BARRIERS TO ENFORCEMENT OF NATIONAL BUILDING REGULATIONS BY RELEVANT AUTHORITIES IN GHANA.

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By

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A thesis submitted to the Department of Construction Technology and Management,

College of Art and Built Environment

in partial fulfilment of the requirements for the award of

MASTER OF SCIENCE IN CONSTRUCTION MANAGEMENT

NOVEMBER, 2019

DECLARATION

I hereby declare that this submission is my own work towards the MSc. Construction Management and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

This thesis assesses the barriers to enforcement of National Building Regulations by Relevant Authorities in Ghana. The general objective of this research was to access the barriers to the National Building Regulations enforcement by Relevant Authorities in Ghana. In all, 70 respondents were sampled for the study. Five (5) respondents who are Building Developers were sampled with snowball sampling technique while Sixty-Five (65) respondents who are Staff of the District Planning Authority of Accra Metropolitan Assembly were sampled with purposive sampling technique. The study found out that there are barriers that inhibit the enforcement of National Building Regulations in Ghana and these factors that hinders the enforcement of NBR are complexity or bureaucratic procedures and systems, corruption, Political Interference, lack of public education about the building regulations and lack of relevant education (training) for staff. Also, it is recommended that the relevant Authorities streamline permit acquisition. Also, to the District Planning Authority, it is recommended that authorities must continuously educate and train their staff as well as educate the general public on building regulations to increase awareness while seeking for external support from the security agency to ensure those who default are sanctioned to serve as a deterrent to other building developers.

Keywords: Regulations, Permit, Assembly, Enforcement, Politics, Barriers, Construction

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ACKNOWLEDGEMENT

GLORY BE TO GOD ALMIGHTY for once again adding value to my life, May HIS NAME be praised forever. To all who helped in diverse ways in making this dissertation become a reality;

MR. AYIREBI DANSOH, my supervisor for his expert guidance and support throughout the study. Not forgetting my colleagues Head of Works Department Engineers and all the staffs at Metro and Municipal Assemblies under studied. This research would not have been successful without their cooperation, patience and support during the data collection stage. Thank you so much and GOD continuously shower HIS BLESSINGS upon u all the days of your lives.

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DEDICATION

This project is dedicated to GOD ALMIGHTY for HIS LOVE; JESUS CHRIST HIS SON, came to sacrifice HIS LIFE for our sins, giving us HOPE to reconcile with the FATHER. To my mum; Mad. Janet Agbaglo, who committed her life for her children, worked so hard after her husband's demise of which today I her last born dedicate my Masters. To my wife; Vida Blah Quarshie and kids; Gilbert Edinam Blah Quarshie Ashigbi, Raymond Sedinam Blah Quarshie Ashigbi and my lovely daughter (last baby) Victoria Eyiram Blah Quarshie Ashigbi.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Over the past few decades, most developing countries in the world of which Ghana is of no exception appear to be overwhelmed by the rapid growth of erected buildings across its cities and towns. Perhaps, the drastic innovation in design, construction materials and the use of fire engineering to develop increasingly complex buildings is changing the way in which buildings are erected by developers as well as assessed and approved by building control bodies. In respect, prior to construction of any building by any individual, company or on behalf of the State, it is required that stipulated plans, specifications and certificate are in tune with the building standards prescribed by national building regulations after notice in writing has been given to the local authority and directives issued. However, in Ghana, the unscrupulous deeds of regulators as well as building practitioners and building owners who fail compliance and violate the regulations often result in the collapse of buildings and siting of authorized buildings which consequently cause an increase rise in perennial flooding, fire outbreaks including other building accidents, thereby endangering the lives of occupants.

Vonweller (n.d) cited in Ametepey & Ansah, (2013) identified the purpose of building regulations as ensuring strict adherence to construction standards, energy conservation regulations, as well as to preserve the health and safety of occupants and users. As such, in 1966, Ghana enacted the National Building Regulations (L.I. 1630) to authorize and control the erection, execution, alteration and installations of fittings of residential and commercial buildings in Ghana. Similarly, according to Ametepey, Ansah & Edu-Buandoh, (2015), this Act was enacted to regulate the construction and renovations made on any building structure.

Accordingly, the National Building Regulation Act was to strengthen the decentralization policy of the government under the Fourth Republican Constitution of Ghana by classifying and reinforcing the planning and development functions of the District Assemblies (Republic of Ghana, 1993). Thus, the relevant building control bodies which comprised of Metropolitan, Municipal and District Assemblies (MMDAs), Town and Country Planning Department (TCPD) and the Lands Commission are given legislative powers to regulate human settlements in accordance with sound environmental and planning principles planning by ensuring that individuals adhere or comply with the regulations, while sanctioning defaulters for breach of the regulations.

However, the enforcement of the National Building Regulations (NBR) (L.I. 1630) in Ghana has been subject to many barriers particularly poor adherence or non-compliance; bureaucratic procedures to acquiring the necessary building permit; and also unauthorized erection of buildings which often result in serious building accidents such as collapse of buildings, fire outbreak etc. In addition, the complexity of the regulation which is not enforceable by the building, planning and development authorities prevent individuals to abide by the law. For instance, according to the Court Appointed Special Advocates, (2012), one of the fundamental legal frameworks introduced to regulate the building and construction industry in Ghana (the Ghana Building Code) (GBC) lacked legal authority in its compliance. It, therefore, became a mere guidance document offering advice for some of the more common building situation and advisory tool for practitioners. As a result, there is a current trend of building collapse, and also the unauthorized and disorganized citing of buildings in “reserved spaces, low-lying spaces, waterlogs and marshy areas in Ghana (Orgen, 2010)”.

Likewise, those responsible for enforcing the Building Regulations lack the appropriate competency and even compromise with the design brought for assessment or approval due to their selfish interest. Notwithstanding, these authorities due to their dubious means fail to embrace the implementation of national building regulations or policy document. As result, although development and planning authorities provide a framework for effective planning, the complexities in most building regulations often create widespread opportunities for discretion and corruption and ultimately lead to high numbers of unauthorized structures (The World Bank Group, 2013). Notwithstanding, most stakeholders such as building owners, developers or building contractors violate the regulations perhaps because they are not even aware of the various regulatory processes and systems. Also, the inadequate formal engagements between the Regulator and stakeholders is partly attributable to the ineffective internal regulatory systems and processes. Likewise, the issue of corruption has also been a factor that has raised several questions about the effectiveness of enforcing the National Building Regulations in Ghana. Since authorities engage in corruption, developers or building contractors on the other hand also fail compliance, and these actions by developers are some of the major causes of the rapid growth of unauthorized structures in the urban communities.

Accordingly, poor enforcement of the National Building Regulation has adversely impacted on Ghana's built environment, and the aftermath fatal disasters such as floods, building collapse and fire outbreaks, reveals the essence of an effective building regulation to protect life and property (Ametepey, Ansah & Edu-Buandoh, 2015; Ametepey & Ansah, 2013). Throughout the period, national building regulation has become difficult to enforce across the country (Dadzie, 2011). All the same, almost no legal changes have been made to the enforcement system. It is against this background that this study seeks to assess the barriers to enforcement

of the National Building Regulations by Relevant Authorities in Ghana. Therefore, a review of the National Building Regulations of Ghana is undertaken to comprehend the current phenomenon.

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1.2 Statement of Problem

Frequent erection of buildings at the unauthorized area, the collapse of buildings, fire outbreaks and the perennial flooding in most cities and towns in Ghana has left many citizens in consternation and displaced in this country. But what could possibly be the immediate cause of such disasters? Suddenly what comes to mind could be who granted approval? And was the building erected in accordance with the National Building Regulations? It is designated that, the National Building Regulations 1996, (L I 1630) exist to be enforced by relevant authorities and is meant to be adhered to by developers who are in the building industry to ensure the use of standard quality and acceptable building materials for construction face several obstacles to its enforcement. Despite Ghana's formulated National Building Regulations which contain appropriate standards, and the standards must be complied with in the design and construction of buildings, there are still barriers which prevent the enforcement and effectiveness of the National Building Regulations. Much effort has been expended over the years to confront the challenges associated with the enforcement of the regulations but with little success.

