UNIVERSITY OF EDUCATION, WINNEBA

HOUSE OWNERS' ADHERENCE TO THE LAWS REGULATING GHANA'S HOUSING PLAN AND DESIGN IN THE GOMOA EAST DISTRICT

ASOMANIWAA EUNICE

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ASOMANIWAA EUNICE

(8180100017)

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DECLARATION

Student's Declaration

I, Asomaniwaa Eunice, hereby declare that with the exception of information from other people's work which have been duly acknowledged in the study, this thesis is the outcome of my own research effort, and that it has neither been presented in whole nor part by anyone elsewhere for an award.

Signature : ……

Date : ……

Supervisor's Declaration

I hereby declare that the preparation of this project work was supervised by me, in accordance with the guidelines for supervision of thesis work laid down by University of Education, Winneba.

Supervisor's Name : Miss Ophelia Quartey

Signature : ……

Date : ……

DEDICATION

I dedicate this work to my entire family especially my elder brother, Mr. Adams Patrick Donkor

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Finally, I appreciate the efforts of all cited authors for providing a solid foundation for this study to be built on.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

GSS: Ghana Statistical Service

MEST: Ministry of Environment Science and Technology

OOHs: Owner Occupied Houses

PHC: Population and Housing Census

TCPA: Town and Country Planning Authourity

ABSTRACT

Earlier studies on adherence to housing laws in Ghana have massively concentrated on metropolitan and municipal assemblies. However, their findings may not be adequate for the dynamism in peri urban and urban areas of districts that are contiguous to heavily populated municipalities. This study therefore contributed to filling this gap by investigating house owners' adherence to the Building and Zoning regulations in the peri urban and urban areas of the Gomoa East District, which is contiguous to the heavily populated Awutu Senya Municipality. Captured in four objectives, the study examined the pre- and post-building adherence level of house owners to the national Building and Zoning regulations in the district. It further examined the factors which influence house owners' adherence to the housing laws and identified the effects that house owners' adherence to the housing laws in the district have on the environment. Ways of improving adherence of house owners to the housing laws in the district were also explored. A quantitative approach was adopted and using a semi-structured questionnaire, data was gathered on 375 house owners who were residents in their houses in the study area. This sample size was determined through the multi-stage sampling technique. With the help of SPSS software version 22 and Stata MP 14 software, the data was analysed using descriptive statistics and the logit regression model. The results revealed that house owners' adherence to the Building and Zoning regulations in both the pre and post building stages was low. Moreover, house owners' ability to interpret permit, building supervision by Town and Country Planning Authourity (TCPA) during construction and having tertiary education had significant influence on the house owners' level of adherence. It also came to light that, poor sanitation, poor street network and flooding resulted from house owners' low level of adherence to housing law in the district. In order to bring about immediate improvement in the situation, it is recommended that house owners in the Gomoa East District endeavour to be abreast with the requirements of the Building and Zoning regulations by seeking guidance from the district's TCPA especially during building construction to help align their building activities with the requirements of these housing laws. Yet more, there is need for an enhancement of the supervisory activities of the TCPA in both pre- and post-building of houses in the district. These done, will go a long way to improve house owners' adherence to Building and Zoning laws and offset the negative effects that accompany breaches to the housing laws in the district.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Needs are the conditions necessary for human beings and society to continue in existence (Arbulu, 1987). One group of needs identified by Maslow to be crucial to the survival of human beings is basic needs (Mcleod, 2007). Although what comprises basic needs is mostly contentious and, therefore, defies universal acceptability, the Overseas Development Institute (ODI, 1978) has, however, given a definition. According to ODI (1978), basic needs include things for simple survival such as food, shelter, and clothing as well as public services such as clean water, transportation, employment, education, participation in decision-making, leisure, human rights, democracy, an egalitarian society and self-reliance. Basic needs as defined above could be why Appiah (2007) has argued that there is no debate over housing as a basic need.

Housing, according to Asare, Quartey and Amu (2008), Ebie (2009) and Intsiful (2007), refers to houses together with the available social services, amenities and utilities in an area which makes the area habitable. Housing could thus be said to be a basic need since it provides both the simple needs and the public services needs regarded as key indicators of basic needs as given by ODI (1978). Housing plays diverse significant roles in many economies. According to Kissick et al. (2006) housing directly contributes 14% of gross domestic product (GDP) in the United States. They again contended that housing construction and its registration creates jobs and generates tax revenue. Moreover, Kissick, Leibson, Kogul, Bachmann, Anderson and Eckert (2006) posited that housing builds wealth by appreciating in

value as well as help develop primary and secondary financial markets by its lending. Kissick, Leibson, Kogul, Bachmann, Anderson and Eckert (2006) believe that housing helps to promote good governance through formation of organisations that act as incubators for elected representation. Furthermore, records show that housing with satisfying conditions helps prevents diseases like HIV/ AIDS, tuberculosis, diarrhoea, and malaria leading to social stability and security (Ministry of Water Resources Works and Housing, 2015).

The contributing roles of housing would mean that governments around the globe will work towards improving housing for their populace. Indeed, governments are striving for better housing as observed by Appiah (2007). However, their efforts are barely fruitless as global housing problems still persist particularly in developing countries (Appiah, 2007). The United Nations Meetings Coverage and Press Releases (2020) saw that over one billion people around the globe live in inadequate housing. Kissick, Leibson, Kogul, Bachmann, Anderson, and Eckert (2006) posit that over 14 million refugees and internally displaced people live in tents or temporary shelters and streets of Washington, DC; Sao Paolo, Brazil; Johannesburg, South Africa; Mumbai, India; and other cities.

Hutt (2016) revealed that people living in slums worldwide have grown from less than 700 million in 1990 to 880 million in 2014. Hutt (2016) identified places like Khayelitsha in South Africa; Kibera in Kenya; Dharavi in India; Ciudad Neza in Mexico and Orangi Town in Pakistan with typical alarming cases of slum. In Sub-Saharan Africa, housing deficit and poor housing conditions is a common feature in urban areas (Antwi, 2008). The housing situation in Ghana does not seem any better from the rest of the world. Ghana's housing challenge manifests in both housing

deficit and substandard housing. According to the Republic Bank's report in 2002, Ghana's housing deficit stood at 1,232,835 units, with an estimated new annual demand of 133,000 units. However, only 25,000 units were produced annually with an unfulfilled annual demand of 108,000 units (Boamah, 2010). The housing shortage is projected to hit 5.7 million by 2020, for which the government requires a minimum of 190,000 to 200,000 units of houses annually for the next ten (10) years (Gyamfi, 2018).

Furthermore, housing with lack of basic facilities, weak structures which later collapses (e.g., Batabi church building and Achimota Melcom shop) and growing shanty towns (e.g., Sodom and Gomorrah in Accra) continue to challenge the nation Ghana (Arku, 2009; Yeboah, 2005). The inadequacy of housing in Ghana in terms of numbers and quality has brought about homelessness or temporary dwellings as well as indecent housing for families (Boamah, 2010; Salami, 2015; Addo, 2013). Undoubtedly, this could be a hindrance to the attainment of Sustainable Development Goal 11, which seeks to ensure access to safe and affordable housing by 2030. Undeniably, the worrying state of housing in Ghana calls for attention and research.

Worthy of note, the national housing situation has attracted the attention of many researchers in the times past and continue to. Interestingly, majority of these researches showed that low or noncompliance to the housing laws is a key factor for the current inadequate housing in the country (Appiah, 2007; Tengan, Aigbavboa, & Balaara, 2018). Hence, the need for investigations into the state of adherence to the housing laws in the country. In investigating adherence to the housing laws, efforts must be channeled to less investigated areas, particularly districts where earlier

researchers like Tengan (2018) and Boamah (2013) gave less attention to in terms of level of adherence, related factors and their effects.

1.1 Statement of the problem

Beyond the provision of housing as a basic need, housing has a broader effect on the welfare of individuals in any economy. This notwithstanding, there is evidence of inadequate housing provision in most economies, and Ghana is no exception as observed from Ghana Living Standard Survey, (GLSS,6) (GSS, 2014). A preliminary observation of housing in the Gomoa East district does not show much deviation from the national inadequate housing situation. For instance, most observed houses in the district had no gutter, toilet or bathroom facility and the general environment appeared poorly planned. It is thus not surprising when the 2010 Population and Housing Census for the Gomoa East district revealed typical issues of poor housing for the district (GSS, 2014).

In relation to the background, the cause of inadequate housing has been blamed on non-adherence to the housing laws (Boamah, 2013; Appiah, 2007; Tengan, Aigbavboa, & Balaara, 2018). Such attribution of cause seems to have attracted most researchers' interest on issues surrounding adherence to the housing laws (Bonye, Yiridomoh & Bebelleh, 2020; Sarkheli, Sharifi, Rafieian, Bemanian & Akito 2012; Alnsour & Meaton,2009). A segment of such studies on compliance to housing laws has been conducted in advance economies where systematic non-compliance does not exist (Ogden, 2006; Sarkheli, Sharifi, Rafieian). Although these studies looked into factors like skills and knowledge, supervision and socioeconomic conditions and how they affect compliance to building standards, their findings cannot be wholly adopted

to understand the dynamism of these factors in a context where there is systematic non-compliance.

The recognition of such differences in the dynamism of the above factors can be seen in the high efforts put in similar research works in West African economies where there is systematic noncompliance (Sodiya, & Okubena, 2018; Tengan, Aigbavboa, & Balaara, 2018). However, these studies on housing laws compliance in West Africa especially Ghana have concentrated on pre-building adherence in urban areas of either the Metropolitan or Municipal Assemblies (MMDA), (Aseidu-Danquah, 2016; Boamah, 2013). There is therefore little empirical evidence on the causes and degree of non-compliance especially in post-permit and post-building stages at the district assembly level and by extension the Gomoa East District. Though, Degual (2015) and Salami (2015) attempted to fill this gap by respectively using peri-urban areas in the Upper West Region, Aboabo in Ashanti Region and Kwaebibirim in Eastern Region, their findings may be insufficient to reveal the dynamism in adherence to the housing laws in peri-urban and urban areas in a district like the Gomoa East that is contiguous to heavily populated Awutu Municipal assembly.

This study, therefore, sought to conduct a comprehensive investigation into the issue of adherence to housing laws in the Gomoa East District. As a result, the study extended the frontiers of knowledge in two main ways. First, the study explored the dynamism of adherence to Zoning and Building regulation in a comprehensive manner as it extended the investigation to the post-permit and post building phases. Secondly, the study reviewed the dynamism of adherence to housing law in a district that is contiguous to a highly populated municipality as such terrain had less been explored in terms of adherence to housing law.

1.2 Purpose of the Study

The study sought to investigate house owners' adherence to the National Building Regulation and the National Zoning Guidelines and Planning Standards in the Gomoa East District and its implications on the housing environment.

1.3 Objectives of the Study

The objectives of the study were to:

1. examine the pre- and post-building adherence level of house owners in the Gomoa East District to the Building and Zoning regulations.
2. identify the factors influencing house owners in the Gomoa East District adherence to the Building and Zoning regulations.
3. examine the implications of house owners in the Gomoa East District level of adherence to the Building and Zoning regulations on the housing environment.
4. investigate ways of improving house owners' adherence to the Building and Zoning regulations in the Gomoa East district.

1.4 Research Questions

The following research questions were formulated to guide the study.

1. To what extent do house owners in the Gomoa East District adhere to the Building and Zoning regulations in the pre- and post-building stages?
2. What are the factors influencing house owners' adherence to the Building and Zoning regulations in the Gomoa East District?
3. What are the implications of house owners in Gomoa East District adherence level to Building and Zoning regulations on the housing environment?
4. In which ways can adherence to the Building and Zoning regulations be improved in the Gomoa East District?

1.5 Hypothesis

The study was based on the hypothesis that:

H_0: the factors considered in the study individually do not have significant influence on adherence to Building and Zoning regulations.

1.6 Significance of the study

Unlike previous studies on adherence to housing laws which have massively concentrated on metropolitan and municipal assemblies, the conduct of this study in Gomoa East District will bridge the gap and contribute to knowledge on adherence to housing laws in district assemblies in the country. Again, whereas most of the earlier studies used permit acquisition and at most adherence to granted permit in assessing house owners' adherence to housing laws, this study will investigate beyond permit adherence into post building phases of adherence to the housing laws. Thus, findings from the study will provide a comprehensive evidence on the state of house owner's adherence to the housing laws in the Gomoa East district. This will help widen the scope of knowledge on housing laws adherence.

Moreover, the findings from this study will point out the factors that influence adherence to housing laws in the Gomoa East district. This could serve as a guide to the housing planning authourity in identifying the variables they could either promote or demote among prospective builders. Again, findings on implications of house owners' adherence to the housing laws in the Gomoa East District will help shape the thoughts of house owners about their levels of adherence to housing laws. Finally, the study will reveal concrete ways by which adherence to housing laws could be promoted among house owners in Gomoa East District.

1.7 Delimitation

The study was delimited to the 2011 Zoning Guidelines and Spatial Planning Standards (previously Town and Country Planning Ordinance, Cap 84 of 1945) and the 1996 Building Regulation. This was because the two laws tackle the designs and plans of housing in Ghana which is the focus of the study (Ministry of Environment Science and Technology, 2011). However, the study did not look into the detailed architectural requirements of these laws as the expertise involved is beyond the scope of Home Economics discipline.

Besides, the study delimited itself to owner-occupied houses (OOHs) built after 2000. First, this choice ensured that there was high rate of response since the probability of meeting landlords in owner-occupied houses was higher. This in effect reduced non response error. Secondly, the building regulation was introduced in its prime form in 1996 and as a result, using houses built after 2000 ensured that sample frame error was avoided. Finally, the study was delimited to residential housing of urban communities in the Gomoa East District. This was as a result of the likelihood of getting a significant number of OOHs built after 2000 for investigation, considering the limited time frame for the conduct of the study.

1.8 Operational Definition of Terms

Adherence to Housing Laws: compliance with housing laws

Adequate Housing: housing with enough quality buildings and basic amenities

Factors considered in the studies: the factors considered in the study include house owners' ability to interpret permit, house owners' educational level, building supervision by TCPA during construction, bureaucracy in permit attainment,

supervision by TCPA after building, housing regulation related costs and house owner's knowledge on housing laws.

Housing Design: the required types of houses, facilities and amenities of a housing.

Housing Laws: the laws that guide building construction and land uses. For this study, they are the National Building regulations and Zoning guidelines and Spatial Planning Standards.

House Owner: a person who has built a house

Housing Plan: land demarcation and uses in a housing

Owner Occupied House: a house whose owner is a resident.

Post Building Adherence: adherence to housing laws after building completion. This includes maintenance of permitted standards and Zoning requirements for the house.

Pre-Building Adherence: compliance with housing laws from start to end of building.

Substandard Housing: housing with insufficient quality buildings and lack of basic amenities

Slum: housing with weak houses, poor sanitation and lack of basic necessities

Residential Housing: an area with individually developed houses for family use

Zoning: is the division of lands into different uses (zones) within a given area.

1.9 Organisation of the Study

The study was organised into five chapters. The first chapter introduced and justified the study. It comprised background to the study, problem statement, purpose and objectives of the study, research questions, the significance of the study, delimitation of the study, definition of terms and meaning of abbreviations. Chapter Two reviewed related relevant literature on the study. Chapter Three explained and justified the research methodology; research design, the population of the study, sample and

sampling techniques, instrumentation, data collection and analysis procedures. Data analysis and discussions of findings constituted Chapter Four. Chapter Five provided a summary of the study, conclusion, recommendations and suggestions for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter focused on the review of related literature on the study. A literature review generally comprises a review of theories, laws, concepts, models and other abstractions relevant to a study. The literature review helped to position the study with scientific and ethical backing. The review of literature was done under themes such as Theoretical framework, Concept of Housing, Trends in Ghana's Housing Development Laws, Adherence to Hosing Laws, Conceptual framework and Empirical Studies.

2.1 Theoretical Framework

The theories considered under the theoretical framework were needs theory and ethical theory.

2.1.1 Needs Theory

Human beings have many needs and wants which they strive to achieve. Some of these needs are important for survival, and the satisfaction of these needs enhances human welfare. The theories that talk about human needs are numerous – Abraham Maslow's theory of needs, Clayton Alderfer's ERG theory of needs, Douglas McClelland's Acquired Needs Theory, Frederick Herzberg's Two-Factor theory – but in this study Maslow's theory of needs and Alderfer's ERG theory of needs were used because they are simple and directly relate to meeting housing needs.

2.1.2 Abraham Maslow's Theory of Needs (1943)

Abraham Maslow postulated Maslow's theory of needs in 1943. This theory groups human needs into a pyramid or hierarchy. The grouping has physiological needs at the bottom of the pyramid, followed in an upward direction by safety needs, social needs, esteem needs and self-actualisation needs at the top of the hierarchy (McLeod, 2007). The constituents of each level of needs in the pyramid are represented in Figure 2.1.

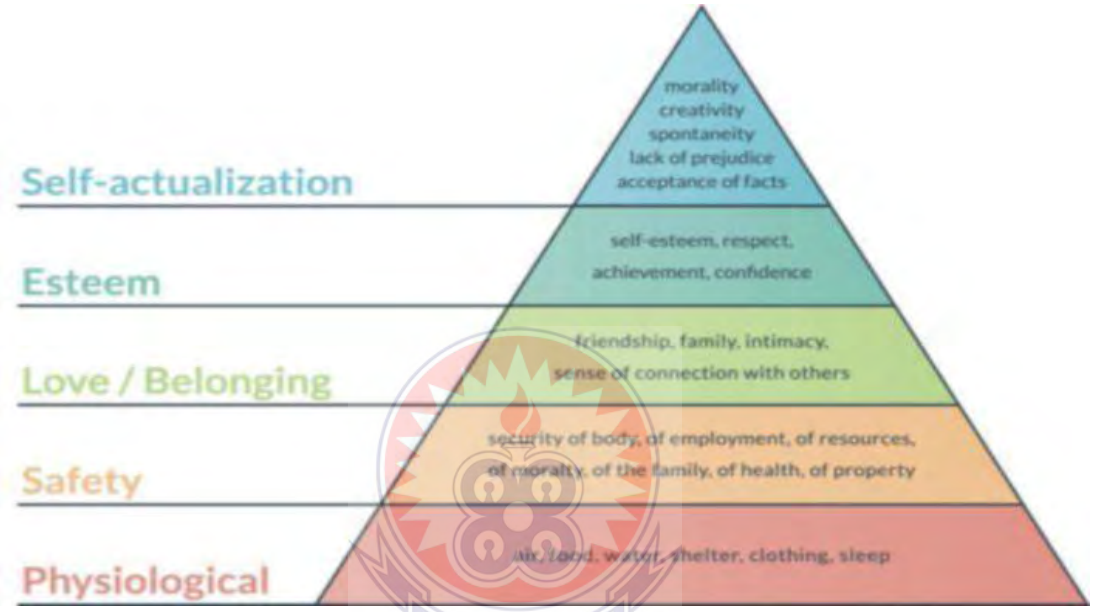


Figure 2. 1: Abraham Maslow' Hierarchy of needs

Source: Maslow (1943). Maslow's hierarchy of needs. *Index of DOCS/Teaching {sp} Collection/Honolulu*.

According to Maslow, psychological needs are basic needs and essential for survival. As a result, these needs must be acquired first. However, Maslow contends that human needs are insatiable and so human beings will progress to achieve higher level needs- safety, social, esteem and self-actualization needs- unless there are obstructors such as unsatisfied lower-level needs to such needs' attainment (Magee, Zachazewski, Quillen & Manske, 2015). Therefore, attainment of needs starts with pursuing basic needs after which safety needs could be sought. Similarly, when safety needs have been achieved, a person can comfortably progress to social needs. This order

continues until self actualisation needs are attained. The basic assumption here is that the achievement of higher-level needs is dependent on satisfied lower-level needs.

Relating Maslow's theory of needs to the study, individuals will first strive to acquire a house for mere laying of their heads (housing as basic need) before thinking of the security the house could offer – protection against weather conditions, dangerous animals, burglary, fire outbreak and structural collapse leading to financial loss - (housing as safety need) which add additional cost. This also means that, a person whose house is not safe will not consider hosting a programme therein (housing as a social need) until the house is safe to accommodate guests.

Furthermore, it is only possible for people to point their houses to others or associate with it when the house is built to a certain societal standard that commands respect (housing as esteem needs). Yet more, a person could feel self-actualized when his house is not only for a dwelling or to command respect but it also shows forth his creativity, innovativeness and wealth (housing as self actualisation needs). In sum, Maslow's theory of needs projects a hierarchical order of needs achievement. Reasoning along this line in terms of meeting housing needs, it could be seen that, acquisition of a house beyond mere laying of head or as a dwelling (basic needs) constitutes additional cost. Thus, the poor would more likely build to satisfy basic needs and likely to breach building laws.

The hierarchical order of meeting needs as postulated by Maslow (1943) is critisised with the argument that human needs may not follow a hierarchical order. This is to say that more than one need may be attained at a time or even in the reverse order. This fundamental deficiency of Maslow's theory of needs was improved upon by Alderfer's ERG theory of needs.

