis was also once the home of the earliest municipal government experiments in the 1850s and the birthplace of pioneer newspapers in Ghana belonging to the first nationalist societies and associations. It was also once one of the earliest centres of entrepreneurship in Ghana (CCMA, 2018; GSS, 2014).

The metropolis is characterised mainly by decayed buildings and emporiums. The architecture of these edifices reflects the way of life of residents. It also serves as a reminder of the status of Cape Coast as a settlement that was once the home of the Europeans and served as the intermediary between Europe and West Africa (CCMA, 2018). The older traditional buildings of the metropolis are located in Nkum, Ntsin, Bentsir, and Idan communities and other surrounding areas. The houses in these areas are built mainly of swish, while some are also built of sun-dried bricks. A swish is a monolithic mud wall laid in courses of approximately 40 to 50 cm (Hyland, 1995). In recent times most of these traditional buildings have been demolished to make way for modern buildings (Hyland, 1995). Many of these houses are characterized by flat mud roofs laid on timber branches or planks, which are now being replaced by asbestos and corrugated iron roofing sheets. The architectural history of Cape Coast is significant for the following reasons (Hyland, 1995). First, it is easily accessible to their workplaces, close to the towns and the fishing harbour. That is to say that it works as a community for the residents. Second, the thick

mud walls and flat roofs give better insulation against heat than the sandcrete blocks and the corrugated roofing sheets used for modern houses. Third, residents living in these traditional communities beam with life, while the entire communities are picturesque, depicting the history of Cape Coast. Lastly, the external layout of the houses is connected with the topography of the metropolis, while the internal layout is suited to the lifestyle of the residents (Hyland, 1995). For instance, King Aggrey's house reminds us of the 19th century, while Danish Mount and M'Carthy Hill remind us of earlier centuries (Hyland, 1995).

There are a number of 19th century European styles houses that exist in considerable numbers along ancient streets such as Commercial Street, Garden Street, Beulah Lane, Coronation Street, and Jackson Street (Hyland, 1995). These houses are generally two storeys high and have been built with sun-dried brick. Some of these houses have also been built with sun-dried bricks with a flat mud roof hidden under pitched roofed centuries ago. Recently, these roofs have been replaced with asbestos or corrugated iron roofing sheets (Hyland, 1995). Most of the ground rooms of these houses have been converted into stores that open directly onto the streets, while the upper rooms comprise an opening veranda, segmented-headed rooms, and chambers and halls (Hyland, 1995). The traditional houses in the metropolis were soundly built, but they will not last forever, as they continue to face the threat of perennial erosion and collapse due to inadequate external drainage and redevelopment activities (Hyland, 1995). For instance, 20 years ago, Swanzy Mills was demolished to make way for a hotel that never materialized, and 30 years ago, Braeside House was demolished for a modern ugly post office (Hyland, 1995). Cape Coast continues to lose its beautiful architectural buildings due to road-widening schemes and poor maintenance culture, leading to building collapse and the demolishing of old structures for redevelopment (Hyland, 1995). The metropolis currently has some historic buildings, such as the

Government House (which served as the regional headquarters of the State Transport Corporation) and the Gothic House (which served as the regional headquarters of the Public Works Department) (Hyland, 1995). The Gothic House has been adapted, renamed and reused as the "Emintsimadze" palace serving as the seat of the paramount chief of the Oguaa (Cape Coast) Traditional Area.

3.2.4 Housing Conditions

The Cape Coast metropolis in 2010 had a total of 17,738 housing units. Out of this, 66% were found in urban areas, and the remaining were found in rural areas (GSS, 2014). About 75% of the household population then lived in urban areas. The average household size was 3.5 persons per household, whiles about eight persons lived in a house. While nearly nine persons per house lived in urban areas, six persons per house lived in rural areas (GSS, 2014). The main type of dwelling in the metropolis was compound houses, with a higher proportion of female-headed households than male-headed households. This differed from occupants of government buildings which had more male-headed households than females. More than one-third of the household population owned their dwellings, whiles about a third of the households lived in a dwelling owned by a private individual, which is more likely to be rented housing (see Table 3.1). Estimates suggest congestion of households in the metropolis as half of a five-member household occupies a single sleeping room (GSS, 2014). This serves as a fertile ground for the outbreak of infectious diseases such as tuberculosis. It also leads to a low level of residential satisfaction among residents and threatens the quality of life and well-being, which are important components of residential satisfaction.

Table 3.1 Ownership Status of Dwelling Units in the Cape Coast Metropolis

Ownership status	Total	Male Headed	Female Headed	Urban	Rural
Owned by household member	14,419	35.3	36.3	33.4	42.7
Being purchased (e.g., mortgage)	282	0.8	0.6	0.7	0.6
Relative not a household member	9,098	19.8	26.7	24.6	16.2
Private individual	13,549	35.6	30.5	32.4	37.1
Public/Government	1,957	5.6	3.7	6.0	1.3
Others	1,081	2.9	2.3	2.9	2.2
Total	40,386	100	100	100	100

Source: GSS (2014)

The metropolis has over 60% of households living in compound houses, and over 11% of them living in separate houses. It also has a male to female household head ratio of 2:1. About 7% of the households in the metropolis lives in flats and apartments. In comparison, about 2% lives in a kiosk and other dwelling units (CCMA, 2018). Cape Coast has about 68% of households occupying only one sleeping room. It also has approximately 93% of single-person households occupy one sleeping room (GSS, 2014). According to the GSS (2014), about 6% of single-person households occupy two sleeping rooms. The proportion of households in the metropolis occupying one sleeping room decreases as household size increases. This implies that most households live in congested rooms, especially when approximately 26% of not less than 10% of households occupy only one sleeping room (GSS, 2014).

Regarding solid waste disposal in the metropolis, approximately 57% of households in the metropolis dispose of their solid waste in communal containers, while about 22% dispose of

theirs in open spaces (GSS, 2014). Regarding urban households, approximately 67% dispose of their solid waste in communal containers, while around 25% of rural households use communal waste containers. In contrast, about 49% of rural households use open spaces for solid waste disposal (GSS, 2014). Cape Coast has about 40% of liquid waste generated thrown into the gutters, while approximately 26% passes through the drainage systems into the gutters. A paltry 4% of liquid waste passes through the sewerage system (GSS, 2014). Regarding rural-urban differentials, about 85% of liquid waste generated in rural areas is thrown into open spaces. In comparison, approximately 63% of liquid waste generated in urban areas is thrown into open spaces (GSS, 2014).

The main source of lighting for households in Cape Coast is electricity which accounts for approximately 91%. This implies that most households are connected to electricity (GSS, 2014). The other sources of light used in Cape Coast are kerosene, flashlight, and candle. Urban household accounts for approximately 5% of those using other light sources, while rural households account for approximately 9% (GSS, 2014). In terms of sources of cooking fuel, charcoal usage accounts for about 59%, while Liquefied Petroleum Gas (LPG) accounts for approximately 31% (GSS, 2014). The primary source of drinking water and other domestic purposes for households in the metropolis is pipe-borne water (GSS, 2014). Sachets water as a source of drinking water in Cape Coast is a common phenomenon among residents, including renters. Approximately 17% and 14% of rural and urban households, respectively, depend on sachets water for drinking purposes. In comparison, more than 80% of total households depend on communal taps or pipe-borne water for other domestic purposes (GSS, 2014). Households in the metropolis, including renters, rely on public toilets (approximately 40%) as their primary source of toilet facilities, with no significant difference between rural and urban dwellers.

Around 38% of urban and 22% of rural households use water closets (GSS, 2014). Households that do not have access to toilet facilities in the metropolis use the bush or beach, with 7% of them found in the urban areas and 13% in the rural areas. Concerning bathing facilities, above 48% of households in urban areas use shared separate bathrooms, while approximately 30% do so in rural areas (GSS, 2014). Also, about 27% of households in rural areas use shared open cubicles bathrooms, compared to approximately 16% in urban areas (GSS, 2014)

3.2.5 Demographic Characteristics

The total population of Cape Coast has increased significantly from 54,123 in 1960 to 189,925 in 2021 (see Fig 3.2). Out of the current population of 189,925, 92,790 are males, while 97,135 are females (GSS, 2021). The number of people living in urban areas has also increased significantly in the same period (see Fig 3.2). As of 2010, 77% of the population was residing in urban areas, whereas 23% were in rural areas (CCMA, 2018; GSS, 2014). But the recent census figures indicate that the metropolis is completely urbanized, with the southern sector being the most urbanized compared to the northern sector (GSS, 2021). It has a household population of 170,966 compared to a non-household population of 18,959 (GSS, 2021). As of 2010, the metropolis had an average household size of 3.5 persons per household (CCMA, 2018; GSS, 2014). According to the recent census, the average household size of the metropolis is 2.9 persons per household (GSS, 2021). This implies a decline in family sizes and suggests a preference for small household sizes.

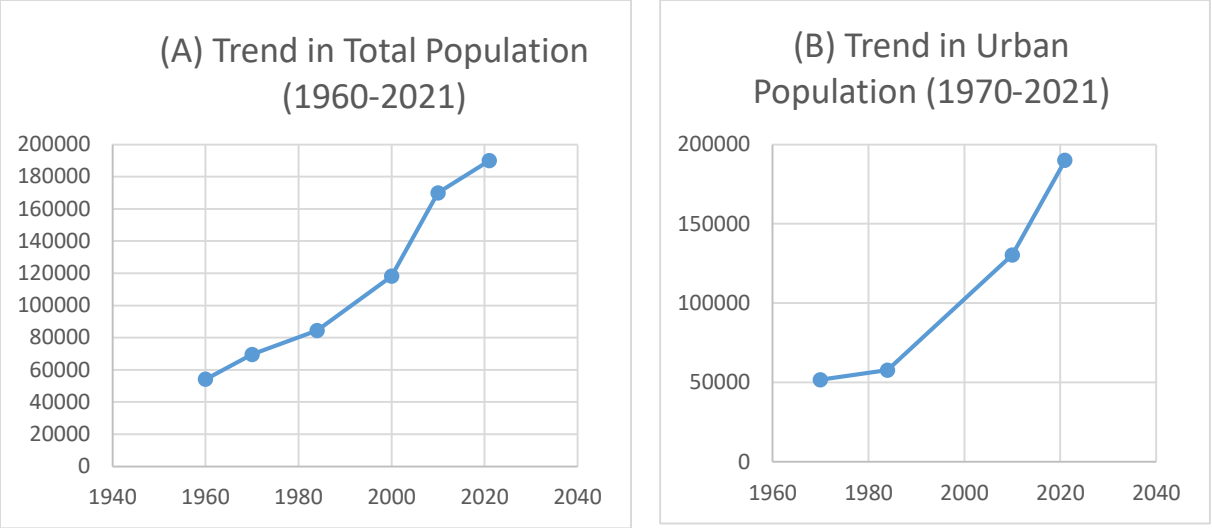


Figure 3.2 Trends of (a) Total Population and (b) Total Urban Population between 1960-2021

Source: CCMA, 2018, GSS (2014; 2021), Nabila (1988) as cited in Agyei-Mensah (2006)

In terms of migration in Cape Coast, approximately 73,000 of the total population are migrants (CCMA, 2018; GSS, 2014). The metropolis has approximately 24,000 migrants born in other parts of the central region, and about 3,000 born outside the country. The remaining migrant population were born in other parts of Ghana (CCMA, 2018; GSS, 2014). Concerning the duration of stay of the migrants in the metropolis, approximately 37% have lived within Cape Coast for less than a year, while about 24% have lived there for more than ten years (GSS, 2014). The foregoing suggests that most of the migrants do not stay in the metropolis for more than a year, and this includes tenants. The Cape Coast core area which comprised communities such as Kotokoraba, Amanful, Idan, Brofoyedur and Ayiko Ayiko has been the only urban centre in the metropolis since 1960. By 1984, the rural-urban population ratio for the metropolis was approximately 32:68 and this slightly changed to 30:68 in 2000. By 2010, the rural-urban

population ratio has significantly changed to approximately 54:48 (GSS, 2014). This suggests a significant increase in the number of people living in urban areas, including tenants (see Fig 3.2).

Cape Coast was made up of 71 settlements, and about 6% of these settlements, including Cape Coast core, Nkanfoa, and Kakumdo accounted for over 80% of the total population. The metropolis also had about 45% of the settlements having a population of less than 100 (CCMA, 2018). Cape Coast was comparable to a city district, with the most populous settlements comprising areas such as Kotokuraba, Tantri and Anaafo serving as the centre for economic activities (CCMA, 2018). The people of Cape Coast are part of a larger group of people called Fantes, who are also part of a bigger ethnic group known as the Akans in Ghana. The people of Cape Coast speak the Fante language. The metropolis comprises people from other ethnic groups in Ghana, such as Ewe, Adas, and Gas of which most are immigrants and include tenants (CCMA, 2018). They engage in various economic activities such as fishing, farming, driving and public sector employment. The festival celebrated in Cape Coast is the Oguaa Fetu Afahye, which is celebrated annually on the first Saturday of September. The beautiful festival attracts different categories of people both within and outside the the metropolis. The entire Cape Coast is also made of a single traditional area headed by one paramount chief, the "Oguaa Omanhene" (CCMA, 2018), popularly known as Osabarima Kwesi Atta 11.

3.2.6 Local Economy

The metropolis is one of the tourism destinations in Ghana and the centre for the Pan African Festival. It hosts historical and cultural facilities such as the Cape Coast Castle, Fort Williams and Fort Victoria, which attracts local and international tourists (CCMA, 2018; GSS, 2014). The scenic landscape makes the area conducive for tourists and adventure seekers. Until 1877, the

metropolis was the capital of the Gold Coast before it was moved to Accra. It has the most extensive pre-historic buildings and the greatest potential for revitalization, economic generation and adaptive reuse (CCMA, 2018; GSS, 2014). It is also characterized by public and private sector organizations such as block moulding factories and mining and quarrying sites. These organizations employ about 90 per cent of the labour force. The private informal sector employs the largest proportion of the working class (CCMA, 2018; GSS, 2014).

The metropolis has an economically active population of approximately 70,000, of which about 91% are employed. The unemployed are normally engaged in household work such as cooking, washing utensils and clothes and fetching water (CCMA, 2018). Females compared to males dominates these non-economic jobs. Unemployment is predominant among the economically active population below the age of 30. The major employment avenues are the wholesale and the retail sectors (CCMA, 2018). The manufacturing and education industries also employ at least 14% of the working class. The metropolis, unlike other big cities in Ghana like Accra and Kumasi, is yet to experience the development of a real estate industry (CCMA, 2018). The real estate industry has provided critical support for reducing the housing deficit in Ghana.

The fishing, forestry and agriculture sector employs approximately 8% of the working population. It is dominated by males, while females dominate the wholesale and retail sectors. (CCMA, 2018). The accommodation, food services and manufacturing industries are also female dominated. Fishing activities in the metropolis is dominated by marine fishing, with fewer inland-fishing activities (CCMA, 2018). The fishing sector is characterized by rudimentary fishing practices, such as using light for fishing which is unsustainable and will likely lead to the rapid depletion of fish stocks. The fishing sector is also faced with challenges such as the high cost of fishing input, inadequate involvement of local communities in fisheries management

(CCMA, 2018), and the inequitable distribution of fishing resources. In the past year, the government of Ghana through local and external resource mobilization, have secured funds for the construction of a fishing harbour in the metropolis to boost economic activities. Traditional marketplaces in the metropolis, such as the "Kotokoraba", "Anafo", "Eyawda Guam", "Kotoka", and "Abura markets", have all being given a facelift to promote trading activities and local economic development.

3.3 Research Methodology

3.3.1 Philosophical Orientation

Underlying every research is a philosophical perspective, which helps to reveal the assumptions researchers make about their work. This leads to the choices which are applied to significant sections of the study, such as purpose, design, methodology, data collection, analysis and interpretation (Moon & Blackman, 2014). The increasing complexity of research problems has made it very important to combine research philosophies in a single study, as doing this provides an understanding which is both deep and broad (Jogulu & Pansiri, 2011). Because of this, the study is underpinned by the philosophical orientation of pragmatism, which combines positivism and interpretivism.

According to Johnson and Onwuegbuzie (2004), pragmatism is a philosophical approach which provides a set of understanding and inquiry that underpins the mixed methods approach and distinguishes it from a research that is purely quantitative or qualitative. The combination of positivism and interpretivism philosophies helped to explore the research problem through the lens of meanings provided by in-depths interviews, which helped to provide further explanations to the quantitative results. A weakness of pragmatism is that it is very laborious as it combines

the collection, analysis and interpretation of two different sets of data (quantitative and qualitative) (Johnson & Onwuegbuzie, 2004). Notwithstanding this weakness, the offers of complementarity in this study presented the opportunity to provide better results and interpretation of the research problem (Creswell & Creswell, 2018).

Positivism is a philosophical paradigm which focuses on the scientific study of the social world. It is underpinned by the ultimate goal of formulating abstract laws on the factors explaining changes in the social world (Bryman, 2016). A vital advantage of this philosophy is that it brings a quantitative or mathematical dimension to the social sciences, which helps to make predictions on human behaviour. It also provides reliable and representative data, which allows to generalize the findings of the study (Bryman, 2016). Despite these practical advantages of the philosophy, it does not provide in-depth reasons behind the data. It has also been criticized for its reductionism nature, as it reduces biological organisms and social processes into physical systems (Bryman, 2016). These core weaknesses of positivism necessitate the adoption of another philosophy to provide complementarity and help to provide in-depth reasons behind the quantitative result. This alternative philosophy holds participants' views very significant for this study.