In terms of the regulation of the Act in Ghana, Relevant Authorities have reneged on their obligation, particularly towards enforcing compliance of safety measures to safeguard present and future occupants. Notwithstanding the powers vested in the District Assemblies, Municipal Assemblies and Metropolitan Assemblies to control construction of unauthorized buildings in

Ghana, appears that they have not been able to exercise strict control, as people are still circumventing the regulations (Freiku, 2003).

In addition, other factors such as the bureaucratic process of acquiring the necessary building permit to determine a safe bearing capacity to place the structure and to ensure one has abided to the standard principles of building regulations are regarded as complex. One of such approaches has been the development of flexible and effective building checks and control procedures that ensure a high degree of regulatory compliance with planning and building code requirements (The World Bank Group, 2013), which is often not enforceable and are violated by recalcitrant. A report by the Santa Cruz Grand Jury emphasized that planning and building regulations that are too complex and difficult to understand may prevent people from building, and in some cases build without the necessary building permit (Santa Cruz Grand Jury, 2004). Accordingly, (Windapo, 2012) indicate that the ineffective and inefficient implementation of the building regulations negatively impacts the erected buildings, health and safety of occupants and the national economy.

Following, issues concerning non-compliance with building and development regulations has raised several questions about the effectiveness of Building Codes. The unwillingness on the part of developers to abide by the established regulations has often resulted in many disasters such as flooding, fire outbreaks, environmental degradation, health hazards and occasional collapse of buildings. These actions by developers are some of the major causes of the rapid growth of unauthorized structures in urban communities. These cases indicate that non-compliance with building regulations is an issue of national scope and significance. As such, it is imperative for officialdom to ensure the construction of eco-friendly buildings, which assures

the health and safety of occupants through the promotion of strict building regulation compliance.

Several Researchers such as Awu (2012), have already researched into the acquisition of building permit in Ghana and the various challenges fraught with the process, the Assembly's capability to vet permits before approval etc. Ametepey, et al., (2015) assessed the factors affecting implementation of National Building Regulations (L.I. 1630) in the Central Region. The aspect that has not been critically considered and which this study focused on, is the barriers affecting smooth implementation and enforcement of the Building Permit in order to ensure sound building as designed

Given the above cases, the study, therefore, seeks to assess the barriers to enforcement of the National Building Regulations by relevant authorities. This study's outcome will immensely support local authorities, policymakers, estate contractors and developers, and practitioners to recognize their awareness level on the regulatory processes and systems as well as the critical factors affecting the successful enforcement of the National Building Regulatory. Likewise, the recommendation of this research, if adhered to, will help mitigate the collapse of structures and erecting of unauthorized buildings in Ghana.

1.3 Objectives of the Study

The main objective of the study is to assess the barriers to the National Building Regulations enforcement by relevant authorities in Ghana. Accordingly, the following set of objectives aided in achieving the main objectives of the study:

1. To assess the critical factors that hinder enforcement of the National Building Regulations in Ghana.
2. To assess the awareness of stakeholders on the existence of National Building Regulations.
3. To examine strategies towards enhancing the implementation of the building regulations.

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1.4 Research Question

Based on the aforementioned problem statement, the following research questions were proposed:

1. What are the critical factors that hinder the enforcement of the National Building Regulation in Ghana?
2. Are stakeholders aware of the existence of the National Building Regulations?
3. What strategies can enhance the implementation of the building regulations?

1.5 Scope of the Study

The study was limited to assessing the barriers to enforcement of the National Building Regulations by relevant authorities in Ghana. The study focused on Accra Metropolitan Assembly. The staff, building owners and building practitioners in Accra Metropolis were the study's primary respondents. The study was limited to the factors affecting the implementation of the National Building Regulations, examined the awareness level on the existence of a National Building Regulatory Framework by primary respondents.

1.6 Significance of the Study

The existence of effective enforcement of the National Building Regulations is an essential component of building a safe environment for occupancy. Per the laws of the land before any building commences developers are required to apply for permission from the District Planning authorities and comply to the national building regulation (L.I. 1630) which contains regulations and requirements meant to be enforced by the planning authorities to satisfy the minimum acceptable levels of safety for buildings and non-building structures. However, lack of awareness and understanding of the National Building Regulations, non-compliance, bureaucratic procedures and other significant factors hinder the enforcement of the National Building Regulations in Ghana. As such, Recalcitrant developers and building practitioners often violate the law and erect buildings at areas where they are not supposed to without permission. This often results in collapsing of buildings and erection of buildings at unauthorized places, causing an increase in flooding as well as fire outbreaks. Thus, striking the right balance is what this research seeks to unravel especially on the factors that hinder the enforcement of National Building Regulations in Ghana as well as bringing into the fore, the awareness level of stakeholders in order to increase education since the study considers the awareness and understanding of these legal frameworks and regulation of the stakeholders as very vital in dealing with the challenges of the situation and more importantly, their readiness to comply with the laid down building requirements, while highlighting on relevant strategies for enhancing the implementation of the National regulations Body.

Accordingly, the study is also intended to be a useful tool in regulating human settlement in the country as a whole. It will again provide an avenue for further research into this field of study. Also, this study will add to the existing knowledge on National Building Regulations and assist

the regulators on their shortfalls while enabling the general public to know the importance of the National Building Regulations.

1.7 Brief Research Methodology

This research was founded on a quantitative survey approach comprising structured survey questionnaires and interview to obtain primary data from respondents while using secondary data arising out of the comprehensive review of extant literature to ascertain previous similar research exercises in the subject matter, in order to know previous offerings, current criticisms and limitations.

In addition, the type of sampling technique employed was purposive sampling. Data was collected from secondary sources, both published and unpublished and from the electronic media (Internet). Three (3) appropriate groups of participants, namely building professionals, local authorities, and construction owners, were invited to participate in the questionnaires. The questionnaires were therefore forwarded in Greater Accra region to local authority workers and construction professionals at the Metropolitan Assembly such as the District Planning Authorities (DPA) made up of the MMDAs Town and Country Planning Department (TCPD) now Physical Planning Department (PPD), the Works Departments, Roads Departments, Fire and other key Technical Officers, while interview schedule was used to elicit the views of building owners with building development permits. 110 questionnaires were therefore distributed between local authority staff and building practitioners, while 10 building owners conducted the interview. A total of 120 participants therefore took part in the study. Findings were analyzed descriptively with the Statistical package for the social sciences (SPSS version

20) program and results presented in tables, frequencies while content analysis was used to derive themes from interviews and presented in themes.

1.8 Limitation of the Study

The limitations identified by the study included financial resources constraints, limited time, difficulty in determining the appropriate actual sample size for the study, willingness of prospective respondents to answer the questionnaires and difficulty in retrieval of administered questionnaires. As a result, there was a delay in the data collection process for the researcher, especially when during the interview sessions.

1.9 Organization of the Study

The study is organized into five distinct chapters: Thus, Chapter one focuses on the background of the study, statement of the problem, objectives of the study, research questions, scope of the study, the significance of the study, brief methodology, limitations of the study and organization of the study. Chapter two (2) on the other hand is on literature review, which comprised of an overview of concepts and review of related literature. Chapter three (3) deals with the methodology used in the study and it includes the research design, population, sample and sampling techniques, procedures, ethical consideration and research analyses used in the study. Chapter four (4) deals with the presentation of analyzed data and discussions. Finally, Chapter five (5) focuses on the summary, conclusion and recommendation of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter focus on the concepts and literature related to this study. Accordingly, it covers the following: an overview of the National Building Regulations 1996 (L.I. 1630), review of related literature on factors that hinder enforcement of building regulations and strategies to enhance compliance of national building regulations.

2.1 History the National Building Regulations 1996, (L.I., 1630)

According to Somiah, (2014), Ghana's National Building Regulations, 1996 (L.I 1630) was enacted by Parliament on September 27, 1996, through the ministers for works and housing, and Local Government, pursuant to the Local Government Act, 1993 (Act, 462). As a piece of legislation the principal aim of NBR (L.I. 1630) is to lay down guidelines and procedures to follow in order to meet the minimum acceptable requirements for security of buildings and non-building structures.