2.1.3 Clayton Paul Alderfer's ERG Theory of Needs (1969)

Alderfer's theory was based on Maslow's work but basically tried to improve the deficiency in Maslow's work by arguing that order of need satisfaction may not exist in practice. Alderfer's ERG theory (1969) synthesizes Maslow's five levels of human needs into three categories. These are Existence needs; Relatedness needs and Growth needs; abbreviated as ERG. The Existence needs combines physiological and safety needs of Maslow's hierarchy of needs; Relatedness needs is a merge of social and external esteem needs, and Growth needs contains internal esteem and self-actualisation needs. This is represented in Figure 2.2.

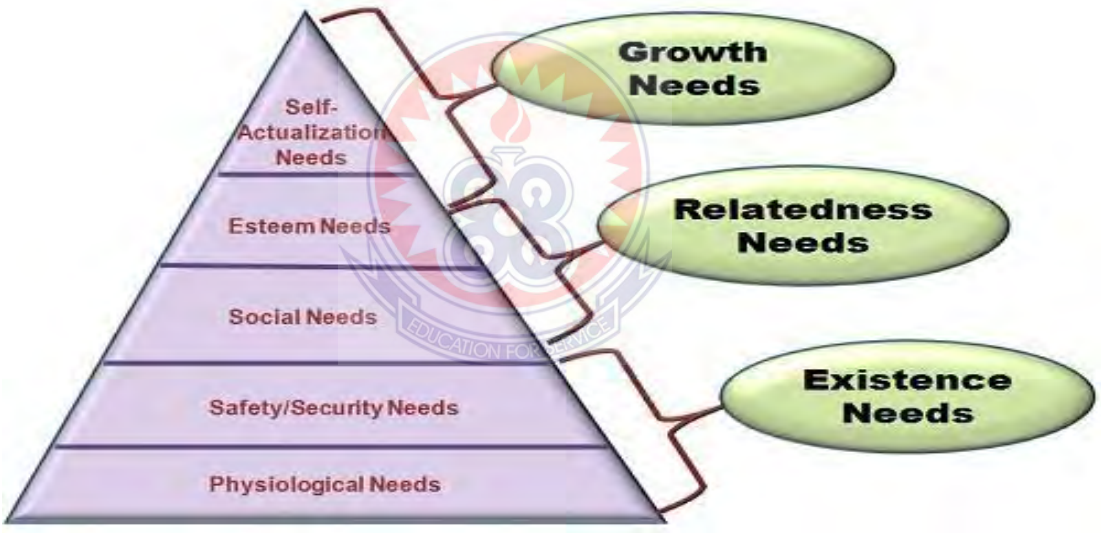


Figure 2. 2: Clayton Paul Alderfer's ERG theory of needs (from 1969)

Source: *Alderfer (1969). An empirical test of a new theory of human needs.* Organizational behaviour and human performance.

Like Maslow's theory of needs, the ERG theory generally accepts that lower needs at the bottom of the pyramid should be attained before progression to the next need. This, however, does not mean higher-level needs depends on satisfied lower needs. The ERG theory maintained that the achievement of all three needs might be worked at concurrently and when higher-level needs appear unachievable, one may regress to

lower needs which may be easier to attain. This indicates that there is no limit to whatever need a person decides to achieve. The ERG theory explains why many people build houses, fully secure it and furnish it to meet certain societal expectation, modern trends or owner's ingenuity before occupying it, although it is expensive to go this way, rather than building for mere laying of head and adding on to meet other housing needs later on when there is money available.

From the two theories of needs, acquiring housing beyond basic needs to satisfy numerous needs is costly. Thus, while the rich may pursue housing to satisfy a multiplicity of needs- physiological, safety, social, esteem and self-actualisation; the poor may pursue housing just for physiological or at best physiological and safety needs. In this case, for a district like Gomoa East where the GSS (2014) indicates that average income is low, it is expected that the average house owner could pursue housing on physiological and safety grounds. Consequently, it is likely that breaches to the housing laws may be prevalent in this part of the country if the standards set by the housing laws require expenditure beyond bare physiological and safety purposes.

Ethical Theories

The acquisition of needs involves decision making (Wubbolding, 2015). According to Chonko (2012), people make decisions in different ways with different ethical applications. Ethical theories thus guide individuals' decisions in the presence of honourable conditions such as anticipated goals of beneficence, least harm, respect for autonomy, and justice. Ethical theories include Deontological ethics, Teleological ethics, Justice Ethics, and Virtue ethics (Chonko, 2012). Chonko (2012) positioned that the type of ethical theory a person applies in decision making depends on the ethical dilemma that is important to the decision-maker. In this study, Teleological

theory was used. This was because, it is in teleology that people's actions may lead to non-adherence of housing laws.

2.1.5 Teleological Ethical Theory by John Stuart Mill (1969)

Teleological Ethics theory assumes that the necessary standards for an action are independent of the good or evil involved in its achievement. Instead, it depends on the nature of the end that actions ought to promote. Here, right actions are those that give much pleasure and whose attainment must justify the means (Duignan, 2010). This is to say that in teleology, the anticipated goal of pleasure is the most important consideration in decision making. As such, the used approach in meeting the expected goal of pleasure even if unacceptable is regarded as right since it is what would result in the anticipated goal of pleasure.

In line with Teleological theory and the fact that building of houses should follow housing laws, which is a decision to be made by the builder, house builders would breach the expected norm of following laws when putting up houses, to the use of illegal means of building houses if the adherence to the housing laws would appear as a hindrance. For instance, if acquisition of permit before building adds extra cost to building and may be unaffordable, it could be a major hindrance for the builder to adhere to housing laws. Hence, the affordable means possible will be resorted to because what matters is having the house built. Thus, people's choice in relation to adherence to housing laws is assumed to be steeped in teleological consideration in this study. This means that classical economic rationality by Baumane-Vitolina, and Sumilo (2016) forms the basis of people's choices on the housing laws.

Economic Rationality as the Basis for Choices on Adherence to the Housing Laws

Teleological ethics (utilitarianism) forms the basis of classical conception of economic rationality. An individual's decision is economically rational if it is based on cost-benefit analysis such that choices made imply benefits outweighs costs in that decision making (Baumane-Vitolina, & Sumilo, 2016). In deciding to not adhere to the housing laws therefore, the individual weighs the net benefit of non-adherence against the net benefits of adherence and chooses the option with the higher net benefit.

For analytical tractability and pure teleological considerations, it is assumed that the benefit derived from a building does not depend on the means used. This implies that net benefits of any building only depend on the cost of acquiring the building and any factor that increases the cost of non-adherences relative to the cost of adherence would dampen non-adherence to the housing laws. On the other hand, any factor that will reduce the cost of non-adherence relative to the cost of adherence would encourage non-adherence to the housing laws. Inferring from this analysis, high cost associated with following the housing laws can result in non-adherence. Unlike cost of adherence which is determined, the cost of non-adherence is based on expectations.

Basically, in rational economic choices expectations are based on the objective probability among others (Lawson, 1988). Therefore, expected cost of non-adherence depends on the probability of being caught by law enforcement agencies, the probability of being sanction when caught, and the probability of facing costly sanctions when caught. If these probabilities are high, expected cost of non-adherence will be high and this will reduce non-adherence to the housing laws. It can therefore

be inferred that presence of enforcing agencies, high frequency of supervision of sites by enforcing agencies, high frequency of issuing orders to stop illegal building projects, high frequency of demolition of illegal structures, high frequency of fines, difficulty in bribing enforcing agencies among other factors can increase the expected cost of non-adherence since they directly affect these probabilities.

2.2 The Concept of Housing

According to Durah (1988), cited in Sheibani and Havard (2014) and Gaurav (2017), the concept of housing could be narrow or broad. Whereas narrow housing means only a house for a dwelling, broad housing incorporates houses and assistance services planned on community principles. Baba, Yusoff and Elegba (2015) are of the view that housing is the results of thoughtful construction activities undertaken by housing authourities to provide houses and the relevant conditions that support human living. Such activities, however, include rehabilitation, maintenance and remodeling of existing structures to cater for accommodation, relocation and resettling of individuals in a society.

For Soliman (1996), cited in Sheibani and Havard (2014) the Marxist trend, the Liberal trend, and temperate trend could help to understand the concept of housing. With the Marxian approach, housing is considered as a fixed commodity for industrial and economic development, which has exchange investment value in the housing market. The Liberal trend sees housing as an economic variable whose development is dependent on its vital functions and family characteristics. For the Temperate trend, housing is regarded as a consumption commodity for all which must be satisfying to all based on the economic situations. It could be said that housing is a planned system

of houses and needed services connected to various sectors of the economy and family characteristics and which could be subjected to modifications.

2.2.1 Importance of Housing

Housing redresses the needs for privacy, family relationship and development as well as security (Kissick, Leibson, Kogul, Bachmann, Anderson, & Eckert, 2006; University of Minnesota, Human Rights Resource Center, no date). In this sense, family's survival and development could be achieved. Housing contributes to social stability and security through housing adequacy and house ownership (Dockery & Milsom, 2005; Kissick, Leibson, Kogul, Bachmann, Anderson, & Eckert, 2006). Housing also builds wealth especially for low-income households, and no doubt, housing wealth is increasingly gaining importance in the Ghanaian economy. For many households, it is the most important form of savings as house ownership is considered as a hedge against inflation in the medium term. In other instances, it is utilized as collateral for borrowing by homeowners, thereby generating funds for other investments and wealth creation. Thus, the housing industry has the capacity to both cultivate and protect wealth. Again, high investment in housing allows poor families to improve their asset base over time, as resources become available (Bank of Ghana, 2007)

To the national economy, housing contributes towards gross domestic product (GDP). In the United States, housing directly contributes 14% of gross domestic product (GDP) and triggers another 6% on average in downstream expenditures. Lending for housing helps develop primary and secondary financial markets. Building construction and housing registration creates job and revenue (Dockery & Milsom, 2005; Afrane et al, 2016). Housing is considered an effective way to promote good

governance. The need to improve housing conditions stimulates civic organizations-housing associations, community-based organizations- that act as incubators for elected representation. Investing in housing expands the local tax base, thereby facilitating the emergence of autonomous and responsive local governments. On the whole, it is seen that housing contributes to provision of shelter to meet family's basic and developmental needs, supports economic growth, promotes social stability, provides income for its investors and supports good governance.

2.2.2 Trends in Housing Provision in Ghana

Housing provision was mainly the state's responsibility between the 1960 and 1965, as part of the 1960 and 1965 National Development Plan. This responsibility of the state was fulfilled through the State Housing Corporation (SHC) and Tema Development Cooperation (TDC). The SHC was to provide housings in the different regions across the country whilst TDC provided state housing in urban areas of the country. However, national economic challenges such as the inability of the state to provide subventions for the activities of the SHC and TDC made these corporations unable to continue with provision of housing in the country. This led to individually provided housing. Currently, most individuals in Ghana provide houses for their selves and families (Hadiya, 2012; Bank of Ghana Report, 2007). Housing provision by individuals led to uncontrolled unapproved housing and subsequent formulation of housing regulating laws to check such uncontrolled housing development (Hadiya, 2012; Bank of Ghana Report, 2007).

2.3 Trends in the Development of Ghana's Housing Laws

Building Regulations ensure that new buildings, conversions, renovations and extensions are provided safely, promote health and offers high performance

(Osuizugbo, 2019). According to Acheampong (2003), cited in Degual (2015), early settlements were without regulations. However, the recognition of the implications of the unregulated settlements promoted the formation of ordinances by colonial governments. This brought the Public Health Ordinance of 1878 where buildings were only undertaken with permission from governors (Degual, 2015).

In the mid-19th century, a boom in businesses especially in mining areas resulted in high migration into the mining centres. This led to the uncontrolled construction of unauthourised structures. Consequently, Towns Ordinance and Mining Area Ordinance were developed in 1898 to regulate sanitation in towns and pollution in mining areas respectively. Nonetheless, these ordinances were silent on guidelines for the development of lands and involvement of citizens in its implementation and thereby resulted in increased slum development.

To properly guide the development of lands, the Town and Country Planning Ordinance 1945, CAP 84, in 1945 was introduced to promote orderly development of declared planning areas (zoning). Through the setting up of the Department of Town and Country Planning Authority (TCPA) as required by this ordinance, plans were prepared and approved for planning areas and endorsed by the minister in charge. The TCPA also promoted the understanding of the ordinance though it failed in granting permits for housing projects. This weakness of the TCPA made people develop their projects without approval. To this end, the Local Government Act of 1993, Act 462, which sought to decentralize the system of government in Ghana, was passed. This brought about the establishment of district assemblies with district planning Authorities who issue out permits for building projects (Degual, 2015).

In 1996, the national Building Regulations, LI 1630, was introduced. This provided a comprehensive procedure to follow in carrying out building projects nationwide. This was enforced at district levels by the district planning Authority (Degual, 2015). In 2011, another hosing law in the form of zoning guidelines and planning standards was compiled. This document came to improve on the weaknesses of the Town and Country Planning Ordinance, Cap 84 of 1945, which was for a long time serving as the guiding document for spatial planning and zoning in Ghana (Ministry of Environment Science and Technology, 2011).

2.3.1 The 1996 National Building Regulation, LI, 1630

The National Building Regulation guides housing development in modern Ghana. Although a call for review of the National Building Regulation has been made, there is need for a complete adherence by housing developers as far as it remains unreviewed in order to ensure safe housing provision (Oppong & Badu, 2013; Somiah, 2015). The National Building Regulation (1996) has nineteen (19) parts. These are application of regulations and building plans; plot development, part; site preparation and landscape, materials for building; structural stability; structural fire precautions; access accommodation; thermal insulation; hearths, chimneys and heat-producing appliances; sound insulation; pest control and protection against decay; drainage; sanitary conveniences; refuse disposal; water supply; lighting and electrical installations; special requirements for rural buildings and miscellaneous provisions.

2.3.2 The 2011 National Zoning Guidelines and Spatial Planning Standards

The objective of Zoning Guidelines and Spatial Planning Standards is to provide clarification on the permissible uses of land and the space requirements that must be taken into account by anyone or any organisation preparing plans and seeking a

development permit. As the name denotes, this document contains two parts, that is, the zoning guidelines and Planning Standards. The Zoning Guidelines mainly provide land zones for an area and defines land use activities- permitted and prohibited- within each zone. The planning standards are a set of criteria for determining the scale, location and site requirements of various land uses and facilities. Some of the standards are obligatory whilst others are recommendations to guide the developer. The mandatory standards are minimal space requirements or basic considerations that must be satisfied. The discretionary standards are advisory and dependent on other factors (Ministry of Environment Science and Technology, 2011).

2.4 The Concept of Adherence

The term adherence is widely used in the field of medicine. Osterberg and Blaschke (2005) maintained that the extent to which patients respond to a medication regime is adherence. They indicated that adherence is preferable than compliance in medicine. Contrarily, in housing, researchers prefer to use compliance for the rate at which people follow hosing guidelines and standard (Offei, Lengoiboni & Koeva, 2018) though few others have used adherence in a similar manner (Tasantab, 2019).

According to Magee, Zachazewski, Quillen and Manske (2015) adherence is the choice of either being engaged in a behaviour or not. This is to say that adherence is personal and in any situation that requires some conditions to be adhered to, for instance adherence to housing laws, one may decide to either adhere to those conditions or not. According to Parker (2000), compliance is the obedience of a populace to rules or government policies. This is to say that compliance equally requires people's submission to some conditions which they may so submit or not. This point to the fact that adherence and compliance have similar interpretations. It is

worthy of note that the term adherence as used in the study same referred to compliance. This aligned with Osterberg and Blaschke (2005) who maintained that the term adherence is often interchanged with compliance.

2.4.1 Adherence to the National Building Regulation

The National Building Regulation, LI, 1630 outlines several requirements for which any housing developer must adhere to. The following themes provides details on some of the basic requirements in the Building Regulation that every house owner must comply with.

2.4.1.1 Adherence to Building Permit- Part I (Regulation 2)

According to this regulation, persons who desire to erect, modify or extend a building shall apply to the district planning authority concerned, who should notify the applicant in 7 days and approve it or not within 30 days. The building plan shall be prepared and signed by a person qualified to design the type of building, and differentiate clearly between new work and existing work if the permit applied for is for work on an existing building. The building plan must meet required specifications given by the district planning authority and indicate the stages and method of constructing the building. Applicants must include a site plan to a scale of 1:1250 or 1:2500 as required by the district planning authority and show the position of the site, as well as a certificate signed by a Licensed Surveyor. Also, an applicant shall prove his title to the land. The applicant then pays the building Permit fee which covers consultation fee. The building permit will then be granted with the time within which the work authorised in the permit should be commenced.

As require by the Building regulation, a building permit recipient shall give to the district planning authority, at least a forty-eight hour notice in writing, indicating the date on which it is intended to begin work, and of the dates on which the following stages of construction; demarcation of the site of the plot and siting of the buildings; foundations of buildings set out; foundations excavated and level pegs for concreting; foundations concreted; trenches for drainage work excavated to levels and gradients; drains laid and joined and ready for testing; reinforcing steel fixed in position before concreting; concrete shuttering ready for striking; walls completed to wall-plate level; and roof frame-work completed before covering will be ready for inspection by the district planning authority.

The house must be built according to the extent applied. Where a developer is notified by the District Planning Authority in writing of any contravention of his building permit in the construction and is required to rectify the contravention, he or she shall within a reasonable time after the completion of the rectification, notify the district planning authority in writing of the completion. A developer shall give to the district planning authority notice in writing of the completion, occupancy, alteration and installation of fittings not more than seven days after completion. Finally, as provided in the National Building Regulation, there shall be issued, in respect of a building completed to the satisfaction of the District Planning Authority, a certificate of completion for habitation or use. After the building is certified fit for habitation, all the requirements are not in any way to be breached as far as the building continues to exist to avoid breaches to the regulation.

2.4.1.2 Adherence to other Requirements of the Building Regulation- part II, V1, XII, XIV and XVII

In addition to building permit adherence, the national building regulation requires every building to be provided with an adequate hygienic system for the disposal of waste liquid; adequate and satisfactory water closet where water is available or an earth closet or chemical closet where there is no water, adequate bathroom, a standardized dustbin or other receptacle for refuse disposal, adequate security lighting for lighting up the premises at night, regular painting and maintenance of structures, protection of houses and its inhabitants against fire and non-encroachment of street upon which buildings may front, abut or adjoin unless otherwise authorised by the District Planning Authority.

2.4.2 Adherence to the 2011 Zoning Guidelines and Spatial Planning Standards

The Zoning Guidelines and Spatial Planning Standards has requirements for adherences under the two main parts of this documents, the zoning guides and the spatial planning standards. This section was focused of the basic requirements for adherence under the zoning guidelines**.**

2.4.2.1 Adherence to the 2011 Zoning Guidelines

The Zoning Guidelines advocates for a maximum of 1.5 people per room in low-density areas to 2 persons per room in high-density areas in residential zones. Consequently, house owners must meet this condition. Again, it prescribes permitted and prohibited uses of land in zones. Importantly, house owners must check the zoning status and standards of lands they want to acquire before going ahead to pay for land (Offei, Lengoiboni & Koeva, 2018). A summary of permitted and prohibited uses in zones for residential housing is provided in Table 2.1.

Table 2. 1: Permitted and Prohibited Uses in Zones

Zones	Permitted Uses	Prohibited Uses
Residential Low Density (Re A)	Compound Houses, public open spaces, corner shops, clinics, pharmacies, educational and childcare facilities, house-based small family businesses (max 2 employees) and public places of worship	Block of flats, industrial development, commercial development over 250m², cemetery and animal husbandry
Residential Medium Density (Re B)	Detached, duplex, row houses, compound houses, public open space, local shop, primary education and childcare centre, community facilities, places of worship, minor business, limited road network to provide access and markets	Chief commercial development, mass transport, warehousing, sports facilities, cemeteries, animal husbandry, stockyard
Residential High Density (Re C)	Detached, semi-detached, row and compound houses, home business, playground, worship centres, childcare clinic, pharmacy, basic schools, public transport facilities, light industries, and market for informal economic activities	Massive industrial development central commercial premises, animal husbandry, cemetery or crematorium and transportation depot
Residential High Density (Multi-storey) (Re D)	Multi-storey flats and apartments, open spaces, shops at ground floor level only, places of worship, pharmacies and clinics, home business childcare centre, basic schools, public transport facilities, guest houses and small hotels, markets for informal economic activities and recreation facilities	All industrial development, commercial development, animal husbandry, cemetery, transport use warehousing and major sports and recreation facilities

Source: MEST (2011)

2.5 Conceptual Framework

A conceptual framework is a structure crafted to project the understanding of a research work. Figure 2.3.1 is a pictorial representation of the conceptual framework for the study.