Interpretivism is a research philosophy which integrates human interest into a study and involves interpreting people's subjective experiences. It provides the advantage of exploring the hidden reasons behind the interrelated and multi-level social processes. Further, it gives the guarantee that the responses provided by the participants are valid and close to the truth (Bryman, 2016). Likewise, every philosophy, it has its weaknesses. For instance, it is not always generalizable and representative and has low reliability due to its subjective nature (Creswell, 2014). These

weaknesses were, however, addressed using the strength of positivism, whose justification has already been provided above. The triangulation of these two philosophies provided this study the opportunity to benefit from the strength of each one and helped to collect and analyse data that offered more insights than if only one of them had been used. This is because the strengths of one were significant in addressing the weaknesses of the other.

3.3.2 Research Design

The research design guides the research process in tandem with a research approach. This research adopted the mixed methods approach which combined the quantitative and the qualitative approaches due to lessons from earlier studies in the subject area and the need for triangulation. Further, using research designs reduces inaccuracy, provides reliability and efficiency, and saves time (Creswell & Creswell, 2018). This study adopted the explanatory sequential mixed methods design, which combined cross-sectional survey and case study designs for the data collection and analysis. This was because, in the mixed methods approach, different research designs can be combined (Frimpong, 2019) to investigate the research problem effectively.

Creswell and Creswell (2018) defined explanatory sequential mixed methods design as the design process where the researcher first collects quantitative data and analyse the results. The findings are then used to plan the qualitative data collection phase. According to Creswell and Creswell (2018), the use of the design was significant because it provided the opportunity to provide additional insights into the quantitative data using qualitative data. A considerable strength of the sequential explanatory mixed method design is that it gives a clear delineation for readers and enhances their understanding of the research problem (Creswell, 2014). Likewise, in

other research designs, its weakness lies in its laborious nature during data collection, analysis and interpretation. The use of mixed methods is justified because findings from the quantitative data was used to plan the qualitative data collection and it was better suited for understanding the relationship between the social and built environment and residential satisfaction. This gave a broad and in-depth understanding of the research problem.

The use of sequential explanatory mixed methods design allowed for combining specific quantitative and qualitative research designs. For the quantitative approach, the cross-sectional survey research design was adopted. This allowed the quantitative data to be collected at one point. It also helped to examine the relationship between levels of social interactions, conditions of the built environment and residential satisfaction using multiple linear regression models (Creswell & Creswell, 2018). This design was relatively faster and inexpensive as the data was collected across the study locations at one point in time. However, it did not provide reasons for the causal relationships between the levels of social interactions, conditions of the built environment and residential satisfaction (Creswell & Creswell, 2018). This weakness was addressed by complementing it with the case study design. Also, the author believed that adopting the cross-sectional survey design was very appropriate as the study sought to collect data across three different socioeconomic neighbourhoods in the Cape Coast metropolis to draw meaningful conclusions.

For the qualitative approach, the case study design was adopted. This involves an in-depth analysis of a program, an event, a case or one or more individuals (Creswell, 2014) to get a deeper understanding of a research problem. This is done using various data collection procedures (Yin, 2009). A fundamental weakness of this design lies in its inability to replicate findings from the data. This weakness was addressed using the strength of the cross-sectional

survey design. The adoption of the case study design was based on the author's interest in understanding how social and built environmental factors influence residential satisfaction from the participant's natural and social setting. The author adopted the explanatory sequential mixed method design in line with using the qualitative results to help explain the quantitative results (Creswell & Creswell, 2018). This allowed the combination of different designs to gain broader and in-depth understanding of how social and built environmental factors influence residential satisfaction.

3.3.3 Data Sources

The data sources for the study were derived from primary and secondary sources. The primary data sources comprised quantitative and qualitative data derived from the study communities, that is, Pedu Estate, Kakumdo and Ekon, which are high-, middle- and low-income communities respectively. The quantitative data was derived during the cross-sectional survey using a semi-structured questionnaire which was designed into four sections. After the introductory statements, Sections A and B asked questions about the socio-demographic characteristics and the levels of residential satisfaction of the respondents, and section C and D asked questions about the levels of social interactions and the conditions of the built environment respectively. The qualitative data was obtained from three participants which were of interest to the research topic: (i) heads of rental households (ii) assembly members and (iii) institutional representatives. The assembly members were selected based on their leadership roles in their respective communities. Also, the selection of the institutional interviewees was based on their knowledge of issues surrounding rental housing development as well as residential satisfaction and dissatisfaction in the Cape Coast Metropolis. This research utilized the purposive sampling

technique to select the qualitative interviewees. Additional, qualitative data collection forms that were used were informal discussions and field observations.

The secondary data were derived from online and print sources such as journal articles, textbooks, websites and official reports from the Ghana Statistical Service (GSS) and the Cape Coast Metropolitan Assembly (CCMA). The official reports from the GSS and the CCMA that were used were the metropolitan Medium Term Development Plan (MTDP) for 2018 to 2021 and the 2010 Population and Housing Census (PHC) municipal analytical report for the Cape Coast metropolis. The 2021 PHC summary report was also used. These documents provided relevant information for profiling the metropolis on contextual issues such as the location, demographic and housing conditions.

3.3.4 Target Population

A target population refers to the group of members to be studied and inferences drawn from (Creswell, 2014). It is very significant to identify the target population because it sets the direction of the scope and objective of the study as well as the data types required. It also helps to define the characteristics of the individuals from which inferences will be drawn (Creswell, 2014). The target population for this study were rental household heads who were 18 years old and above in the three study neighbourhoods, that is Pedu Estate, Kakumdo and Ekon, which were high-, middle- and low-income neighbourhoods respectively. The choice of household heads was significant because, as heads of the household, they were deemed to have ample knowledge on the socio-spatial relationships, conditions of the built environment, and in-depth knowledge about their private rental residential units. The household heads were also in a critical

position to exert informal social control, attend community meetings and socialize with family members in the accepted communal norms (Frimpong, 2019).

3.3.5 Sample Size and Sampling Procedures

A sample refers to a subset containing the characteristics of a larger population (Creswell, 2014), and a sample design is a definite plan for drawing a sample from a given population (Kothari, 2017). In line with selecting a representative sample of rental households, the Yamane (1967) published sample size determination table was adopted. The total number of households in the three neighbourhoods was 6322 (see Table 3.2). Hence, at a confidence level of 95% and a margin of error of ±7, the total sample size corresponded to a figure around 200. However, given the skewed distribution of the total number of households across the neighbourhoods, this would have resulted in smaller sample size allocated to some of the study neighbourhoods which would have affected future statistical analysis at the intra-neighbourhood level (due to the small sample size). In view of this, additional 46 was added to the sample and distributed across the neighbourhoods to shore the individual samples at the neighbourhood level.

The total sample size used was therefore 246, which was proportionally distributed according to the total number of households in the study neighbourhoods. The total sample size of 246 was deemed adequate because it meets the minimum sample size of at least 100 to conduct a test of statistical significance as recommended by (Hair et al., 2018). The total sample size of 246 was also considered adequate and appropriate because it meets the suggested minimum of 200 required to perform the multiple regression analysis adopted for this study as recommended by (Israel, 2003).

Table 3.2: Summary of Household Population and Sample Sizes

Communities	Socioeconomic Status	Total No. of Households	Household Sample Sizes
Pedu Estate	High-income	3539	138
Kakumdo	Middle-income	1333	52
Ekon	Low-income	1450	56
Total		**6322**	**246**

Source: GSS (2014).

This study utilized the multistage sampling technique, where a sample is drawn from a population using smaller and smaller units at each stage (Creswell & Creswell, 2018). This sampling technique helped to avoid the problems of randomly sampling from a larger population beyond the available resources (i.e., time and labour). However, the results from a multistage sampling cannot be generalized for an entire population because sections of the population are cut off during the sampling process (Glen, 2022). Despite this, it was useful because it helped to simplify the population within the metropolis (Creswell & Creswell, 2018).

The first stage of the multistage sampling involved the purposive sampling of the three different study neighbourhoods along socioeconomic status. The sampling was done from the list of neighbourhoods in the Cape Coast Metropolis which was obtained from the Metropolitan Statistical Officer during a reconnaissance survey and were stratified based on socioeconomic status. The purposive sampling was also based on the input made by the institutional representatives the researcher engaged during the reconnaissance visit as to the appropriateness

of selecting these neighbourhoods. The number of households in each of the three neighbourhoods were then obtained from the 2010 Population and Housing Census analytical report published by the Ghana Statistical Service (Table 3.2). This was significantly helpful as it helped to determine the respective sample sizes for the three neighbourhoods. In the absence of data on private rental houses in each of the study neighbourhoods, rental houses owned by private individuals were identified through a transect walk and informal discussions with residents during the reconnaissance survey (Ehwi et al., 2020). During this period, a listing exercise was conducted on the number of private rental houses in the study neighbourhoods. To confirm if the houses listed were rental houses, the author occasionally adopted a stop-and-ask technique to appropriately identify the private rental houses in the respective study neighbourhoods (Ehwi et al., 2020). At the end of the listing exercise, a total number of 741,320 and 432 private rental houses were identified for Pedu Estate, Kakumdo and Ekon respectively.

The second stage involved systematically sampling the houses in the study areas to select the household heads and the sample sizes above (Table 3.2). Systematic sampling is a probability sampling method where members of the population are selected at regular intervals with reference to a random starting point. This sampling technique provides flexibility and is easy to conduct and understand during data collection. It, however, becomes difficult to use when the specific number of a population is not known (Kothari, 2017). This weakness was addressed through the listing exercise, where a list of private rental houses was identified (Table 3.2). Further, the use of housing units to sample households is justified because houses are the appropriate units where households can be located (Melese, 2006). In lieu of this, a sample interval was generated by dividing the total number of private rental houses listed in each neighbourhood over their respective sample sizes using the formula, $K = \frac{N}{n}$, where K =

systematic sampling interval, N = estimated number of houses, and n = estimated sample size. In effect, the houses were used to select the household heads, and using a sampling interval ensured that a household head in each private rental housing units had an equal chance of being selected to participate in the survey. A starting point was identified within each community, after which every K^{th} house was selected using the sampling interval of each community until the respective sample sizes was obtained (Frimpong, 2019). The sample interval for Pedu Estate was (741÷138=5). This meant that at every 5th house from the list, a household head was selected. Regarding Kakumdo, the sample interval was (320÷52=6). This also meant that at every 6th house from the list, a household head was selected. Lastly, in the Ekon community, the sample interval was (432÷56=8), which also meant that at every 8th house from the list, a household head was selected.

The final stage was a simple random sampling of household heads for the questionnaire survey. In single-habited houses where there is normally one household head, the head of the household or in his or her absence, a representative was automatically selected for the questionnaire survey. Likewise, in multi-habited houses where there is usually more than one household head, one household head or in their absence, a representative was selected for the questionnaire survey. The characteristics of the sample population as renters made it very difficult to reach them during the day, except for those who operated HBEs. Given this and to ensure the study's goal was achieved, the researcher went in the early evenings, which was very conducive for meeting them because most of them had closed from work and were returning home by that time.

Concerning the qualitative data, the interviewees were purposively selected based on their expertise in and experience with the research topic. A total of 22 participants were tabled for the

interviews involving (i) 16 heads of rental households (ii) 3 assembly members and (iii) 3 institutional interviews. The heads of the rental households were selected with the assistance of the assembly members and were supposed to comprise of the following participants (Pedu Estate=8, Kakumdo=5 and Ekon=3). In the end, 14 out of the 22 participants, voluntary agreed to be interviewed. They comprised 9 heads of rental households which coincidentally involved 3 from each neighbourhood, 3 institutional representatives and 2 assembly members. Efforts to conduct more interviews with rental household heads were unsuccessful as respondents were unwillingness or unavailable at the agreed time of the interview. Further, the 3 institutional representatives comprised 1 person each from the department of rent control, metropolitan planning office and the social welfare and community development, whereas 2 assemblymen participated. As mentioned earlier, it was intended to interview 3 assemblymen, 1 from each community, but one of the assemblymen was unavailable, and all efforts to reach him proved unsuccessful. The assemblymen were selected because of the leadership roles they assume in the communities, as this put them in a critical position to provide insightful information on the research topic (Frimpong, 2019).

The qualitative interviews were conducted in line with the principle of data saturation, the point to which no new perspective or information was derived (Bryman, 2016). During the interviews, it was realized that the 10th to 12th interviewee responses were not adding any new perspective or information to the existing data. This point according to Saunders et al. (2018) is referred to as the saturation point. The objectives of the study were largely addressed using the quantitative research design. Hence, the qualitative data was not collected as a parallel data but as an additional data meant to provide further insight and perspective into the quantitative data. This meant that the focus was not on the numbers or the sample size per se but on data saturation. The

results and inferences from the quantitative data therefore guided the design of the qualitative interview guide, which was intended to seek further insight and opinion regarding findings from the quantitative data. Interviews were preferred over focus group discussions because during the qualitative data collection it was difficult to meet rental household heads at the same time. In addition, housing choice is an individual decision making process, and based on income, preference, and household level consideration. Some of these issues can also be very personal, and thus it was appropriate at the time of data collection that a one-on-one interview would give much room for informants to express themselves, without letting other household heads becoming privy to such personal issues.

3.3.6 Justification for the Selection of Study Neighbourhoods

The three study neighbourhoods namely Pedu Estate, Kakumdo and Ekon were purposively selected from a list of neighbourhoods obtained from the Metropolitan Statistical Officer of the Cape Coast Metropolitan Assembly. According to the residential classification obtained from the Metropolitan Statistical Officer, Pedu Estate is a high-income community located within the central part of Cape Coast. Even though it is classified as a high-income neighbourhood, there are pocket of squatter settlements and low-income rental housing within and around it. Rental households in these squatter and low-income communities were excluded during the data collection exercise. Further, Kakumdo is classified as a middle-income neighbourhood located at the northern part of Cape Coast and is a developing community which also has pocket of low-income rental housing. Ekon is classified as low-income neighbourhood. It is a coastal and a fishing community which is experiencing rapid housing development. Rental housing in the Ekon community is largely characterized by shared facilities such as bathrooms, living compound as well as water and electricity. The neighbourhoods were purposively selected from

the three different socio-economic neighbourhoods representing high-, middle-, and low- income neighbourhoods respectively during the reconnaissance survey with input from the Metropolitan Statistical Officer and the Metropolitan Rent Officer. The main reason underlying the selection of different socio-economic neighbourhoods was based on the premise that there is a spatial variation of residential satisfaction among rental households living in different socioeconomic neighbourhoods, and that the socio-spatial conditions across different socio-economic neighbourhoods are not the same.

3.3.7 Methods of Quantitative and Qualitative Data Collection

The data for this research was collected using two main procedures: surveys for the quantitative and interviews for the qualitative data. The main data collection instruments for the quantitative data were a semi-structured questionnaire, and the qualitative data was a structured interview guide. Personal observation and informal discussions were also used during the data collection. Kothari (2017) defines a questionnaire as a set of questions printed or typed in a definite order or form. The use of the questionnaire was because large samples could be reached, and the findings could be made dependable and reliable (Kothari, 2017). A weakness of using the questionnaire for the survey was that it could be returned unanswered. Also, the respondents could have a problem with interpretation and understanding. These anticipated challenges were addressed during the data collection exercise by explaining the purpose of the study very well to the respondents and not leaving the questionnaire with them as the data collection was done digitally using the Kobo Collect Application. Further, the use of the questionnaire offered the opportunity to engage a large section of the target population of which, without it, the data collection would have been laborious and time consuming.

The questionnaire contained questions which were geared towards providing a better understanding of the research questions. Section A consisted of questions on the socio-demographic and housing characteristics of respondents, Section B consisted of questions on assessing residential satisfaction among the respondents, and Section C consisted of questions on determining the levels of social interactions in the neighbourhoods. Finally, Section D consisted of questions on choosing the conditions of the built environment. The questionnaire was pre-tested before the actual survey on 30 selected rental household heads in locations with similar characteristics and respondents as that used for the study. This helped to edit and make sure the questions and the language which were not clear to the respondents were reworded to make it easy to understand. The actual collection of the quantitative data followed this.

Also, Kothari (2017) mentions that the interview method of data collection involves the use of verbal stimuli questions in exchange of verbal stimuli answers. Interviews help to derive in-depth information and provide further insights into the quantitative data. However, its weakness was that it was time consuming. Despite this weakness, it offers complementarity and clarity to the quantitative results. This was important for understanding the research questions from different perspectives, as the interview guide was designed to reveal happenings in the residential environment of the study communities. The interview guide comprised of questions related to residential conditions, social relations as well as conditions of the built environment. In all, two separate interview guides were designed, that is, one each for the community respondents, including the assemblymen and the institutional representatives. The institutional representatives were selected from the rent control and physical planning department and the office of social welfare and community development. The additional qualitative methods utilized were informal

discussions and field observation which provided a deeper understanding of the research topic. The language for the data collection exercise was tailored to the understanding of the respondents. Hence both English and Akan were used for the data collection exercise depending on what was convenient for the respondents (Frimpong, 2019). The data collection process began with an introduction of the researcher and the purpose of the study (see Appendix C). The goal of the research as well as the expected benefits were also explained to each respondent. The respondents were further assured of confidentiality and anonymity of the data they provided and their identities. They were also informed that participation in the study was solely voluntary and that they were free to pull out of the data collection process at any time.