The National Building Regulation has jurisdiction over the construction, modification and expansion, repairs and demolishing of all buildings in Ghana. In total, the Legislation comprises of one hundred and eighty-seven (187) laws under nineteen (19) subdivided sections. The nineteen subsections of this regulations consists:

"Application of regulations and building plans; Plot development ; Site Preparation and landscape; Materials for building; Structural stability; Structural fire precautions; Access accommodation; Air movement and ventilation; 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 building and; Miscellaneous provisions".

However, the section of the building regulations reviewed for the study is the application of regulations and building plans (Ametepey, et al., 2015).

2.1.1 Application of regulations and building plans

The National Building Regulation regulates all major and minor building construction works in Ghana with the exception of those otherwise exempted by the regulation. To start with, an applicant must receive a building permit from the district planning department by first proving ownership of with relevant documentation certified by the Chief Registrar of the Land commission. Secondly, applicants must furnish the district planning officer with architectural designs of the intended building, well demarcated site plan signed by a registered surveyor. Accordingly, failure to satisfy the aforementioned requirements disqualifies a building permit application (Republic of Ghana, 1996)

Further, the enforcement of L.I 1630 by the various district assemblies is the responsibility of the District Planning Authority (DPA). The composition of DPA is the administrative heads of "District Town and Country Planning Manager, Head of District Works Department, District Environmental Health Officer, District Fire Officer, Electricity Company of Ghana District Manager, Ghana Water Company Ltd District Manager". According to Ametepey, (2015), guaranteeing strict compliance to the building regulations is done through daily inspections by a building inspector appointed by the DPA. In exercising its powers under Section 64 of the Local Government Act of 1993 (Act 462), the District Planning Authority to which the plans

are presented may grant a construction license under those laws, and may include, with regard to the construction or works proposed, any conditions inconsistent with these laws in regard of the license. This involves the requirement that, as the construction or work advances, the applicant submits any data or details needed by the district planning agency from moment to moment. In a building permit, the district planning authority may indicate the time during which work permitted in the license should be started. The construction license shall usually be valid for five years. The DPA is also has powers to extend the validity period when circumstances inhibit the completion of the building project with the stated time. (Republic of Ghana, 1996).

Furthermore, failure of applicants to undertake or complete building or renovations granted permits by the District Planning Authority. Any construction or work carried on after the expiration date of a construction authorization or prior to the approval of an application for extending the validity period violates those provisions. Also, the DPA must acknowledge receipt of application within 7 days of the application and communicate the final decision to the applicant within 3 months after submission of application. (Republic of Ghana, 1996; cited in (Somiah, 2014).

However, an applicant who is not aware of the grant or denial of a request may start building on the condition that the request is acceptable in accordance with the DPA after expiration of 3 months. A individual to whom a construction permit has been granted, referred to as a developer in these Regulations, shall provide a written notification of at least 48 hours of the DPA, suggesting a deadline for the start of work and the dates on which the next construction steps are prepared for inspection in accordance with DPA:

"*the demarcation of site of the plot and siting of the buildings; the foundations of buildings set out; the foundations excavated and level pegs for concreting; the foundations concreted; the trenches for drainage work excavated to levels and gradients; the drains laid and joined and ready for testing; the reinforcing steel fixed in position before concreting; the concrete shuttering ready for striking; the walls completed to wall-plate level; and the roof frame-work completed before covering*" (Republic of Ghana,1996; cited in (Somiah, 2014).

Likewise, until an authorized inspector inspects it, no building work will begin. If the procedure laid down in subsection (1) of Section (10) of the National Building Regulation is not complied with, the Inspector may notify that the proprietor must cease building as needed to verify the conformity of any clauses. Where notice is not fulfilled, the DPA can apply to the nearest court at the site of the building to order that any part of the building or work be cut, laid open or pulled in order to undertake any tests necessary to establish that those regulations have been or are not being complied with, and charge the cost to the owner of the building (Republic of Ghana, 1996; cited in (Somiah, 2014).

Furthermore, building regulations requires that a residential certificate be given for accommodation or use when the construction is completed and that a competent building inspector can inspect the building which is being constructed for the purpose of ensuring that the regulations have been met. (Republic of Ghana, 1996; cited in (Somiah, 2014).

2.1.2 Application for Permission to Develop (Building Permit)

Building Permit is a document given by the planning authorities to developers indicating that their request for permission to erect, construct or install a building has been granted or approved hence, they are to develop in conformity with the procedures and requirements

(National Building Regulation, 1996). (Awu, 2012) states that building permit is a license granted a developer to commence building works, extension to existing structures, repairs, changes, demolition, plumbing and mechanical works such as electrical, air conditions and heat emitters etc. A developer refers to a person, a group or a body who has been granted and issued a Building permit to commence building (National Building Regulation, 1996). It is a requirement for any person, group or a body who intends to erect, make structural alterations or install any fitting to a building to apply to the planning authorities where the project is intended and submit the relevant documents for permission (National Building Regulation, 1996).

2.1.3 Compliance of Building Permits

Parker cited in (Ametepey & Ansah, 2013) defined compliance as adherence to rules and legislations or with the objectives of government policies by a target population. Compliance with construction licenses can be considered rigorous compliance with district planning authorities' permission to establish the precepts and requirements. (National Building Regulation, 1996). Building permit enforcement may be seen on 2 levels; the PDA is enforceable, and designers are responsible for ensuring compliance.

2.1.4 Ensure Compliance by Developers

Each individual, agency or body responsible in the locality or neighborhood shall comply with all authorized development plans. Compliance with authorized construction permits is called compliance with the circumstances of use and norms stipulated in the building permit approved by the developer during growth. The proprietor and construction developer shall be responsible for complying with the authorized conditions of the building permit. Department of the

Environment, Community and Local Government, (2011). Accordingly, Section 10 (1) of the (National Building Regulation, (1996) informs that "the person to whom a building permit was issued regulations mentioned herein as the" developer "must provide the Authority with statutory planning district least 48 hours' written notice of the date of starting work, and the dates the following stages of construction will be ready for inspection by the planning Authority-District

(a) The site boundary of the plot and the location of the building;

(b) The foundations of buildings exposed;

(c) Excavated foundations and grade stakes for concrete;

(d) Concrete foundations;

(e) Trenches for drainage work dug levels and gradients

(f) Laid and jointed drains and ready for testing;

(g) The reinforcing steel fixed in position before the concreting;

(h) Concrete formwork ready to strike;

(i) Completed the wall Walls levels of the plate;

(j) Roof framed completed work before covering. "

This regulation is further emphasized that “No construction shall be covered until it has been inspected and approved by the District Planning Authority" (National Building Regulation, 1996). On top of that, "it is the responsibility of every person who conducts the construction works to comply with the relevant Building Regulations requirements" (UK Department of Communities and Local Government , 2007). In the UK, however, the developer may suggest a surveyor for the authorized development plan to efficiently guarantee compliance, which oversees the project according to an authorized license. “If the approved inspector is

committed, the person who intends to carry out the work (i.e. the developer) and the inspector must give the district or local authority together with an initial notice". The local or district authority has approximately five days to accept or reject the notification. If the agency either does not dismiss or accept at the end of the period, the notice shall be considered to be acceptable and the inspector shall oversee the creation of the structure according to the plan. This practice is quite distinct than that of Ghana where the building inspector who is employees of the local or regional authorities should specify that the notification has been accepted or rejected and not supervise the physical structure on an everyday basis, but monitor it intermittently to see that they comply with the laws.

In Ghana it is essential for an accomplished residential certificate to be issued before it is issued to its occupants to guarantee full compliance with the requirements of the construction licenses authorized (National Building Regulation, (1996). Further, it is emphasized that "after the final construction, the building is inspected for internal and external structures comply with the Building Code and drawings submitted earlier. Other works include inspected the emergency exits emphasizes, among others, and the residential certificate is issued "(Improvement Program Local Public Service, 2010, p.16).