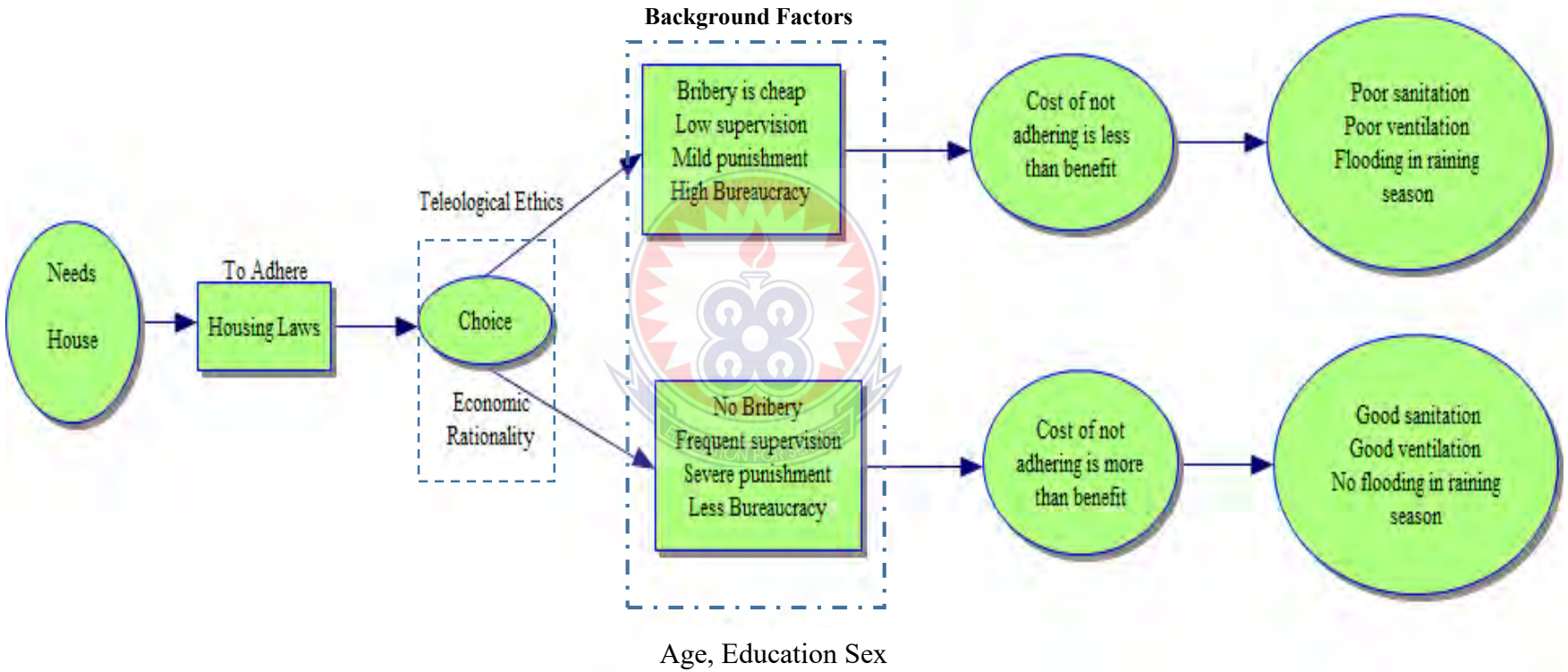


Figure 2.3. 1: Conceptual Framework

Source: researcher's own construct (2020, based on theoretical framework)

From the conceptual framework, house is one of the needs that human beings aspire to fulfill. At any moment one decides to provide for house, one is faced with a choice situation with the alternatives to adhere to housing laws or not. This choice situation is guided by ethical consideration. In this study, the ethical consideration that was considered appropriate was teleological ethics due to high incidence of non-adherence to housing laws in Ghana. Individuals acting with teleological ethics basically operate with economic rationality whereby any choice made reflects higher benefits over cost.

Holding background factors like education, sex, age among others fixed, individuals in environments where it is cheap to bribe, supervision of building construction is low, punishment for breaching housing low, bureaucracy in obtaining housing documents is high, will find it relatively cheaper not to adhere. This provides a situation where the expected benefits of not adhering exceed the expected associated cost of such a choice. Individuals will relapse into non adherence and this will create poor housing condition like poor sanitation, poor ventilation, flooding among others. On the other hand, if background factors like education, sex, age among others are held fixed and conditions like non acceptance of bribe, frequent supervision of building construction, severe punishment for breaching housing and less bureaucracy in obtaining housing documents exists among others, house developers will find it more expensive to breach housing laws. In this instance, the expected cost of non-adherence will outweigh expected associated benefits and house developers will find it prudent to adhere, the adherence will ensure proper housing condition like good sanitation, good ventilation and less flooding.

2.1 Empirical Studies

The empirical review was done to know the state of knowledge on the issues sought after in the study. Specifically, the empirical studies were done under four main headings: adherence to housing laws, factors influencing adherence to housing laws, implications of adherence level on environment and ways of improving adherence to housing laws.

2.6.1 Adherence to Housing Laws

Adherence to housing laws is the first responsibility of any housing developer, though Local Authorities also ensure house owners' adherence to the housing laws. Levels of adherence to the housing laws may be high or complete, average or medium and low or non-compliance (Arimah & Adeagbo, 2000). Such adherence levels may be as a result of enforced actions or voluntary actions meted on house owners (Boamah, 2013; Burby, May & Paterson (1998). In the following paragraphs, trends relating to house owners' adherence to both building regulation and zoning guidelines and spatial planning have been reviewed.

Alnsour and Meaton (2009) found quite a low level of compliance to residential standards which tend to vary among the tested standards and households in Jordan. Likewise, Salami (2015) found a higher level of non-compliance (93.33%) to building permits in the Kwaebibirem district. The specific non-adherences to housing laws have been revealed by numerous authors in Nigeria. These related to construction of buildings without approved building plans, violation of setback regulations, plot coverage and room size as well as the conversion of the facility into different uses (Jimoh, Al-Hasan, Imimole, & Ahmed, 2017).

In Kenya, Lahore-Pakistan, Tehran and Jordan, non-adherences to housing laws as seen in Nigeria have been recorded in addition to contraventions of inner courts, area and dimensions of spaces, building coverage ratio, floor area ratio, ventilation spaces and parking provisions (Aziz, 2018; Rukwaro, 2009). The instances of non-adherences to housing laws in some part of Ghana is not different from what have been recorded outside the country (Offei, Lengoiboni & Koeva, 2018; Boamah, 2013). Nonetheless, it is prudent to Probe the various instances of no adherence relevant to the study individually.

Concerning permit acquisition before building, it is seen that there have been lots of studies conducted in this vein. All these studies, through a quantitative approach, found that only a few house owners obtained permit for their buildings. That is Bonye et al (2020) and Ahmed and Denyi (2011) both conducted their studies in the Wa Municipality and Aziz, (2019) in Lahore- Pakistan. Seeing there was no such study in the Gomoa East District, this study checked house owners' adherence to permit acquisition prior to building.

In terms of prerequisite documents for permit acquisition, only few studies have been carried out in this direction (Arimah & Adeagbo, 2000; Akrofi, Avogo & Wedam, 2019). Recognizing the fact that permit acquisition is dependent on pre-requisite documents like site plan and building plan, their non-existence or existence could hinder house owners' acquisition of permit or prove their readiness to acquire permit respectively. It was, therefore, in the right step for this study to investigate the acquisition of prerequisite documents for obtaining the permit.

On adherence to granted permit, a number of studies have been conducted (Boamah, 2013; Salami, 2015). Using mixed approaches, Salami (2015) and Ahmed and Dinye (2011) found non-compliance with the granted permit such as house owners with permit not inviting building inspectors to supervise building construction; and change of use of facilities in Kwebibirim District and Wa Municipality respectively.

Concerning adherence to zoning guidelines and planning standards, contrasting findings have been revealed by related studies in terms of compliance with zoned lands. Through a quantitative approach, Ahmed and Dinye (2011) and Aziz (2019) found breaches to planned uses for land in Wa Municipality and Lahore-Pakistan respectively. However, high compliance with zoned lands was recorded in West Ashiyie, Adenta Municipality through a qualitative approach by Matey, Lengoiboni and Koeva (2017). Interestingly, Matey, Lengoiboni and Koeva (2017) were silent as to whether the respondents' high adherence to the zoned lands were coincidental or they knew what the lands had been earmarked for. It was thus regarded as right for the current study to focus attention on respondents' knowledge on zoning for their acquired lands.

In terms of adherence to provision of facilities, a study by Degual (2015) in Aboabo and Akrofi, Avogo and Wedam (2019) in Wa found that facilities like gutters, kitchen and toilets were inadequately provided as against the requirements of the building regulations. The current study expanded the scope of adherence as it checked adherence to provision of facilities like bathroom, toilet, kitchen, dustbins and fire extinguishers.

Relating to adherence to acquisition of certificate of completion, related studies are only minimal. A quantitative study by Salami (2015) in the Kwebibirim District

revealed that respondents' do not acquire certificate of completion for habitation. Considering the low research in this direction and the years gap since the first was conducted, the current research conducted in this light was acceptable.

These studies have provided empirical evidences on how house owners have failed in terms of their adherence to housing laws. Contrarily, Aseidu-Danquah (2016) found an average adherence to housing laws in the Tema Metropolis-Ghana whereas Awuah and Hammond (2014) found high levels of compliance among the elite class in the Kwabenya community. This is quite encouraging if recent situation reveals same.

On the whole, there was a generally low-level of house owners' adherence to housing. These breaches, though recorded in different parts of Ghana and outside the country, were typical breaches of both building and zoning regulations.

2.6.2 Factors Influencing Adherence to Housing Development Laws

The factors influencing adherence to housing regulatory laws have been studied by numerous authors. Using the quantitative approach, level of awareness, monthly household income, household size, finance facilities, municipal administrative culture, monitoring, enforcement and uncertainty of residential standards were found to impact adherence level in Tehran by Sarkheyli (2012), in Tema by Asiedu-Danquah (2016) and in Baghdad by Hamed and Albazaz (2019).

Additionally, through a quantitative approach, Somiah, Ayarkwa, Agyekum and Hackman (2015) revealed that deficiencies in education resulted in construction of unauthorized buildings in Asakae, Ghana. Also, through the quantitative approach, lack of awareness, ignorance of building regulations, financial profitability, shortage of space, stringent building regulations came out as causes of non-adherence in Lahore- in Pakistan (Aziz, 2019). Moreover, with quantitative approach, legal, social,

political, corruption; bureaucratic procedures; Lack of commitment by the central government; and ambiguities of some part of the national building regulations, under-resourced building inspectorate division determined the level of compliance with land use planning guidelines in peri-urban areas of Wa (Boyne, Yiridomoh & Der Bebelleh, 2020; Boamah, Gyimah & Nelson, 2012) and in Kwebibirim District (Salami, 2015). The factors identified as influencing house owners' adherence to housing laws have been revealed above. Some of these factors relevant to the study are discussed in details in ensuing sub themes.

2.6.2.1 Institutional Factors

Planning institutions play vital roles in the control of housing development. Thus, the functions and practices of these bodies- monitoring, administrative practices, ambiguity in existing regulations and non-involvement of public in the planning of housing standards- could positively or negatively influence adherence (Alnsour & Meaton, 2009). The influence of functions or practices of housing planning institutions on adherence to housing laws are provided.

First, monitoring is one of the key routine practices of housing planning authourities seen to positively correlate with adherence to housing laws (Abubakar, Diah & Yassin, 2013; Arima & Adeagbo, 2000). However, Offei, Lengoiboni and Koeva (2018) and Memunatu (2015) observed that monitoring and enforcement of the housing laws by the monitoring team was low which led to differences between zoned lands and used lands. What could be underplaying the monitoring processes of planning authourities?

According to Cripps and Foot (1969), the planning authority needs to be well-resourced with the required technology, capacity and resources in its acceptable forms to monitor and track changes in line with the goals of the land-use regulation.

Unfortunately, planning authorities are ill-resourced (Aseidu-Danquah, 2016, Boamah, Gyamah & Nelson, 2012). This undoubtedly could affect monitoring activities of housing planning authourities, thereby influencing adherence to the housing laws.

In most developing countries, state bodies are financially constrained to recruit competent building professionals as compared to the private bodies (Williams & Mawdseley, 2006; Bilham, 2009; Kathuria, 2007, Chandel, Sharma, & Marwaha, 2016). This makes the private sector more likely to compete in terms of paying good salaries to attract such competent professionals than the state bodies. Adherence will obviously be affected when there are low building inspectors to monitor and enforce housing laws.

In Ghana, unavailability of logistics like drawing equipment, stationery, vehicles for routine inspections, bulldozers and modern computer software like the Geographic Information System (GIS) promote the development of unauthourised buildings and encroachment on public open spaces (Ahmed & Dinye, 2011; Pogbekuu, 2010). To this end, it would be expected that government's annual budget makes provisions to support monitoring activities of housing institutions. Interestingly, Yeboah and Obeng-Odoom (2010) reveal that though few town and country planning departments are able to create some funds to support their routine activities, government's support to such state institutions is only a peanut. It is thus advocated that government support in this light to improve adherence to housing laws in Ghana.

Secondly, the ambiguities in existing housing laws have been minimizing efforts by housing authourities to promote its adherence (Abubakar, Diah & Yassin, 2013; Atemewan, 2019; Arimah & Adeagbo, 2000). Straightforward rules are more likely to

be adhered to (Spence, 2004). However, complex housing laws with multiple repetitions and improvements which does not support context they are being use have been pointed to affect housing laws adherence (Ogu, 1999; Rakodi, 2001; Kironde, 2006; Spence, 2004). Again, the loopholes in housing laws make them unclear to support adherence (Boamah, Gyimah & Nelson, 2012).

Thirdly, high bureaucracy in permits acquisition has been influencing the large volumes of unauthourised structures. The several stages in permit acquisition process coupled with and paying of bribe to officials before getting leads to undue delay and non-adherence (Agyei-Mensah & de-Graft Aikins, 2010; Farvacque-Vitkovic et al. 2008; Aluko, 2011). Moreover, Alnsour and Meaton (2009) contended that the sustenance of friendship and particular interest in efforts to ensure adherence have negative impacts on adherence. A particular form of corruption may prevail because of the relationship between the building industry and local politicians. This is usually common when house owners find it less expensive to bribe a regulatory official than to conform to relevant building standards (Krimgold, 2011). Lastly, lack of public participation has been seen to contribute to poor implementation of housing laws. Oduwaye (2009) attributes the lack of orderly development in Lagos to the lack of public participation in planning.

2.6.2.2 Awareness and Knowledge Factors

The extent to which people are aware of or have knowledge about the existence of housing laws impact on their adherence (Payne & Majale, 2012; Aziz, 2018; Sarkheyli, Sharifi, Rafieian, Bemanian & Murayama, 2012). Respondents' ignorance of the details of the zoning standards, building permit and Building regulations has resulted in noncompliance as revealed by many authors (Memunatu, 2015; Somiah,

Ayarkwa & Agyekum, 2015; Offe, Lengoiboni & koeva, 2018). Several other authors, however, disagree that lack of awareness could lead to noncompliance to housing development laws (Arimah & Adeagbo, 2000; Alnsour & Meaton,2009; Awuah & Hammond, 2014). Arimah and Adeagbo (2000); Alnsour & Meaton (2009) and Awuah & Hammond, 2014) pointed out that awareness of existing planning regulation was not a panacea for its compliance. On the whole, awareness and knowledge could be said to be an influential factor that affects adherence either positively or negatively.

2.6.2.3 Socio-Economic Factors

Several authors reveal that socioeconomic reasons influence compliance with housing laws (Atemewan, 2019; Abubakar, Diah & Yassin, 2013, Boamah, Gyimah & Nelson, 2012). Compliance to housing standards increases general building cost though these relatively small increments are readily balanced by the reduction of future disaster loss of life and property, and the benefit-cost ratio is high (Krimgold, 2011; Alnsour & Meaton, 2009; Spence, 2004). This notwithstanding socio-economic reasons makes most house owners unable to adhere to housing laws. Low levels of income, large family sizes, lack of housing financial facilities, laziness and disrespect towards planning institutions, employment, housing-related motives and high cost of rent are seen to motivate the construction of unauthourised structures (Arimah & Adeagbo, 2000; Alnsour & Meaton, 2009; Aseidu-Danquah, 2016). Offei, Lengoiboni and Koeva (2018) indicated that households with fewer members adhere to plot coverage requirements when building but those with more members tend to breach plot coverage requirement because of the need to accommodate all its members.

2.6.2.4 Political factors

Aseidu-Danquah (2016) unveiled ineffective housing policies, limited funding for city planning and lack of political will to implement regulations as causing the development of unauthourised structures. He explained that both land administrators and political heads do not enforce housing laws as expected because of the fear of losing their positions**.** Housing Planning involves housing professionals, interest groups and politicians and since political figures who chair the planning has much power over planning decisions, it so happens that some permits are unlawfully approved without considerations for advice from qualified experts to gain political support. This later affects implementation (Yeboah & Obeng-Odoom, 2010).

2.6.2.5 Land arrangement factors

Kasanga (2008) maintained that over 90% of landholding in developing countries is traditional. These lands are usually sold without the consent of planning authorities thereby, creating many problems. For instance, Boamah (2010) indicated that acquisition of land from the customary land sector comes with many challenges like multiple land sales, conflicting ownership claims, boundary disputes, and cumbersome procedures making it difficult to meet some of the requirements for permits. Permit acquisition requires proof of ownership and since most of these lands are sold to more than one person, land title demand in permit acquisition becomes a problem leading to subsequent avoidance of permit acquisition in building.

2.6.3 Implications of Adherence Levels to the Housing Laws on Environment

The state of adherence positively or negatively impacts housing environment. Empirical evidences are provided on implications of Adherence Levels to the Housing Laws on Environment. Degual (2015) found poor sanitation in the form of filthy

environment, inadequate toilets and foul smell, inadequate ventilation, and lack of access ways in Aboabo as results of non-adherence to housing laws. He further indicated that inadequate toilets resulted in pressure on the few dilapidated existing public toilets in the community. Tasantab (2019) in a mixed approach study titled; *Beyond the plan: How land use control practices influence flood risk in Sekondi-Takoradi* found that non-compliance with permit regulations and uncontrolled conversion of vegetated land has led to the building of residential properties in swamps, waterways and other flood-prone locations, creating flood risk.

Al Ishaqee and Albazaz (2019) in their mixed-methods approach on the impacts of building contraventions and informal residential land subdivision on the quality of life (QOL) in Baghdad found that breaches in building and land use have led to low public utility networks, reduced open and public spaces and excessive pressure on urban infrastructure, resulting in an unhealthy and aesthetically unappealing urban environment (Yahya et al., 2004; Lai & Ho, 2001; Ahmed & Dinye, 2011). According to World bank (2010), informal settlements give rise to overcrowding, lack of essential urban services including clean water, sanitation, electric power, employment, access to transportation, and access to health and educational facilities are the result of failure to seek guidance from land use.

Again, development of unauthourised buildings is reported by several authors to cause fire outbreaks, exacerbates people's vulnerability to earthquakes and subsequent loss of life and property (Gacheru, 2015; Ainuddin, Mukhtar, & Ainuddin, 2014; Salami, 2015; Adinyira & Anokye 2013; Kahraman, Saatci & Sadhana, 2006). Eduful and Shively (2015) in their study titled *Perceptions of urban land use and degradation of*

water bodies in Kumasi, concluded that low compliance with existing regulations, among other reasons leads to water degradation.

The instances of non-adherence to housing laws have been seen to negatively impact the housing environment. However, total adherence to housing laws correlates with positive outcomes that are able to stand the test of time and offer value for money (Atlantic Federation of African Agencies, 2015; Saunders, 1996; Wang et al., 2001). In conclusion, where adherence is high, quality houses is assured. However low or non-adherence results in overcrowding, lack of essential services, low utility network, reduced open spaces, poor sanitation, weak/collapsed buildings, fire outbreaks, traffic congestion, flooding and earthquakes. These findings generally relate to the macro environment. It was then acceptable for this study to check how adherence to the housing laws impacts on the immediate environment.

2. 6. 4 Ways of Improving Adherence to Housing Development Laws

Some authors have carried out studies on how adherence to housing laws could be improved. These are discussed under sub-themes such as improvement of existing building regulations, monitoring, ease in access to information, reduction of bureaucracy in permit attainment and education, political will.

2.6.4.1 Improvement of Existing Building Regulations

Some authors point to lack of clarity of housing development laws as negatively influencing its adherence (Abubakar, Diah & Yassin, 2013; Atemewan, 2019; Arimah & Adeagbo, 2000; Alnsour & Meaton, 2009; Arima & Adeagbo, 2000). This suggests that housing laws should be developed to ensure maximum clarity. When regulations lack clarity and may be subject to broad interpretation, there is a risk that builders and authorities will become confused about how to proceed. This can lead to unnecessary

delays, disputes and uncertainty (De Soto, 2000). An example of unclear building regulation is that of Solomon Islands.

Again, unclear housing laws affect adherence. For instance, the Philippines national building code has been inconsistent among cities since 1977. Taguig and Pasig are both parts of the Metro Manila area, but their interpretation of which documents need to be certified and which kinds of buildings need certain inspections is very different (World Bank, 2010). This defies reliability of the laws thus affects uniform adherence. Besides being clear, building rules also need to be adaptable so that they can keep up with economic and technological demands. Updating of existing residential standards to meet modern urban residential trends have been suggested by Alnsour & Meaton (2009). Similarly, Omollo, Hoyombe and Owino (2018) call for modifications in existing laws to meet modern preference and demographic conditions.