3.3.8 Procedures for Ensuring Reliability and Validity

Reliability and validity are two essential concepts in quantitative and qualitative research. Whereas the research methods in both the quantitative and qualitative approaches differ, reliability and validity help to ensure the credibility of the research process. In quantitative research, reliability refers to the extent to which research instruments can consistently produce the same outcome under the same situation on repeated occasions (Taherdoost, 2016). In quantitative research, several tests are available to ascertain if an instrument is reliable. These include a test of stability, homogeneity and equivalence (Drost, 2011). But the interest of this study was in the test of homogeneity, also known as internal consistency. The aim of this test is to confirm whether a concept operationalized for a study would yield the same outcome for different groups of individuals using the same data collection technique (Drost, 2011). This test was important because various concepts used in the study were taken from the literature. Also, in quantitative research, validity refers to the extent to which a concept is accurately measured in a study. That is to say, whether conclusions drawn from the study are justifiable. In this study, two

validity issues were addressed: internal and external validity. Internal validity refers to the extent to which the observed outcome represents the truth in the population under study. On the other hand, external validity refers to the extent to which the outcome of a study can be generalized to different situations, groups, or events. Therefore, to ensure internal and external validity and make strong claims based on the results, the researcher ensured that the sample drawn was representative of the population, and the sampling procedure was unbiased (Frimpong, 2019). The results from the pilot testing revealed that the questionnaire was reliable ($\alpha \geq 0.7$) and valid (AVE $\geq$ 0.5) as the test statistics aligned with recommended reliability and validity values (Ursachi et al. 2015).

Conscious efforts were also made to ensure reliability and validity during the qualitative data collection. In qualitative research, reliability refers to how dependable the responses from multiple data collection techniques, such as interviews, are made stable or consistent over a period or by different qualitative researchers. In qualitative research, reliability also deals with the reliability of concepts that need to be measured. This helps to ensure that the qualitative data obtained was reliable informants interviewed were carefully selected based on their experience and knowledge of the research topic. They were also selected based on their designation as stakeholders in promoting residential and community development (Neuman & Kreuger, 2003). Validity in qualitative research refers to the appropriateness of the tools, processes and data. This refers to the study's trustworthiness, credibility and rigour (Drost, 2011). Ensuring validity in qualitative research allows for establishing an association between the data and the conclusions. Therefore, the data triangulation approach was adopted to ensure that the study's results were valid. Data triangulation involved using different informants, such as community members,

assembly members and institutional heads. The use of the mixed method approach was also helpful in validating the results through cross-validation (Frimpong, 2019).

3.4 Exploratory Factor Analysis of Measurement Variables

Exploratory Factor Analysis (EFA) was conducted on the three (3) measurement variables i.e., residential satisfaction, levels of social interaction and conditions of the built environment. The EFA was performed to reduce the items of the measurement variables to a few constructs that best define them. The EFA method was performed using the Principal Component Analysis (PCA) extraction method and the Varimax with Kaiser Normalization rotation method. The use of the PCA required meeting a number of assumptions to ensure that the data is suitable to give valid and reliable results. A fundamental assumption is sampling adequacy and adequate correlation between the variables. This ensures that the sample size is large enough to generate valid results.

3.4.1 Residential Satisfaction

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy test was used to test for sampling adequacy. The values for KMO, as provided by Kaiser (1974), should range from zero to one. A value close to zero indicates a diffusion in the pattern of correlation making the data unreliable for factor analysis. While a value close to one shows that the pattern of correlation is together and therefore suggests that the data is suitable for factor analysis (Williams et al., 2010). Without ambiguity, Kaiser (1974) recommends a value greater than 0.5 as acceptable. On the other hand, Barlett's Test of Sphericity was used to test if the correlation between the variables was adequate. For factor analysis to be performed, the correlation between the variables should not be zero (Dziuban & Shirkey, 1974). The Kaiser-Meyer-Olkin Measure of Sampling

Adequacy test score of .912 shows that the sample was adequate, as it is above the recommended threshold of 0.5. The Barlett's Test of Sphericity score was also significant (X^2=2395.216, df=91, p=.000) indicating that the correlation between the variables was adequate and therefore fit for a PCA (see APPENDIX E).

The principal components analysis assumes that all variance before the extraction is held at 1 (Abunyewah, 2019). APPENDIX E shows the loadings after extraction, which indicate the proportion of variance explained by other factors. The results show that the communalities between the measurement items varied from each other and were more than the acceptable threshold of > 0.30 (Abunyewah, 2019; Loewen & Gonulal, 2015). APPENDIX E also shows the variance accounted for by the components. For instance, while component 1 explains 53.15% of the total variance, component 2 and 3 explains 10.46 and 7.21respectively of the total variance. Cumulatively, the three components explain 70.82% of the total variance, which is above the recommended threshold of 60% (Hair et al., 2012). APPENDIX E also shows the rotated components matrix for the items. It shows high positive loadings on the three components. Whiles the maximum for component 1 is .847, the minimum values for components 1, 2 and 3 were .600, .607 and .793 respectively. The high loadings showed by the items for the three components could be explained by the use of the Varimax with Kaiser Normalization rotation method, which maximizes the sum of the variance of the square buildings (Smith, 2002). In line with previous literature, component 1 which included items such as (see APPENDIX E) was named as *satisfaction with internal design of dwelling unit*. Component 2 was named as *satisfaction with services in the dwelling unit*, and component 3 was named as *satisfaction with external features of dwelling unit* (Gan et al., 2019; Kshetrimayum et al., 2020; Mohit et al., 2010). In this study, residential satisfaction was measured using component 1, which was

labelled *satisfaction with internal design of dwelling unit.* This is because component 1 accounted for more than 50% of the total variance. Component 1 was therefore used as the dependent variable.

3.4.2 Levels of Social Interactions

The KMO Measure of Sampling Adequacy test was used to test for sampling adequacy. The KMO Measure of Sampling Adequacy test score of .910 (see APPENDIX F) shows that the sample was adequate, as it is above the recommended threshold (Kaiser, 1974). The closeness of the test value to one also shows that the correlation pattern was together, indicating that the data was suitable for factor analysis (Williams et al., 2010). The Barlett's Test of Sphericity score was also significant (X^2=2004.307, df=66, p=.000) indicating that the correlation between the variables was adequate and therefore fit for a PCA (Dziuban & Shirkey, 1974). APPENDIX F also shows the loadings after extraction, which indicate the proportion of variance explained by the underlying factors. The results show that the communalities between the measurement items varied from each other and were greater than the recommended threshold (Abunyewah, 2019; Loewen & Gonulal, 2015). For instance, the smallest loaded item after extraction was C5, which explains 53.1% of the variance (.531). The highest loaded item was also C7, which explains 84.7% of the variance (.847).

APPENDIX F also shows the variance accounted for by the components. The result reveals that component 1 explains 56.41% of the total variance, while components 2 and 3 explain 9.31% and 8.46%, respectively of the total variance. Cumulatively, the three components explain 74.19% of the total variance, which is above the recommended threshold set by (Hair et al., 2012). APPENDIX F shows the rotated components matrix for the items. The results show high

positive loadings on the three components. Whiles the maximum for component 1 was .832, that of components 2 and 3 were .847 and .895 respectively. The high loadings by the three components could be explained by the use of the Varimax with Kaiser Normalization rotation method, which maximizes the sum of the variance of the square buildings (Smith, 2002). Based on previous literature, Component 1 was named *community social ties.* Component 2 was also named *quality of community life, and* Component 3 was named *community participation in social activities* (Amérigo & Aragones, 1997, Filkins, 2000; Grillo et al., 2010). All the components of social interactions were used as the independent variable in the first regression model which examined the relationship between social interactions and residential satisfaction. This was used to answer research objective three.

3.4.3 Conditions of the Built Environment

The KMO Measure of Sampling Adequacy test score of .820 in APPENDIX G shows that the sample was adequate and above the recommended threshold (Kaiser, 1974). The closeness of the test value to one also indicates that the correlation pattern was together. This indicates that the data was suitable for factor analysis (Williams et al., 2010). The Barlett's Test of Sphericity score was also significant (X^2=1633.639, df=105, p=.000) indicating that the correlation between the variables was adequate and therefore fit for a PCA (Dziuban & Shirkey, 1974). The loadings after extraction indicate the proportion of variance explained by the underlying factors. The results show that the communalities that existed between the measurement items varied from each other. The explanation for commonalities as used in this study was adapted from (Abunyewah, 2019). The smallest loaded item after extraction was item D6, which explains 48.7% of the variance (.487). The highest loaded item was D14, which explains 85.1% of the variance (.851).

APPENDIX G also shows the variance accounted for by each component. The result reveals that component 1 explains 35.12% of the total variance, and components 2, 3 and 4 explain 14.221%, 9.095%, and 7.398% of the total variance respectively. Cumulatively, the four components explain 65.83% of the total variance, which is above the recommended threshold set by (Hair et al., 2012). The result of the rotated components matrix shows high positive loadings on the four components. The maximum for components 1 and 2 was .831 and .898, whiles that of components 3 and 4 was .786 and .856 respectively. The high loadings showed by the items for the three components could be explained by using the Varimax with Kaiser Normalization rotation method, which maximizes the sum of the variance of the square buildings (Smith, 2002). Based on the literature, component 1 which included items such as (see APPENDIX G) was named, *community layout and design.* Component 2 was named *quiet environment. C*omponent 3 was named *access to community services,* and component 4 was named *presence of green spaces* (Smith, 2011). All the components of the conditions of the built environment were used as the independent variable in the second regression model which examined the relationship between conditions of the built environment and residential satisfaction. This was used to answer research objective four.

3.4.4 Reliability and Validity Statistics of Measurement Scales

The reliability of a measurement scale is a statistical measurement of its consistency or dependability using scores ranging from 0 to 1 (Cronbach & Shavelson, 2004). Two types of reliability were assessed, that is internal and composite reliability. The internal reliability was assessed using the Cronbach alpha coefficient, whiles the latter was determined using the composite reliability calculator (Colwell, 2016). According to Pallant (2011) and Hair et al.

(2014), a Cronbach alpha coefficient and a composite reliability score > 0.6 is considered highly acceptable and reliable. Validity denotes the extent to which an instrument accurately measures what it is supposed to measure (Abunyewah, 2019). Construct validity was measured due to its importance for theoretical construction and hypothesis testing (Kane, 2013). This study measured two types of construct validity that is convergent and discriminant validity. Both convergent and discriminant validity was determined using the correlational matrix approach suggested by Campbell and Fiske (1959). According to them, a minimum correlational coefficient > 0 and p< .5 indicates that convergent validity has been met. Further, they add that to achieve discriminant validity, the count of total number of violations should be less than half of the total comparisons.

APPENDIX E shows that after the PCA, all the 14 items that were used to measure residential satisfaction were retained for further analysis. The items were grouped into three components. The reliability of the 3 components was checked, and the results revealed that internal and composite reliability was met as the Cronbach alpha coefficient and the composite reliability score of all the 3 components met the recommended threshold. The study results also revealed that convergent and discriminant validity was achieved as they met the recommended thresholds. The results in APPENDIX F show that after the PCA, 10 of the 12 items used to measure levels of social interactions were retained for further analysis. The retained items were grouped into 3 components. All the 3 components met the recommended threshold for internal and composite reliability. Further, the recommended thresholds for convergent and discriminant validity were also met. APPENDIX G shows that after the PCA, 11 out of the 15 items that were used to measure conditions of the built environment were retained for further analysis. These were

grouped into 4 components. It also shows that internal and composite reliability were achieved as well as convergent and discriminant validity.

3.5 Data Analytical Strategy

The quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) software version 21. The SPSS software was used to generate descriptive and inferential statistics such as mean, standard deviation, and multiple linear regression models to answer the research objectives, and they were presented in tables. The details of the specific statistics performed for each research question are as follows: The first objective sought to assess the levels of residential satisfaction in the study communities. The results were presented in tables using mean and standard deviation to gauge the distribution of residents' satisfaction with the conditions of their residential units. The second objective, which sought to assess the levels of social relations and conditions of the built environment, was also analyzed using mean and standard deviation and presented in tables. The third and fourth objectives sought to examine the relationships between social interactions and conditions of the built environment and residential satisfaction. The results were analysed using multiple linear regression models and presented in tables. This helped to determine if there is a significant or not significant relationship between levels of social interactions and conditions of the built environment and residential satisfaction in the three different socioeconomic neighbourhoods.

The qualitative data were gathered through interviews and manually coded to explore (i) rental households (RH1, RH2, RH3, RH4, RH5…RH9), (ii) assembly members (AM1 and AM2) and (iii) institutional representatives (IR1…IR3) perspectives on the conditions of the residential environment and the role of social relations and the built environment in residential satisfaction in the study communities. It was analysed using the six (6) stage-steps of thematic content

analysis proposed by Braun and Clarke (2006) to look out for similar and dissimilar responses and presented in quotations to support the quantitative data. The first step involved generating the transcript and reading through the data repeatedly to be well informed by the perspectives shared by the interviewees. The second step involved generating initial codes from the transcript. The third step involved the putting together of the codes and the search for themes relating to residential satisfaction, social interactions and conditions of the built environment as well as their expected and actual experiences with the residential environment. In the fourth step, the derived themes were reviewed and refined, while the fifth step involved the definition and naming of the themes. The last step involved the writing and discussion of the findings where emerging quotes were recorded and triangulated with the quantitative results for each research objective.

3.6 Challenges Encountered During Data Collection

The data collection exercise even though was successful, did not happen without challenges. This section enumerates these challenges concerning primary and secondary data collection procedures. With regard to the primary data, i.e., First, with regard to the collection of quantitative data, it was very difficult to identify rental housing in the study communities, especially in the high-income community where most houses were owned by residents. This challenge was addressed through the assistance of residents and opinion leaders in the community and the use of the stop and ask technique and a transect walk to enquire which houses were for rental purposes (Ehwi et al., 2020). This process helped to identify rental households in these houses. Secondly, it was difficult to identify the appropriate time to meet the households that most often were not home except those who operated home-based enterprises. Discussion with some of the residents and opinion leaders revealed that the appropriate time to meet them was early evenings, this advice was heeded and it helped to meet most of the renters.

The third challenge encountered was the respondents' unwillingness to participate in the survey and disclose their ages and incomes. They were reassured of anonymity and confidentiality and that the data was for only academic purposes. All respondents who declined to take part in the survey were excluded.

With regard to the qualitative interviews, institutional representatives were reluctant to grant interviews. However, after they demanded and inspected the letter of introduction and my student identity card, they were convinced that the data gathered was for only academic purposes. This helped to have a fruitful interaction and the provision of reliable data.

3.7 Summary

The main philosophical worldview underpinning the study is pragmatism which combines positivism and interpretivism. This accounts for why the mixed methods approach was adopted. The use of the explanatory sequential mixed methods designs also allowed for the combination of different designs to achieve the research objectives. Further, the main data collection tools were questionnaires, interview guides, personal observation and informal discussion.

CHAPTER FOUR

LEVELS AND CONDITIONS OF SOCIO-SPATIAL FACTORS AND RESIDENTIAL SATISFACTION IN THE SELECTED NEIGHBORHOODS

4.1 Introduction

This chapter builds on the previous chapter by presenting the research findings and discussion on research objectives one and two. The chapter presents result on the levels of residential satisfaction in the three different socioeconomic neighbourhoods selected for the research by exploring to what extent households are content with their dwelling unit's features. Further, the chapter presents findings on the social interactions and conditions of the built environment within the study neighbourhoods. Here, results on the everyday social activities of residents are presented, as well as the existing conditions of the built environment. Assessing these variables is essential because it helps to highlight different aspects of the socio-spatial environment which are likely to influence residential satisfaction. The names of the respondents ascribed with the qualitative quotes are pseudonyms and not their real names.

4.2 Profile of the Respondents

Table 4.1 shows that more females (52%) participated in the study than males (48%). This finding is consistent with a recent census report (GSS, 2021). Regarding variations in the study neighbourhoods, except Pedu Estate, which had more males slightly higher than females, Ekon and Kakumdo had more females than males. Further, the results revealed that almost one-third of the entire population had attained tertiary education status, while approximately 10% had no formal education. This finding corroborates similar household studies in the metropolis (Gyimah, 2018, GSS, 2014). According to the GSS (2014), the reason for this finding could be that

majority of those currently in school are migrants. The variations within the communities indicates that whereas more than one-third of the participants in Ekon have received secondary education status, a little above one-fourth and almost half of the respondents have attained secondary education status and tertiary education status in Kakumdo and Pedu communities respectively.

In terms of marital status, the results show that a little above half of the total sample population (50.4%) were married. This implies that almost the same number of respondents constituted the other categories. The finding is inconsistent with that of GSS (2014). The difference in results could be due to the difference in sample sizes used in the respective studies. Table 4.1 also shows that approximately 42% of the total respondents sampled work in the private formal sector, while the remaining sampled respondents work in other sectors. The variations within the communities show that whereas almost 60% of the respondents work in the private informal sector in Ekon, more than half of the respondents in Kakumdo worked in the private formal sector. In the Ekon community, it is common to see residents engaged in low-income related activities such as fish drying, fish smoking and petty trading activities.