2.1.5 Assessing the level of compliance

The degree of conformity is the extent to which the developer respects the terms and conditions, including the structural requirements of an approved permit. This can be measured in percentage or decimal forms with full respect equivalent to 100% or (1). Each developer must comply fully with the conditions of his / her license endorsed certificate before the home is delivered.

On the contrary, if after one reason or another, the developer decided to make a change in the permit approved, he or she is required to confer with local authorities for any modification during construction before final as-built design is prepared and or changes made and not conflict with any of the requirements of the Construction Regulations in the UK (Department of Communities and Local Government, 2007) Ghana's local government, however, did not make provision for any changes after authorization has been issued and clearly indicated that, "once the statutory Planning Committee bylaw approved an application for a building permit no other changes should be made to construction/layout drawings "(Improvement Program Local Public Service 2010, p.15).

2.1.6 Developers who do not meet the Approved Requirements

Developers who do not meet the permit approval requirements are often denied and asked to reapply after meeting the requirements. Section 3 (2) of the (National Building Regulation, 1996) states "No approval shall be granted to any applicant who has not Tittle right to land, and for the purposes of this regulation, good title should be in accordance with certificate issued by the Chief Registrar of Land Titles or other authorized agency as well. "Therefore, the denial of a license means the applicant restrict development or performance of the work. Indeed, "No physical development must be done in a district without the prior approval of a form of written authorization issued by the District Planning Authority" authorities should also fully ensure that all compliant building permits approved standards and minimum specifications outlined in the Construction Regulations. Unfortunately, there is no specific provision for punitive measures for local authorities that do not conform to building regulations in granting licenses in Ghana. Victoria Auditor General, (2011) in providing a solution to the reform institution problem

recommended establishing the Peacebuilding Commission (the Commission), as the new regulatory authority to oversee the building control, including the permit system, build competitive. The Commission's functions include:

- Ensure compliance with the building regulations by local authorities
- Participate in the development of national construction standards
- Monitor relevant developments in the regulation of construction standards in the country
- Monitor the system for the collection of samples of building permits
- Inform and train stakeholders in the industry
- Resolve disputes etc.

If the field survey has shown that there is no specific punitive measure for developers who do not comply with the regulations in issuing building permits for the developers, the above recommendation with respect Victoria Auditor General would be relevant. Besides, to ensure that projects submitted by the applicant in the demand for building permits fully respect the standards and requirements of the national law of the building, the Australian Building Act 2011 for issuing the certificate of conformity of the design before the applicants submitted drawings for the building permit (Australian Building Commission, 2012).

2.1.7 Developers who do not comply with Permit after Approval

Once the statutory Planning Committee bylaw approved an application for a building permit no other changes should be made to construction/layout drawings (local programs to improve government services, 2010). The promoter is required to strictly comply with the standards and minimum requirements specified in the permit. To ensure that this is actually fact, Article 11 of

Regulation of National Construction (1996) provides for the appointment of an inspector to monitor and inspect the daily work on building erection and installation all developments issued with building permits. In the United State of America, any person who negligently violates license conditions the implementation of the Building Acts is punishable by criminal penalties of $ 2500 to 25 000 $ per day of violation, or imprisonment exceeding one year, or both. In the case of a recurrence for a negligent violation, a person must be subject to other criminal penalties (United States Environmental Protection Agency, 2012).

In Ghana, however, "that the conditions included in a permit are not met, a district planning authority may give written notice to such forms as may be prescribed by regulation to the owner of the land forcing on or before a date specified in the notice to show cause in writing addressed to the District Planning Authority why the unauthorized development should not be prohibited, as amended, soothed, removes or destroys " (Local Government Act , 1993). Local Government Act 462 (1999) also provides that if the property owner fails to prove evidence of approval of the respect of development approved in the permit, the District Assembly (local authority) may demolish the structure and recover the cost of demolition by the developer as if it was debt owed to the district assembly. This aspect of the regulations is normally performed at the various meetings only to take away the demolition without recovering the cost of the unauthorized developer as a punitive measure.

2.2 Significant factors that hinder enforcement of building regulations

2.2.1 Lack of awareness of National Building Regulations

A number of research findings from different countries point to various factors impeding the enforcement of the structural parts of the building regulation provisions. According to (Dahiru,

2012), these factors include lack of awareness. They contended that the lack of awareness among the developers leads to a reduction in the extent of compliance with the relevant regulations. Awareness creation among people within the municipality on the presence of these regulations is very necessary; their awareness is a partially first good step towards stimulating compliance with the regulations. According to Mensah, (2010) few developers have knowledge of building permits including landowners. Bachelet al. (2006) noted that the growing of complexity of building regulations makes it increasingly difficult for small firms to understand them, and hence, errors on plans and drawings are eventually replicated in buildings. Imrie's (2004) study into how knowledgeable builders were of the provisions of Part M (access to and use of buildings) of the UK Building Regulations contradicted this view. Imrie (2004) noted that, although Part M is easy to achieve because it does not ask for a great deal, conflict situations arise because builders are unaware of the requirements of the approved documents. Moreover, some building control officers claimed that, although builders are given copies of design guides on access, they rarely look at them.

2.2.2 Bureaucratic procedures/ complexity of National Building Regulations

Even though there are legislation and regulations meant to create an enabling environment in setting up buildings, they are not adhered to. According to Owusu, (2000) in his study, the cumbersome nature of acquiring permits to develop, has made a lot of people ignore this very important requirement of development and go ahead with it. A report by the Santa Cruz Grand Jury emphasized that planning and building regulations that are too complex and difficult to understand may prevent people from building, and in some cases build without the necessary building permit (Santa Cruz Grand Jury, 2004). Many developers in the country know of the

existence of building regulations, but few of them actually comply with them due to its complexity. The reasons being that they think it is time consuming, costly and laborious. These developers, therefore, do not apply for permits before commencing building projects, especially private developers. Some of the developers who acquire the permit also do not conform to the specifications of the permit with excuses being that the regulatory process and systems are too cumbersome.

2.2.3 Lack of Competency

Adequate trained personnel to ensure enforcement is also a crucial factor. Consistent with the study of Berrisford, (2010) which established that vague implementation processes for structural features of buildings and inadequate technical staff in the relevant local authorities to impose execution of building regulations were adverse challenges in African municipalities. Berrisford's study identified that the local authorities neither possess clear criteria for enforcing the structural portions of the code requirements nor the technical know-how in building fitness inspection. In the absence of ratified standards and also slackness in the approval process, there would be no motivation for developers to submit their drawings for authorization. Berrisford, (2010) proposes that stepping up the approval process can help remove the hurdles to the enforcement of building regulations.

The additional challenge for each building control body is to ensure that they have sufficient competency within their own organization or expertise that they can call upon to adequately assess construction schemes that use modern techniques. Thus, it is required that those in an approval role must have the competency to assess the design being proposed, thus ensuring that safety is not compromised by the design. Through education and training, the approval bodies

must ensure their professional staff have the necessary competencies to analyze innovative schemes and approve where compliance has clearly been demonstrated. It is for this reason that third-party review is essential to ensure innovation does not progress without a full evaluation of the life safety issues being made (O'Neill, 2019).

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2.2.4 Political Factors

Again, Political meddling or presence of politics at all levels is also mentioned as a major setback to promoting the development and implementation of requirements in building codes. To confirm the earlier assertion, Obiegbu, (2008) has noted that both central and local government do not have the commitment to implementing building regulations, as is the case in Nigeria. In some cases, a government which is the main actor involved in building regulations and decisions often neglects or disapproves certain important policies and projects due to political tension and even if approved may take a long while to be implemented (Magigi and Majani, 2006). Nyangweso, (2007) opined that a high professional fee is also partly culpable for implementation constraints. Averagely, professional fees range between 3–15% of the overall building construction cost. Obviously, such sky-rocketing costs could discourage potential developers from engaging experts in the housing development projects, thus further deepening the risk of building collapse (Berrisford, 2010).