Moreover, flexible rules are fundamental to maintaining a safe and vibrant construction sector. Avoidance of overly specific provisions make housing laws challenging to keep regulation up to date, thereby affecting its adherence. When building regulations set targets without regulating how to achieve those standards, adherence is easier. Where building regulations make specifications; for instance, what materials can be used in construction, adherence becomes difficult when regulations are not regularly updated to meet current trends. For instance, in Ukraine, constructional activities still refer to specific materials that used to be produced in the former Soviet Union, which are no longer available, making adherence with the regulations difficult. Clear, adaptable and flexile rules could help promote adherence to housing laws.

2.6.4.2 Monitoring

Yau and Chiu (2015) studied how to combat building illegality in Hong Kong. The results suggest that imposing heavier punishments against non-conforming owners is the top priority option. Boamah, Gyimah and Nelson (2012) recommends strengthened and robust monitoring mechanisms to ensure adherence among landlords.

Burby, May and Paterson (1998) in their quantitative study on improving compliance with regulations in California found that improving compliance involves use of incentives and techniques to increase the willingness of people to comply with regulations voluntarily. It is not then surprising when Meaton and Alnsour (2009) and Boamah (2013) suggested voluntary adherence from citizens through dialogue where citizens are brought on board to make sure that societies comply with the housing regulations (Essuman, & Mate-Kole, 2021). Moreover, from the empirical studies of Alnsour & Meaton (2009) in Offei and Lengoiboni and Koeva (2018) in Ghana, GIS and UAV could be used to communicate, monitor and enforce residential standards.

2.6.4.3 Ease in Access to Information

Easy access to information on documentation and fees required by building authorities can make compliance with regulations easier and reduce transactions costs for businesses (World Bank, 2021). In 2012, research on *Doing Business* collected data in 159 economies on the different ways in which housing authorities make building information accessible (World Bank, 2021). It came out that mere understanding the needed documents used to apply for a building permit and obtaining necessary forms require a meeting with a public official. In the Middle East and North Africa, this is the case in around a third of the economies. On the contrary,

in economies where access to such information is online, applications are processed more quickly about 177 days on average and building permits is granted in less time. Where an appointment with an official is required, the process takes 199 days on average.

2.6.4.4 Reduction of Bureaucracy in Permit Attainment

Bonye, Yiridomoh and Bebelleh (2020) call on the ministry of lands and natural resources to help minimize bureaucracies in permit acquisition in order for house owners to be able to acquire them and promote adherence. Before a building plan is approved, appropriate clearances are needed to ensure quality and safety and this involves several agencies. Redesigning the permit acquisition process to accommodate all the agencies involved in a central database management system could help (Agyemang, Asiedu, & Kpamma, 2014). Some economies have opted to put the agencies in one location- one stop shops. One successful example is in Hong Kong SAR, China (World Bank, 2010).

In 2006 Burkina Faso was among the ten economies with the most complex requirements for the permit in the world. To help address this concern, Burkina Faso opened a one-stop-shop for construction permits in May 2008. The new regulation merged 32 procedures into 15, reduced the time required from 226 days to 122 and cut the cost by 40% (World Bank, 2010). These one-stop shops improve the organization of the review process, not by reducing the number of checks needed but by better coordinating the efforts of different agencies. That way, more resources can be devoted to checks rather than to multiple interactions between the client and the various agencies.

2.6.4.5 Education

According to Alnsour & Meaton (2009), on the job training of local staff and planners must be intensified to ensure adherence. In congruence, World Bank (2010) recognised that establishment of educational and training institutions for the building professionals for professional education, building control and certification could help achieve compliant and safe construction. Similarly, Bonye et al (2020) entreat Ministry of Lands and Natural Resources to educate landlords in efforts to promote housing laws' adherence. Additionally, Essuman, and Mate-Kole (2021) pointed out that education of the general public about when to build will help to promote builder's adherence to housing laws. This is to say that when prospective builders know the dos and don'ts such as needed documents for building, what they mean and fees to pay on them, it would facilitate their adherence.

2.6.4.6 Government or Political Will

Boamah et al. (2012) advices for politicians to desist from influencing housing development processes for their political gains for adherence to housing laws to be achieved. Essuman and Mate-Kole (2021) calls on government to resource and staff the local authority well to be able to carry out inspections and enforce the notices that they issue. Omollo, Hoyombe and Owino (2018) advocates for the removal of the bottlenecks in easy land acquisition as well as improving public involvement and coordination in the planning of housing standards. Various ways by which adherence to housing development laws could be improved have been outlined. These mostly relate to the improvement of existing housing laws and what government and housing planning authorities could do to help promote adherence to housing laws.

Summary of Literature Review

The reviewed literature in this study covered the theoretical frame, conceptual framework, Concept of Housing, trends in Ghana's housing development Laws, adherence to hosing laws and related empirical studies. The theoretical and conceptual frameworks in the study were based on Abraham Maslow's and Clayton Arderfers' theories of needs and the Teleological Ethical theory based on Economic Rationality by John Stuart Mill. The concept of housing was understood as a system of houses and needed services carefully planned to suit the sectors of the economy and family characteristics of inhabitants, and which could be subjected to modifications. The use of housing development Laws was seen to have started from the enactment of Public Health Ordinance of 1878; to Towns Ordinance and Mining Area Ordinance in 1898; to Town and Country Planning Ordinance, CAP 84, in 1945 (currently the 2011 zoning guidelines and planning standards); to the Local Government Act of 1993, Act 462 and finally to the 1996 National Building Regulations, LI 1630. The empirical review was done on the scope of coverage and research methods used by related previous studies conducted in Ghana and outside Ghana. The literature review did not find studies on adherence to housing laws in post building phase in Ghana. Again, in spite of the different socio-economic dynamism in districts contiguous to metropolitan and municipal areas, studies on adherence to housing laws had not been conducted in these areas in Ghana.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discussed the research approach, research design, settings of the study, the population, sample and sampling techniques, research instruments, validity and reliability of instruments, data collection procedure, data analysis method and ethical considerations.

3.1 Research Approach

Creswell (2009) explained research approach as a scheme that gives direction to the conduct of research systematically. In view of this, Holme and Solvang (1991) argued that, quantitative and qualitative are the two research methods that could be applied in research work. This study employed a quantitative research approach. According to Kuranchie (2016), quantitative research deals with questions of relationship, cause and effect that researchers can answer by collecting data and statistically analysing numeric data. Patton (2002) maintained that quantitative research allows for generalization of findings, ensure samples and sampling techniques are statistically determined to achieve fairness and representativeness respectively. According to Kuranchie (2016) quantitative research does not necessarily require researchers to be involved in on-the-spot data gathering.

The usage of quantitative research approach was justified by the following reasons. First, the study sought to investigate the house owner's adherence to housing laws which require specific responses from respondents, and this makes the study highly objective. Thus, quantitative approach was best suitable, considering its objectivity as indicated. Additionally, the use of quantitative research allowed for generalizing of

study's findings to the population. Again, the usage of probability sampling techniques as required by quantitative approach helped to offset biasness. This was because each sampling unit in this study had equal possibility of inclusion in the study. Furthermore, since quantitative research deals with questions of relationship, it allowed for testing of the relational hypothesis set for the study. Finally, statistical analysis permitted by this approach allowed for the inclusion of tables and graphs for the visual effect of patterns revealed from the study.

3.2 Research Design

According to Kirshenblatt-Gimblett and Trochim (2006), a research design is the general plan that is chosen to integrate the different parts of the study in a coherent and logical manner. In this study, the cross-sectional survey was used. The cross-sectional survey involves observation, data collection, analysis and discussion of findings received from a representation of a population at once (Babbie, 2005, cited in Kuranchie, 2016).

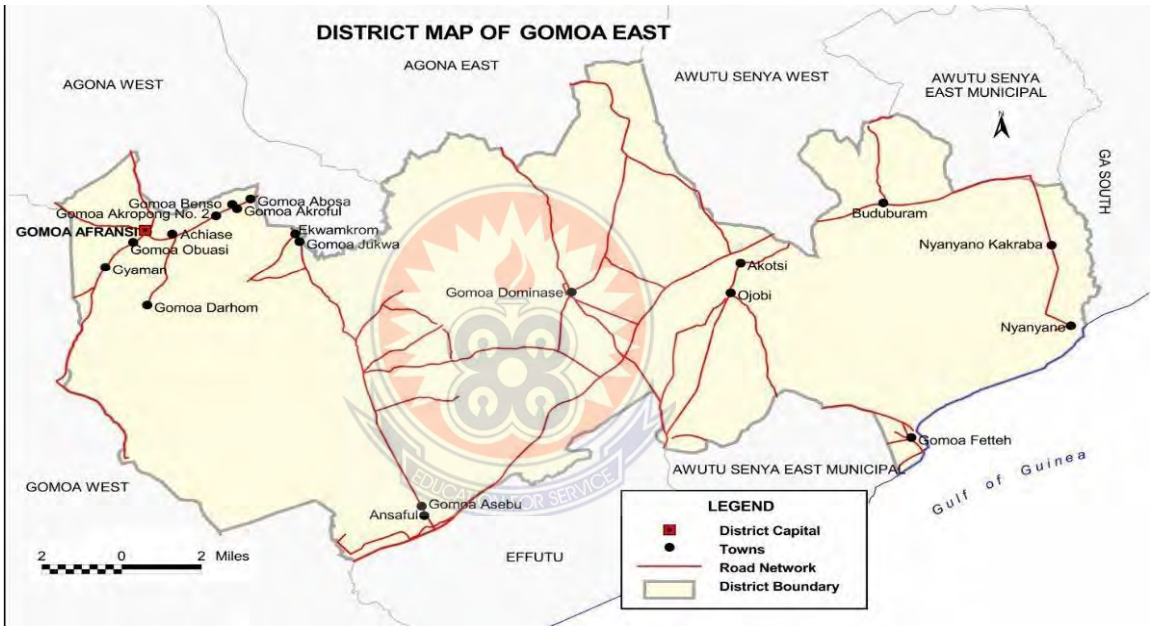
According to Public Health Action Support Team (PHAST), (2020), cross-sectional survey helps to gather data from a pool of participants with varied characteristics and demographics. Cross-sectional survey design is relatively quick, cheap and easy to conduct without any periods of follow-up, it is able to measure prevalence for all factors under investigation and suitable for descriptive analyses and for generating hypotheses (PHAST, 2020).

The study was interested in investigating the current state of housing laws adherence by house owners. The use of cross-sectional survey design was not out of order since it checks only current state of issues in research works. This positioned the study to be completed in a short period. Again, considering the larger study area with more than

50 different towns and many settlements for each town, it was only appropriate to use a cross-sectional survey which helped to accommodate the variability within the population in the study.

3.3 Study Area

The study was conducted in the Gomoa East District which was formerly part of the Gomoa Central District before it was split in 2012. Figure 3.1 shows the geographical map of the Gomoa East District.



Source: GSS, 2014

Figure 3. 1: District Map of Gomoa East

From the Districts' map, the Gomoa East District is bordered to the north-east with Agona East, to the south-west with Gomoa West, to the east with Awutu Senya and Ga South in the Greater Accra Region, to the south by Effutu and to the south-eastern with the Atlantic Ocean.

According to the 2010 PHC, the district occupies an area of 539.69 square kilometres with both rural and urban communities (GSS, 2014). The total population stood at

207,071, of which more than 90 percent are natives. Majority of the population 81.5 percent are literate. The population comprised 87.4 percent informal sector workers. The housing stock in the district is 38,924, of which 22,010 are in the urban communities and 16,914 in the rural communities. The number of houses owned by members of the household in the district are 24,668 of which rural ownership is 12,461, and urban ownership is 12,207. The average number of households per house is 1.4 and average household size is 3.8 (GSS, 2014).

3.4 Population

Khan (2014) explained a research population as the entire collection of items from which samples can be drawn. The population for the study was owners of owner-occupied houses (OOHs) built after 2000 within the urban communities of the Gomoa East District. The defined population was derived as follows. The 2010 PHC shows that the urban communities for the district have 22,010 houses. When this is cross-checked with the disaggregated figures by communities, it was found that Bududuram, Nyanyano Kakraba, Nyanyano and Gomoa Fetteh were the communities that were considered as urban. Table 3.0 shows the number of houses per each of the urban communities.

Table 3.1: Number of Houses in Urban Town

S/N	Community	Number of Houses
1	Bududuram	11,339
2	Nyanyano Kakraba	6,504
3	Nyanyano	3,405
4	Gomoa Fetteh	762
Total		**22,010**

Source: GSS, 2014

From GSS (2000, 2014), the number of houses in the Central Region increased from 223,239 houses in 2000 to 346,699 houses in 2010. It can thus be inferred that 35.61% of the total houses in the Central Region in the year 2010 was built after 2000. Assuming the same distribution for Gomoa East District, it can be inferred that, 7,838 houses [(35.61÷ 100) × 22,010] were built from 2001 to 2010 in the urban centres of the Gomoa East District.

Again, the growth rate of houses in the Central Region between 2000 and 2010 was 3.23% when estimated by the exponential growth formula of $r = [\ln (H_t - H_{t-10}) \div t] \times 100$. Assuming this growth rate for the Gomoa East District for the period between 2010 and 2020, the houses built 2001-2010 in the urban centres of Gomoa East District is expected to increase from 7,826 houses in 2010 to 10,826 houses in 2020 when the exponential growth formula of $H_t = H_{t-10}(e^{tr})$ is used.

Furthermore, the 2010 PHC shows that 55.4% of urban houses in the Gomoa East District were owner-occupied. This means Owner-Occupied Houses (OOH) in the urban centres of Gomoa East District built from 2001 to 2020 is assumed to be 55.4% of the total houses estimated to be built in the urban centres from 2001 to 2020 (10,826). This gives 5,998 owner-occupied houses in the urban centres built from 2001-2020 as the study's population. In these houses, the house owners formed the units of enquiry. The use of owner-occupied houses was precise for the study as it made it possible to meet the owners of the sampled houses during data collection. This was so important as the house owners were the only ones who could have given true data for the study. Also, owner-occupied houses built after 2000 were used to ensure that data was carefully collected to avoid too old houses which might have been built when there were no housing laws. Finally, choice of urban centres for the

study was as a result of the likelihood of getting more of the defined population in such areas for the study.

3.5 Sample and Sampling Technique

A sample is simply a subset of a population under study from whom data is collected and used to make statements that apply to such a population (Salkind, 2010). Yamane (1967) formula of sample size determination was used to determine the sample size. The study used this formula because it was easier to understand and use. The sample size determination formula as given by Yamane (1967) is n = [N ÷ (1 + N (e) ^2], where n is the sample size; N is the population; 1 is a constant and e is the allowed margin of error given as (0.05). The calculation for the sample size is shown below using Yamane's formulae.

n = N ÷ [1 + N (e) ^2] as Yamane (1967) gave.

Sample size (n) =?

Population (N) =5,998

Constant =1

Allowed margin of error (e) = 0.05

Thus, n = 5998 ÷ [1 + 5998 (0.05) ^2]

n = 5998 ÷ [15.995]

= 375.

Therefore, the sample size comprised 375 owner-occupied houses in the urban centres built after 2000.

To sample, the multistage sampling technique was employed. Multistage sampling involves selecting the sample across two or more hierarchical levels of the population. This helps to combine a number of sampling techniques so as to address the needs of

sampling in the best efficient and possible way (Trochim, 2006). Multistage sampling is useful when the population is widely spread out and finding every individual is not possible. It allows researchers to work to reduce population size. The use of multistage sampling technique helped to reduce the contact areas under study to a manageable point. This helped to reduce stress and time in the conduct of the study.

In application, each of the four (4) urban communities was taken as a cluster. After this, half (two) of the four clusters were selected for the study through the simple random sampling technique. To do the simple random sampling, the excel rand function was applied. That is, each cluster was assigned a random value by rand on excel and then sorted in an ascending order. The first two (2) urban towns on the rand list- Nyanyano and Gomoa Fetteh- were used for the study.

The next step was to select specific areas for data collection in the two urban towns. Here the stratified sampling was used to do this, a familiarization tour was undertaken in each of the two urban towns to identify and pick the newly developed areas where most of the owner-occupied houses built after 2000 could be attained for the study. Each selected area formed a stratum for the specific urban community. This is represented in 3.2.

Table 3. 2: Strata in Urban Towns

SN	Strata in Nyanyano and its Location	Strata in Gomoa Fetteh and its Location
1	**Nyamekye Stratum**: From behind Central hospital to Tinalikus area, Kojo Oku Junction and Dawa road	**Tills Beach Stratum**: from Pentecost church to Tills beach resort
2	**Jehovah Stratum**: From Jehowa junction to Aki and Popo, Gesemeni and Paradise	**Som Nyame Stratum**: Fom Som Nyame down to Esaaba Little Flower academy to Kyerewaa lodge area
3.	**Kojo Oku Stratum**: From infant Jesus SHS to Curve junction, to Arabic school to Kojo Oku DA	**Village of Hope Stratum**: From SDA church to Fettehman SHS
4	**Fiifi Pratt Stratum**: From Fiifi Pratt junction to Salt Mining Area	**Kofi Annan Stratum**: From COC school to DA JHS
5	**Peace Stratum**: From beyond Mosama Disco Christo Church to the newly built Public toilet	**American House Stratum**: From American house to Ahmadiyya Mosque
6	**Mosama Stratum**: From Mosama DC church junction to assembly man's residence to Mildred school	
7	**Cemetery Stratum:** From cemetery junction to Senya Land boundary	
8	**Kawano Stratum**: From Dawano junction into the town	

Source: field survey, 2020

To know the number of houses in each stratum as a result of no officially existing sample frame, the researcher and her coached research assistant handpicked house numbers for each stratum. In doing so, it came out that houses with house numbers were available in all strata in Gomoa Fetteh but not in Nyanyano for all strata. This situation resulted in 'chalking' for the strata in Nyanyano with the initials of each stratum as a unique code for the numbering. In all, a total of two (2) months, spanning from January to March, were used to tally the sample frame for all strata in the two urban communities. The details for the strata is summarized in table 3.3.

Table 3.3: Sample Frame for Strata in Urban Towns

S/N	Nyanyano Town		Total	Fetteh Town		Total
	Stratum	**Sample Frame**		**Stratum**	**Sample Frame**	
1	Nyamekye	NA 001 – NA 312	311	Tills Beach	GF 005 – GF 172	167
2	Jehovah	JA 001 – JA 294	293	Village of Hope	GF 423 – GF 517	94
3	Kojo Oku	KOA 001 – KOA 218	217	Som Nyame	GF 584 – GF 701	117
4	Fiifi Pratt	FPA 001 – FPA 227	226	Kofi Annan	GF 732 – GF 805	73
5	Peace Town	PTA 001 – PTA 303	302	American House	GF 209 – GF 396	187
6	Mosama	MA 001 – MA 268	267			
7	Cemetery	CA 001 – CA 198	197			
8	Dawano	DA 001 – DA 319	318			
Total			**2,131**			**638**

Source: Field Data, 2020

After obtaining the sample frames of house numbers for the strata, the required sample size was determined for each stratum. In order to ensure fair representation of each urban community, the total number of houses to be surveyed in each urban community was first determined. This was based on the proportion of houses in an urban community to the total number of houses in the two urban communities. After this, the number of houses to be surveyed in each stratum was determined based on the proportion of sample frame for a stratum to the total number of houses for the urban community stratum falls. This is seen in the table 3.4.

Table 3.4: Sample Size for Strata

Town	Houses	Houses to survey	Sample Frame	Sample size for Stratum	
Nyanyano	3,405	307	2,131	Nyamekye Area	45
				Jehovah Area	42
				Kojo Oku Area	31
				Fiifi Pratt Area	33
				Peace Town Area	44
				Mosama Area	38
				Cemetery Area	28
				Dawano Area	46
Total					**307**
Gomoa Fetteh	762	68	638	Tills Beach Area	18
				Village of Hope Area	10
				Som Nyame Area	12
				Kofi Annan Area	8
				America man Area	20
Total					**68**

Source: Fieldwork, 2020

To select the determined sample size for each stratum, simple random sampling technique was applied. The simple random sampling again made use of rand function to avoid any attempt towards biases. The list of house numbers for each stratum was entered into excels. Each house number was assigned a random value using the rand function in excel. The house numbers were then sorted in ascending order based on the random value. The required number of houses was then selected from the randomly sorted list, starting from the first house number on the list.

Since the selected house numbers were not strictly OOHs built after 2000 as the defined population, the expectation was that any selected house number that could not meet the defined criteria was replaced with the next randomized number on the rand list of houses for the stratum. The replacement option was not difficult. As reported by the 2010 PHC, 55.4% of urban towns in Gomoa East district were owner-occupied. This means, for any two houses selected, at least one should be an owner-occupied house and this could be the reason for the ease with which the replacement exercise was undertaken.

3.6 Data Collection Instrument

Research tools are used to collect data in a research work. Semi-structured questionnaire was used in the study to collect primary data. Semi-structured questionnaire is generally a type of questionnaire that provides both open and close-ended questions to respondents (Kuranchie, 2016). The choice of a semi-structured questionnaire was in line with the objective nature of the study. It, therefore, ensured that respondents were restricted on issues that required specific answers by selecting from among a number of responses and again given the opportunity to provide their own views when further probing becomes necessary. Moreover, questionnaire in general, whatever type it is, allows respondents some time to think before responding to the questions; thus, its usage was regarded as source of thoughtful and reliable data.

The instrument was designed to cover five sections. The first section covered the demographic details of respondents. Questions on the first objective were captured under section two. The second objective came under section three. Section four and five contained questions on objectives three and four respectively.