Table 4.1 Gender, Level of Education, Marital Status and Employment Sector

Items	Ekon	Kakumdo	Pedu Estate	Total
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Gender				
Male	20 (35.7)	22 (42.3)	76 (55.1)	118 (48.0)
Female	36 (64.3)	30 (57.7)	62 (44.9)	128 (52.0)
Level of Education				
None	5 (8.9)	8 (15.4)	12 (8.7)	25 (10.2)
Non-Formal Education	7 (12.5)	3 (5.8)	16 (11.6)	26 (10.6)
Primary	4 (7.1)	6 (11.5)	10 (7.2)	20 (8.1)
JSS/JHS	10 (17.9)	11 (21.2)	12 (8.7)	33 (13.4)
SSS/SHS/TVET	22 (39.3)	14 (26.9)	22 (15.9)	58 (23.6)
Tertiary/Higher	8 (14.3)	10 (19.2)	66 (47.8)	84 (34.1)
Marital Status				
Informal/Living together	12 (21.4)	9 (17.3)	12 (8.7)	33 (13.4)
Married	6 (10.7)	22 (42.3)	96 (69.6)	124 (50.4)
Separated	10 (17.9)	12 (23.1)	13 (9.4)	35 (14.2)
Divorced	2 (3.6)	1 (1.9)	2 (1.4)	5 (2.0)
Widowed	2 (3.6)	1 (1.9)	2 (1.4)	5 (2.0)
Single/Never Married	24 (42.9)	7 (13.5)	13 (9.4)	44 (17.9)
Employment Sector				
Unemployed	3 (5.4)	1 (1.9)	6 (4.3)	10 (4.1)
Private formal	16 (28.6)	27 (51.9)	60 (43.5)	103 (41.9)
Private Informal	33 (58.9)	20 (38.5)	39 (28.3)	92 (37.4)
Public sector	4 (7.1)	4 (7.7)	33 (23.9)	41 (16.7)

Source: Field Data, 2022

Concerning the length of stay, Table 4.2 shows that across all three communities, a little above one-third of the respondents have lived in the metropolis between 0-5 years. This result is not significantly different from the other sub-groups. Further, the results show slight variation across the communities. This result is not surprising as rental households are likely to relocate after staying at a residence or a place (Ehwi et al., 2020). The results also tell us that the other respondents who have lived in the community for longer periods could be indigenes. The study's results revealed that more than half of the respondents were from the metropolis. However, the

intra-community variation concerning indigenes was higher in Pedu Estate compared to the other two communities. In terms of housing choice, while more than one-third of the total participants lived in compound houses, 10% lived in semi-detached housing. Similar reports have also shown that the majority of the population in the metropolis lives in compound houses (GSS, 2014). Distribution within the communities revealed that approximately 66% and 48% of the participants in Ekon and Kakumdo lived in compound houses respectively. In comparison, more than 65% of the respondents in Pedu Estate lived in detached housing, flats, and apartments. Even though Pedu Estate is designated a high-income neighbourhood, there are pockets of slum communities such as Pedu Village with several compound houses.

Table 4.2 Distribution of Length of Stay, Status as an Indigene and Housing Choice

Items	Ekon	Kakumdo	Pedu Estate	Total
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Length of Stay in the Community				
0-5 years	21 (37.5)	20 (38.5)	51 (37.0)	92 (37.4)
6-10 years	13 (23.2)	17 (32.7)	48 (34.8)	78 (31.7)
>10 years	22 (39.3)	15 (28.8)	39 (28.3)	76 (30.9)
Indigene				
Yes	35 (62.5)	34 (65.4)	97 (70.3)	166 (67.5)
No	21 (37.5)	18 (34.6)	41 (29.7)	80 (32.5)
Housing Choice				
Compound Housing (rooms)	37 (66.1)	25 (48.1)	25 (18.1)	87 (35.4)
Detached Housing (separate)	14 (25.0)	21 (40.4)	46 (33.3)	81 (32.9)
Semi-detached Housing	3 (5.4)	1 (1.9)	21 (15.2)	25 (10.2)
Flat/Apartment	2 (3.6)	5 (9.6)	46 (33.3)	53 (21.5)

Source: Field Data, 2022

Further, the results in Table 4.3 reveals that the mean age of the total sample population was 38 years (SD= 8.7). This implies that the age structure of the sample population depicted that of a broad base with a slimmer summit. It therefore confirms the age structure of the metropolis for

the previous census (GSS, 2014). Inter-community observation reveals no significant variation within the communities, as mean ages do not significantly deviate from the total. Concerning household size, the mean for the total sample population was 2.50 (SD=.99). This is 0.4 less than the average household size for the recent census (GSS, 2021). The results indicate that the characteristics of the sample population are similar to that of the 2010 population and housing census. Further, the mean ages for the respective communities did not significantly deviate from the total. This demonstrates that efforts to minimize sampling error during the data collection were successful. The number of rooms occupied by a household was also obtained from the respondents. Knowing the number of rooms, a household occupies indicates whether the house is overcrowded (GSS, 2014). This will likely influence residential satisfaction and residents' decision to stay at a place. It also aligns with the assumption of the housing needs theory (Rossi, 1955) that as households progress through the family cycle, they will require to meet their housing needs and aspirations. Inter-community variation revealed that households living in Pedu Estate, a high-income community, occupy more rooms than the other two communities. In terms of household income, the mean for the three communities was 1724.39 (SD=1382.94). Inter-community variations revealed that the mean for Pedu Estate was relatively higher than that of Ekon and Kakumdo. This was not surprising because the average monthly incomes depicted their socioeconomic status. The income data shows wide diversity or disparity in income distribution within communities, indicating also that the mean does not give a good picture of the actual income situation in the communities. The researcher appreciates or is aware of the limitations that comes with eliciting information on incomes from respondents in survey designs. However, in this context, that was the best way of eliciting information of the earnings of

respondents as has been done in other studies (Asiedu & Arku, 2009; Baiden et al. 2011). Indeed, the respondents reported a very high response rate (100%) for the income variable.

Table 4.3 Distribution of Age, Household Size, Number of Rooms and Monthly Income

Variable	Ekon	Kakumdo	Pedu Estate
	Mean (SD)	Mean (SD)	Mean (SD)
Age	37.80 (7.513)	36.83 (7.638)	38.36 (9.437)
Household Size	2.91 (1.283)	2.35 (.764)	2.40 (.876)
Number of rooms Occupied	1.27 (.447)	1.58 (.696)	1.99 (1.025)
Household Monthly Income	1460.71 (1285.079)	1684.62 (1472.145)	1846.38 (1380.741)

Source: Field Data, 2022

Regarding the qualitative data, a total of fourteen (14) interviews were conducted to supplement the quantitative data. This comprised eleven (11) household and community interviews (including two assembly members) and three (3) institutional representatives. Their ages ranged between 27 to 58 years, with the minimum and maximum ages coming from a household head and institutional representative respectively. This finding is consistent with the quantitative data as mean ages did not vary significantly (see Table 4.3). Concerning gender, eight (8) respondents representing 57%, were males while the remaining were females. In the quantitative data, there were more females than males.

Further, more than half of the interviewees had received tertiary education and had stayed in the metropolis for less than 5 years. These findings are also consistent with the quantitative data (see Table 4.1; 4.2). The qualitative data were used to supplement the quantitative data. It was also revealed that equal number of the interviewees were working in the public sector as well as the private sector. The quantitative data also showed a similar outcome.

4.3 Assessment of Socio-Spatial Factors in the Selected Neighbourhoods

This section of the results presents descriptive statistics of the items that were used to measure residential satisfaction, levels of social interactions and conditions of the built environment. The items were all measured on a five-point Likert scale, and the interpretation of the mean scores was based on the scale proposed by Oxford and Burry-Stock (1995) in their study of language learning strategies. The scale has been contextualised for used in this study for the purpose of interpreting the mean scores. This scale is considered appropriate because it suitable for interpreting a five-point Likert scale. Given this background, mean scores between 1.0 to 2.4 were interpreted as low, 2.5 to 3.4 were interpreted as moderate, and 3.5 to 5.0 were interpreted as high. The sections below present the mean scores of the various variables and their interpretation.

4.3.1 Levels of Residential Satisfaction in the Selected Neighbourhoods

This section presents the findings and discussion for research objective one. It sought to assess the levels of residential satisfaction in the selected communities. The variables that were used to measure residential satisfaction were informed by what had been used by previous literature to conduct similar studies in Ghana and elsewhere as indicated in Chapter 3. The variables comprised fourteen (14) items, and they sought to assess residents' satisfaction with the

conditions of their dwelling units. Inter-community variation revealed that, residents living in Pedu Estate had a relatively higher mean[1] than those living in Kakumdo and Ekon communities. Table 4.4 shows that in the Ekon community, residents were highly satisfied with the level of in-house interaction or cooperation, which contributed the highest mean of 3.7 relative to the other measuring items. In the Kakumdo community, residents were highly satisfied with overall architectural design and dwelling unit with a mean of 3.73. In Pedu Estate, residents were highly satisfied with privacy in dwelling units with a mean score of 4.0. In essence, residents at Pedu Estate were more likely to have high levels of residential satisfaction with privacy in their dwelling units than those in the other two communities. Personal observation of the residential environment in the Pedu Estate community revealed that most of the residential units in the community including rental housing were walled and had essential housing facilities such as standpipes and in-house toilet facilities (see Figure 4.1). This was however not the case in the other two communities.

[1] Ekon (Min=17.00, Max=66.00, Mean=48.00, SD=12.81)
Kakumdo (Min=20.00, Max=63.00, Mean=48.75, SD=9.96)
Pedu Estate (Min=21.00, Max=70.00, Mean=52.66, SD=8.58)

Table 4.4 Levels of Residential Satisfaction

		Ekon		Kakumdo		Pedu Estate	
	Items	Mean	SD	Mean	SD	Mean	SD
B1	Satisfied living in this house	3.38	1.214	3.46	1.019	3.75	1.159
B2	Satisfied with maintenance services	3.34	1.225	3.48	.939	3.74	1.055
B3	Satisfied with housing services such as number of toilet and bath	2.93	1.189	3.04	1.171	3.56	1.208
B4	Satisfied with the level of in-house interaction or cooperation	3.73	.981	3.71	.825	3.94	.790
B5	Satisfied with privacy in current dwelling	3.70	1.060	3.71	.776	4.00	.783
B6	Satisfied with the quality of building materials used to construct dwelling unit	3.41	1.203	3.58	.957	3.86	.914
B7	Satisfied with overall architectural design of dwelling unit	3.68	.974	3.73	.795	3.87	.878
B8	Satisfied with ventilation/natural air flow	3.66	1.032	3.58	1.016	3.94	.826
B9	Satisfied with the number of other spaces in the house e.g., kitchen, porch, etc.	2.89	1.201	2.85	1.073	3.43	1.196
B10	Satisfied with door/window quality and roofing	3.68	.993	3.58	1.016	3.88	.838
B11	Satisfied with floor quality	3.61	1.019	3.69	.897	3.95	.804
B12	Satisfied with room length	3.55	1.143	3.67	.879	3.68	1.074
B13	Satisfied with size and location of entrance to dwelling unit	3.62	1.019	3.71	.825	3.95	.795
B14	Satisfied with electricity and water supply in dwelling unit	2.82	1.223	2.96	1.171	3.10	1.252

Source: Field Data, 2022

Residents accept and adapt to their housing conditions due to the housing deficit and the likelihood of meeting similar conditions elsewhere (Gilbert, 2016). The findings that residents' satisfaction with their dwelling units ranges from moderate to high are consistent with that of Adewale et al. (2019). They revealed in their study in Nigeria that dwelling unit features such as interior space and quality and room sizes, influence residential; satisfaction. The same could not

be said of a study in Ghana where Addo (2016), in her study of residential satisfaction among multi-habited low-income households found out that dwelling units features such as room sizes and privacy in the compound have negative influence on residential satisfaction. Given the conceptual framework (see Figure 2.2), households are likely to be satisfied with their residential units when their housing aspirations such as spacious room sizes and the availability of kitchen space meet their expectations.

The qualitative data revealed that some residents were very happy with their dwelling units as one of them expressed *"...I am very happy living in my house. I don't have any problem with anyone and we live together peacefully"* (Emmanuel, 28, M-Ekon). One of the respondents also mentioned that; *"I am satisfied with the conditions of this house. I don't share anything with anyone and have my privacy a lot of the time. Most houses in this community are like that and I think it is very good since it leads to peaceful coexistence in the house"* (Malanga, 36, F -Pedu Estate). The qualitative interviews also revealed some of the challenges residents go through, including a lack of essential housing services such as toilet facilities (see Figure 4.1). Rental households living in houses with basic sanitation facilities are likely to experience residential satisfaction, whiles those living in houses without basic sanitation facilities are likely to have residential dissatisfaction.

Araba, a resident of Ekon complained about the lack of adequate toilet facilities and space in the community. She mentions that *"...Some of the people renting in this community do complain about problems in their dwelling units. For instance, they complain about the lack of toilet facilities and adequate spaces." (Araba, 28, F -Ekon).* This situation will likely lead to residential dissatisfaction among the residents, as toilet facilities are essential amenities every house should have for its occupants. In the Kakumdo community, one of the residents

complained about the challenge of sharing the same kitchen and bathroom with another tenants. She mentions that; *"...I share the same kitchen and bathroom with the other tenants, and she has taken over the whole kitchen space with most of her foodstuffs and cooking utensils which leaves a very little space for me. We also sometimes have disagreement on the cleaning of the bathroom and because of these I am considering relocating" (Ama, 35, F -Kakumdo)* An institutional representative also confirmed that the rental conditions in the metropolis are poor, leading to low satisfaction among the residents and rental households. The quotes below from Araba and the institutional representative summarize their sentiments by saying: *"...The rental conditions in the metropolis are not the best. Overall, there is no satisfaction anywhere, and you know there is a housing deficit, that's how come people rush in for what they do not want so in the end they regret going in for what they should not have gone for. So everywhere I have been it's the same. Dwelling units' conditions are very poor." (Institutional Representative, 45, M).*

The views of Araba and the Institutional Representative as shown above depict the metropolis's rental housing conditions. In the context of the housing needs theory by Rossi (1955), the lack of essential housing services such as the availability of water supply leads to households relocating to meet their housing needs. This is likely to lead to residential dissatisfaction among households, and confirms the results of Ibem and Aduwo (2013), who found out a high level of residential dissatisfaction among residents of public housing in Nigeria. It could be true that the shortage of housing supply could be blamed for this phenomenon, and house owners should partly be blamed for giving out substandard housing for rent. Good housing conditions are likely to result in high levels of residential satisfaction among residents, while poor housing conditions are likely to result in residential dissatisfaction (Waziri et al., 2013).

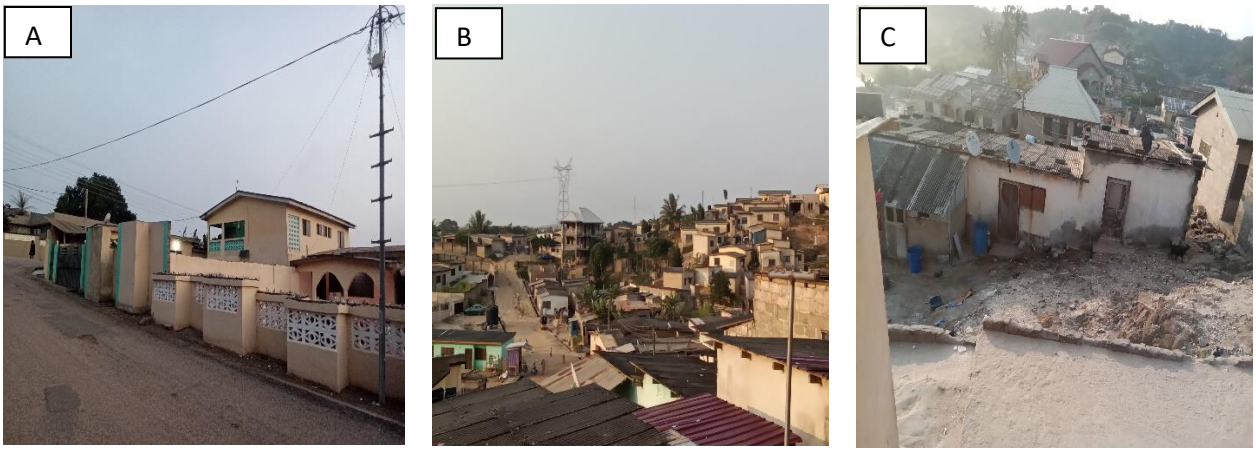


Figure 4.1 Rental Housing at (a) Pedu Estate and (b) Kakumdo and (c) Ekon communities

Source: Fieldwork, 2022

4.3.2 Levels of Social Interactions in the Selected Neighbourhoods

This section presents the findings and discussion for the first part of research objective two, which sought to assess the levels of social interactions among households in the study communities. The result is presented using mean and standard deviation. The questions used in measuring the levels of social interactions were informed by what has been used by previous literature in Ghana and elsewhere as indicated in Chapter Three. It had twelve (12) items in total. Table 4.5 shows the distribution of the mean scores across the three selected communities. Inter-community variation revealed that residents living in Kakumdo had a relatively higher mean[2] than those living in the Pedu Estate and Ekon communities. In the Ekon community, residents

[2] Ekon (Min=19.00, Max=57.00, Mean=48.23, SD=6.01)
Kakumdo (Min=33.00, Max=55.00, Mean=47.58, SD=3.65)
Pedu Estate (Min=13.00, Max=55.00, Mean=40.01, SD=9.55)

agreed highly to the statement that there is high level of social interaction among households with a mean score of 4.18. Similarly, residents in Kakumdo also expressed highly to the statement that there is a high level of social interaction among households with a mean score of 4.10. it was however not the case in the Pedu Estate community as residents expressed highly to the statement that they get along well with each other with a mean score of 3.64. The results generally show a stronger social interaction among residents in Ekon and Kakumdo than in Pedu Estate. This finding was expected for Ekon as it was a low-income community with a majority of compound houses compared to the other two communities. Social interaction between residents in the communities is an essential factor that could likely influence residential satisfaction. The relatively high social interactions in Ekon and Kakumdo than Pedu Estate is crucial for reducing criminal activities and building community bonding and trust among residents.