Additional reasons that hinder the improvement in implementation of building regulations in developing countries as identified from literature include: deficient data as regards building market in various countries and legislative requirements in both private and public sectors, lack of a national building safety policy, outmoded and inadequate building legislation, feeble private-sector technical capability because of a scarcity of skilled staff, obsolete bylaws, quality

control and safety structures, Inadequate funding for enforcing organizations and lack of requisite staff and other necessary logistics, causing insufficient monitoring, inspection, and certification abilities (Kimani, 2010).

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2.2.5 Corruption

Corruption recognized in enforcing building codes can often be combined with some of the worst possible catastrophes such as flooding, collapse of building, etc. Several disorganized buildings erected across the space are as a result of the indulgence in corruption, for instance, In breach of local residential codes by contractors who skipped soil experiments, constructed additional floors and ignored particular seismic demands, 65% of the apartment blocks in Istanbul and other towns in Turkey before the 1999 earthquake in which 17,00 individuals died. Turkey was given an earthquake-resistant building codes with advanced regulations. This was primarily a breakdown in the scheme of code execution. Partly thanks to the rampant small-scale corruption, building inspectors were incentivized for a different approach and for the development of bad construction procedures. Similar to this, there are numerous erected buildings in Ghana that are at unauthorized spaces and owners do not have the legal permits (Ametepey, et al., 2015; Ametepey & Ansah, 2013).

2.2.6 Non-compliance with National Building Regulations

Non-compliance is a major building regulation challenge in Ghana. Non-compliance is a violation of the Building Regulations and a criminal offence. Most countries, including Ghana, require certain processes to be followed to show compliance with these regulations. Such processes include requiring the client or builder to submit building plans, specification, health

and safety plans and surface water drainage plans to the Local Authority for approval. If construction developers overlook the application and continue to work with it, one may be liable for conviction of fines, and demolitions or alterations may be necessary in cases where the work done does not comply with rules. In any society, it is the consequences of the violation of law that discourage people from its violation. If the consequence of non-compliance with the building permit did not approve sufficient deterrent effect, it will naturally lead to a continued disregard and deliberate. The noncompliance of building regulation has resulted in many buildings not conforming to the development scheme of many communities in Ghana. The effect of this is the annual flooding, fire outbreaks, loss of life, and difficulty in utility services provision among other problems.

2.3 Strategies to enhance compliance

With the increasing number and complexity of the building regulations and standards, contractors and designers must be authorized to follow the regulations and demonstrate their conformity for the very first time. In terms of building compliance in general, strong enforcement, and inspection frequency in particular are essential elements (Burby, 2000). The key to compliance is expenditure on enforcement (monitoring, plan inspection, field inspection and technical aid) by building departments. In order to create a standards of basis in relation to a specific element of construction or design (Bell and Lowe, 2000), conformity is tested in accordance with the main objective of any building regulations.

In the 'performance approach', proposed solutions can be evaluated by testing or calculation, or by a combination of testing and calculation (Glaeser and Gyourko, 2003). Bordass, (2001) indicate that this approach is critical. The researcher comments that there has been much

interest in performance indicators in many fields, but, while recognizing the importance of such monitoring and benchmarking, the indicators can become ends in themselves, rather than aids to understanding and assessing the contribution to performance in different contexts. In most countries, some requirements are given by law and in building regulations, building standards etc., but others are provided in contract documents, site meeting records, and other project documentation, as well as other details that are difficult to specify (Josephson, 1999).

Also, another strategy for enhancing compliance is to streamline the procedures and systems of NBR. This streamlined compliance model analyzes governments in their legislative system, gathers stakeholder feedback, identifies strengths and weaknesses and how to improve the efficiency or efficiency of their processes (Winter, 2012). Locals can concentrate on enhancing their administrative processes to decrease the time it takes to move through the legislative phase to a fresh construction or construction refurbishment, when burdensome and duplicate regulatory demands are removed. Permit processing, submission of plans and review, scheduled and carried out inspections are often areas of enhancement (Winter, 2012). Relief is the practice of enhancing legislative construction procedures in order to eliminate overlap and duplication and to generate more effective administrative procedures. This study, when applied correctly, not only increases the efficiency and effectiveness of building departments in implementing the building code specifications, but also increases customer service and saves local government, its residents and private sector financially. The first stage in the streamlining method is to identify the regulatory obstacles in the administrative and enforcement code programs of a jurisdiction. This should include both an inner evaluation and customer and other stakeholder input requests. A full flow chart of regulatory processes is crucial for defining regions for enhancement across all agencies / departments concerned (Winter, 2012).

According to the Alliance for Building Regulatory Reform in the Digital Age (Winter, 2012), "it is about increasing the efficiency of modern construction codes, rules and regulations and reducing the amount of time it takes to move a new building or building renovation through the regulatory process by as much as 80% annually, saving both the private and public sectors tens of billions of dollars." "A response to a survey conducted by the National Conference of States on Building Codes and Standards (NCSBCS) and the Alliance provides evidence that streamlining worked in Ventura County, Calif. Ventura County noted that for its investment of $160,000 for a permits and inspections software package, the county had saved over $1,000,000 in costs over a six-year period, even as their staff shrank by three people and their workload increased by 80%" (Winter, 2012).

According to (Visscher, 2007), writing in the context of European building regulations, a final inspection certificate or Certificate of Occupancy is required prior to occupation in most countries to declare that the structure has been built in accordance with the regulations. (Benge, 1999) Describes that compliance with the mandatory clauses of the New Zealand Building Code is tested through a performance-based process. However, an alternative route to proving compliance with the mandatory clauses is provided, through the 'Verification Method' (calculations or test methods) and the 'Acceptable Solution' (cookbook method), which two additional tiers are collectively called the 'Approved Documents'. In South Africa, the National Building Regulations and Standards Act (Act 103 0f 1977) also requires a Certificate of Occupancy to be issued for conventionally constructed buildings and lists certain additional regulations, etc. with which contractors must comply.

2.3 Conclusion

From the literature review, the enforcement of building regulations is very important. Also, strict compliance with the Building Regulations through the approved standards is not fully enforced as it is expected. It is also clear that there is no stringent punishment in place for developers who do not comply with the building permit approved to serve as a deterrent to others, except by demolition local authorities. It is also observed that building developers lack awareness of building regulations and on the side of authorities who are to enforce building regulations to ensure compliance by developers often lacked competency, training and experience.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The chapter provided details on the approach that the study followed; details on the various techniques and methods that were used to select respondents to participate in the study. Additionally, the chapter comprises of the research design, data and sources, the target population, sample size and sampling techniques, the research instrument used, data processing and data analysis. Naoum (1998) reveals that the outcome of any research is directly related to the methodology adopted, the success and validity of the research depend on the appropriate selection and implementation of the methodology. Thus, research methodology provides a guide to ascertain the objective of the study, with emphasis on the barriers to enforcement of the National Building Regulations by relevant Authorities in Ghana.

3.1 Research Design

The research design is the complete plan used to link conceptual study issues with relevant (and feasible) empirical research. The design of the research enables the researcher to fulfill the study goals. The study design also articulates the sort of information needed, the techniques used for collecting and analyzing the information, and how all this will be used to answer questions about the studies. The research design also represents the objective of the study, which can be described as an exploratory, descriptive and explorative purpose. Thus, the design of the study is thus called the overall plan for responding to the issues posed (Saunders et al., 2007).

Accordingly, this research study adopts both a descriptive and exploratory type of research design. This design is considered appropriate because the researcher aimed to investigate the underlying problems by probing more or shedding light on the study area. Burns and Groove (2001) defines exploration research as studies to obtain fresh perspectives, to explore fresh thoughts and to achieve a better understanding of the phenomenon. The use of an exploratory survey permits the study to rely on research instruments such as questionnaires and interview guide to gather diverse information and opinions from the respondents. Moreover, the adoption of an exploratory survey guided the study to ask questions on significant factors that affect the enforcement of the National Building Regulation in Ghana as well as inquire on the awareness of building developers on the existence of National Building Regulations and identifying strategies towards enhancing compliance with the National Building Regulations.