3.7 Validity and reliability of the instrument

Validity refers to the extent to which the content of a measuring instrument sufficiently represents all items under study (Kuranchie, 2016). This can be done by judgement or panel evaluation (Piesie-Anto, 2012, cited in Kuranchie, 2016). Reliability also basically measures the consistency of the instrument in producing the same results over time (Kuranchie, 2016). Piesie-Anto (2012) reveals that reliability is achieved through testing the stability, equivalence and internal consistency using methods like test-retest, equivalence form, split half, Kuder-Richardson and inter-rater methods.

To check for the validity and reliability of the instrument, the researcher checked the face and content validity of the instrument. Moreover, the instrument was given to colleagues to help make needed corrections on it. The instrument was afterwards given to the supervisor to validate it. Finally, a pilot study was undertaken in Winneba in the Effutu Municipality where 20 respondents were sampled. The choice of Winneba was based on the fact that it had similar sociocultural characteristics with the study communities making it suitable for the pilot study. Feedback received after analysis of data from the pilot study helped to correct ambiguous questions and restructure poorly set questions to make it valid. Again, Cronbach Alpha coefficient test on the data yielded 0.64 and this means the instrument was reliable according to Pallant (2001).

3.8 Data collection procedure

Data collection method is logical process a researcher uses to collect data for the study (Alshenqeeti, 2014). Data is crucial in research because it forms the basis of analysis. In this study, primary data from the field was used for analysis. A period of

13 weeks was used to collect primary data from the field. This ensured that at least one week was devoted to each stratum. With this timeline, an introductory letter was sought from the Home Economics faculty. Copies of the introductory letters were distributed to the respondents on first day of the week arranged for a stratum. This was done with the help of coached research assistant. This helped to familiarize with respondents, seek their consent and book a date within the designated week for data collection.

For each stratum, the number of houses to be surveyed were shared for data collection between the researcher and her assistant. This helped to work within time to avoid exceeding the one-week deadline planned for each stratum. In each visited house, the questionnaire was administered as interview. This was however done with researcher remaining neutral to the kind of answers respondents preferred to choose. Administering the questionnaire as interview helped respondents who could not read the questionnaire and answer it became actively involved in the study. This resulted in a 100 percent response rate for questionnaire and individual questions in the questionnaire.

3.9 Method of Data Analysis

Data analysis involves bringing to order, and giving meaning to the bulk of information collected in a research (Johnston, 2014). The data were analyzed using descriptive and inferential statistics. All the descriptive statistics were done with the help of Statistical Package for Social Sciences (SPSS) version 22 and the inferential statics through regression analysis was done with the help of Stata MP 14.

Demographic characteristics of respondents were analysed through percentage pie charts. Objectives one, three and four were analysed using percentage pie charts,

frequency Tables and cross tabulations. The use of Percentage pie charts helps with both visual and quantitative comparison of variables; frequency tables provide useful numerical summaries; whereas cross tabulations reveal important patterns. To test the hypothesis on objective two, the logit regression model was used. The use of logit model was necessitated by the fact that the dependent variable, which was adherence, was binary. With a binary dependent variable, the multiple linear regression was not appropriate since the assumptions underlying such a model will be violated. In particular the multiple linear regression requires the dependent variable to be a continuous variable. By using a logit model, marginal effects can be estimated so as to determine the specific impacts of the independent variables on the dependent variables. This would allow similar analysis like those achieved in the multiple linear regression model.

3.10 Ethical Consideration

Research ethics refers to rules of conduct in research which are very important for researchers to observe (Johnson, Adkins, & Chauvin, 2020). The study ensured informed consent of its respondents, where respondent's decision to participate in the research was sought prior to the study. This helped to achieve respondents' voluntary participation in the study. Again, neutrality regarding what responses a researcher decides to take or reject was ensured. This ensured respondents had their free will to choose which answers they prefer to questions asked. Besides, confidentiality of the identity of respondents were taken into consideration and thus, no names were taken from the respondents.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter analysed and discussed findings from the study. This was done to cover the demographic characteristics of respondents and the four objectives of the study.

4.1 Demographic Characteristics of Respondents

In this section, the demographic characteristics data on respondents is analysed in order to determine whether or not the respondents truly represent and qualify as house owners for the study.

4.1.1 Age Distribution

Table 4.1.1 shows the age distribution of respondents. The age distribution of respondents is one of the key variables in deciding if a given sample is logically fit to represent the population under investigation. For instance, in a society where individuals see acquisition of housing as self-actualization, it is expected from Maslow's theory that acquiring houses would be pursued mostly in later years in life when the lower needs have been fulfilled. It is, therefore, anticipated that respondents would be generally late middle to older ages if Maslow's theory holds. This expectation is however, not a strict rule as the simultaneity of needs satisfaction has been pointed out by the ERG theory.

Table 4.1: Age of Respondents

Age	*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
25-29	19	5.1	5.1	5.1
30-34	39	10.4	10.4	15.5
35-39	63	16.8	16.8	32.3
40-44	80	21.3	21.3	53.6
45-49	47	12.5	12.5	66.1
50-54	31	8.3	8.3	74.4
55-59	36	9.6	9.6	84.0
60 and above	60	16.0	16.0	100.0
Total	**375**	**100.0**	**100.0**	

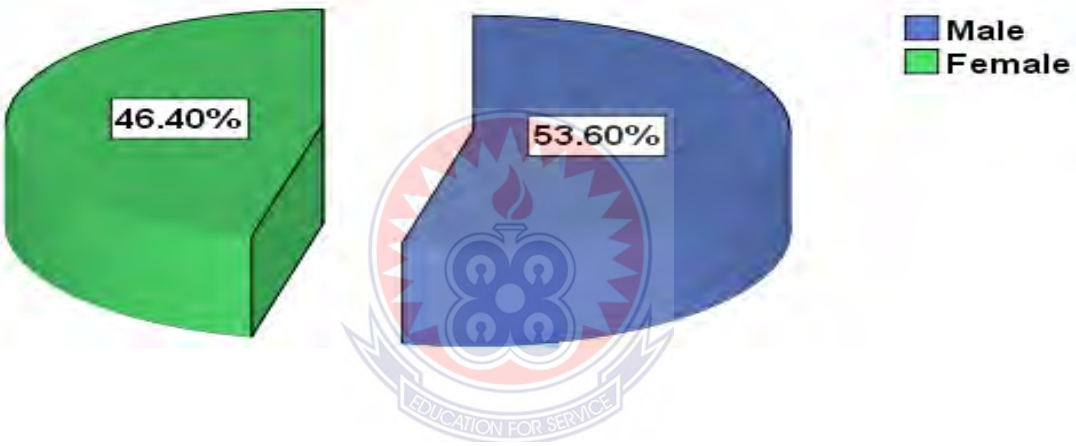
Source: Field Data, 2020

In Table 4.1, it is observed that all the 375 respondents indicated their age, and as a result, there was no missing data or non-response. The lowest age of the respondents is 25 years and those with the age bracket of 25-29 years constitute 5.1%. This means that 94.9% of respondents are 30 years or older.

It is also seen that respondents between the ages of 25-34 years are 15.5%; implying 84.5% of respondents are 35 years or older. Again, 67.7% of respondents are also 40 years or older. However, the late middle to older age respondents (i.e., 45years or older respondents) constitutes 46.4% whereas the younger to middle age group (25-44years) are 53.6%. In fact, house ownership consistently increases among the younger ages and peaks at age 40-44years. It thereafter declines generally. Assuming that respondent's pursuit of needs follows Maslow's hierarchical needs theory, the large proportion of house owners being young people suggests that house acquisition in the district is generally done for lower level needs. In this situation, the level of adequacy which is required by the housing laws would be difficult to meet and adherence level would be low.

4.1.2 Sex Distribution of Respondents

Figure 4.1 is a pie chart showing the sex distribution of respondents. This helps to determine whether the sample suffers gender bias or not. As individuals' choice between adherence and non-adherence is dictated by economic rationality, gender may play a critical role – there is definitely a difference in what males and females will consider as expected cost, in their cost and benefit analysis. This means that gender can affect the level of adherence to the housing laws. It is therefore important to have a gender balance sample to avoid inherent biases that can severely affect the



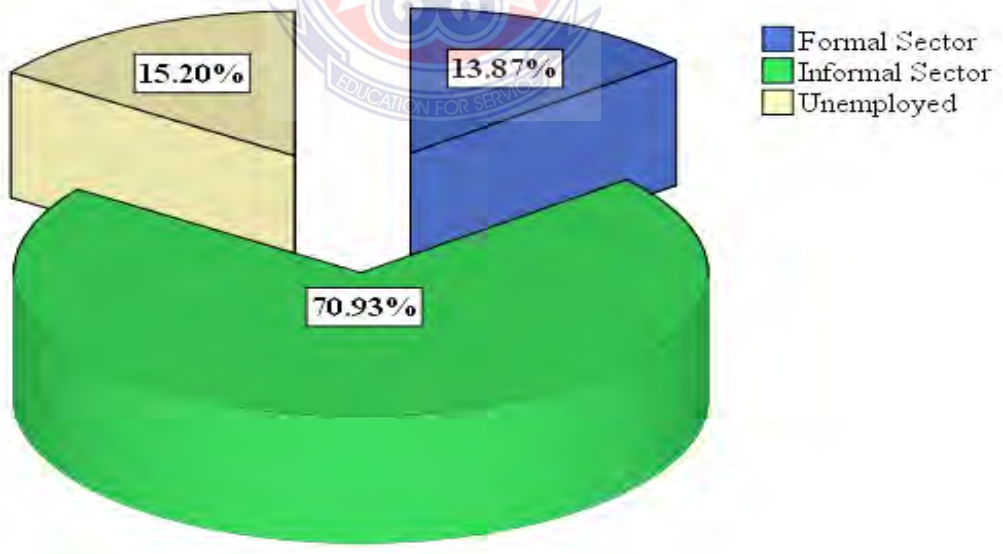
Source: field data, 2020

Figure 4. 1: Sex Distribution of Respondents

From Figure 4.1; it is seen that the males are (7.2%) more than the females. This difference can be attributed to the gap between the average income earning for females and males in Ghana (GLSS 7, 2018). Since males are more capable financially to put up houses than females, they are expected to be more in the sample. Although the males are more than the females, the results do not suggest an extensive margin. The sample is therefore expected to be robust against gender bias. As a result, the influence of gender on adherence to housing laws is adequately controlled for in this study.

4.1.3 Occupation of Respondents

Figure 4.2 shows the occupation of respondents. Sector of occupation usually correlates with variables like educational level and income. As a result, the occupation distribution can be used to determine whether respondents are employed in high-income sectors or not on the average. In instances where incomes are high on the average, it would be expected that most of the lower needs have been achieved. This would provide opportunity for higher needs like self-esteem and self-actualization needs to be achieved. The pursuit of house acquisition would be to satisfy a higher need and as a result adequate houses will be provided when we reason along the Maslow's theory. Looking at issues form Alderfer's theory of needs perspective, if individual earn higher incomes, they can be capable of satisfying lower and higher needs simultaneously and as a result, there will be the opportunity for them to provide adequate houses in satisfying higher needs of growth.



Source: field data, 2020

Figure 4. 2: Occupation

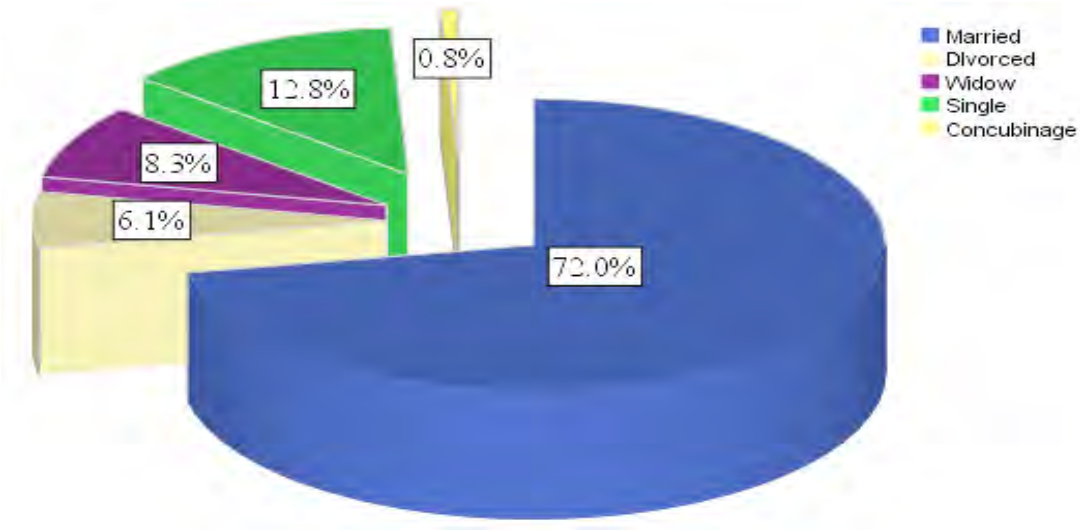
Figure 4.2 clearly shows a sample which is dominated by informal sector workers (70.93%) and with a significant proportion of unemployed people (15.20%). There are

few respondents who are employed in the formal sector (13.87%) and this is not surprising as the occupational distribution is confirmed by the GLSS, 7 (2018) for the district. It is, therefore, a sample of low-income earners. As a result, it is expected that income or economic hardships will play a vital role in the adherence to housing laws in this study. This is because as low-income earners, there is a great likelihood that respondents have not graduated from the lower needs to the high needs on Maslow's hierarchy. They may not be able to simultaneously provide for lower and higher needs as suggested in the Alderfer's theory of needs. In this context, the expectation is that respondents may be pursuing house acquisition to satisfy lower needs.

Where individuals acquire houses for pure lower needs on survival and safety purposes, they commit cheaper resources into the building. In this sense, the expected cost of non-adherence like orders to stop work or demolition appears to be lower relative to cost of adherence. This provides them with the motivation to breach the housing laws as their choices are guided by economic rationality.

4.1.4 Marital Status

Figure 4.3 shows the marital status of respondents. This information can be used to infer if respondents have high dependence or not. High dependency ratio potentially increases the scope of needs for individuals. They are therefore faced with broader lower needs to satisfy and this delays their ability to reach higher needs. There is therefore a high probability for individuals with high dependency ratio to pursue the acquisition of houses to satisfy lower needs.



Source: field data, 2020

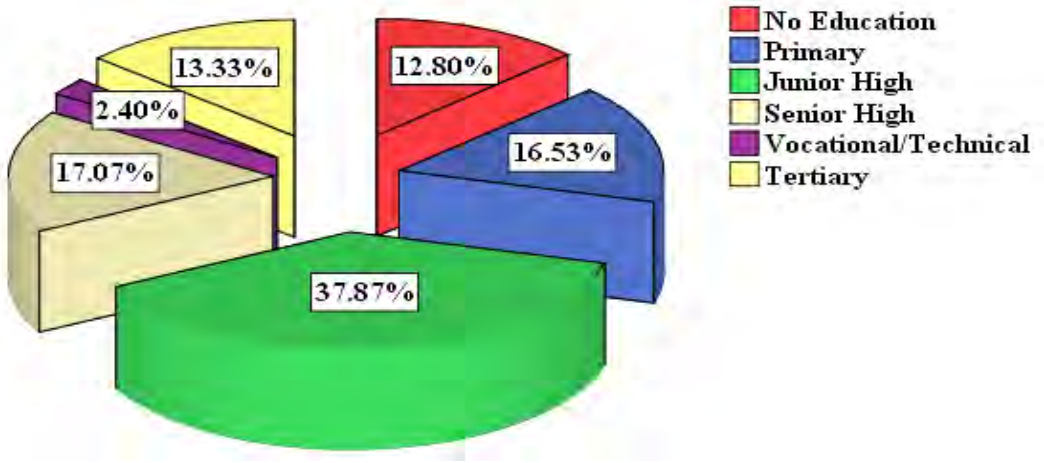
Figure 4. 3: Marital Status

In the Ghanaian setting, married people, divorced and widows usually have large dependents. These groups of people dominate in the sample (86.4%) as seen from Figure 4.3. With a high level of dependence, it is expected that the average respondent will pursue the acquisition of a house for purposes of satisfying lower needs. In this sense, breaches of the housing laws are likely to be high especially in relation to congestion in the post adherence stage. High dependency is also likely to be associated with socio-economic hardships (for people with low income levels), which in turn provide incentive for people acting under economic rationality to choose non-adherence for higher net benefit. Such decision is likely to be prominent in settings where institutional weakness exists.

4.1.4 Education Level

Figure 4.4 depicts respondents' level of education. There is the need for some level of literacy to read and understand the housing laws. This could be the reason why knowledge and awareness is one of the factors that have been pointed out as having influence on adherence to these laws. Also, education has influence on employment

and income, which are socio-economic factors that have a bearing on adherence to the housing laws.



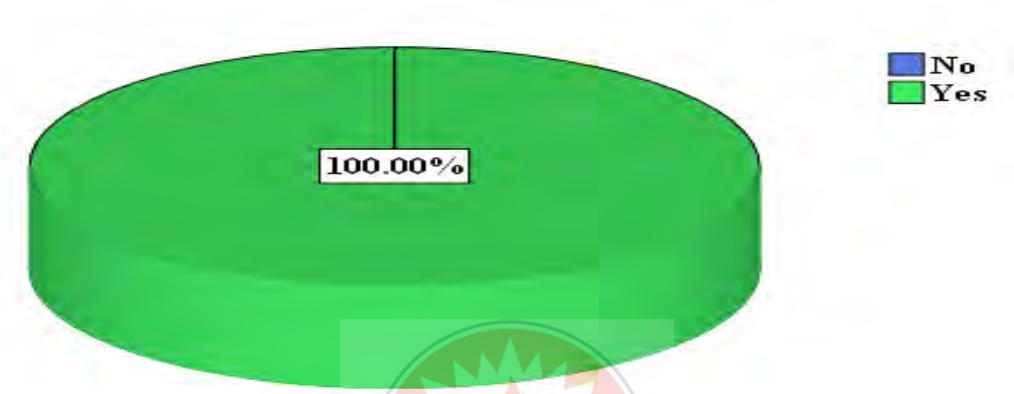
Source: field data, 2020

Figure 4. 4: Educational Level

Observing Figure 4.4, it can be identified that respondents with low level of education (i.e., no education, primary, junior high, senior high, and vocational and technical education) constitute 86.67% of the sample. This explains why majority of respondents are employed in the low income informal sector and some significant number being unemployed as observed in section 4.1.3. This pattern fits the bigger picture in GLSS round 7 (GLSS 7, 2018). Apart from being employed in low income sectors due to respondents' low level of education, there is also the possibility that their knowledge and awareness of the housing laws would be low. It is important to state that in rational economic decision making, information is key – as the information available affects ones expected costs and net benefits. The lack of awareness and knowledge of the housing laws can lead to over-exaggeration of the cost and bureaucracy involved in following the laws. This will make the expected cost of adhering to the housing laws appear greater than that of non-adherence, and thereby provide incentives for non-adherence.

4.1.5 Proof of Ownership

Figure 4.5 presents the proportion of respondents who had proof of ownership for their land. It is expected that if not for any other document, respondents would take some proof of ownership for their land as they act with economic rationality and would therefore not risk their resources in developing lands they cannot claim ownership.



Source: field data, 2020

Figure 4. 5: Proof of Ownership

It is seen from Figure 4.5 that all the house owners had proof of ownership of their land. This is essential because one has to provide proof of ownership in the form of receipts, transfers of land title agreement, lease agreement or indenture among other documents before one can apply for building permit. This directly proves that respondents are not ready to risk losing their property. By extension, they will refrain from non-adhering practices if they expect that there is a high probability of being caught and sanctioned for such acts. It can therefore be deduced that in a vibrant enforcing institutional setting where non-adherence can lead to multiple costs, non-adherence will not be a better option for respondents.

4.1.6 Summary of Background Analysis

The expectation drawn from the background analysis is that respondents are dispositioned to pursue acquisition of houses to satisfy lower needs within the Maslow's framework. Their ability to pursue lower and higher needs simultaneously which is possible in the ERG framework is also expected to be low. This is because the greater proportion of respondents are youthful, they have high dependency ratio (based on their marital statuses), and they are low-income earners (based on their sector of occupation).

Pursuing house acquisition to satisfy lower needs would therefore not make it economically rational to add on costs of following the housing laws unless the institutional context is such that there is a very high probability of being caught and sanctioned for non-adherence. It is therefore expected with the sample under investigation that there will be a high tendency for non-adherence if the institutional lapses are predominant.

4.2 To What Extent Do House Owners Adhere to the Building and Zoning Regulations in the Pre and Post Building Completion Stages in the Gomoa East Districts?

In this section, the various aspects of house owners' level of adherence to the housing laws are examined. The analysis is for both adherence at the pre-building phase and that of the post-building phase. The pre-building phase covers all the period from the acquisition of land to the acquisition of the certificate of completion. All processes and activities after the acquisition of the certificate of completion are analyzed at the post-building phase.

4.2.1 Adherence in the Pre-Building Stage

In the pre-building stage, it is expected that house owners acquire the following documents – site plan, indenture, building plan, building permit and completion certificate. They are also expected to provide essential facilities like gutters before completion of the building. They are further expected to follow specific processes – following zoning requirements and inviting town and country planning for supervision.