Table 4.5 Mean and Standard Deviation of the Level of Social Interaction Scale

		Ekon		Kakumdo		Pedu Estate	
	Item	Mean	SD	Mean	SD	Mean	SD
C1	Resident in this community get along well with each other	4.02	.556	3.94	.539	3.64	.981
C2	Residents in this community can be trusted	3.96	.631	3.90	.774	3.57	.989
C3	Residents in this community share the same values	4.02	.700	3.90	.721	3.36	1.046
C4	Residents in this community are closely acquainted	4.07	.535	4.02	.313	3.38	1.076
C5	Residents in this community are willing to help their neighbours	3.84	.654	3.92	.518	3.55	.982
C6	There is a high level of resident's engagements in communal activities	3.77	.874	3.96	.656	3.12	1.168
C7	We discuss issues on our residential units during social meetings	3.89	.888	3.83	.785	3.10	1.210
C8	There is a high level of social interaction in this community	4.18	.508	4.10	.569	3.48	1.082
C9	I am satisfied with residents' overall participation in social activities	4.07	.684	3.90	.495	2.98	1.199
C10	It is common to see children of neighbours playing together	4.12	.634	4.04	.194	3.23	1.173
C11	We meet very often among ourselves in this community	4.13	.662	4.08	.269	3.38	1.109
C12	There is a strong social bonding in this community	4.16	.596	3.98	.464	3.22	1.237

Source: Field Data, 2022

The study's finding of high levels of social interaction activities such as residents getting along well with each other in some of the study neighbourhoods are consistent with that found by Asiedu and Arku (2009). Their study revealed high levels of social interactions such as exchanging pleasantries among residents living in selected gated communities in Accra. It is also similar to that found by Addo (2016). She revealed in her study high levels of social interactions such as participation in community social activities among multi-habited low-income households

in Accra. Conceptually, (see Figure 2.2), it is likely that high levels of social interaction such as participating in community social activities, exchanging pleasantries and meeting at social gatherings (Addo, 2016; Asiedu & Arku, 2009), among households highly influence residential satisfaction, while low level of social interaction activities leads to residential dissatisfaction.

The qualitative data revealed that residents are very active regarding social interactions and activities in the Ekon community. He mentioned that; *"...This is a fishing community and on the days that we do not go for fishing we engage in a lot of activities. For instance, some of the youth play football, whiles both youth and adult also play chess. This is very important it leads to unity in the community and brings us together."* (Community Leader, 34, M -Ekon). Another community leader in the Pedu Estate community complained of low social interaction among residents. He mentioned that: *"...In this community, there is low level of social interaction among residents. Everybody minds his business and it is only occasionally that you see residents come out of the houses to meet each other for interaction"*. (Community Leader, 45, M -Pedu Estate). This is not surprising as residents in high-income communities are likely to exhibit low social interaction and community activities due to the high tendency to stay indoors. A resident and an institutional representative acknowledged the importance of continued social interactions among community members. Specifically, they mentioned that social interactions among residents bring about peace, harmony and peaceful co-existence. In view of this, a resident in the Kakumdo community mentioned that *"...Even though social interactions in this community cannot be compared to what exists in other communities such as the coastal communities it's quite okay. Because everyone loves to stay in his house but when they meet each other, they engage and know that they are living in the same community. So, I will say we know ourselves" (Ama, 35, F- Kakumdo).* An institutional representative added his voice to the importance of

social interactions among the communities and household residents. He said that *"...It is good if social interactions occur in every community as it brings peace and happiness among residents". (Institutional representative, 58, M- CCMA).*

The perspectives above about social interactions captured by the community leader and the institutional representative are essential for understanding the relevance of social interactions in residential satisfaction. It is also similar to the findings by Riazi and Emani (2018) in Iran, which revealed that residents who engage in social interactions experience high levels of residential satisfaction. In the context and assumption of the conceptual framework as adapted from Adewale et al. (2019), social interactions lead to peaceful coexistence and environmental and spatial awareness among residents. The views of some of the residents, like a community leader in Ekon are essential considerations that could influence residential satisfaction among residents. In reasoning with the housing needs theory by Rossi (1955), social interactions, which is critical for building community cohesion and social support systems is an important aspiration of households as they live or relocate to an area.

4.3.3 Conditions of the Built Environment in the Selected Neighbourhoods

This section presents the results and discussion of the second part of research objective two, which sought to assess the conditions of the built environment in the selected communities. The items used for measuring conditions of the built environment were adapted from what has already been used by previous literature as indicated in Chapter Three. The items were fifteen (15) in total. Inter-community variation revealed that, residents living in the Pedu Estate had a

relatively higher mean[3] than those living in Kakumdo and Ekon communities. Table 4.6 shows that in the Ekon community, residents agreed highly to the statement that they reside at good locations from their workplace with a mean score of 3.79, the result was the same for Kakumdo with a mean score of 3.71. However, in the Pedu Estate, residents agreed highly to the statement that there is low level of noise in the community. Generally, the findings show improved conditions of the built environment in Pedu Estate compared to the other study communities (see Figure 4.2). This could be due to the difference in the socioeconomic status of the communities as Pedu Estate is a high-income community and likely to have improved environmental conditions.

[3] Ekon (Min=18.00, Max=57.00, Mean=43.93, SD=11.52)
Kakumdo (Min=14.00, Max=62.00, Mean=45.27, SD=11.22)
Pedu Estate (Min=28.00, Max=67.00, Mean=49.20, SD=6.72)

Table 4.6 Mean and Standard Deviation of the Conditions of the Built Environment Scale

		Ekon		Kakumdo		Pedu Estate	
	Item	Mean	SD	Mean	SD	Mean	SD
D1	Good location of house from work place	3.79	1.057	3.71	.893	3.24	1.212
D2	Adequacy of educational facilities for children	3.57	1.158	3.46	1.075	3.42	1.164
D3	Adequacy of cultural and recreational facilities	2.39	1.073	2.40	.975	2.28	.980
D4	Adequacy of health facilities	2.88	1.266	3.44	1.110	3.20	1.227
D5	Adequacy of trees, green spaces and parks	2.29	1.022	2.35	.905	2.78	1.190
D6	Low level of air pollution	3.18	1.323	3.65	.968	4.04	.899
D7	Presence of demarcated pedestrian walkways	3.05	1.299	3.21	1.109	3.40	1.187
D8	Adequate number of public toilets	2.98	1.258	2.87	1.138	3.26	1.142
D9	Presence of open spaces	3.54	1.220	3.50	1.057	3.64	1.100
D10	Effective local government services such as rubbish collection	3.09	1.392	3.40	1.272	3.54	1.166
D11	Presence of good transportation features e.g., bus stops	3.46	1.095	3.31	1.130	3.48	1.128
D12	Nice neighbourhood landscape	3.22	1.281	3.44	1.178	3.83	.887
D13	Low level of crowdedness	3.18	1.266	3.23	1.463	4.50	1.148
D14	Low level of noise	3.21	1.261	3.29	1.433	4.61	1.063
D15	Satisfied with security and safety issues in the neighbourhood	2.93	1.319	2.96	1.481	3.33	1.777

Source: Field Data, 2022

The literature point to the relevance of assessing residents' experiences with the built environment as it helps to measure the quality of life and well-being which is also likely to influence residential satisfaction (Smith, 2011). The moderate levels of satisfaction with

conditions of the built environment such as proximity to the workplace in some of the study communities are similar to that found by Abankwa et al. (2020). They revealed in their study in the Ellembelle District, moderate levels of satisfaction with community facilities such as the availability of schools and hospitals. This finding is also similar to what Addo (2016) revealed in Accra. She revealed moderate satisfaction with neighbourhood characteristics such as proximity to work.

The qualitative data revealed different nuances to the quantitative data as it provided further insights into the quantification of residents' assessment of the conditions of the built environment. It was revealed that residents in the Ekon community face environmental problems as one of the residents mentioned that: *"…Noise pollution and open defecation at the beaches are some of the problems that we have in this community. Most of the houses do not have toilet facilities, so they use the bush and nearby bushes to attend to natures call."* (Emmanuel, 27, M-Ekon). The study's findings in the Pedu Estate community revealed that residents do not face major environmental problems. The qualitative data also underscore the importance of social amenities in the communities and how they could influence residential satisfaction among residents. Forster, a resident of the Pedu Estate community revealed that the community lacks adequate bus stops which could lead to accidents. He mentioned that "…*The environmental challenges here are not a lot compared to other places, but If care is not taken you can be knocked down by a car since we are closer to the main road. The bus stops here too are not adequate." (Forster, 32, M- Pedu Estate).* Road features are essential components of the built environment. A community which frequently experiences car knockdowns could have residents who will likely have low levels of residential satisfaction.

An institutional representative also attributed the problems that renters face in the metropolis to shortages in rental housing supply. He notes that this leads to residents having to resort to sub-standard housing to meet their housing needs. He mentioned that *"...The problems that renters face all bores down to scarcity because if you don't have a place or you intend to get a place, we might not pay attention to some of the problems or issues in the environment. So even if the places lack certain social amenities, you take it like that." (Institutional Representative, 45, M).* Rental housing challenges are not new; over the years, the state and private sector efforts have helped address the challenges to some extent. Yet, a considerable deficit remains.

The views expressed above by the respondents are significant aspects of the built environment that could likely influence residential satisfaction among residents. The high cost of rental accommodation forces residents to accept sub-standard housing and poor housing conditions to meet their housing needs (Arku et al., 2012). In the context of the housing deficit theory by Morris and Winter (1978), the discrepancy between households' expected outcome and the actual outcome as they occupy a new residence or neighbourhood leads to residential dissatisfaction. This includes taking up rental accommodation. The poor conditions of rental housing revealed by this study are consistent with the assertion made by Addo (2016), who mentions that rental housing in Ghana is rarely maintained and likely to be poorly managed.

Figure 4.2 A Snapshot of the Street at (a) Pedu Estate and (b) Kakumdo and (c) Ekon communities

Source: Field Data, 2022

4.4 Summary

This chapter sought to present findings and discuss the levels and conditions of socio-spatial factors and residential satisfaction in the Cape Coast Metropolis. The chapter therefore answered research objectives one and two. The results on the first objective: Assessment of residential satisfaction indicates varying levels of residential satisfaction among the residents ranging from moderate to high. The results of the second objective: Levels of Social Interactions and Conditions of the Built Environment also revealed varying levels of social interactions and conditions of the built environment across the communities. The results were obtained using mean and standard deviations.

CHAPTER FIVE

RELATIONSHIP BETWEEN SOCIO-SPATIAL FACTORS AND RESIDENTIAL SATISFACTION IN THE SELECTED NEIGHBOURHOODS

5.1 Introduction

This chapter builds on the previous chapter by presenting the results and discussion of research objectives three and four. The chapter presents the findings and discussion on the relationships between the levels of social interactions and conditions of the built environment and residential satisfaction in the selected neighbourhoods. The conclusions of the hypotheses testing are also presented in this chapter. The multiple linear regression model was used to test for the relationships. The names of the respondents ascribed with the qualitative quotes are pseudonyms and not their real names.

5.2 The Relationship between Social Interactions and Residential Satisfaction in the Selected Neighbourhoods

5.2.1 The Assumptions of the Multiple Linear Regression Model

This section of the chapter presents findings on research objective three (3), which sought to find the relationship between the levels of social interactions within the communities and residential satisfaction. In the model, satisfaction with the internal design of dwelling units was used as a proxy for residential satisfaction. This is because it accounted for more than half (53.15%) of the total variance of residential satisfaction (see APPENDIX E). The objective was achieved using the multiple linear regression model. Various assumptions of the model are presented per the

communities. This gives credence to the reliability of the data in presenting the model. The assumption that the relationship between the Independent Variables and the Dependent Variable should be linear was checked using the scatter plot. It revealed a straight line indicating that the relationship between the variables is linear and could model the relationship. The assumption that variations in the residuals is the same at each point across the model was also checked using the scatter plot. To do this the standardized values the model would predict were plotted against the standardized values derived. The scatter plot showed that the spread of the residuals was fairly constant across the linear model indicating the assumption of homoscedasticity was met.

The Durbin-Watson statistic was used to test for the assumption that the residuals are independent or uncorrelated. APPENDIX H shows that the assumption was met as the values meet the recommended threshold (Durbin & Watson, 1950). The assumption of normality was also checked using the histogram, and the output showed that normality might have been violated for the Kakumdo community. Despite the assumption's violation, the Kakumdo community model was still presented for further analysis. This was done in reasoning with Pallant (2011) as well as Elliot and Woodward (2007), that the violation of the normality assumption is not a major problem when the sample size is > 30 or 40. This assertion could be valid as all other assumptions were met for the Kakumdo community, indicating the data's reliability for the model. The model summary in APPENDIX H is important for evaluating the omnibus effects of the IVs on the DV. The overall model was statistically significant in explaining residential satisfaction F (10, 45) = 3.618, $p<0.05$ and accounted for approximately 45% of the variance in residential satisfaction in Ekon (R^2= .446, Adjusted R^2= .323). The overall model was also significant in explaining residential satisfaction F (10, 126) = 2.236,

p<0.05 and accounted for approximately 15% of the variance in residential satisfaction in Pedu Estate (R^2= .152, Adjusted R^2= .085). However, the overall model was not statistically significant in explaining residential satisfaction F (10, 41) = 1.423, p>0.05 and accounted for approximately 24% of the variance in residential satisfaction in Kakumdo (R^2= .236, Adjusted R^2= .050). Again, the result is probably still valid as only extreme deviations from the p-value are likely to significantly affect the findings and the community sample size > 30 (Elliot & Woodward, 2007; Pallant, 2011). This assertion is true as the overall model for the community showed a significant relationship between some IVs and the DV for the community, indicating that the findings could have significant implications for residential satisfaction.

This results section presents semi-partial (part) correlations between the IVs and the DV. Emphasis was placed on the values of the semi-partial correlation because it is one of the best ways to assess the unique contribution of a predictor to the dependent variable in a multiple regression model (Abdi et al., 2002). The square of these values informs us of the percentage of variance each predictor uniquely explains. For example, Table APPENDIX H shows that the respondent's status as an indigene account uniquely for about 6% of the variance in residential satisfaction in Ekon (.248*.248=0.061504) or approximately 6% given the other variables in the model. On the other hand, quality of community life accounts uniquely for about 5% of the variance in residential satisfaction in Pedu Estate (.215*.215=0.046225) or approximately 5%, given the other variables in the model. In running multiple linear regression, another key assumption that needs to be met is the absence of multicollinearity among IVs in the regression model. The presence of multicollinearity increases the standard errors which further decreases the power of the test of the regression coefficients and limits the size of the multiple regression

(Pituch & Stevens, 2016). To assess for the presence of multicollinearity among the IV's, two indices were used for determination, and these were tolerance and VIF (see APPENDIX H). The tolerance values represent the proportion of the variation unexplained in IV_k after performing the regression unto the remaining IVs. Tolerance values <.10 indicate the presence of multicollinearity. The results show that all the tolerance values of the three models were >.10, which meets the recommended threshold by (Tabachnick & Fidell, 2001). This indicates the absence of multicollinearity. With regard to the VIF, a value >10 indicates the presence of multicollinearity. The results show that the VIF values for the two models are < 10, which meets the recommended threshold (Lomax & Hahs-Vaughn, 2012). This also indicates the absence of multicollinearity.

5.2.2 The Overall Multiple Linear Regression Model

A multiple linear regression model was fitted to predict the influence of the levels of social interactions on residential satisfaction in the selected neighbourhoods. In the Ekon community, all of the assumptions were met. The overall model explains 45% of the variation and is significantly useful in explaining residential satisfaction, F (10, 45) = 3.618, p<0.05. The results show a significant relationship between the length of stay and residential satisfaction (β=-.665, p<0.001). The results also show a significant relationship between Status as an Indigene and residential satisfaction (β=.357, p<0.05). Since these two variables had binary responses, the standardized regression slope only reflects the difference between the two groups in z-score units. This can be interpreted as that because the slope is negative for length of stay, residents who have lived in the community for 5 years and below are less likely to be satisfied with their dwelling units than residents who have lived in the community above 5 years. Further, the results

also show that because the slope is positive for whether the respondent is an indigene in the community, non-indigenes or residents who are not from the community are more likely to be satisfied with their dwelling unit than indigenes or people who are from the community. The results on social interactions show that for every one standard score (i.e., z-score) increase in community social ties, residential satisfaction increases by .172, which was not found to be a significant relationship (β=.172, p>0.05). The result further shows that for every one standard score (i.e., z-score) increase in quality of community life, residential satisfaction increases by .128, which was not found to be a significant relationship (β=.128, p>0.05). However, the result shows that there is a significant relationship between community participation in social activities and residential satisfaction (β=-.379, p<0.05). This can be interpreted to mean that for every one standard score (i.e., z-score) unit increase in community participation in social activities, there is a predicted decrease of -.379 standard score unit on residential satisfaction (see Table 5.1)

In the Kakumdo community, all assumptions were met except the normality assumption between the IVs and the DV. The overall model explains 24% in the variation of residential satisfaction, and it is not significantly useful in explaining residential satisfaction F (10, 41) = 1.423, p>0.05. Further analysis shows for every one standard score (i.e., z-score) increase in community social ties, residential satisfaction increases by .334, which was not found to be a significant relationship (β=.334, p>0.05). Also, for every one standard score (i.e., z-score) increase in community participation in social activities, residential satisfaction decreases by .066, which was not found to be a significant relationship (β=-.066, p>0.05). However, the results show that there is a significant relationship between quality of community life and residential satisfaction (β=.429, p<0.01). This can be interpreted to mean that for every one standard score (i.e., z-score)

unit increase on quality of community life, there is a predicted increase of .429 standard score unit on residential satisfaction (see Table 5.1).

In the Pedu Estate community, all of the assumptions were met. The overall model explains 15% variation of residential satisfaction, and it is significantly useful in explaining residential satisfaction, F (10, 126) = 2.236, $p<0.05$). The results show that, for every one standard score (i.e., z-score) increase in community social ties, residential satisfaction increases by .149, which was not found to be a significant relationship ($\beta=.149$, $p>0.05$). Also, for every one standard score (i.e., z-score) increase in community participation in social activities, residential satisfaction increases by .010, which was not found to be a significant relationship ($\beta=.010$, $p>0.05$). However, the result shows that there is a significant relationship between quality of community life and residential satisfaction ($\beta=.231$, $p<0.01$). This can be interpreted to mean that for every one standard score (i.e., z-score) unit increase in quality of community life, there is a predicted increase of .231 standard score unit on residential satisfaction (see Table 5.1).