3.2 Research Approach

This study relies on a mixed method, which combines quantitative and qualitative methods. The use of a mixed method for this study minimizes the biases, limitations and weaknesses associated with each method. Two broad methods of research are inductive and deductive approaches (Trochim, 2006). Trochim (2006) describes inductive movements as shifting from specifics to generals, while deductive starts from the particular one and finishes from the particular; experiences or observations based arguments are best put forward inductively, while legal, guidelines or other broadly accepted values based arguments are best put forward deductively. The two most common kinds of analyzes used in studies are quantitative (deductive) and qualitative (inductive). Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection,

analysis, and interpretation. Inferences were drawn based on the answers given from questions asked. Deductions were based upon evidence gathered from qualitative results and insights gained from discussions with survey participants. This study, therefore, made use of a both inductive (qualitative) and deductive (quantitative) research approach, characterized by descriptions and explanatory elements in the light of the research objectives. Thus, the adoption of a mixed method necessitates the use of a structured questionnaire and an interview guide to collect data from

Moreover, the rationale for using a qualitative method for the study is that it helped the researcher to gather information from respondents in the form of explanations, descriptions, narratives, views and thoughts the study topic through an interview guide. On the other hand, the quantitative method described and measured data obtained from respondents through designed structured questionnaires and the responses from the questionnaires were coded to generate statistical results such as frequencies and percentages.

3.3 Target Population

A population is a group of people or items from which a sample is taken from for measurement (Garson, 2006). Also, according to Nieswiadomy (2002), a population is a complete set of individual people or objects that exhibit the same common characteristics of interest to a researcher. The survey covered the Accra Metropolitan Assembly particularly, the District Planning Authorities (DPA) comprising of the Planning and Engineering Department, Building Control Departments and other key technical officers. However, due to limited time, the research was limited to the aforementioned Departments since the researcher could not study the whole population. The rationale for targeting these units was due to the fact that they play a

major role in the planning, certification, processing of permit and erection of buildings at the Accra Metropolis as well as being responsible for ensuring building regulations are implemented in accordance to the laws of Ghana. However, with Building developers due to unavailability of data, it was difficult to know the actual population. Thus, the population for building developers was undefined.

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3.4 Sampling Techniques

Burn et al. (2001) described sampling as a selection method for a section of the population that represents the complete population and the test results represent the remainder of the group. One of the benefits of choosing a sample is that gathering data from a large group of participants is less expensive and time consuming. Sampling techniques come in two categories, namely; probability sampling techniques and non-probability sampling techniques. The difference between the two is that with non-probability sampling technique, elements in the population do no stand equal chance of being selected or picked. Simth and Albaum (2005) indicated that, with the case of non-probability sampling technique, elements or components are chosen by researchers based on availability, convenience and the researchers own judgment.

Accordingly, the type of sampling technique employed was the purposive sampling technique and the snowball sampling technique. The purpose sampling technique which falls under the non-probability sampling technique criteria. For purposive sampling, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Lewis and Sheppard, 2006; Tongoco, 2007). Thus, this technique was used to sample respondents at the District/Local Authority of the Accra Metropolis.

Nonetheless, with the snowball method, one subject who is located gives the researcher the name of another subject, who in turn provides the name of a third, the third gives the name of the fourth and so on until the required sample size is covered. This strategy is viewed as a response to overcome the problems associated with concealed or hard-to-reach populations. Thus, in the context of this research, one building developer was selected, and through him, other developers were reached until the required sample size for developers was obtained. Also, due to the difficulty in locating some of the developers, the Snowball method was used to select developers since there was no sampling framework for selecting the participants (Mensah, 2010).

3.5 Sampling Size

A sample is also a topic of the populations which have been targeted (Polit and Hungler, 1999) and often used for purposes of precision and economics in large-scale investigation. (Weisberg and Bowen, 1997). The established sample size is the foundation of the real process of sampling. The sample size is the chosen part of the population using the method of sampling. Therefore, one or more population components may be present in the sample size. According to Smith and Albaum (2005), the units in sample size may be single elements or aggregates of single elements. Hence, a sample size of seventy (70) respondents was selected for the study. The questionnaires were distributed to selected sixty-five (65) respondents from the departments or units of the District Planning Authority, while interview guide was used to gather data from Five (5) respondents who are categorized as building developers.

3.6 Sources of Data

The study made use of both primary and secondary sources of data. The secondary source of data was derived from annual reports, information booklets, articles and internet sources. The Primary Data Source was gathered from the field survey which was involved with the collection of empirical data. A survey obtains information from a sample of people by means of self-report, that is, the people respond to a series of questions posed by the investigator (Polit, 1999). Here in this study, the primary data was collected from the Accra Metropolitan Assembly particularly at the District Planning Authorities (DPA) comprising of the Planning and Engineering Department, Building Control Departments and other key technical officers. As such, questionnaires were sent to staff at the local authority in the Accra Metropolitan Assembly particularly at the District Planning Authorities (DPA), while the interview schedule was used to elicit views of building contractors or developers.

3.7 Instrument for Data Collection

There were two instruments that were used for data collection. These comprised of a questionnaire and an interview guide.

3.7.1 Questionnaires

The questionnaire was designed in accordance to the objectives of the study. Generally, the way in which questions are asked in the questionnaire affects the quality of responses. It is therefore imperative that not only the right questions are asked, but also the questions are understood and asked in the right way (Oppenheim, 1996). Accordingly, the researcher visited the various departments at the convenience of staff at the local authority office to administer

questionnaires. The questionnaire consisted of both closed and open questions. The study adopted a structured closed-ended questionnaire as the main instrument for primary data collection from the respondents which is harmonious with the chosen research design and strategy. This questionnaire was self-administered and consisted of three sections; section one was made up of four questions on general background information of respondents and company, section two sought to identify the barriers that hinder the enforcement of the National Building Regulations, whereas section three identify the strategies to enhance compliance with requirements of the national building regulations by developers.

3.7.2 Interview Guide

There were face-to-face interviews in which the researcher asked respondents questions designed to elicit answers pertinent to their views on their awareness of the existence of the national building regulation. The number, wording and sequence of questions were identical for all building developers of the sample. One Major benefit of the interviews is that it gave the researcher an opportunity to get direct information from respondents on their awareness of the existence of the Building Regulations.

3.8 Data Analysis

Scheepers et al. (2003) indicated that data analysis is the process of structuring and ordering research data so that patterns within the data can become clear, and data is referred to as the information. In this study, analysis of the data was essentially an analysis of the field notes and interviews. The notes may be superficial but, however, during the process of analyzing the notes are clarified, extended and interpreted. Data analysis also provides the researcher with the

opportunity to compare and contrast interpretations, expand unforeseen findings and interpretation.

Denzin et al. (1998) pointed out that qualitative research stresses and highlights the way the social significance of the question is built and stresses its connection to the theme. Also, (Berg, 2001) intimated that qualitative research is about the meaning, definitions, concepts, characteristics and metaphors of things.

In explaining descriptive research design, (Burns, 2001) also stated that "it is a study that observes and describes the presence, frequency or absence of characteristics of a phenomenon as it naturally occurs, in order to gain and gather additional information". Thus, aim of the descriptive research design is therefore mainly to define the scenario in terms of its procedures, preferences, views, interests or phenomenon of interests (Polit, 1999).

3.8.1 Data analysis tools

This section deliberates the methods used to analyze the data collected in order to answer the research questions and achieve the objectives of the study. The initial step was data preparation from the interview which involved the conversion of raw information into an organized format for the analysis. At this step data editing, data coding and data entry were all done. The questionnaires retrieved were first sorted and checked for wholeness. Also, data from the questionnaire were entered into Statistical Package for Social Science (SPSS) version 21 and then conveyed into the Microsoft Excel 2010 for analysis using descriptive statistical tools and measures namely tables, percentages and charts.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents the analysis and data collected from respondents. In all, seventy respondents (70) participated in the study. Sixty-Five (65) questionnaires were distributed to respondents of the five selected units at the District Planning Authority of the Accra Metropolitan Committee and all were retrieved making a 100% response rate, whereas Five (5) participants who are classified as building developers participated in the interview session. The analysis was carried out based on the answers for the questionnaire and the interview and was structured with outcomes in the form of frequency distribution tables, frameworks and topics in keeping with study issues and study goal goals. Accordingly, after correct information coding and imputing as well as the content analysis, information presentations are produced from survey information using the Social Science Statistical Package (SPSS) and Microsoft excellent.