In this sense, pre-building adherence level is measured against the extent to which house owners are able to acquire these listed documents, provide for the essential facilities and also follow the needed processes.

4.2.1.1 Adherence to Acquisition of Requisite Documents before Building

In this section, adherence to acquisition of site plan, building plan and building permit is examined. Table 4.2 shows a cross-tabulation between the acquisition of a site plan and the acquisition of indenture. Use of cross-tabulation has the power to detect inconsistencies in the process of acquiring both documents. For instance, a well followed process ensures that anyone with indenture has a site plan since the site plan is a prerequisite document for obtaining indenture.

Table 4. 2: Acquisition of Indenture and Site Plan

Cross-tabulation		*Acquisition of Site Plan before Building*		
		No	***Yes***	***Total***
Acquisition of Indenture before Building	No	201 (53.6%)	31 (8.3%)	232 (61.9%)
	Yes	0 (0%)	143 (38.1%)	143 (38.1%)
Total		**201 (53.6%)**	**174 (46.4%)**	**375 (100%)**

Source: Field Data, 2020

Table 4.2 shows that a total of 174 respondents obtained site plan. This figure is 46.4% of respondents and therefore reveals a low level of adherence. Although Akrofi et al. (2019) found that majority of house owners in the Wa Municipality had site plan, the current state of affairs in the Wa Municipality as observed by Bonye et al. (2020) also revealed low level of acquisition of site plan in the area. The finding in this study therefore goes a long way of showing how non-adherence to housing laws can be a national problem which is not limited to only peri-urban Ghana.

In Table 4.2, it is also observed that no respondent claimed to have an indenture without a site plan. This meets expectation because, in practice, a site plan is needed to obtain indenture. In all, only 143 respondents (38.1%) had indenture as proof of ownership of their lands. This shows that adherence to acquisition of indenture was low among respondents. This finding is consistent with what Bonye et al. (2020) made in the Wa Municipality in which acquisition of indenture was low among house owners in the Municipality.

Table 4. 3: Acquisition of Building Plan and Site Plan

Cross-tabulation		*Acquisition of Site Plan before Building*		***Total***
		No	***Yes***	
Acquisition of Building Plan before Building	No	201 (53.6%)	81 (21.6%)	282 (75.2%)
	Yes	0 (0%)	93 (24.8%)	93 (24.8%)
Total		**201 (53.6%)**	**174 (46.4%)**	**375 (100%)**

Source: field data, 2020

Table 4.3 confirms the expectation that no respondent without site plan had a building plan. It must be pointed out that only 93 out of the 174 respondents with a site plan had building plan. Thus, the number of respondents with building plan (93) was only 24.8% of the entire respondents. This low proportion of respondents with building plan conforms to the findings in the studies conducted by Akrofi, Avogo and

Wadem (2019) in the Wa Municipality where the acquisition of building plan was low among landlords. However, the proportion of house owners with building plan in the Gomoa East District (24.8%) seems to be lower than that of the Wa Municipality (46.7%) as observed by Akrofi et al. (2019). Though not encouraging, the somewhat better performance in relation to acquisition of building plan in the Wa Municipality can be as a result of vibrant enforcing agency. Being a municipality, Wa is expected to have better equipped town planning institutions than the Gomoa East District.

The observed phenomenon may be as a result of the use of house for satisfying lower order needs as deduced form the socio-economic status of respondents in the background analysis. This is because if houses are to be used to meet higher order needs like esteem and actualization, then a lot of planning will have to be undertaken so that the social status sought after can be achieved. It is important to point out that, the need for houses for lower order needs satisfaction does not require commitment of much resource. Cheaper materials and inferior products are usually used. Therefore, following the building and zoning regulations may come with relatively unacceptable costs. In most cases the cost of following the law to the letter may even be closer to the kind of building constructed. The house owner who acts with economic rationality in choosing between adhering and not adhering to the building laws may opt for non-adherence especially where institutions are weak. This is because the highest cost of non-adherence may be some few hundreds of Ghana cedis needed to bribe one's way through. Non-adherence to the building regulations is expected to be high and this can be ascertained in Table 4.2.3, which shows a cross tabulation between building plan and building permit.

Table 4. 4 Acquisition of Building Permit and Building Plan

Cross-tabulation		*Acquisition of Building Plan before Building*		***Total***
		No	***Yes***	
Acquisition of Permit before Building	No	282 (75.2%)	41 (10.9%)	323 (86.1%)
	Yes	0 (0%)	52 (13.9%)	52 (13.9%)
Total		**282 (75.2%)**	**93 (24.8%)**	**375 (100%)**

Source: field data, 2020

Table 4.4 shows that respondents obtained building plan, and in reference to the analyses on Table 4.3, site plan before the acquisition of building permit. This therefore means that as required by law, both building plan and site plan were obtained before building permit was granted. With only 52 (13.9%) respondents having building permit, the implication is that 323 (86.1%) of house owners contravened the building regulation. This low level of adherence to the housing laws is likely the result of institutional lapses or the harsh socio-economic conditions of house owners. Similar findings were revealed by Ahmed and Dinye (2011), Akrofi, et al (2019) and Bonye et al. (2020) in the Wa Municipality where the acquisition of building permits was low among landlords. This phenomenon may partly explain why the UN has projected that by 2020, 26.6% of Sub-Sahara Africans will dwell in slums (Hasrat-Nazimi, 2014).

4.2.1.2 Adherence to the Provision of Adequate Facilities

In this section, the analyses focus on the extent to which house owners adhered to the building and zoning regulations in terms of providing adequate facilities. The focus here was on facilities whose adequacy is not affected by the number of users. In particular, provision of gutter was considered in this section, as its adequacy is not significantly affected by the number of occupants in a house.

Table 4. 5: Adequacy of Gutters

Provision of Gutters	*Frequency*	*Percent*	*Cumulative Percent*
Inadequate	7	1.86	1.86
Adequate	19	5.06	6.9
No Gutter	349	93.1	100.0
Total	**375**	**100.0**	

Source: field data, 2020

A greater proportion of households constituting 349 (93.1%) did not have gutters as shown in Table 4.5. This phenomenon presents lots of challenges to drainage of liquid waste from households in the Gomoa East District. What is more disturbing is that out of the 26 (6.9%) of respondents with gutters in their houses, 7 (1.86%) indicated that the facility was not adequate or in the right state. The non-provision of essential facility like gutters in the houses gives credence to the suspicion from the background analysis that, respondents pursued the acquisition of houses to satisfy lower order needs. This orientation prevents house owners from adhering to the housing laws in relation to the provision of essential facility like gutter, because the aim is only to get a shelter to protect against harsh weather conditions and other dangers.

Although the findings are similar to that made by Anthony, Dabara, Oyediran, Guyimu, & Oladimeji (2015) in Ede, Nigeria where there was poor drainage, it slightly differs from the situation detected by Degual (2015) in Aboabo- Kumasi. Unlike Degual's finding in Aboabo in which there was vast availability of drains which were, however, in deplorable state, the case in Gomoa East is the one in which there is generally unavailability of gutters in households. The lack of drains has the potential of posing health hazards due to the resultant indiscriminate liquid waste disposal.

4.2.1.3 Adherence to Laid Down Processes

The analysis in this section is done to assess how much house owners followed laid down processes. The first part of the analysis is devoted to level of satisfaction of zoning requirements (i.e., planned use of land). The results presented in Table 4.6 show the planned use of land. It is a requirement in the zoning guidelines and spatial planning that a given piece of land is strictly used for its planned purpose.

Table 4. 6: Planned Use of Land

Planned Use of Land before Buying	*Frequency*	*Percent*	*Cumulative Percent*
I did not find out	288	76.8	76.8
Market	5	1.3	78.1
School	2	0.5	78.7
Residence	69	18.4	97.1
Church	3	0.8	97.9
Farm	2	0.5	98.4
Cemetery	6	1.6	100.0
Total	**375**	**100.0**	

Source: field data, 2020

In Table 4.6, 288 (76.8%) of respondents did not inquire about the planned use of the lands they bought. This means that they did not border to satisfy zoning requirements before land development. Out of the remaining 87 (23.2%) respondents who inquired about the planned use of their lands, it is only 69 (18.4%) who actually adhered to the purported use of the land. It can, therefore, be deduced that there was a low level of adherence to the zoning guidelines and planning standards. The high proportion of house owners that did not find out about the planned use of the land is likely to be the result of lack of awareness as the education level among house owners in the district is low.

These findings contradict the results obtained by Matey et al. (2017) in the Adenta Municipality where there was compliance with the permitted use of land. This difference in findings can be attributed to a number of factors including income and literacy differentials as well as differences in the vibrancy of enforcement institutions.

The other laid down processes that was analyzed in this section is invitation of town and country planning officials for supervision of building construction by house owners. Table 4.7 shows the number of times house owners invited the town and country planning officials to supervise their buildings while construction. By law, each phase of the building construction should be supervised. There are at least ten phases stipulated by the building regulation for supervision (National Building Regulations, 1996).

Table 4.7: Invitation for Building Supervision by House Owners

Invitations made by House Owners for Supervision of building construction	***Frequency***	***Percent***	***Cumulative Percent***
0	343	91.5	91.5
1	6	1.6	93.1
2	21	5.6	98.7
3	4	1.1	99.7
5	1	.3	100.0
Total	**375**	**100.0**	

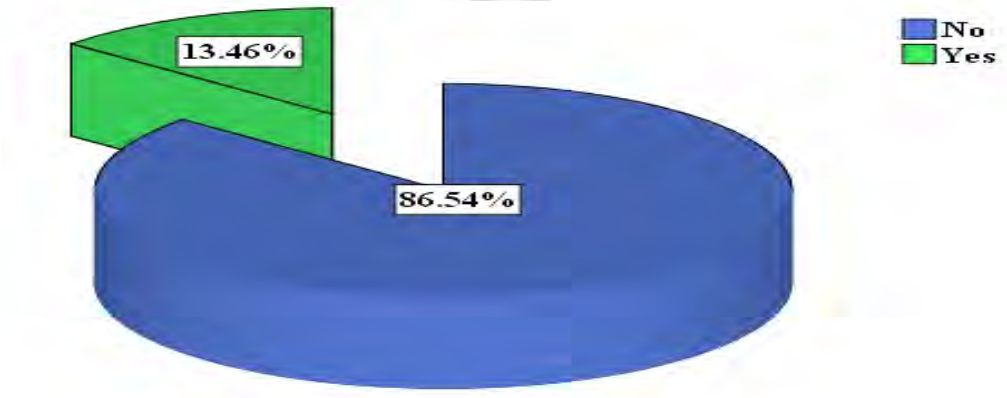
Source: field data, 2020

In Table 4.7, it is observed that 343 (91.5%) of house owners did not invite the Town and Country Planning Personnel to supervise any phase of the construction process. Most importantly, the remaining 32 (8.5%) of house owners were not able to invite the Town and Country Planning Personnel to supervise all the ten stipulated phases of the building construction. It, therefore, means that adherence was very low in relation to allowing the Town and Country Planning Personnel to supervise the

building construction. This is similar to the findings made by Ahmed and Dinye (2011) that house owners did not call for an inspection of their building construction in the Wa Municipality. As the supervision of the building construction is a requirement for the acquisition of the certificate of completion, the low levels of supervision will result in low levels of acquisition of certificates of completion.

4.2.1.4 Other Aspects of Adherence in the Pre-Building Phase

This section covers other aspects of behaviour that can aid in assessing the level of adherence in the pre-building phase. The analyses look into how house owners who obtained building permit complied with demands of the permit. Later, the number of house owners who obtained certificate of completion were also considered. Figure 4.6 shows the proportion of house owners that were cautioned to stop construction of building for breach of their building permit. The frequency of stop-work cautions issued can reveal the extent to which house owners failed to adhere to the requirement of their building permit.

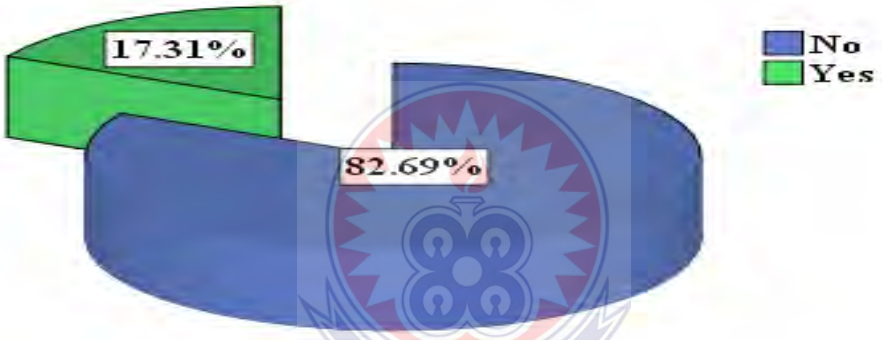


Source: field data, 2020

Figure 4. 6: Notice to Stop Construction for Breach of Permit

In Figure 4.6, the proportion of house owners represented by the sector labelled "Yes" were those who were cautioned to stop work for breaching their building permits. This is a smaller proportion 50 (13.46%) when compared with those who were not

cautioned for breaching their building permit, represented by the sector labelled “No”. Considering, the fact that majority of house owners have been able to build without a permit as seen in table 4.4, it is an indication that there are lapses in the operations of the Town and Country Planning in Gomoa East District. In the context of institutional lapses, it is possible that breaches to the building permit went undetected, contributing to such a high degree of non-adherence. Therefore, the few respondents who were ordered to stop work (13.46%) should not be misconstrued for high level of adherence but rather as a manifestation of institutional lapses. This is so because if only few people had breached the building permit, then a greater number of respondents would



have obtained completion certificate but this was not the case under Figure 4.7.

Source: field data, 2020

Figure 4. 7: Acquisition of Certificate of Completion

Figure 4.7 shows that a small proportion of the house owners with permit 65 (17.31%) represented by the sector labelled “Yes” were able to obtain a certificate of completion. This means that most house owners did not meet the requirements of their building permit. This notwithstanding only a few house owners with building permit were cautioned by the town and country planning for breach of their building permit as observed in Figure 4.6 analysis. This partly confirms the suspected lack of effective monitoring by the town and country planning.

4.2.1.5 Summary of Adherence in the Pre-Building Phase

The analysis thus far has revealed a low level of adherence to the housing laws in the pre-building stage by house owners. In particular majority of house owners did not acquire all the relevant documents – especially building permit - before building. They also did not provide adequate gutters in their buildings. Again, there was low adherence to zoning in terms of sticking to the planned use of land. This generally low level of adherence in the pre-building phase is evidenced by the very low proportion of house owners who were able to acquire certificates of completion. Such findings are not surprising as house owners are mostly low-income earners whose socio-economic background suggests that their motive of acquisition of house is to satisfy lower order needs. In this situation not much resource is committed to building houses. The implication is that house owners acting with economic rationality would find the net benefit of non-adherence to the housing laws to be high in contexts where there are institutional lapses in the enforcement of laws.

4.2.2 Adherence in the Post-Building Stage

This section focuses on adherence in the post-building phase. The variables to be considered include the adequacy of facilities like kitchens, bathrooms and toilets. Other issues that will be considered include post building conversions and related permits.

4.2.2.1: Adequacy of Facilities

Knowledge on the average household size and the average number of households in a house is essential in determining whether the facilities provided by house owners are adequate or not. In Table 4.8, descriptive statistics on the household size as well as the number of households in a house is given.

Table 4. 8: Average Household and Household size

Average Household and size	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Number of Households	375 (100%)	1.0 (0.3%)	13.0 (3.5%)	2.4	2.1
Household Size	375 (100%)	1.0 (0.3%)	16.0 (4.3%)	4.8	2.9

Source: field data, 2020

From Table 4.8, the minimum household size is one, and the maximum is 16. The mean household size is five. The descriptive statistics on the number of households in a house also show that on the average there are two households in a house. For the purpose of this study, each household is expected to have a separate set of facility. This is based on the standards set by the MDGs and SDGs for adequate provision of sanitation facilities – which is used to operationalize and make specific the requirement of adequate facility provision in the 1996 National Building Regulation of Ghana. According to WHO/UNICEF JMP (2008), the standards for improved Sanitation facilities prohibits sharing of such facilities among households (p. 14) and WHO/UNICEF JMP (2017) affirms that one of the requirements for a safely managed sanitation service under SDG 6.2 is that "people should use improved sanitation facilities which are not shared with other households". It is based on these standards that the current study required each household in a house to have access to a set of separate toilet, bathroom and kitchen facility. Therefore, with an average of two households in a house as indicated in Table 4.8, the provision of two or more toilet, bathroom and kitchen each in a house is considered adequate

Table 4.9 extends the analyses by presenting a descriptive statistic of the essential facilities. It can be used to determine whether the criterion for adequate facility provision is met or not. This will enable the study to determine if the requirement for

adequate provision of facilities in the zoning regulation is achieved by respondents or not.

Table 4.9: Provision of Essential facilities

Provision of Essential facilities	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Number of Rooms in House	375(100%)	1.0 (0.3%)	22.0 (5.9%)	4.0	2.5
Number of Rooms per one Household	375(100%)	1.0(0.3%)	10.0 (2.7%)	3.0	2.0
Number of toilet available	375(100%)	0 (0%)	6.0 (1.6%)	0.8	0.9
Number of bathrooms available	375(100%)	0 (0%)	6.0 (1.6%)	1.1	0.96
Number of Kitchens available	375(100%)	0 (0%)	7.0 (1.9%)	0.8	0.99

Source: field data, 2020

In Table 4.9, whereas some households lack necessary facilities like toilets, bathroom and kitchen, others have as many as six toilets or bathrooms or seven kitchens. This notwithstanding, the mean number of toilets, bathrooms, kitchens and rooms per household are 0.8, 1.1, 0.8 and 3.0 respectively. This clearly shows that the facility that met the adequacy criterion of at least two units per household is the rooms. What this implies is that each household has an adequate number of rooms which is three on the average. This, therefore, means that overcrowding in rooms is not a significant phenomenon in the urban centers of Gomoa East District.

On the contrary, the average of one toilet, one bathroom and one kitchen per household is lower than the expected two units each of these facilities per household. This, therefore, shows that in relation to essential facilities, there was low adherence to the requirement of adequate provision with regards to toilet, kitchen and bathroom. It can be argued that although there is an average of one kitchen, one bathroom and one toilet in a house, such facilities are inadequate when the number of households in

a house is taken into consideration. This creates room for facility sharing. Such results confirm the finding by Degual (2015) in Aboabo-Kumasi where the number of tenants who did not share kitchen and bathrooms with co-tenants was less than 10%. The inadequate provision is likely an outcome of the use of houses to satisfy lower order needs by house owners who are constrained socially and economically. With such a motive availability is sought for but adequacy becomes trivial – as in the parlance 'half loaf is better than none'.

Apart from rooms, toilet, kitchen and bathroom, adequate provision of outside light, fire extinguishers and dustbins are examined. This is presented on the percentage Table 4.10.

Table 4. 10: Provision of Fire Extinguisher, Outside Light and Dustbin

Provision of facilities	***Inadequate***	***Adequate***	***Not Available***	***Total Row N %***
Fire Extinguishers	2 (0.5%)	34 (9.1%)	339 (90.4%)	100.0%
Outside Lights	32 (8.5%)	260 (69.3%)	83 (22.1%)	100.0%
Dustbins	16 (4.3%)	105 (28.0%)	254 (67.7%)	100.0%

Source: field data, 2020

Table 4.10 indicates that 339 (90.4%) of respondents did not have fire extinguishers in their houses. This shows that majority of the houses did not have basic firefighting equipment as the National Building Regulation requires. In terms of outside light, it is observed that 83 (22.1%) of respondents did not have any outside light. This is not surprising as the houses used for the study were recently built – after the year 2000 – and therefore there is a high possibility of including houses which were in the process of applying for electrification. Out of the remaining 292 (77.9%) of houses, 260 (69.3%) had adequate provision of outside lights. The figure indicates a high level of

adherence in terms of providing outside light. The security benefits enjoyed from fixing outside lights go a long way to point out that respondents did not take risks which were not justifiable by rational choices considerations.

What appears worrying is the high proportion of respondents without dust bins 254 (67.7%). This shows that respondents' level of adherence on the provision of dustbins was low. A similar finding was made in Ede, Nigeria by Anthony, Dabara, Oyediran, Guyimu & Oladimeji (2015) where over fifty percent of respondents did not have dustbins in their homes. This phenomenon has the potential of causing indiscriminate littering in the community.

The analysis in this section has revealed that the level of adherence to the provision of essential facilities was low among respondents. Apart from rooms and outside light where a significant proportion of respondents had made adequate provision, other facilities like bathroom, toilet, kitchen, fire extinguishers and dustbins were in short supply.

4.2.2.2: Alteration of Structure and Commercial activity

The analysis in this section dwells on the alterations that respondents have caused to their buildings and the acquisition of permits for such alterations. The building 1996 National Building Regulations requires that all such changes to building have to be given prior approval (permits) by the Town and Country Planning. This section also discusses undertaking of commercial activities in residential houses which is frowned by the zoning laws. These behaviours are common in the post building stage.