Table 5.1 The prediction of Residential Satisfaction by Levels of Social Interactions

		Ekon		Kakumdo		Pedu Estate	
		β	SE	β	SE	β	SE
Model	**Variables**						
1	Gender	.104	.304	-.112	.317	.110	.148
	Age	-.117	.019	.172	.023	.158	.008
	Level of Education	-.071	.118	-.025	.123	-.120	.054
	Monthly Household Income	.191	.000	.047	.000	-.040	.000
	Length of Stay	**-.665*** **	.353	.287	.348	-.038	.172
	Household Size	.131	.106	.025	.213	.120	.088
	Status as Indigene	**.357***	.390	-.066	.352	.154	.190
	Community Social Ties	.172	.426	.334	.600	.149	.067
	Quality of Community Life	.128	.222	**.429****	.235	**.231****	.065
	Community Participation	**-.379***	.217	-.066	.276	.010	.069

Source: Field Data, 2022

β is the standardized coefficient and SE being the standardized error, *p<0.05 **p<0.01 ***p<0.001

The results above show that length of stay, indigene status and community participation in social activities are significant predictors of residential satisfaction in the Ekon community. These variables were not significant in predicting residential satisfaction in the Kakumdo and Pedu Estate communities. This could be due to the varying impacts of sociodemographic variables such as age and education on the relationships in the study communities. Another reason could also be the strength of social interaction among residents in the Ekon community. Residents in a low-income community are likely to have stronger community interaction than those in a high-

income community. The results are consistent with that found by Danquah et al. (2014); they revealed from their study in Keta that a significant relationship existed between length of stay, community participation in social activities and residential satisfaction. In the context of the conceptual framework adapted from Adewale et al. (2019), the relationship between social interactions such as community participation in social activities and residential satisfaction could be influenced by sociodemographic factors such as length of stay (Figure 2.2).

Further, quality of community life was a significant predictor of residential satisfaction in the Kakumdo and Pedu Estate communities. This was expected as quality of community life across different socioeconomic neighbourhoods is likely not to be the same. It could also be interpreted to mean that residents in middle- and high-income communities are likely to have a better quality of community life than those in low-income communities. The findings are consistent with that of Wang and Wang (2016), who revealed in a study conducted in Beijing a significant relationship between the daily interactions between residents and residential satisfaction. In the context of the conceptual framework adapted from Adewale et al. (2019), social interaction activities such as exchanging pleasantries could lead to residential satisfaction or dissatisfaction among residents of rental housing units.

The findings revealed a statistically significant relationship between community participation in social activities and residential satisfaction. This means that the null hypothesis does not support the data leading to its rejection. The hypothesis was however supported only in the Ekon community (β=-.379, $p<0.05$). This implies that community participation in social activities is an important predictor of residential satisfaction in Ekon. An increase in community participation in social activities leads to a decrease in residential satisfaction among the residents. The finding is consistent with that found in the United States by Grillo et al. (2010), that engaging in

community social activities has a significant relationship with residential satisfaction. The finding is also consistent with that of Wang and Wang (2016) in Beijing, where there was a significant relationship between social interactions and residential satisfaction. In the context of the conceptual framework as adapted from Adewale et al. (2019), residents living in neighbourhoods with high levels of social interactions are likely to experience residential satisfaction, while those living in neighbourhoods with low levels of social interactions are likely to experience residential dissatisfaction.

The finding from the qualitative data on the levels of social interactions in the communities was similar to the quantitative data. It was revealed there is a strong social interaction in Ekon than in the other two communities. It also revealed the significant role of quality of community life on residential satisfaction in the Kakumdo and Pedu Estate communities. During the interview with Emmanuel, a resident living in the Ekon community, he mentioned that: *"…Ekon is a place where a lot of social activities goes on. It is largely a fishing community, so the days that we do not go on fishing you see a lot of the youth playing football at the beach or on the school park in the community. Even during fishing days' people still do these things. It's a community I will say a lot of social interactions takes place" (Emmanuel, 27, M- Ekon).* The level of social interaction existing in the Ekon community was not the same in the other two communities. A community leader in the Pedu Estate community gave an indifferent opinion. He mentioned that *"…Even though social interactions in my community cannot be compared to what exists in other communities such as the coastal communities but it's quite okay. Because everyone loves to stay in his house but when they meet each other they engage and know that they live in the same community. So, I will say we know ourselves"* (*Community Leader, 45, M- Pedu Estate*). Social interaction between households and residents is important for building community social support

in times of need. Households could rely on social capital to reduce community problems such as the incidence of crime, through sharing personal contact information such as telephone numbers.

Housing as a commodity does not satisfy only dwelling needs of individuals of households but other intangibles such as family relationships, social interactions and social status. Therefore, households' demand certain housing units to satisfy their needs for social space to engage in social interactions with people around them and this could be beneficial to new tenants (Grillo et al., 2010; Vera-Toscano & Ateca-Amestoy, 2008). Situating the discussion in the context of the conceptual framework adapted from Adewale et al. (2019), neighbourhoods with high levels of social interactions are likely to experience residential satisfaction, while those with low levels of social interactions are likely to experience residential dissatisfaction.

5.3 The Relationship between Conditions of the Built Environment and Residential Satisfaction in the Selected Neighbourhoods

5.3.1 The Assumptions of the Multiple Linear Regression Model

This section of the chapter presents the results and discussion on research objective four (4). The objective sought to examine the relationship between conditions of the built environment within the communities and residential satisfaction. Likewise, in the earlier regression model, satisfaction with the internal design of dwelling unit's features was used as a proxy for residential satisfaction because it accounted for more than half of the total variance in residential satisfaction. The objective was also achieved using a multiple linear regression model. Various assumptions about the model are presented in the paragraphs below. This indicates the reliability

and robustness of the data. The assumption that there should be a linear relationship between the IVs and the DV was checked using the scatter plot. The scatter plot revealed that the relationship between the variables could be modelled by a straight line indicating that the relationship is linear. The assumption also that variations in the residuals are the same at each point across the models was checked using scatter plot. To do this the standardized values the model would predict were plotted against the standardized values derived. The scatter plot showed that the spread of the residuals was fairly constant across the linear model indicating the assumption of homoscedasticity was met. The Durbin-Watson statistic was used to test for the assumption that the residuals are independent or uncorrelated. APPENDIX I shows that the assumption, except for the Kakumdo community was met as the values met the recommended threshold (Durbin & Watson, 1950). The assumption of normality was checked using the histogram, and the result showed that the data was normally distributed indicating that the assumption of normality was met.

The model summary in APPENDIX I is important for evaluating the omnibus effects of the IVs on the DV. The overall model was statistically significant in explaining residential satisfaction F (11, 44) = 5.277, $p<0.05$ and accounted for approximately 57% of the variance in residential satisfaction in Ekon (R^2= .569, Adjusted R^2= .461). The overall model was also significant in explaining residential satisfaction F (11, 125) = 3.777, $p<0.05$ and accounted for approximately 25% of the variance in residential satisfaction in Pedu Estate (R^2= .249, Adjusted R^2= .183). However, the overall model was not statistically significant in explaining residential satisfaction F (11, 40) = .913, $p>0.05$ and accounted for approximately 20% of the variance in residential satisfaction in Kakumdo (R^2= .201, Adjusted R^2= -.019). Notwithstanding this, the overall model

for Kakumdo showed a significant relationship between some IVs and the DV, indicating the data's reliability (see Table 5.2).

This section of the results presents correlations between the IVs and the DV. The values of the semi-partial correlation indicate one of the best ways of assessing the unique contribution of a predictor in a multiple regression model. The square of these values informs us of the percentage of variance each predictor uniquely explains. For example, Table 5.2 shows that community layout and design accounts uniquely for about 0.14% of the variance in residential satisfaction in Ekon (.037*.037=0.001369) or approximately 0.14%, given the other variables in the model. Also, the presence of green spaces accounts uniquely for about 0.36% of the variance in residential satisfaction in Pedu Estate (-0.060*-0.060=0.0036) or approximately 0.36%, given the other variables in the model. The presence of multicollinearity increases the standard errors, further decreasing the power of the test of the regression coefficients and limiting the size of the multiple regression (Pituch & Stephens, 2016). To assess the presence of multicollinearity among the IVs, two indices were used for determination, and these were tolerance and VIF (see APPENDIX I). The tolerance values represent the proportion of the variation unexplained in IV_k after performing the regression unto the remaining IVs. Tolerance values <.10 indicate the presence of multicollinearity. The results show that all the tolerance values of the three models were >.10, which meets the recommended threshold by (Tabachnick & Fidell, 2001), indicating the absence of multicollinearity. With regard to the VIF, a value >10 indicates the presence of multicollinearity. The VIF values for the three models are < 10, which meets the recommended threshold by (Lomax & Hahs-Vaughn, 2012), indicating the absence of multicollinearity.

5.3.2 The Overall Multiple Linear Regression Model

The Multiple linear regression was fitted to predict the influence of conditions of the built environment on residential satisfaction. In the Ekon community, all of the assumptions were met. The overall model was statistically significant in explaining residential satisfaction F (11, 44) = 5.277, $p<0.05$ and accounted for approximately 57% of the variance in residential satisfaction (R^2= .569, Adjusted R^2= .461). The overall model shows a significant relationship between monthly household income and residential satisfaction (β=.249, $p<0.05$). This can be interpreted as that for every one standard score (i.e., z-score) increase in monthly household income, there is a predicted increase of .249 standard score unit on residential satisfaction. The results show a significant relationship between quiet environment and residential satisfaction (β=.561, $p<0.05$). This can be interpreted as that for every one standard score (i.e., z-score) increase in a quiet environment, there is a predicted increase of .561 standard score unit on residential satisfaction. A significant relationship was also established between the length of stay and residential satisfaction (β=-.448, $p<0.001$). Since the length of stay item had a binary response, the standardized regression slope only reflects the difference between the two groups in z-score units. This can be interpreted as that, because the slope is negative for length of stay, residents who have lived in the community for 5 years and below are less likely to be satisfied with their dwelling units than residents who have lived in the community above 5 years (see Table 5.2).

In the Kakumdo community, all assumptions were met except the assumption that the residuals are uncorrelated. The overall model was not statistically significant in explaining residential satisfaction F (11, 40) = .913, $p>0.05$ and accounted for approximately 20% of the variance in residential satisfaction (R^2= .201, Adjusted R^2= -.019). Yet, further analysis shows a significant relationship between the presence of green spaces and residential satisfaction. For instance, for

every one standard score (i.e., z-score) increase in the presence of green spaces, residential satisfaction decreases by .572, which was found to be a significant relationship (β=-.572, $p<0.05$).

In the Pedu Estate community, all of the assumptions were met. The overall model was also significant in explaining residential satisfaction F (11, 125) = 3.777, $p<0.05$ and accounted for approximately 25% of the variance in residential satisfaction in (R^2= .249, Adjusted R^2= .183). The results show that, for every one standard score (i.e., z-score) increase in age, residential satisfaction increases by .184, which was found to be a significant relationship (β=.184, $p<0.05$). The results also show that, for every one standard score (i.e., z-score) increase in community layout and design, residential satisfaction increases by .413, which was found to be a significant relationship (β=.413, $p<0.001$).

Table 5.2 The prediction of Residential Satisfaction by Conditions of the Built Environment

		Ekon		Kakumdo		Pedu Estate	
		β	SE	β	SE	β	SE
Model	**Variables**						
1	Gender	-.014	.266	-.000	.337	.051	.142
	Age	-.068	.017	.071	.024	**.184***	.008
	Level of Education	.169	.116	.159	.144	-.152	.052
	Monthly household income	**.249***	.000	.317	.000	-.024	.000
	Length of stay	**-.448*****	.317	.104	.382	.006	.173
	Household size	.037	.099	-.092	.215	.122	.084
	Status as an Indigene	-.072	.405	-.018	.368	.108	.180
	Community Layout and Design	.068	.197	.202	.204	**.413*****	.086
	Quiet Environment	**.561***	.219	.193	.215	.069	.101
	Access to Community Services	-.186	.154	.246	.363	.132	.074
	Presence of Green Spaces	-.111	.210	**-.572***	.326	-.069	.070

Field Data, 2022

β is the standardized coefficient and SE being the standardized error, *p<0.05 **p<0.01 ***p<0.001

It could be deduced that monthly household income, length of stay, and quiet environment are significant predictors of residential satisfaction in the Ekon community. The finding on quiet environment was not expected, as it was not likely that Ekon would have a quiet environment compared to Kakumdo and Pedu Estate. The relationship between a quiet environment and

residential satisfaction was however consistent with that found by Azimi and Esmaeilzadeh (2017). They revealed in their study in Iran a significant relationship between satisfaction with neighbourhood characteristics and residential satisfaction. Danquah et al. (2014) also revealed in their study in Keta a significant relationship between the length of stay and residential satisfaction. Situating this within the conceptual framework adapted from Adewale et al. (2019), the conditions of the built environment such as a quiet environment and the presence of recreational facilities are likely to highly influence residential satisfaction, while their absence is likely to result in residential dissatisfaction.

The findings revealed a statistically significant relationship between a quiet environment and residential satisfaction. Hence, the rejection of the null hypothesis since it does not support the data. The hypothesis was however supported only in the Ekon community (β=.561, $p<0.05$). This suggests that an increase in a quiet environment leads to an increase in residential satisfaction in Ekon. It could be deduced that residents become satisfied with their residential environment when the noise level in the community decreases. The finding above is consistent with that in Turkey by Erdogan et al. (2020), which revealed that aspects of the built environments such as quietness have a positive relationship with residential satisfaction. The finding is also consistent with that of Ibem and Amole (2013) found in Nigeria, where there was a positive relationship between aspects of the built environment and residential satisfaction. In the context of the conceptual framework as adapted from Adewale et al. (2019), residents living in neighbourhoods with good and adequate amenities are likely to experience residential satisfaction, while those living in neighbourhoods with poor conditions are likely to experience residential dissatisfaction.

The presence of green spaces was also a significant predictor of residential satisfaction in Kakumdo. In the case of Pedu-Estate, it was age and community layout and design which came

out as the significant predictors. This outcome compared to Ekon, was expected as the presence of green spaces and nice community layout and designs are likely not to be found in a low-income community. A similar study by Huang and Du (2015) in China also found a positive relationship between residential satisfaction and satisfaction with community services such as recreational centres. This has also been corroborated by Azimi and Esmaeilzadeh (2017) in Iran who revealed a significant relationship between satisfaction with neighbourhood characteristics and residential satisfaction. Situating the discussion in the context of the conceptual framework adapted from Adewale et al. (2019), conditions of the built environment such as the presence of recreational facilities and green spaces, are likely to influence residential satisfaction, while their absence is likely to lead to residential dissatisfaction.

The qualitative interviews revealed the different conditions of the built environment that residents have to deal with in the selected communities. These include the challenge of open defecation due to the absence of public toilet facilities. It also came out that community layout and design were important for residents living at the Pedu estate. Praba, a resident of the Pedu Estate community mentioned that: *"...The community is well planned with street well connected. So, I will say the environment is nice to stay. Even though problems could be found in other parts of the community, I will say that the conditions are largely favourable" (Praba, 27, F- Pedu Estate).* This narrative shared by Praba was in contrast to that shared by Araba, a resident of the Ekon community. She mentioned: *"...This is a fishing community, and we have many problems. The major problem we face is the stench from the fish the women dry, it's very bad. We do not also have adequate public toilets so many of the residents go the beach to defecate which is not good" (Araba, 28, F- Ekon).* Poor conditions of the built environment such as inadequate

sanitation facilities in the neighbourhood will likely lead to residential dissatisfaction among residents including tenants.

Residents' assessments of the conditions of the built environment are critical determinants of residential satisfaction or dissatisfaction (Sebastien, 2020). This presents the opportunity to tap into their knowledge of housing conditions to meet their housing needs, an issue of quality of life and well-being (Smith, 2011). Hence conditions of the built environment can influence households' including tenants' relocation decisions (Rohe & Lindblad, 2013), especially when they are dissatisfied with the neighbourhood environment. Situating the discussion within the context of the conceptual framework adapted from Adewale et al. (2019), good neighbourhood conditions lead to residential satisfaction, while poor neighbourhood conditions lead to residential dissatisfaction.

5.4 Summary

This chapter sought to present findings and discussion on the relationships between the levels and conditions of socio-spatial factors and residential satisfaction in the Cape Coast Metropolis. The chapter therefore answered research objectives three and four. The results of the third objective: The relationship between social interactions and residential satisfaction revealed a significant relationship between the length of stay, status as an indigene, and community participation in social activities in the Ekon community. Further, there was a significant relationship between quality of community life and residential satisfaction in the Kakumdo and Pedu Estate communities respectively. The results of the fourth objective: The relationship between conditions of the built environment and residential satisfaction revealed a significant relationship between monthly household income, length of stay and quiet environment in the

Ekon community. In the Kakumdo community, there was a significant relationship between the presence of green spaces and residential satisfaction. The model also revealed that age, community layout, and design were significant predictors of residential satisfaction in the Pedu Estate community. Results from the hypotheses testing also showed that the alternate hypotheses were only supported in the Ekon community.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the summary of key findings derived from the research. It provides an overview of the main and specific objectives that guided the study and a summary of key findings. The conclusion section follows this. In this chapter, expected and unexpected results were indicated, and the possible reasons that could account for them have been provided. The conclusion section is followed by the contributions of the study, recommendations as well as possible areas for future research.

6.2 Summary of Key Findings

The study examined the influence of socio-spatial factors on residential satisfaction among households living in rental housing areas in the Cape Coast Metropolis. The specific objectives were to assess the (i) levels of residential satisfaction, (ii) levels of social interactions and conditions of the built environment, (iii) the relationship between social interactions and residential satisfaction and (iv) the relationship between conditions of the built environment and residential satisfaction in the selected neighbourhoods. The respondents were residents living in rental housing in different socioeconomic neighbourhoods in the Cape Coast Metropolis, who were selected using a multistage sampling technique. The sequential explanatory mixed methods design was adopted for the study, and the statistical analysis conducted were frequencies, percentages, mean, standard deviation and multiple linear regression. Data presentation was mainly done using tables.