The rate of transforming building is presented in Table 4.11 by a cross-tabulation between index on transformation and permit. In this study five kinds of

transformations were considered – expansion of rooms, addition of rooms, conversion of facility like kitchen into rooms, and changing parts of building like windows. For each transformation undertaken a score of one is given and simple summation of these scores is used as the index of transformation. Thus, an index of 0 represents undertaking no transformation while an index of 5 indicates all five transformations have been done. If a respondent obtained permit for each transformation, he/she scores 1 on permit, otherwise the score is 0.

Table 4. 11: Permit on Transformation to Building

Cross-tabulation		*Permit*			***Total***
		No	***Yes***	***NA***	
Transformation to Building	0	0 (0%)	0 (0%)	229 (61.1%)	229 (61.1%)
	1	100 (26.7%)	11 (2.9%)	0 (0%)	111 (29.6%)
	2	19 (5.1%)	2 (0.5 %)	0 (0%)	21 (5.6%)
	3	6 (1.6%)	1 (0.3)	0 (0%)	7 (1.9%)
	4	7 (1.9%)	0 (0%)	0 (0%)	7 (1.9%)
Total		**132 (35.2%)**	**14 (3.7%)**	**229 (61.1%)**	**375 (100%)**

Source: field data, 2020

In Table 4.11, 229 respondents (66.1%) did not undertake any kind of transformation to their building. This phenomenon is expected as houses are provided to satisfy lower order needs. In such situations, once a house is provided it can serve its purpose for a long time without further transformations as far as population remains fairly stable. On the other hand, houses provided for higher order needs like esteem requires constant transformation to keep up with the Jones.

With the 146 respondents (33.9%) who undertook one or more transformation of their building, only 14 of them (9.6%) sought permit for each transformation. Most importantly, out of the 111 respondents who undertook just one kind of transformation, only 11 of them (10.09%) obtained permit for such transformation.

The results therefore show that, there is low level of adherence to the requirements of transforming building.

Similar to the analysis on Table 4.11, Table 4.12 presents a cross-tabulation between running commercial activities and permit obtained for such activities. Five kinds of commercial activities were considered and these were school/day care, drinking spot/restaurant, church, ware house, commercial animal rearing. For each commercial activity undertaken a score of one is given and simple summation of these scores is used as the index of commercial activity. Thus, an index of 0 represents undertaking no commercial activity while an index of 5 indicates all five commercial activities have been undertaken. If a respondent obtained permit for each commercial activity undertaken, he/she scores 1 on permit, otherwise the score is 0.

Table 4. 12: Permit on Commercial Activity

Cross-tabulation		*Permit*			***Total***
		No	***Yes***	***NA***	
Commercial Activity	0	0	0	302	302
	1	64	7	0	71
	2	0	2	0	2
Total		**64**	**9**	**302**	**375**

Source: field data, 2020

From Table 4.12, 302 of respondents (80.5%) did not undertake any kind of commercial activity in the house. This shows a very low level of conversion of purposes of house. This is lower than the levels detected by Ahmed and Dinye (2011) in the Wa Municipality where a figure closer to 50% used their houses for commercial purposes. Such difference is not surprising as the level of commercial activities in a municipality is expected to be higher than those at the district level.

Interestingly, only 9 out of the 73 respondents who undertook one or two commercial activities in their houses sought for permit for each of the activities. This constitutes 12.3% level of adherence. Such low level of adherence in relation to the regulations

on use of houses for commercial activities was also identified by Ahmed and Dinye (2011) in the Wa Municipality. This suggests a problem that may affect most parts of the country.

4.2.2.3 Summary of Post-Building Adherence

It was identified that adherence to the housing laws in the post-building phase was low in terms of provision of adequate toilet, kitchen, bathroom, fire extinguishers and dust bins. Also, a low proportion of respondents who undertook transformation of their building or who engaged in commercial activities in their houses took permit on those actions. Therefore, similar to the pre building phase, there was a low level of adherence in the post-building phase as well.

4.3. What are the factors influencing house owners' adherence to the Building and Zoning regulations in the Gomoa East District?

In this section, the research question is answered through hypothesis testing. To be able to do this, a regression analysis is employed for the hypothesis testing. This is achieved by first creating index for adherence level which is the dependent variable in the study. The index is then converted into a binary variable and the logit regression model is then applied.

4.3.1 Index of Adherence

In this section, an index is created for adherence. The index helps to measure the overall level of adherence. Being a compact measure of adherence, it also helps to run regression on adherence with the factors under investigation.

4.3.2 Creating the Adherence Index

Two categories of index are created and subsequently combined to form the adherence index. The first index is created for acquisition of required documents- site

plan, building plan, building permit and certificate of completion. A score of one is given for acquisition of each of these documents. Therefore, the index for the required documents ranges from 0-4.

Secondly, index for processes and facilities is created by assigning one for following each selected process or for adequately acquiring selected facilities. Four selected processes for the index are inviting Town and Country Planning officer for supervising building process for at least six times; sticking to requirement of permit by holders; obtaining permit for each transformation to building; and obtaining permit for each commercial activity undertaken in the house. This means that a maximum score of 4 can be obtained for adherence to processes. The facilities selected for adequate provision are adequate gutters per house, adequate fire extinguisher per house, adequate dustbin per house, two or more rooms per household, two or more bathrooms per household, two or more toilets per household, and two or more kitchens per household. Here, a maximum score of seven can be obtained for selected facilities. This means that the index for processes and facilities ranges from 0-11.

In obtaining the overall index, the index for acquisition of prerequisite documents is given a weight of 2 whereas the index for processes and facilities is given a weight of 1. The reason for attaching more importance to the acquisition of required documents is that they serve as official prove of adherence. The index of adherence in this manner ranges from 0-19. This is shown in the frequency Table 4.13.

Table 4. 13: Index of Adherence

Index	*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
0.00	5	1.3	1.3	1.3
1.00	23	6.1	6.1	7.4
2.00	69	18.4	18.4	25.8
3.00	83	22.1	22.1	47.9
4.00	63	16.8	16.8	64.7
5.00	51	13.6	13.6	78.3
6.00	14	3.7	3.7	82.0
7.00	21	5.6	5.6	87.6
8.00	7	1.9	1.9	89.5
9.00	14	3.7	3.7	93.2
10.00	12	3.2	3.2	96.4
11.00	7	2.0	2.0	98.4
12.00	6	1.6	1.6	100.0
Total	**375**	**100.0**	**100.0**	

Source: field data, 2020

Table 4.13 shows that adherence to housing laws was low among house owners. It is seen that, 350 (93.2%) of respondents scored 9 or lower marks out of the maximum of 19. Again, no respondent scored between 13 and 19. This confirms the low level of adherence that was observed in the pre and post building stages. This consistency of the index with the findings in the pre and post building stages makes it reliable as a measure of adherence level of respondents to the building and zoning laws.

4.3.3 The Dependent Variable

To answer the question posed in this section, a regression analysis is employed with adherence being the dependent variable. However, the Index of Adherence is not a continuous variable and cannot be supported by Ordinary Least Square Estimation of the Multiple Linear Regression. To avoid this problem, the Index of Adherence is transformed into a binary variable which is used as the dependent variable in a logit regression.

Thus, all indices from 0 to 9 is taken as 0 to represent non-adherence group whereas all indices from 10 to 19 is taken as 1 to represent adherence group. This binary variable on adherence is used as the dependent variable in the logit regression used in this section. Table 4.14 gives the frequency distribution of the dependent variable. It shows that out of the 375 respondents, only 25 house owners fell into the adherence group whereas 350 were in the non-adherence group.

Table 4. 14: The Dependent Variable

Dependent Variable		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
	0.00	350	93.3	93.3	93.3
	1.00	25	6.7	6.7	100.0
Total		**375**	**100.0**	**100.0**	

Source: Field Data, 2020

4.3.4 The Independent Variables

The independent variables that are used in the study are factors which the study seeks to test how they influence house owner's adherence to housing laws in Ghana. In particular, knowledge on housing laws, cost of building according to the standards prescribed by law, ability to interpret permit, supervision of building by Town and Country Planning Authourity (TCPA), education level of house owners, bureaucracy in obtaining permit, house size (proxied on number of rooms), size of dependence (proxied on household size), cost of building permit and TCPA supervision after building are considered. The study also controls for sex of house owners, age of house owners, marital status of house owners and sector of employment. This is because socio economic factors have been found to influence adherence by several authors (Atamewan, 2019; Abubakar, Diah & Yassin, 2013; Boamah, Gyimah & Nelson, 2012).

Apart from supervision of building by TCPA which was numeric, all the other factors were measured as binary in the following ways. In terms of sex, males were represented as 0 and females as 1. Formal sector of employment was represented as 1 whereas informal and unemployment was represented as zero. House owners aged 45 or older were represented by 1, otherwise 0. In terms of house size, houses with 3 or less rooms were represented by 0, otherwise 1. House owners who were single were represented by 0, otherwise 1. House owners with high knowledge on the housing laws were represented by 1, otherwise 0. For one or more supervisions after building, a figure of one is given, whereas 0 is given for no supervision after building. House owners with tertiary education were represented by 1, otherwise 0. One (1) was used to represent house owners who rated the cost of permit as high (i.e., 6-10) but 0 was given to those who rated the cost of permit as low (0-5). One was used to represent house owners who rated the cost of building by standards as high (i.e., 6-10) but 0 was given to those who rated the cost of building by standards as low (0-5). House owners who were able to interpret permit were represented by 1, otherwise 0. House owners who considered bureaucracy in obtaining building permit were represented by 1, otherwise 0. In terms of size of dependence, house with average household size of 6 or more were represented by 1, otherwise 0.

4.3.5 Hypothesis testing

H_0: the factors considered in the study individually do not have significant influence on adherence to Building and Zoning regulations.

To test the above hypothesis, the logit regression model was used because the dependent variable for adherence was binary. The analysis is done by Stata/MP 14.0 software. The probability value of the logit model is 0.0000 in Table 4.15 and it

implies that the model has goodness of fit. In Table 4.15, 3 out of the 14 variables had significant coefficients. These are ability to interpret permit which has a positive influence on adherence at the 1% significance level; supervision of building by TCPA which has positive influence on adherence at the 5% significant level; and education level of house owners which also has positive influence on adherence at the 1% level of significance.

Table 4. 15: The Logit Regression

Log likelihood = -68.869709 **No. of obs = 375**
Pseudo R^2 = 0.2502 **LR chi2(14) = 45.96**
Prob > chi2 = 0.0000

Dependent Variable: Adherence

Independent Variables	Coefficient	Standard error of logit	Marginal effect	Standard error of marginal effect
Cost of Building by Standards	-0.254	(2.822)	-0.00676	(0.0689)
Ability to Interpret permit	1.611***	(0.505)	0.0755**	(0.0338)
Supervision of Building by TCPA	0.257**	(0.117)	0.00747**	(0.00381)
Bureaucracy in Obtaining permit	0.758	(0.550)	0.0212	(0.0151)
Size of Dependence	0.422	(0.544)	0.0132	(0.0184)
Cost of Building Permit	1.536	(2.839)	0.0809	(0.243)
Education level of House Owners	1.486***	(0.561)	0.0758*	(0.0441)
TCPA Supervision after Building	-1.817	(1.153)	-0.0527*	(0.0316)
Knowledge on housing Laws	0.545	(0.735)	0.0199	(0.0332)
Marital status	1.317	(1.140)	0.0255*	(0.0150)
House size	0.117	(0.091)	0.00340	(0.00274)
Age of House Owners	0.469	(0.514)	0.0139	(0.0160)
Sex of House Owners	0.165	(0.499)	0.00483	(0.0148)
Sector of Employment	-0.028	(0.660)	-0.000818	(0.0188)
Constant	-6.584***	(1.325)		

Standard errors in parentheses
***** p<0.01, ** p<0.05, * p<0.1**

The logit regression has shown that if house owners are able to interpret permit, their adherence level to the housing laws will be higher, particularly from the marginal effect, house owners who are able to interpret permit are 8% likely than their counterpart to be in the adherent group at the 5% level of significance. Records point to the fact that ability of house owners to interpret permit is one of the key requirements for issuance of building permit in the city of Fortuna, California. In

Fortuna, owner builders are required to formally undertake that they are capable of reading and understanding permit and all its implications before they are granted permit (Community Development Department, Fortuna, 2009). The finding in this study on ability to interpret permit therefore provides justification for the practice in the city of Fortuna as the ability to interpret permit promotes adherence.

Again, it is seen that the number of supervisions of buildings by TCPA has positive influence on adherence. At the 5% level of significance, the marginal effect shows that, a unit increase in the number of supervisions of a building by TCPA causes the house owner to be 0.7% more likely to be in the adherence group. This means that intensifying supervision produces adherence. This is similar to the findings made by Alnsour and Meaton, (2009), Arimah and Adeagbo (2000) and Abubakar, Diah & Yassin, (2013) that monitoring of housing projects by TCPA improves adherence.

Furthermore, the logit model shows that, house owners' level of education has positive influence on adherence. At the 10% level of significance the marginal effect shows that, house owners with tertiary education are 8% likely to be in the adherent group than their counterparts with lower levels of education. This supports Alnsour and Meaton (2009) finding in Old Salt that educational level positively influences adherence as breaches to regulations on plot frontage and ventilation in Old Salt was blamed on house owners' lower levels of education.

Unlike supervision by TCPA during building which has been shown to have positive influence on adherence, supervision after building by TCPA is related to low levels of adherence. In particular, houses that were supervised after building were 5% less likely than their counterparts to be in the adherent group at the 10% level of

significance. This phenomenon is only plausible where supervision by TCPA after building is done as a response to breaches of the housing laws. In simple terms, supervision after building in this study portrays a culture of reactive institutions rather than proactive one. It is therefore not surprising when Alnsour and Meaton (2009) pointed out that administrative culture had effect on monitoring. The use of post building supervision in reactive sense is highlighted in the findings by Okeke, Sam-Amobi and Okeke (2020) where post building supervision were geared towards identification of defective buildings to reduce the incidence of building collapse. This implies that non-adherent houses have higher likelihood of obtaining post building supervision than their counterparts, and hence the negative co-efficient.

The logit model and its corresponding marginal effect have revealed that apart from ability to interpret permit, supervision of building by TCPA, education level of house owners, TCPA supervision after building and marital status which have significant influence on adherence, all the other factors did not have any significant influence on adherence to housing laws by house owners in the Gomoa East District. In this vein, the results in this study failed to confirm findings made by several authors. In relation to knowledge on housing laws (awareness), the findings in this study while supporting the claim by Arimah and Adeagbo (2000), Alnsour & Meaton (2009) and Awuah and Hammond (2014) that knowledge (Awareness) has no significant impact on adherence; it does not support the claim by Boamah (2013), Offei et al (2018) and Menunatu (2015) that knowledge (Awareness) promotes adherence in other parts of Ghana.

Again, the findings in this study generally does not support the claim that socioeconomic factors influence adherence as observed by Atemewan (2019);

Abubakar et al. (2013), Boamah (2013) and Offiong, Offiong and Epke (2014). This is because socioeconomic factors like Maturity (age 45 years or older), sex (gender) and being in the formal sector did not have any significant influence on adherence to housing laws in the Gomoa East District. An important observation in terms of socio-economic factors by Aseidu-Danquah (2016) was that employment in cities was associated with non-adherence due to the construction of unauthourised structures by those employed. This finding seems to be consistent with the findings of this study since employment in the formal sector had a negative impact on adherence, although the non-significance of this observation implies that the negative relationship is largely by chance. Moreover, the finding by Offei et al (2018) and Alnsour and Meaton,2009 (2009) that dependence (household size) influences adherence was not supported in this study as the co-efficient of dependence (household size) although positive was insignificant. The only socio-economic factor in this study that is seen to influence on adherence is marital status. With regards to marital status, the marginal effect shows that house owners who are not single are 3% more likely than their counterparts to be in the adherence group at the 10% level of significance. This means that house owners who are single exhibit lower level of adherence to the housing laws.

Another finding that is not supported in this study is how bureaucracy causes non-adherence in the studies conducted by Bonye et al (2020) and Aseidu-Danquah (2016). Contrary to their finding, this study shows that bureaucracy has no significant influence on house owners' adherence to housing laws in the Gomoa East District. Turning attention to cost of building according to prescribed standards as well as cost of building permit, it is observed that, each of these did not have significant influence on adherence in this study. Although the cost of building by prescribed standards had

the expected negative sign implying that higher cost of building causes non-adherence, the non-significance of this coefficient was not enough to confirm the findings by Krimgold (2011) that higher cost of building by prescribed standards contributed to non-adherence as it created avenue for bribery.

In wrapping up the discussion of factors influencing adherence to housing laws in the Gomoa East District, it is important to point out that house size (proxied on number of rooms) is one of the factors that does not influence adherence among respondents in the district. The specific factors that influence house owners' adherence to the housing laws in the district are ability to interpret permit, educational level, supervision of building by TCPA and marital status. A key observation that was also made is the fact that post building supervision by TCPA was done in response to non-adherence practice. There is therefore the need for the TCPA to intensify supervision in order to prevent the development of unauthourised structures.

4.4 What are the implications of house owners in Gomoa East District adherence level to Building and Zoning regulations on the housing environment?

The focus in this section is to examine the effect of adherence to Building and Zoning Regulation on the housing environment in the Gomoa East District of Ghana. The distribution is highly skewed towards non-adherence and this makes it unsuitable for hypothesis testing such as use of chi square test. As a result of this, the analysis is limited to cross tabulation analysis. In cross tabulation analysis, a relationship can be determined based on the pattern of distribution of values on the diagonals. Specifically, after comparing values row by row on the cross tab, if it appears that the principal diagonal has high-high (low-low) values against low-low (high-high) values on the minor diagonal, a negative relationship is established. However, if after

comparing values row by row on the cross tab and it appears that there is high-low (low-high) values on the principal diagonal against low-high (high-low) values on the minor diagonal, a positive relationship is established.

Table 4. 16: Implications of Adherence

Implications of adherence on Gomoa East environment		***Category of Adherence***		***Total***
		Non-Adherence	***Adherence***	
Existence of Poor Sanitation in House	No	142 (38.0%)	315 (84.0%)	154 (41.1%)
	Yes	233 (62.0%)	60 (16.0%)	221 (58.9%)
Total		**375 (100.0%)**	**375 (100.0%)**	**375 (100.0%)**
Existence of Congestion in Rooms	No	269 (71.6%)	375 (100.0%)	276 (73.5%)
	Yes	106 (28.4%)	0 (0%)	99 (26.5%)
Total		**375 (100.0%)**	**375 (100.0%)**	**375 (100.0%)**
Existence of Fire Outbreaks in House	No	371 (98.9%)	375 (100.0%)	371 (98.9%)
	Yes	4 (1.1%)	0 (0%)	4 (1.1%)
Total		**375 (100.0%)**	**375 (100.0%)**	**375 (100.0%)**
Existence of Poor Traffic in area	No	288 (76.9%)	360 (96.0%)	293 (78.1%)
	Yes	87 (23.1%)	15 (4.0%)	82 (21.9%)
Total		**375 (100.0%)**	**375 (100.0%)**	**375 (100.0%)**
Poor Ventilation in room	No	222 (59.3%)	345 (92.0%)	231 (61.5%)
	Yes	153 (40.7%)	30 (8.0%)	144 (38.5%)
Total		**375 (100.0%)**	**375 (100.0%)**	**375 (100.0%)**
Pressure on Household Facilities/Utilities	No	198 (52.9%)	315 (84.0%)	206 (54.9%)
	Yes	177 (47.1%)	60 (16.0%)	169 (45.1%)
Total		**375 (100.0%)**	**375 (100.0%)**	**375 (100.0%)**
Existence of Flooding in Raining Season	No	169 (45.1%)	180 (48.0%)	170 (45.3%)
	Yes	206 (54.9%)	195 (52.0%)	205 (54.7%)
Total		**375 (100.0%)**	**375 (100.0%)**	**375 (100.0%)**
Existence of Poor Street Network	No	82 (22.0%)	150 (40.0%)	87 (23.2%)
	Yes	293 (78.0%)	225 (60.0%)	288 (76.8%)
Total		**375 (100.0%)**	**375 (100.0%)**	**375 (100.0%)**

Source: field data, 2020

As seen in Table 4.16 for poor sanitation, the principal diagonal has low-low percentages whereas the minor diagonal has high-high percentages. This suggests a negative relationship between poor sanitation and adherence to the building and zoning regulation at the household level. This means that as house owners become more adherent to the building and zoning regulations, poor sanitation reduces in houses. Specifically, whereas 233 (62%) of non-adherent houses have poor sanitary conditions, this reduces to 60 (16%) among the adherent houses. In the same way,

Degual (2015) found that noncompliance to housing laws greatly contributed to poor sanitation in the Aboabo community. The lesson here is that, by improving adherence to the building and zoning regulations, sanitary conditions can be improved at the household level.

Moving the analysis to congestion in room, the cross-tabulation reveals another negative relationship between adherence and congestion. All the adherent houses had no problem of congestion whereas 106 (28.4%) of non-adherent houses have problem with congestion. In support, as observed by World Bank (2010), informal settlements give rise to overcrowding. This imply that improving adherence has the potential of minimizing congestion problems in the Gomoa East District. In terms of fire outbreak, the cross tabulation in Table 4.16 suggests a relationship with adherence to the housing laws. It is important to observe that, whereas no adherent house has experienced fire outbreaks, 4 (1.1%) of non-adherent households have come under fire outbreaks. This weakly suggests that improving adherence to the housing laws has the potential of eliminating incidence of fire outbreaks in the district. This conforms to findings by Gacheru (2015) that development of unauthourised buildings lead to risks of fire outbreaks. Therefore, adherence should be improved if the aim is to avoid fire outbreaks in houses in the district.

Similarly, a negative correlation has been found between adherence to the housing laws and poor traffic in the communities. Poor traffic being a community variable affects both adherent and non-adherent households in varying proportions as the menace created by non-adherent houses has spillover effect on adherent houses. Whereas 87 (23.1%) of non-adherent households have poor traffic experience, this reduces to 15 (4%) among the adherent houses – implying that improving adherence

to the housing laws is associated with reduction in the incidence of poor traffic in the communities. This finding confirms Degual (2015) finding where non-adherence to housing laws led to difficulty in accessing various parts of Aboabo community. This draws the attention to the fact that enforcement of housing regulations must be strengthened so as to avoid further chaotic scenes in terms of traffic movement in the community.

The cross tabulation has also revealed a negative correlation between poor ventilation in rooms and adherence to the housing laws. In fact, 153 (40.7%) of non-adherent houses have ventilation problems and this reduces to 30 (8%) among adherent houses. What this tells us is that, with improvement in adherence, ventilation problems are likely to reduce to very low levels. The finding confirms Degual (2015) who observed poor ventilation situations in Aboabo due to non-adherence to housing laws. In the case of pressure on household facilities/utilities, a negative correlation was established with adherence to housing laws. In particular, pressure on household facilities was more prevalent in non-adherent houses 177 (47.1%) than in adherent houses 60 (16%). This is not surprising as key facilities like toilet, bathroom and kitchen were found to be inadequately available under section 4.2.2 of this study. This has the propensity to put pressure on existing social facilities as tenants in houses with inadequate facilities are bound to resort to public ones. It is in the light of this that Degual (2015) and Al Ishaqee, & Albazaz (2019) found that non adherence to housing laws lead to excessive pressure on community facilities. The lesson that can be taken here is that, improving adherence to the housing laws causes reduction in pressure on household facilities/utilities.

The cross tab has further established a negative relationship between flooding and adherence. It is seen that the problem of flooding affected 206 (54.9%) of non-adherent houses but the proportion reduces to 195 (52%) of adherent houses. This widespread nature of flooding shows the extent to which breaches to the housing laws has created problems of flooding for not only non-adherent houses as there is potential spillover effect on more than half of the adherent houses. Tasantab (2019) made similar finding in Sekondi-Takoradi where non-compliance with permit regulations posed flooding risk.

Finally, Table 4.16 reveals a high incidence of poor street network in the Gomoa East District. A large proportion of respondents 288 (76.8%) faced poor street network. Specifically, the proportion of non-adherent houses that were enmeshed in poor street network was 293 (78%) with spillover effect on 225 (60%) of the adherent houses. This negative relationship between adherence and poor street network is not limited to Ghana alone as Al Ishaqee and Albazaz (2019) also found that breaches in building and land use led to low public utility networks in Baghdad. It can be summarized from the analyses that negative relationship was found between adherence to the housing laws and all the aspects of poor housing environments that was considered in this section. In particular, high adherence was associated with no congestion in rooms, no incidence of fire outbreaks, improved sanitary condition, improved traffic, improved ventilation, less pressure on household facilities, reduced incidence of flooding and improved street network.

4.5 In which ways can adherence to the Building and Zoning regulations be improved in the Gomoa East District?

The analysis in this section sought to identify ways by which adherence to housing laws could be improved in Gomoa East District. To do this, the respondents were

presented with a number of statements on ways of improving adherence to housing laws, to indicate their stands of disagreement, neutrality or agreement to each statement. The findings are shown in Table 4.17.

Table 4. 17: Ways of Improving Adherence

Ways of Improving Adherence	*S D*	*D*	*N*	*A*	*S A*
Free distribution of copies of housing laws to prospective builders in Gomoa East by the local TCPA	15 (4.0%)	6 (1.6%)	12 (3.2%)	119 (31.7%)	223 (59.5%)
Public sensitization of the housing laws by the TCPA	5 (1.3%)	2 (0.5%)	12 (3.2%)	135 (36.0%)	221 (58.9%)
Enforcement of the prescriptions of the laws on offenders	24 (6.4%)	4(1.1%)	23 (6.1%)	120 (32.0%)	204 (54.4%)
Regular supervision of building projects by the local TCPA	15 (4.0%)	5 (1.3%)	10 (2.7%)	140 (37.3%)	205 (54.7%)
TPCA' prompt response to citizens reports on breaches to the laws	34 (9.1%)	4 (1.1%)	14 (3.7%)	137 (36.5%)	186 (49.6%)
Accreditation of land selling agents by the Gomoa East district to promote adherence to housing laws	21 (5.6%)	1 (0.3%)	19 (5.1%)	119 (31.7%)	215 (57.3%)
Adequately resourcing and staffing the Gomoa East's TCPA by the government to promote adherence to the housing laws	18 (4.8%)	7 (1.9%)	13 (3.5%)	139 (37.1%)	198 (52.8%)
Licensing of masons in Gomoa east to promote adherence to housing laws	25 (6.7%)	6 (1.6%)	14 (3.7%)	111 (29.6%)	219 (58.4%)

Source: field data, 2020

From Table 4.17, it could be seen that great majority of the respondents 356 (94.9%) from both agree and strongly agree responses, accepted that sensitization of people on the housing laws by the TCPA would help ensure adherence in the urban areas of the district. Considering the low level of education of most of the respondents revealed under section 4.1 of this study, their search for information on the housing

laws in this technological age and their ability to read and comprehend the conditions in the laws would be much hindered. Sensitising the public by TCPA on the details of the housing laws would thus help overcome the identified weaknesses in the respondents and promote their adherence to the housing laws. This finding explains why Essuman, and Mate-Kole (2021) maintained that education of the general public on what to do when about to build helps to promote builder's adherence to housing laws.

A total of 345 (92%) of the respondents either agreed or strongly agreed that regular supervision of building projects by the TCPA could promote adherence to the housing laws in the urban areas of Gomoa East District. Usually, most breaches to housing laws commence at building construction stages even when house owners have obtained permits. This is why supervision should be frequent for early detections of deviations in expectations of the laws and subsequent actions. This could be why Bonye et al. (2020) and Boamah, Gyimah and Nelson (2012) recommended strengthened and robust monitoring mechanisms to ensure adherence to housing laws among landlords.

Free distribution of copies of housing laws to prospective builders by TCPA were agreed and strongly agreed by 119 (31.7%) and 223 (59.5%) of respondents respectively. This means 342 (91.2%) of the respondents come to an agreement that free distribution of copies of housing laws could end in house owners' ultimate adherence to the housing laws. This strategy as largely agreed by respondents could help create the awareness of the laws and as well make information on the laws readily available to the populace. The finding here conforms to the finding by world bank (2021) that easy access to information on documentation can make compliance

with regulations easier. Adequately resourcing and staffing the Gomoa East's TCPA by the government to promote adherence to the housing laws was accepted by most of the respondents 337 (89.9%). This if done will help enhance the activities of the district's planning authourity. In line with this, Essuman and Mate-Kole (2021) has called on government to resource and staff the local authority well to be able to carry out inspections and enforce the notices that they issue.

Accreditation of land selling agents by the Gomoa East district to promote adherence to housing laws was embraced by 334 (89%) of respondents as a way of promoting adherence to housing laws in the district. This could help save the challenges in land acquisition from customary land sector with its inherent challenges which later becomes a hindrance to land owner's acquisition of the necessary documents if they wanted to, as found by Boamah (2010). Concerning licensing of masons in Gomoa East District to promote adherence to housing laws, a total of 330 (88%) of the respondents from agree and strongly agree responses see it as an effective approach. As given by the World Bank (2010) educating and training the building workers for certification could help achieve compliant and safe construction. TPCA' prompt response to citizen's reports on breaches to the laws was agreed or strongly agreed by a total of 323 (86.1%) of respondents as a way of promoting house owners' adherence to housing laws. This could be an effective way of ensuring public's participation in promoting adherence to the housing laws. It is not then surprising when lack of public participation in housing planning and implantation in Lagos led to poor city development as found by Oduwaye (2009). Omollo, Hoyombe and Owino (2018) advocates for public involvement and coordination in dealing with housing standards to ensure the laws are adherence to.

In terms of enforcing the prescriptions of the laws on offenders, 120 (32%) of respondents and 204 (54.4%) of respondents respectively agreed and strongly agreed that house owners' adherence could be improved in this way. Thus, a total of 323 (86%) respondents believed that the prescriptions of the housing laws must be enforced on its offenders. This finding is similar to findings by Yau and Chiu (2015) that imposing punishments against non-conforming owners is the top option in dealing with illegal building in Hong Kong. In sum, each of the ways of improving adherence to housing laws received an agreement by at least 323 (86%).

CHAPTER FIVE

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the study, major findings of the study, conclusion and recommendations.

5.1 Summary of the Study

The study investigated adherence of house owners to the Building and Zoning regulations of Ghana in the Gomoa East District. The objectives of the study focused on examining the pre- and post-building adherence level of the house owners to the Building and Zoning regulations; identifying the factors that influence their adherence level; examining the implications of their adherence; and investigation of ways of improving house owners' adherence to the Building and Zoning regulation in the Gomoa East District. Data was collected on 375 owner occupied houses built between 2001 and 2020 in the urban towns of the district. The multistage sampling technique was used to arrive at this sample. The data collected were analyzed descriptively and inferentially. The major findings from the study are provided in subsequent sub themes.

5.2 Major Findings of the Study

The major findings of the study were:

1. House owners' adherence level to the Building and Zoning regulations in the urban areas of Gomoa East District was low in both the pre- and post-building stages.
2. A positive relationship existed between house owners' ability to interpret permit (8%); building supervisions by TCPA during construction (0.7%);

house owners' level of education (8%); marital status of house owners (3%), and house owners' adherence to housing laws. A negative relationship was also established between post building supervisions by TCPA (5%) and adherence to housing laws – which implied reactionary rather than proactive administrative culture on the part of the TCPA in the district.

3. Non adherence to the building and zoning regulations in urban areas of Gomoa East District led to poor street network (76.8%); poor sanitation (58.9%) and flooding during raining season (54.7%).
4. Public sensitization of the housing laws by the TCPA 356 (94.9%); regular supervision of building projects by TCPA 345 (92%); free distribution of copies of housing laws to prospective builders by TCPA 342 (91.2%); adequately resourcing the district' planning department by the government 337 (89.9%); accreditation of land selling agents by the Gomoa East District 334 (89%); licensing of masons in Gomoa East to promote adherence to housing laws 330 (88%); prompt response by TCPA to citizens reports on breaches to the laws 323 (86.1%); and enforcement of the prescriptions of the laws on offenders by the TCPA 323 (86%) were seen as ways by which adherence to housing laws in the Gomoa East District can be improved.

5.3 Conclusion

From the major findings of the study, it can be concluded that there is low level of adherence to housing laws by house owners in the urban areas of Gomoa East District and this is significantly influenced by house owners' ability to interpret permit, their education level and supervision of building construction by TCPA. In this regard, regular supervision of building construction by TCPA, distribution of copies of the housing laws to existing and prospective house owners, licensing and accreditation of

agents in the housing development industry are practical steps to improve the poor sanitation, congestion, poor road network and flooding which results from the low levels of adherence.

5.4 Recommendations

On the basis of the findings, the following recommendations are proposed to improve the poor adherence to the housing laws in the Gomoa East District.

1. There should be conscious effort to help landlords understand the contents of building permit granted to them by the TCPA as their ability to interpret the permit can significantly promote adherence to the housing laws in the district. In this sense, issuing useful documents that enhance the knowledge of existing and prospective house owners on the housing laws will be useful. Again, house owners should endeavour to be abreast with the basic requirements of the Building and Zoning regulations in order to avoid the many breaches they make against these laws.
2. There should be improvement in supervision by the TCPA in the Gomoa East District to bring about increased level of adherence to the housing laws by house owners. Such supervision activity should be extended beyond the pre building phase to the post building phase to specifically monitor transformations to buildings.
3. In the medium to the long term, the district can promote house owners' adherence to the housing laws if it ensures that all existing government policies aimed at raising the average education level of the citizenry are well implemented in the district. This is because, higher education levels of house owners was found to promote their adherence to the housing laws.

4. House owners should seek guidance from TCPA in the district during building construction in order to have their building activities aligned with the expectations of the building and zoning laws to help curb the negative effects of not building to expectations of these laws.

5.5 Limitation of the study

There was no standard formula identified in literature for measuring the adherence level of respondents and as a result the researcher had to result to creation of adherence index using weighted averages. In this context, the use of weighted average for the adherence index involved use of discretion on the part of the researcher in assigning waits to the different aspects of adherence. However, to minimize the level of discretion, weights were given in accordance with the requirements of the law. By so doing, the conclusion from adherence index was consistent with the descriptive analysis on the individual aspects of adherence. Also, the questionnaire used in the study was administered by the researcher as interview where respondents could not read. However, a thorough interpretation was done to help respondents understand the true requirement of the question to ensure reliable response. With close ended question, all options were read to the respondents and interpreted before responses were given to prevent biases in the administration of the questionnaire. Other caution also taken to minimize biases included not stressing some options and also maintaining same body gestures when questions were read and interpreted.

5.6 Suggestion for Further Studies

The following recommendations are made for future related studies.

1. The current study did not focus on adherence to the architectural details of the 1996 National Building Regulations and it is therefore recommended that interested future studies can explore this dimension of adherence in the district.
2. The index of adherence does not have a standardised approach yet. As a result, interested future studies can contribute to building a standardised index on adherence for universal acceptability. This is because, there are varied measures of adherence which have been used in the existing literature and this is prone to biases of the researcher.

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APPENDIX
UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF HOME ECONOMICS EDUCATION
DEPARTMENT OF FAMILY LIFE MANAGEMENT EDUCATION

RESPONDENT' INFORMATION

I am a final year M.Phil. Home Economics student in the above University. As part of my requirement for the award of the M.Phil. degree above, I am conducting a study on the topic: **homeowners' adherence to the laws regulating Ghana's building plans and designs in the old Gomoa East district**. Consequently, your responses will be needed for the following questions. As much as possible, your responses will be kept anonymous and also confidential to the study only.

Questionnaire for House Owners

Section A: Socio-Demographic Characteristics of Respondents. Please tick **[√]** appropriately.

1. **Age**
   Below 20 ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐
   40-44 ☐ 45-49 ☐ 50-54 ☐ 55-59 ☐ 60+ ☐
2. **Sex**
   Male ☐ Female ☐
3. **Sector of Occupation**
   Formal Sector ☐ Informal sector ☐ Unemployed ☐
4. **Marital Status**
   Married ☐ Single ☐ Divorced ☐ Other Specify ……...
5. **Educational Level**
   Primary ☐ Junior High ☐ Senior High ☐
   Vocational/Technical
   Tertiary ☐ Other Specify……
6. Do you have any document to prove that the land you have built on is yours?
   Yes ☐ No ☐

Section B: To examine the pre- and post-building completion adherence level of homeowners in the old Gomoa East district to the building code and zoning regulations.

Pre-Building Completion Adherence Level

7. Which of the following document(s) did you obtain before the start of your building? Please tick **[√]** as many as applicable.
   a. Building permit ☐ b. Site plan ☐ c. Indenture ☐
   d. Building plan ☐ e. None of the above ☐
8. Indicate the situation of gutter(s) in your house with a tick **[√]**.
   a. Adequate ☐ b. Inadequate ☐ c. Not available ☐
9. What was the planned use (zoning) of this plot of land you have built your house on as you were informed by the land owner or Town and country planning officer? Tick **[√]** appropriately
   a. I did not find out ☐ b. Market ☐ c. School ☐ d. Residence ☐
   e. Park ☐ f. Church ☐ g. Farm ☐
   h. other(s)specify……

10. How many times did you invite your Town and Country Planning officer to inspect and certify the building construction? Tick **[√]** correctly.
    a. Never ☐ b. Twice ☐ c. Thrice ☐ d. Four times ☐
11. Other specify
    ……
12. Were you notified to stop building by the town and country planning for not following the purpose of your granted building permit? Tick **[√]** correctly.
    a. Yes ☐ b. No ☐
13. Did you obtain certificate of completion before occupying your house? Tick **[√]** correctly
    a. Yes ☐ b. No ☐

Post Building Completion Adherence Level

14. How many households/families occupy your house?
    One ☐ Two ☐ Three ☐ Four ☐ other specify……
15. How many persons are in one household/family in this house?
    One ☐ Two ☐ Three Four ☐ Other specify……
16. How many rooms are in this house? Indicate answer below with a tick **[√]**.
    a. One room ☐ b. Two rooms ☐ c. Three rooms ☐ d. Four rooms ☐
    e. Other specify
    ……
17. How many rooms are being occupied by one household/family in this house? Tick **[√]** correctly.
    a. One ☐ b. Two ☐ c. Three ☐ d. Four ☐
    e. Other, specify……
18. For each of the following **facilities**, indicate the number available in your house. Indicate **zero (0)** if facility is not available at all.
    a. Toilet ☐ b. Bathroom ☐ c. Kitchen ☐
19. Indicate the **adequacy or inadequacy** of each of the following **items** in your house with a tick **[√]**. Write **zero (0)** if **item** is not available at all.

Item	Not available	Adequate	Inadequate
Fire Extinguisher			
Outside Light			
Dustbins			

20. Which of the following **changes** have taken place after the completion of your building? **Tick [√]** as many as applicable but put **zero (0)** if not applicable.
    a. Expansion of rooms ☐ b. Building additional room(s) ☐
    c. Changing of roof/window ☐ d. Conversion of toilet/bathroom/kitchen ☐
    Other changes on building specify……
21. Did your Town and Country Planning Officer supervise each of the changes indicated in question 20? (*Ignore if none of the changes in 21 was applicable in your house*).
    a. Yes ☐ b. No ☐

22. Which of the following activities take place in your house? Please tick [√] as many as applicable
    a. School/daycare ☐ b. Drinking spot/restaurant ☐ c. Church ☐
    d. Ware house ☐ e. Poultry or Pig farm None of the above ☐
23. Did you consult your Town and Country Planning officer before engaging in each of the activity in question 23? Tick [√] correctly. Yes ☐ b. No ☐

Section C: To establish the underlying factors influencing adherence level of homeowners in the old Gomoa East district to the building code and zoning ordinance of Ghana.

Factors influencing homeowners' adherence level to the building code and zoning ordinance of Ghana.

KNOWLEDGE LEVEL

24. Indicate the do's and don'ts of the housing laws in Ghana you know of.
    a. ……
    b. ……
    c. ……
    d. ……
25. Can you interpret a building permit? Tick [√] correctly
    a. Yes ☐ b. No ☐

INSTITUTIONAL

26. How bureaucratic is the attainment process of a building permit? Tick [√] correctly
    a. Very high ☐ b. High ☐ c. Neutral ☐ d. Low ☐ f. ☐
    Very low
27. How many times did the Town and Country Planning Officer supervise your building during construction? Please tick [√] correct answer.
    a. Never ☐ b. One-time ☐ c. Two times ☐ d. Three ☐
    times
    e. Four times ☐ f. Other, specify ……
28. Has the Town and Country Planning officer ever visited your house for supervision after completion? Tick [√] correctly
    a. Yes ☐ No ☐

ECONOMIC

Please rate questions 33 and 34 from 1 to 10 in terms of how affordable it is to build according to approved permit and building materials.

1	2	3	4	5	6	7	8	9	10
Highly unaffordable									Highly affordable

29. Cost of obtaining a building permit ……
30. Cost of building according to the Town and Country Planning standards……

Section D: To determine the implications of homeowners adherence level to the Building Code and Zoning Ordinance of Ghana on the old Gomoa East district' environment.

Implications of Adherence Level on the Housing Environment

31. Which of the following housing problems exist within your house or community? Tick **[√]** as many as applicable if problem exist but put zero (0) if problem does not exist.
    a. Poor sanitation in house ☐ b. Poor traffic in community ☐
    c. Congestion in rooms ☐ d. Poor ventilation in rooms ☐
    e. Fire outbreaks ☐ f. Poor street network ☐
    g. Flooding in raining season h. Pressure on household facilities ☐
    i. Any other(s), specify……....

Section E: To investigate ways homeowners in the Old Gomoa East district can improve their adherence level to the building code and zoning ordinance of Ghana.

Respond to the following statements with a tick **[√]** of one of the following responses: Strong Disagree (SD), Disagree (D), Neutral (S), Agree (A) and Strongly Agree (SA)

S/N 37	**Statements**	**SD**	**D**	**N**	**A**	**SA**
a.	Free distribution of copies of Ghana's housing laws to prospective builders					
b.	Public sensitization of Ghana's housing laws					
c.	Enforcing the prescriptions of the law on offenders					
d.	Regular supervision of building projects by the districts					
e.	Prompt response to citizens reports on breaches to the law					
f.	Accreditation of land selling agents to promote adherence to the laws					
g.	Adequately resourcing and staffing the Gomoa East and Central housing Authourity by the government					
h.	Licensing of masons in the districts to promote adherence to the laws					
i.	Other ways, specify ……					

THANK YOU