6.2.1 Findings on Objective One: Assessment of the Levels of Residential Satisfaction

Objective one aimed to assess residential satisfaction across the three selected socioeconomic neighbourhoods. The study revealed varying degrees of residential satisfaction across the selected neighbourhoods, ranging from moderate to high. In terms of community specific findings, residents in Ekon exhibited moderate to high satisfaction with their dwelling units. The quantitative data revealed that respondents were moderately satisfied with electricity and water supply and with privacy in dwelling units. In the Kakumdo community, whereas the sampled residents were moderately satisfied with electricity and water supply, they were also highly satisfied with the overall architectural design of dwelling units. In the Pedu Estate residents were highly satisfied with electricity and water supply and privacy in dwelling units. The quantitative results generally imply that residents were satisfied with their residential environment.

6.2.2 Findings on Objective Two: Levels of Social Interactions and Conditions of the Built Environment

The purpose of objective two was in two parts. The first was to assess the levels of social interactions, and the second was to assess the conditions of the built environment. With regard to levels of social interactions, the findings revealed that residents living in the Ekon and Kakumdo communities exhibited high levels of social interactions. In contrast, those living in the Pedu Estate community showed moderate to high social interactions. This finding was expected as residents living in high-income neighbourhoods are likely to have relatively low levels of social interactions compared to those living in low- and middle-income communities. This is because residents in high-income communities are likely to stay indoors with little social engagement. In

contrast, those in low- and middle-income communities are likely to have high social engagement.

The quantitative data revealed that residents expressed varying agreement to the statement on the conditions of the built environment across the three socioeconomic neighbourhoods. For instance, residents in all three communities agreed lowly to highly on the conditions of their built environment. However, those living in the Ekon and Kakumdo communities agreed highly to good location from house to workplace. This was not the case in the Pedu Estate community as residents agreed highly to low levels of noise. These findings were expected as residents in low- and middle-income areas are likely to engage in work activities not far away from their households as compared to those living in high-income areas. This could be true as residents living in Ekon, a low-income fishing community are likely to be employed in the private informal sector.

6.2.3 Findings on Objective Three: Relationship between Levels of Social Interactions and Residential Satisfaction

This objective sought to examine the relationship between the levels of social interactions and residential satisfaction. The study revealed a statistically significant relationship between length of stay (β=-.665, $p<0.001$), Status as an Indigene (β=.357, $p<0.05$), community participation (β=-.379, $p<0.05$), and residential satisfaction in the Ekon community. The interpretation could be that because the slope is negative for length of stay, residents who have lived in the community for 5 years and below are less likely to be satisfied with their dwelling units than residents who have lived in the community above 5 years. The results further show that because the slope is positive for status as an indigene in the community, non-indigenes or people who are not from

the community are more likely to be satisfied with their dwelling unit than indigenes or people who are from the community. The finding on community participation in social activities could be interpreted to mean that for every one standard score (i.e., z-score) unit increase in community participation in social activities, there is a predicted decrease of -.379 standard score unit on residential satisfaction. Further, the results revealed no statistically significant relationship between the other variables used to measure levels of social interactions and residential satisfaction.

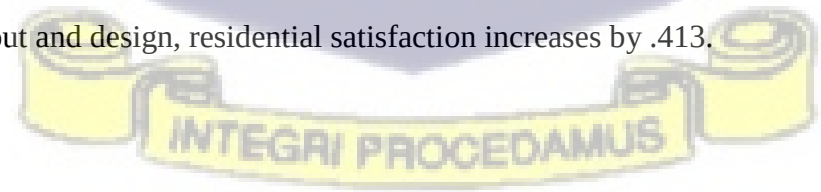
The findings further revealed a statistically significant relationship between quality of community life (β=.429, $p<0.01$) and (β=.231, $p<0.01$) and residential satisfaction in the Kakumdo and Pedu communities respectively. This can be interpreted to mean that for every one standard score (i.e., z-score) unit increase in quality of community life, there is a predicted increase of .429 standard score unit on residential satisfaction in the Kakumdo community. In the Pedu Estate community the result implies that for every one standard score (i.e., z-score) unit increase in quality of community life, there is a predicted increase of .231 standard score unit on residential satisfaction. There was no statistically significant relationship between the other variables used to measure social interactions and residential satisfaction in the two communities respectively.

6.2.4 Findings on Objective Four: Relationship between Conditions of the Built Environment and Residential Satisfaction

This objective sought to examine the relationship between conditions of the built environment and residential satisfaction. Generally, different factors predicted residential satisfaction across the three communities. For instance, in the Ekon community the results revealed a statistically

significant relationship between monthly household income (β=.249, p<0.05), length of stay (β=-.448, p<0.001), quite environment (β=.561, p<0.05), and residential satisfaction. This implies that for every one standard score (i.e., z-score) increase in monthly household income, there is a predicted increase of .249 standard score unit on residential satisfaction. Also, because the slope is negative for length of stay, residents who have lived in the community for 5 years and below are less likely to be satisfied with their dwelling units than residents who have lived in the community above 5 years. Further, for every one standard score (i.e., z-score) increase in a quiet environment, there is a predicted increase of .561 standard score unit on residential satisfaction. There was no statistically significant relationship between the other variables regarding conditions of the built environment and residential satisfaction.

In the Kakumdo community, there was a statistically significant relationship between the presence of green spaces (β=-.572, p<0.05), and residential satisfaction in the Kakumdo community. This could imply that for every one standard score (i.e., z-score) increase in the presence of green spaces, residential satisfaction decreases by .572. In the Pedu Estate community there was a statistically significant relationship between age (β=.184, p<0.05), community layout and design (β=.413, p<0.001), and residential satisfaction. The results show that, for every one standard score (i.e., z-score) increase in age, residential satisfaction increases by .184. The results further show that, for every one standard score (i.e., z-score) increase in community layout and design, residential satisfaction increases by .413.



6.3 Conclusion

The study's overarching goal sought to examine the influence of socio-spatial factors' on residential satisfaction in three different socioeconomic neighbourhoods in the Cape Coast

Metropolis. Based on the study findings, it could be mentioned that the aim of the study was achieved as there was a statistically significant relationship between some of the socio-spatial factors and residential satisfaction. The study's goal was achieved through four main research objectives using statistical tests such as mean, standard deviation, PCA and multiple linear regressions. In essence, findings on objective one revealed that residents exhibited moderate to high levels of residential satisfaction across the three communities. However, residential satisfaction among residents of Pedu Estate was dominant compared to the other two communities. This finding was expected because residents living in high-income areas are likely to be highly satisfied with their residential environment relative to those living in the other two communities.

Further findings on objective two showed that residents across the communities exhibited varying social interactions. However, residents living in the Ekon community exhibited dominant levels of social interaction relative to the other two communities. This finding was also expected as residents living in low-income areas are more likely to have higher social interaction levels than the other two communities. In Pedu Estate, residents agreed highly to the conditions of the built environment compared to those living in the other two communities. This finding was also expected as high-income neighbourhoods as more likely to have good environmental conditions relative to the other two communities. Result on objectives three and four revealed a statistically significant relationship between quality of community life and residential satisfaction in Kakumdo and Pedu Estate only. This finding was not expected, as residents living in the two communities are more likely to have low levels of social interactions compared to those living in Ekon. This could be due to the role of individual and contextual factors such as age and level of education on residential satisfaction.

The study also set out to test for hypothesis on the relationship between community participation in social activities and residential satisfaction. The findings show a statistically significant relationship between community participation in social activities and residential satisfaction in the Ekon community only. This finding was expected as a low-income community will likely have strong social cohesion and community bonding. Also, the second hypothesis examined the relationship between conditions of the built environment and residential satisfaction. The model revealed a statistically significant relationship between a quiet environment and residential satisfaction in the Ekon community only. The finding was not expected as a low-income community is not likely to have a quiet environment as compared to the other two communities.

The qualitative data provided further insights into the quantitative data. The interviews with residents and institutional representatives revealed a strong social interaction between residents in the metropolis, especially those living along the coast. This could account for the high level of social interactions in Ekon compared to the other two communities which are located in the northern part of the metropolis. It was also revealed that open defecation at the beach was a major environmental problem facing residents of Ekon. This finding was expected as most residents living in the community do not have toilet facilities in their homes. Hence, they will likely use the beach and the bushes when nature calls.

Notwithstanding the important contributions of this study to empirical literature and practice, it is useful to mention the limitations pertaining to the data and methodology. First, the results need to be interpreted with caution as the findings pertain to the three selected neighbourhoods randomly selected from each socioeconomic. This could not be generalized for all the neighbourhoods in the metropolis as different individual, and contextual factors exist in the neighbourhoods. Second, during the data collection procedure, residents of Pedu Estate were

hostile. A discussion about this with some of them revealed that they are being careful about criminals who pretend to be students and other professionals seeking assistance or work. Even though this proved challenging, using my student's identity card and an introductory letter from the department helped prove my identity.

6.4 Contributions of the Study

I. The study adds to the existing literature on socio-spatial predictors of residential satisfaction among households in rental housing in three different socioeconomic neighbourhoods. While in Ekon, the predictors were length of stay, status as an indigene, monthly household income, community participation and quiet environment, the predictors in Kakumdo were quality of community life and the presence of green spaces. In Pedu Estate, the predictors were age, quality of community life and community layout and designs. These predictors are significant because they reveal practical and neighbourhood individual and contextual factors to inform and improve residential housing conditions especially in rental housing areas.

II. The use of mixed methods in geographical research presents opportunities to better investigate and explain research problems. This helps to draw on the strength of both quantitative and qualitative methods. The literature on residential satisfaction has received little attention in the mixed method application, as most of the studies have used only the quantitative approach. This study contributes to research methodology by using qualitative quotes to provide further insights into the quantitative data.

III. The theory of housing needs (Rossi, 1955), is underlined by the assumption that progression from one cycle to another requires that households meet certain aspirations, and the inability to fulfil these aspirations leads to dissatisfaction with their residential environment. This study makes a theoretical contribution by applying this assumption to households living in

rental housing areas in Ghana. The study showed that the aspirations of households to stay in a particular community are not only based on the conditions of the residential unit but also social and built environmental factors such as community participation in social activities and a quiet environment. Further, according to the theory of housing deficit (Morris & Winter, 1978), households evaluate their housing conditions using certain standards as they move into a new residence. However, the theory does little to include external factors outside the dwelling unit, such as social interactions and conditions of the built environment. This study revealed that community participation in social activities and a quiet environment are essential determinants for rental households relocating to a place or a new residence. Theoretically, a significant contribution of this study also lies in its application in the African context.

6.5 Recommendations

I. The study has revealed that residents exhibited moderate to high levels of residential satisfaction across the three communities. It was dominant in the Pedu community relative to the other two communities. It is recommended that rental housing owners in the Ekon and Kakumdo communities improve housing conditions such as the use of shared facilities. For instance, the use of shared household amenities such as prepaid meters by multiple households was found to be grounds for conflict between co-tenants. There can be arrangement with ECG to provide meters for individual households. Indeed, this form of arrangement has been ongoing in some houses in the same community. Thus, this can be scaled up and land-lords can be encouraged to do that, especially if the meters can be purchased at a subsidized rate.

II. The study has shown that residents across the three communities exhibited varying social interactions. However, residents living in Ekon exhibited dominant social interaction relative to the other two communities. Further, residents residing in Pedu Estate agreed highly to the conditions of the built environment relative to residents living in the other two communities. It is recommended that the CCMA ensure social activities such as community football matches are promoted. This tends to increase satisfaction among the residents. Further, the conditions of the built environment such as community layout and designs should be improved in Ekon and Kakumdo communities. This also tends to increase satisfaction among the residents.

III. The study has demonstrated a statistically significant relationship between quality of community life and residential satisfaction in Kakumdo and Pedu Estate. It is recommended that residents living in the Pedu Estate community improve social interactions and share their telephone numbers. This is significant because it helps them to know each other better and helps to control criminal activities. This could help to ascertain from neighbours the identity of unknown persons found within the communities. Indeed, the existing resident association can be a starting point for building such relationship which will include exchange of phone numbers and other information that can improve social connections among households in the community.

IV. Further, the study has demonstrated that, that there is a statistically significant relationship between community participation in social activities, quiet environment and residential satisfaction in Ekon only. It is recommended that the CCMA promote community participation activities in the other communities as it builds community cohesion and trust. Further, a quiet environment is hard to occur in the Ekon community as low-income

communities are hard to have a noise free environment. It is again recommended that the CCMA put down measures to reduce noise in the communities as it could negatively influence residential satisfaction. This is even more important because it has implications for the achievement of SDG 11, which seeks to build safe, resilient and inclusive cities. The study provides the results necessary to include the perspective of residents living in rental housing areas across different socioeconomic neighbourhoods in the design and implementation of decisions concerning the residential environment.

6.6 Suggestions for Future Research

I. This research was conducted across three different socioeconomic neighbourhoods in the Cape Coast Metropolis of Ghana. The results, therefore, apply to the geographical boundaries of the metropolis. However, further research would be required in other rental areas in Ghana to enhance the generalisation of the research findings. This is because different spatial factors influence residential satisfaction among households living in different rental housing areas.

II. Further, this research was conducted among households living in private rental housing. One reason that could affect residents' satisfaction with their dwelling units is high rental charges. In view of this, residents are likely to have higher expectations of living in their housing unit. Future research is therefore required among households living in public rental housing to confirm or repudiate the findings of this study.

III. Further research is required to establish the relationship between psychological well-being and residential satisfaction. Such studies have been considered elsewhere but with little focus on Ghana. This study will help determine other issues beyond socio-spatial factors that predict residential satisfaction.

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APPENDICES

APPENDIX A: QUESTIONNAIRE FOR HOUSEHOLDS

Introduction

This research is being conducted in partial fulfilment for the requirement of the award of MPhil Geography and Resource Development on the topic *"Socio-Spatial Determinants of Residential Satisfaction among Households Living in Rental Housing Areas: The Case of Cape Coast Metropolis"*. The data collected is solely for academic purposes; hence it will be accorded utmost anonymity and confidentiality. You may discontinue this survey at any time or choose not to respond to any of the questions. Please it will take about 15 minutes to complete the questionnaire.

Name of the community……..

SECTION A: BACKGROUND CHARACTERISTICS

Please indicate your responses by ticking [√] where appropriate

1. Gender: a. Male [ ] Female [ ]

2. Age……..

3. Level of Education:
a. None (No formal education) [ ] b. Non-formal education [ ] c. Primary [ ] d. JSS/JHS
[ ] e. SSS/SHS/TVET [ ] Tertiary [ ]

4. Marital Status: a. Informal/living together [ ] b. Married [ ] c. Separated [ ] d. Divorced [ ] e. Widowed [ ] f. Never Married [ ]

5. Employment sector: a. Unemployed b. Private formal c. Private informal d. Public (government) sector e. Religious Organization [ ] International organization [ ]
e. Others [ ]

6. Religion: a. Christian [ ] b. Muslim [ ] c. Traditional [ ] d. No Religion [ ] e. others [ ]

7. Ethnicity: a. Akan [ ] b. Ga-Adangbe [ ] c. Ewe [ ] d. Guan [ ] e. Mole-Dagbani [ ] f. Grusi [ ] g. Mande [ ] h. Gurma [ ] i. Others [ ]

8. Which of these best suit your status as an indigene? a. Indigene [ ] b. None-Indigene [ ]

9. Household Size ……....

10. Number of rooms occupied…….

11. Monthly household income: …….

12. Housing type: a. Compound housing (rooms) [ ] b. Detached housing (separate) [ ] c. Semi-detached housing d. Flat/apartment [ ] e. Others [ ]

13. Length of stay in community: a. 0-5 years [ ] b. 6- 10 years [ ] c. 11 years and above [ ]

SECTION B: ASSESSMENT OF RESIDENTIAL SATISFACTION

Please rank your satisfaction with your dwelling unit on a scale of 1-5.

*1=**Very Dissatisfied**; 2=Dissatisfied; 3=Neutral 4= Satisfied; 5= **Very Satisfied***

S/N	Item	1	2	3	4	5
1.	Satisfied living in this house					
2.	Satisfied with maintenance services					
3.	Satisfied with housing services such as the number of toilets and bath					
4.	Satisfied with the level of in-house interaction or cooperation					
5.	Satisfied with privacy in current dwelling					
6.	Satisfied with the quality of the building materials used to construct the dwelling unit?					
7.	Satisfied with the overall architectural design of the dwelling unit					
8.	Satisfied with ventilation/natural airflow					
9.	Satisfied with the number of other spaces in the house, e.g., kitchen, porch, etc.					
10.	Satisfied with door/window quality and roofing					
11.	Satisfied with floor quality					
12.	Satisfied with room length					

13.	Satisfied with the size and location of the entrance to dwelling unit					
14.	Satisfied with electricity and water supply in dwelling unit					

SECTION C: LEVELS OF SOCIAL INTERACTION

Please rank on a scale of 1-5 your assessment of social interaction in the community.

*1=**Strongly Disagree**; 2=Disagree; 3=Neutral 4= Agree; 5= **Strongly Agree***

S/N	Item	1	2	3	4	5
1.	Residents in this community get along well with each other					
2.	Residents in this community can be trusted					
3.	Residents in this community share the same values					
4.	Residents in this community are closely acquainted					
5.	Residents in this community are willing to help their neighbours					
6.	There is a high level of resident engagement in communal activities					
7.	We discuss issues in our residential units during social meetings					
8.	There is a high level of social interaction in this community					
9.	I am satisfied with residents' overall participation in social activities					
10.	It is common to see children of neighbours playing together					
11.	We meet very often among ourselves in this community					
12.	There is a strong social bonding in this community					

SECTION D: CONDITIONS OF THE BUILT ENVIRONMENT

Please rank on a scale of 1-5 your agreement to the following statements.

*1=**Strongly Disagree**; 2=Disagree; 3=Indifferent 4= Agree; 5= **Strongly Agree***

S/N	Item	1	2	3	4	5
1.	Good location of house from workplace					
2.	Adequacy of educational facilities for children					

3.	Adequacy of cultural and recreational facilities					
4.	Adequacy of health facilities					
5.	Adequacy of trees, green spaces and parks					
6.	Low level of air pollution					
7.	Presence of demarcated pedestrian walkways					
8.	Adequate number of public toilets					
9.	Presence of open spaces					
10.	Effective local government services such as rubbish collection					
11.	Presence of good transportation features, e.g. bus stops					
12.	Nice neighbourhood landscape					
13.	Low level of crowdedness					
14.	Low level of noise					
15.	Satisfied with security and safety issues in the neighbourhood					

Thank you

APPENDIX B: INTERVIEW GUIDE FOR COMMUNITY

This interview is being conducted by Stephen Leonard Mensah, a master's student at the University of Ghana. Please the research focuses on *"Socio-Spatial Determinants of Residential Satisfaction among Households Living in Rental Housing Areas: The Case of Cape Coast Metropolis"*. The data collected is solely for academic purposes; hence it will be accorded utmost anonymity and confidentiality. This interview will take about 30 minutes and you may choose to discontinue the interview at any time or refuse to answer any of the questions. Thank you

Background information

1. Can you tell me about your role in the community, age, years of staying in this community and your sex?

Assessment of Residential Satisfaction

2. How will you describe your level of satisfaction with your dwelling units?
3. Do residents generally complain about dissatisfaction or problems with their dwelling units?
4. Do you hold residents' meetings in this place, and what issues dominate during the meetings

Levels of Social Interactions

5. How will you describe social interactions in this house or the community?
6. Can you name some forms of social activities that residents in the community engage in?

Conditions of the Built Environment

7. How will you describe the built environmental conditions in this place regarding the adequacy of educational facilities, availability of green and open spaces, safety issues, etc.?
8. Do residents generally express displeasure about some aspects of the built environment, as mentioned above?

   Thank you

APPENDIX C: INTERVIEW GUIDE FOR INSTITUTIONS

This interview is being conducted by Stephen Leonard Mensah, a master's student at the University of Ghana. Please the research focuses on *"Socio-Spatial Determinants of Residential Satisfaction among Households Living in Rental Housing Areas: The Case of Cape Coast Metropolis"*. The data collected is solely for academic purposes; hence it will be accorded utmost anonymity and confidentiality. This interview will take about 30 minutes, and you may choose to discontinue the interview at any time or refuse to answer any of the questions. Thank you

Background information

1. Can you tell me about your institution, position/title, age, sex, and years working here?

Assessment of Residential Satisfaction

1. Describe your institution's role in promoting residential satisfaction in rental housing areas.
2. How will you describe the general rental housing conditions in the metropolis?

Levels of Social Interactions

3. Describe your institution's role in promoting social interaction and activities in rental housing areas.
4. Can you mention some specific social activities you have initiated, implemented or promoted in these areas?

Conditions of the Built Environment

5. Can you describe some of the built environmental problems in rental housing areas?
6. What is your overall assessment of the conditions of the built environments in these areas?

Thank you

APPENDIX D: INTRODUCTORY LETTER

UNIVERSITY OF GHANA

SCHOOL OF SOCIAL SCIENCES
COLLEGE OF HUMANITIES
DEPARTMENT OF GEOGRAPHY
AND RESOURCE DEVELOPMENT

DGRD/06/22

June 6, 2022

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION - MR. STEPHEN LEONARD MENSAH

The above-named is an MPhil student of the Department of Geography and Resource Development, University of Ghana, Legon. As a requirement for his MPhil programme, he is expected to present a thesis on the topic, *"Socio-Saptial Determinants of Residential Satisfaction among Households of Rental Housing: The Case of Cape Coast Metropolis"* and as such would require information for his research work from your outfit.

We should be very grateful if you could accord him the needed support he may require to collect his data.

We thank you for your cooperation.

Yours faithfully,

Prof. Alex owusu Barimah
For: Head of Department

P. O. Box LG 59, Legon, Accra , Ghana | Tel: +233 (0) 302 500 394/ 500 393
Email: geograf@ug.edu.gh | www.ug.edu.gh

UG

INTEGRI PROCEDAMUS

APPENDIX E: PCA ASSUMPTIONS FOR LEVELS OF RESIDENTIAL SATISFACTION

KMO Statistic and the Barlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.912
Barlett's Test of Sphericity	Approx. Chi-Square	2395.216
	df	91
	Sig.	.000

Communalities of Residential Satisfaction Measurement Item

	Measured Item	Initial	Extraction
B1	Satisfied living in this house	1.00	**.737**
B2	Satisfied with maintenance services	1.00	.801
B3	Satisfied with housing services such as number of toilet and bath	1.00	.687
B4	Satisfied with the level of in-house interaction or cooperation	1.00	.591
B5	Satisfied with privacy in current dwelling	1.00	.646
B6	Satisfied with the quality of building materials used to construct dwelling unit?	1.00	.758
B7	Satisfied with overall architectural design of dwelling unit	1.00	.692
B8	Satisfied with ventilation/natural air flow	1.00	.756
B9	Satisfied with the number of other spaces in the house e.g., kitchen, porch, etc.	1.00	.515
B10	Satisfied with door/window quality and roofing	1.00	.708
B11	Satisfied with floor quality	1.00	.748
B12	Satisfied with room length	1.00	.748
B13	Satisfied with size and location of entrance to dwelling unit	1.00	.817
B14	Satisfied with electricity and water supply in dwelling unit	1.00	.711

Extraction Method: Principal Components Analysis

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Comp.	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**
1	7.442	53.155	53.155	7.442	53.155	53.155	4.525
2	1.464	10.459	63.614	1.464	10.459	63.614	4.073
3	1.009	7.205	70.819	1.009	7.205	70.819	1.317
4	.820	5.858	76.676				
5	.659	4.710	81.387				
6	.473	3.375	84.762				

7	.399	2.851	87.612
8	.356	2.545	90.157
9	.343	2.450	92.606
10	.278	1.982	94.589
11	.234	1.673	96.262
12	.199	1.423	97.684
13	.188	1.345	99.030
14	.136	.970	100.000

Extraction Method**:** Principal Component Analysis

Rotated Components Matrix

Variable	**Components**		
	1	**2**	**3**
B13	.847		
B11	.789		
B12	.780		
B10	.759		
B8	.728		
B4	.605		
B2		.835	
B1		.814	
B3		.753	
B7		.668	
B6		.630	
B5		.618	
B9		.607	
B14			.793
Cron. alpha	.901	.819	-
Comp. Reliability	.887	.875	.629
Corr. Coefficient	> 0, p< .05	>0, p< .05	>0, p< .05

Extraction Method: Principal Components Analysis

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 8 iterations.

APPENDIX F: PCA ASSUMPTIONS FOR LEVELS OF SOCIAL INTERACTIONS

KMO Statistic and the Barlett's Test of Sphericity

Kaiser Meyer Olkin Measure of Sampling Adequacy		.910
Barlett's Test of Sphericity	Approx. Chi-Square	2004.307
	df	66
	Sig.	.000

Communalities of Levels of Social Interactions Measurement Scale

		Initial	Extraction
C1	Resident in this community get along well with each other	1.00	.784
C2	Residents in this community can be trusted	1.00	.780
C3	Residents in this community share the same values	1.00	.672
C4	Residents in this community are closely acquainted	1.00	.813
C5	Residents in this community are willing to help their neighbours	1.00	.531
C6	There is a high level of resident's engagements in communal activities	1.00	.686
C7	We discuss issues on our residential units during social meetings	1.00	.847
C8	There is a high level of social interaction in this community	1.00	.669
C9	I am satisfied with residents' overall participation in social activities	1.00	.756
C10	It is common to see children of neighbours playing together	1.00	.763
C11	We meet very often among ourselves in this community	1.00	.830
C12	There is a strong social bonding in this community	1.00	.770

Extraction Method: Principal Components Analysis

Total Variance Explained

	Initial Eigenvalues			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**
Comp.	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.769	56.412	56.412	6.769	56.412	56.412	4.159
2	1.118	9.314	65.727	1.118	9.314	65.727	2.476
3	1.015	8.459	74.186	1.015	8.459	74.186	2.267
4	.590	4.913	79.099				
5	.510	4.252	83.351				
6	.431	3.593	86.944				
7	.375	3.129	90.073				
8	.339	2.822	92.895				
9	.267	2.222	95.116				
10	.232	1.935	97.051				
11	.209	1.740	98.791				
12	.145	1.209	100.000				

Rotated Components Matrix

Variable	Components		
	1	2	3
C11	.832		
C12	.832		
C4	.809		
C10	.764		
C3	.600		
C1		.847	
C2		.822	
C7			.895
C9			.646
C6			.603
Cron. alpha	.915	.767	.809
Comp. Reliability	.879	.821	.764
Corr. Coefficient	> 0, p< .05	>0, p< .05	>0, p< .05

Extraction Method: Principal Components Analysis

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

APPENDIX G: PCA ASSUMPTIONS FOR CONDITIONS OF THE BUILT ENVIRONMENT

KMO Statistic and the Barlett's Test of Sphericity

Kaiser Meyer Olkin Measure of Sampling Adequacy		.820
Barlett's Test of Sphericity	Approx. Chi-Square	1633.639
	df	105
	Sig.	.000

Communalities of Conditions of Built Environment Measurement Scale

	Items	Initial	Extraction
D1	Good location of house from work place	1.00	.616
D2	Adequacy of educational facilities for children	1.00	.729
D3	Adequacy of cultural and recreational facilities	1.00	.722
D4	Adequacy of health facilities	1.00	.618
D5	Adequacy of trees, green spaces and parks	1.00	.790
D6	Low level of air pollution	1.00	.487
D7	Presence of demarcated pedestrian walkways	1.00	.546
D8	Adequate number of public toilets	1.00	.497
D9	Presence of open spaces	1.00	.637
D10	Effective local government services such as rubbish collection	1.00	.644
D11	Presence of good transportation features e.g., bus stops	1.00	.692
D12	Nice neighborhood landscape	1.00	.650
D13	Low level of crowdedness	1.00	.845
D14	Low level of noise	1.00	.851
D15	Satisfied with security and safety issues in the neighborhood	1.00	.551

Extraction Method: Principal Components Analysis

Total Variance Explained

	Initial Eigenvalues			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**
Comp.	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.268	35.117	35.117	5.268	35.117	35.117	22.590
2	2.133	14.221	49.338	2.133	14.221	49.338	18.947
3	1.364	9.095	58.433	1.364	9.095	58.433	15.470
4	1.110	7.398	65.831	1.110	7.095	65.831	8.823
5	.836	5.573	71.404				
6	.705	4.701	76.105				
7	.613	4.089	80.194				
8	.537	3.579	83.773				
9	.481	3.208	86.982				
10	.471	3.142	90.123				
11	.440	2.936	93.059				

12	.374	2.496	95.555
13	.298	1.984	97.539
14	.253	1.686	99.225
15	.116	.775	100.00

Rotated Components Matrix

Variable	Components			
	1	**2**	**3**	**4**
D11	.831			
D9	.724			
D10	.715			
D7	.687			
D12	.658			
D13		.898		
D14		.889		
D2			.786	
D1			.769	
D3			.681	
D5				.856
Cron. alpha	.836	.931	.659	-
Comp. Reliability	.847	.888	.790	.733
Corr. Coefficient	> 0, p< .05	>0, p< .05	>0, p< .05	>0, p< .05

Extraction Method: Principal Components Analysis

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

APPENDIX H: ASSUMPTIONS OF THE MULTIPLE LINEAR REGRESSION MODEL FOR THE RELATIONSHIP BETWEEN LEVELS OF SOCIAL INTERACTIONS AND RESIDENTIAL SATISFACTION

Model Summary Table

	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Ekon	1	.668[b]	.446	.323	.98223776	1.793
Kakumdo	2	.486	.236	.050	1.05956609	1.288
Pedu Estate	3	.390	.152	.085	.83152743	1.748

Anova Table

	Model	Sum of Squares	df	Mean Square	F	Sig
Ekon	Regression	34.910	10	3.491	3.618	.001
	Residual	43.416	45	.965		
	Total	78.326	55			
Kakumdo	Regression	14.226	10	1.423	1.267	.280
	Residual	46.030	41	1.123		
	Total	60.256	51			
Pedu Estate	Regression	15.646	10	1.565	2.263	.018
	Residual	87.121	126	.691		
	Total	102.767	136			

Contributions of Each Independent Variable to the Model

Model		Ekon			Kakumdo			Pedu Estate`		
		Zero-order	Partial	Part	Zero-order	Partial	Part	Zero-order	Partial	Part
1	Gender	-.083	.125	.094	-.090	-.119	-.105	.107	.114	.106
	Age	.067	-.144	-.108	.066	.165	.146	.191	.157	.146
	Level of Education	-.177	-.069	-.051	-.116	-.021	-.018	-.128	-.097	-.090
	Monthly Household Income	-.009	.192	.146	-.020	.038	.033	-.089	-.040	-.037
	Length of Stay	-.404	-.566	-.511	.219	.275	.250	-.035	-.035	-.033
	Household Size	.118	.168	.127	-0.91	.026	.022	.052	.119	.110
	Status as an									

	Indigene	.154	.316	.248	-0.10	-.066	-.058	.078	.137	.127
	Community Social Ties	-.132	.174	.132	.050	.269	.244	.139	.145	.135
	Quality of Community life	.161	.143	.107	.282	.375	.354	.224	.228	.215
	Community Participation	-.301	-.400	-.325	-.209	-.063	-.055	-.055	.010	.009

Collinearity Statistics

Model		Ekon		Kakumdo		Pedu Estate`	
		Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
1	Gender	.814	1.229	.882	1.134	.932	1.072
	Age	.853	1.172	.724	1.382	.856	1.168
	Level of Education	.532	1.878	.514	1.947	.569	1.758
	Monthly Household Income	.582	1.719	.497	2.012	.843	1.186
	Length of Stay	.590	1.695	.755	1.324	.727	1.375
	Household Size	.942	1.062	.831	1.204	.848	1.179
	Status as an Indigene	.483	2.072	.770	1.299	.680	1.471
	Community Social Ties	.586	1.705	.533	1.875	.822	1.217
	Quality of Community Life	.702	1.424	.682	1.466	.872	1.147
	Community Participation	.737	1.357	.688	1.453	.835	1.198

APPENDIX I: ASSUMPTIONS OF THE MULTIPLE LINEAR REGRESSION MODEL FOR THE RELATIONSHIP BETWEEN CONDITIONS OF THE BUILT ENVIRONMENT AND RESIDENTIAL SATISFACTION

Model Summary Table

	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Ekon	1	.754	.569	.461	.87611952	2.110
Kakumdo	1	.448	.201	-.019	1.09730650	.821
Pedu Estate	1	.499	.249	.183	.78552725	1.925

Anova Table

	Model	Sum of Squares	df	Mean Square	F	Sig
Ekon	Regression	44.552	11	4.050	5.277	.000
	Residual	33.774	44	.768		
	Total	78.326	55			
Kakumdo	Regression	12.093	11	1.099	.913	.537
	Residual	48.163	40	1.204		
	Total	60.256	51			
Pedu Estate	Regression	25.636	11	2.331	3.777	.000
	Residual	77.132	125	.617		
	Total	102.767	136			

Table 4.25 Unique Contribution of Each Predictor Variable to the Model

Model		Ekon			Kakumdo			Pedu Estate`		
		Zero-order	Partial	Part	Zero-order	Partial	Part	Zero-order	Partial	Part
1	Gender	-.083	-.019	-.013	-.090	-.102	-.092	.107	.056	.048
	Age	.067	-.094	-.062	.066	.068	.061	.191	.189	.167
	Level of Education	-.177	.169	.112	-.116	.112	.101	-.128	-.128	-.111
	Monthly household income	-.009	.291	.200	-.020	.211	.193	-.089	-.025	-.022
	Length of stay	-.404	-.462	-.342	.219	.094	.085	-.035	.005	.005
	Household									

	size	.118	.052	.034	-.091	-.095	-.086	.052	.127	.111
	Status as an Indigene	.154	-.065	-.043	-.010	-.017	-.015	.078	.101	.088
	Community Layout and Design	.484	.056	.037	.234	.167	.152	.381	.368	.343
	Quite Environment	.576	.447	.329	.145	.153	.139	-.136	.065	.057
	Access to community Services	-.301	-.253	-.171	.104	.149	.135	.088	.127	.111
	Presence of Green Spaces	-.166	-.140	-.093	-.139	-.306	-.287	-.189	-.069	-.060

Collinearity Statistics

		Ekon		Kakumdo		Pedu Estate`	
Model		Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
1	Gender	.843	1.187	.835	1.198	.903	1.108
	Age	.839	1.192	.728	1.373	.821	1.218
	Level of Education	.440	2.270	.403	2.479	.534	1.871
	Monthly household income	.645	1.550	.373	2.679	.840	1.191
	Length of stay	.583	1.716	.671	1.490	.645	1.551
	Household size	.871	1.148	.877	1.141	.828	1.207
	Status as an Indigene	.356	2.807	.757	1.321	.671	1.490
	Community Layout and Design	.294	3.403	.561	1.784	.689	1.451
	Quite Environment	.344	2.911	.516	1.937	.679	1.472
	Access to community Services	.849	1.178	.299	3.348	.704	1.421
	Presence of Green Spaces	.696	1.437	.251	3.977	.771	1.297