4.1 Demographic Characteristics

This section briefly explains the background of the respondents. Demographic characteristics of respondents are important to understand what constitute respondents that participated in the study. It is essential to be aware always of the features of the participants in order to place their answers in contexts, according to Adinyira and Anokye (2013). The respective demographics covered by this study therefore included gender, departmental affiliation, work and education levels. Hence, data obtained from respondents are analyzed and presented as follows:

4.1.1 Gender of Respondents

In all, 170 respondents were asked to indicate their gender, either Male or Female. Accordingly, analysis of the results is presented in Table 4.1.

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Table 4.1: Gender of Respondents

Respondents	**Number of Respondents**	**Percentage**
Male	52	74.28
Female	18	25.72
Total	**70**	**100**

Source: Field survey, 2019

Table 1 reveals the gender distribution of the respondents. Clearly, it can be seen from the table that male respondents (52) dominate the study representing 74.28% whereas 18 respondents making 25.72% were females. This actually confirms the perception that any work regarding building planning and construction is a male-dominated field.

4.1.2 Departmental Affiliation of Respondents

This section describes the number of respondents found in the departments of the District Planning Authority and the Building Developers identified with a snowball. In all, there were Seventy (70) respondents who participated in the study. Five (5) respondents were Building developers while sixty-five (65) respondents were purposively sampled from the Planning & Engineering Department, Building Control Department and the Technical Departments of the District Planning Authority of the Accra Metropolitan Assembly. Results are presented in Table Two (2) below.

Table 4.2: Department of Respondents

Respondents	Number of Respondents	Percentage
Building Developers	5	7.15
Planning and Engineering Department	22	31.42
Building Control Department	25	35.72
Technical Officers	18	25.71
Total	**70**	**100**

Source: Field survey, 2019

Findings revealed that majority of the respondents that participated in the study works at building control department. Building control is the process of monitoring post permit physical developments to ensure maximum compliance with the regulations and requirements. Qualified Building Inspectors carry out building control works on a daily basis to make sure that buildings are constructed in compliance with the permission granted by the planning authorities as required by the National Building Regulations (Section 11). (National Building Regulation, 1996). Accordingly, the above observation implies that the Building inspectors at the building control department play a major role as required by the National Building Regulation to systematically inspect the various stages of the building work as it progresses to ensure maximum compliance to the regulations and requirements.

4.1.3 Years of Working Experience

This section represents the years of working experience of respondents either at the District Planning Authorities (PDAs) or as a Building Developer. The study discovered that 27 (38.57%) of respondents have been involved in their work for over 10 years; 9 (12.85%) of respondents possess 6-10 years' experience whereas respondents who have from 1 to 5 years'

experience constituted for 34 (48.58%). The information gathered portrayed that majority of the respondents, demonstrating 48.58% had experience ranging from 1 to 5 years. It is believed that all things being equal, the validity of this research findings would depend on a large extent on the responses provided by new staff employed at the various departments. Findings obtained are presented in a pie chart below:

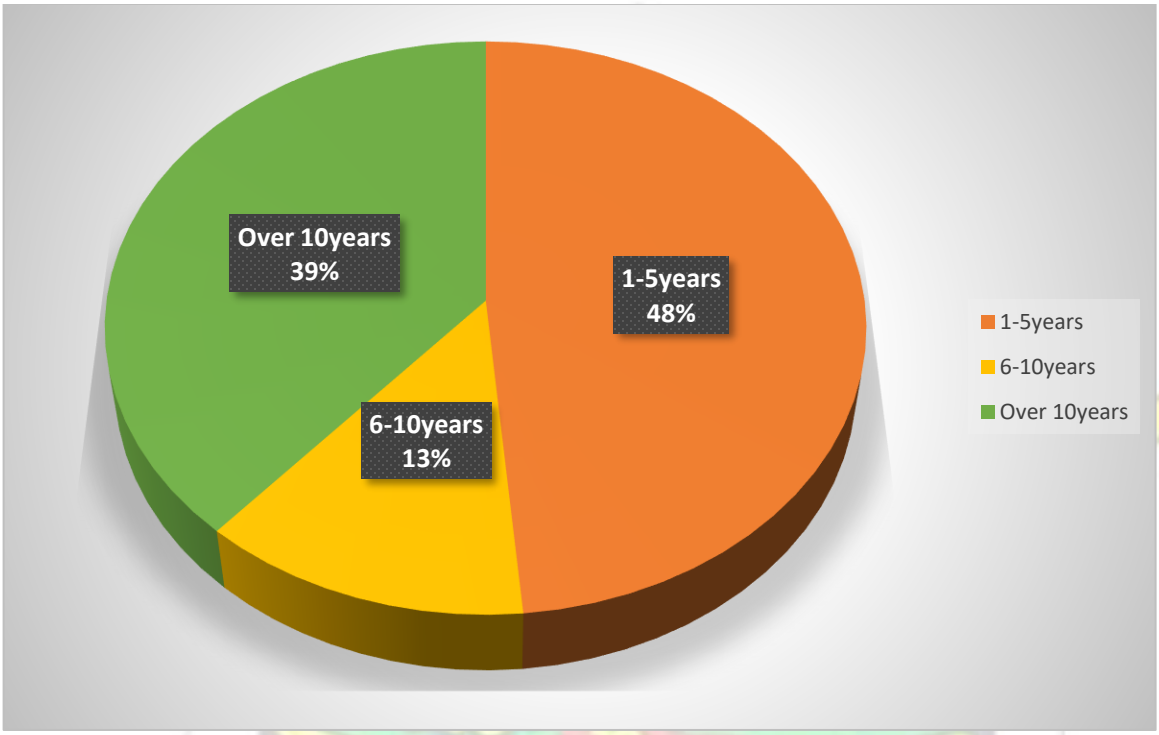

Figure 4.1: Work experience of Respondents

Source: Field survey, 2019

4.1.4 Level of Education of Respondents

It was required from respondents to indicate their educational level. Findings from the study revealed that 10 respondents representing 14.30% only had secondary education, 25 respondents making 35.70% have had polytechnic education, and 35 of them representing 50.0% have completed university education. This implies that, the majority of the respondents

are graduates from the university; therefore, they are capable of answering the questionnaires and as such the questionnaire was used for data collection from them. Findings are presented in the histogram below:

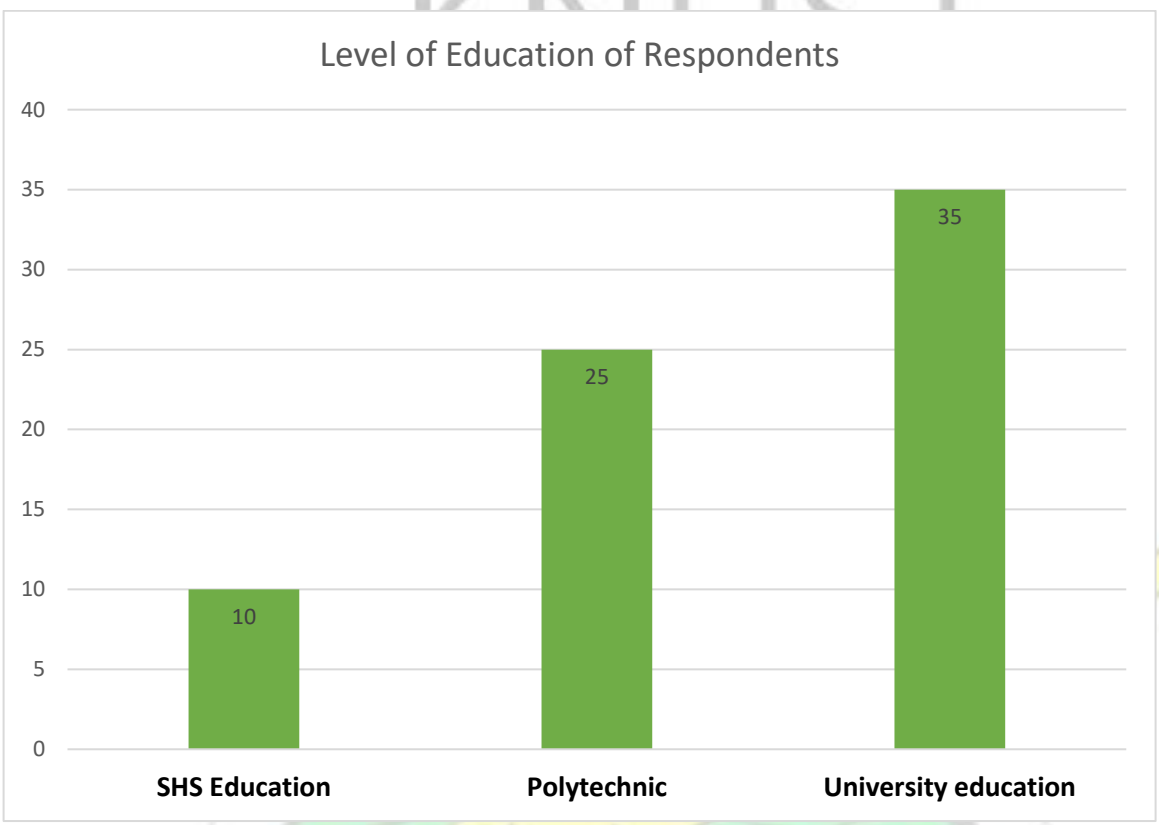

Figure 4.2: Level of Education of Respondents

Source: Field survey, 2019

4.2 Factors that affect the enforcement of the National Building Regulation in Ghana.

This section required only respondents at the District Planning Authority (65 respondents) to indicate the key factors that inhibit the enforcement of National Building Regulations. The factors hindering enforcement are captured in order of relative significance and presented in Table 4.3 below:

Table 4.3: Significant Factors that inhibit the enforcement of the NBR

Factors hindering the implementation of the NBR	Frequency	Percent	Rank
Lack of competency/relevant education (training) for staff	3	4.61	**5th**
Complexity or bureaucratic of procedures and systems	33	50.76	**1st**
Corruption	13	20.02	**2nd**
Political Interference	11	16.92	**3rd**
Lack of public education about national building regulations	5	7.69	**4th**

Source: Field Data, 2019

From Table 3 above, it was revealed that the study discovered that the most significant impeding the enforcement of the National Building Regulations is the complexity or bureaucratic of procedures and systems (50.76%). The participants say that permits are issued by several administrative centres, inspections, certificates and signatures leading to a very cumbersome operation. The participants noted that this factor often discourages the public or building developers from receiving design guidelines and building licenses before constructing any sort of construction. This finding is in line with Bachelet al. (2006) who noted that the growing complexity of the building regulations is making it increasingly difficult for small firms to understand them, and hence, errors on plans and drawings are eventually replicated in buildings. According to Freiku (2003), institutional bureaucracy compels many house-owners not to acquire building permits before they even start their building. Similarly, Owusu-mensah (2003) observed that the situation appears to be more disturbing as private land developers have

consistently ignored laid down drawings and plans and continue to build haphazardly. This factor was very important to the Staff probably because they have realized the experience clients or building developers have to go through to obtain a building permit; thus, they indicate the restructuring of the procedures.

The next most significant factor, according to respondents was corruption (20.02%) which deter developers from acting appropriately. Staff at the District Planning Authority perceived that the most important factor that affects the implementation of the national building regulation is corruption. Corruption is disheartening to note that corruption was rated as the second most significant factor inhibiting enforcement of national building regulations. According to the respondents, there are situations where monies paid as kickback was higher than the official money paid with receipt. This practice thwarts the smooth enforcement of the na The participants say that permits are issued by several administrative centres, inspections, certificates and signatures leading to a very cumbersome operation. The participants noted that this factor often discourages the public or building developers from receiving design guidelines and building licenses before constructing any sort of construction. national building regulation. In addition, building developers who fail to acquire a permit before building often bribe authorities to acquire a permit, while those who flout the regulations engage in corruption with regulators to free themselves from sanctions and punishment.

Political meddling or presence of politics at all levels is mentioned as a major setback to promoting the development and implementation of requirements in building codes. This result confirms the earlier assertion of (Obiegbu, 2008) who noted that both central and local government do not have the commitment to implementing building regulations, as is the case in Nigeria.

Lack of public education about the national building regulation (7.69%) was ranked as 4th by respondents. According to the respondents, most people particularly building developers are not even aware they have to obtain a permit before commencing their building development. Those who are aware also do not know the processes and the importance of obtaining a building permit before developing their building. This study discovered that this finding supports the observations of Adinyira and Anokye (2013) who identified that, most unauthorized buildings occur due to lack of education or enlightenment and ignorance of people about planning schemes and building regulations. Likewise, Owusu-Mensah (2003) observed that, to a large extent, people have disregarded planning schemes and building regulations.

The factor respondents considered as having the least effect is the Lack of competency or relevant education (training) for staff to effectively enforce compliance (4.61%). This result is consistent with the study of (Berrisford, 2010) which established that vague implementation processes for structural features of buildings and inadequate technical staff in the relevant local authorities to impose execution of building regulations were adverse challenges in African municipalities. Berrisford's study identified that the local authorities neither possess clear criteria for enforcing the structural portions of the code requirements nor the technical know-how in building fitness inspection. In the absence of ratified standards and also slackness in the approval process, there would be no motivation for developers to submit their drawings for authorization. (Berrisford, 2010) proposes that stepping up the approval process can help remove the hurdles to the enforcement of building regulations. Thus, through education and training, the approval bodies must ensure their professional staff have the necessary competencies and training to analyse innovative schemes and approve where compliance has clearly been demonstrated.

4.3 Building Developers' awareness of National Building Regulations (Building Permit).

As part of the response from the interview on building developers' awareness of national building regulations (permit), there was a question that required respondents to indicate what they know about building permit. As such, Findings retrieved from the five (5) respondents is categorized in themes and presented below:

1. **The building permit is as a License to Build**

The study discovered that the majority of building developers were aware of a building permit as a License to Build. This indicates that the majority of developers were aware of Building Permit which is a requirement of the National Building Regulations. Accordingly, the level of awareness on the national building regulations (L.I.1630), exhibited by Developers at Accra Metropolis was very high.

The first (1st), Third (3rd) and Fifth (5th) Developers that were interviewed revealed that,

First (1st) Respondents: *"Most of us who build for our clients ensure we acquire building permit before construction because that is our license to build and as for me, in order not to experience any embarrassment while building especially from AMA to stop work, I ensure I follow the exact rules as well as conform to the permit I have obtained since that is an indication of my license to construct my building, but yet still I know there are other builders who are disobedient so they may start building first and when they see that AMA has used red ink to write stop work, then they rush to the office for permit that is when they use illegal means to get building permit.*

Third (3rd) Respondents: *"What I know since I started as a building contractor for the past 10 years is that, building permit is a license granted by the Municipal and District Assembly and without the permit, they will charge you to pay a fee but if you refuse they will pull down your building".*

Fifth (5th) Respondents: *"I know that a building permit is a license for builders to build or construct a land just like how drivers are given license to drive on a road so without the license you cannot drive and similar, without the permit you cannot build".*

To a large extent, the study discovered that, most Developers are aware of the National Building regulations on building permit especially [Section 40(1-4)] which says that no person or organ in the Metropolis, Municipal or District shall erect or install any physical development without prior approval in the form of a written permit by the metro, municipal or district planning authority as indicated by National Building Regulations 1996, LI 1630 (National Building Regulation, 1996). In the agreement, (Awu, 2012) indicates that building permit is a license granted to a developer to commence new building works, an extension of existing structures, demolition, repairs, change in use, plumbing and mechanical works such as electrical, air conditions and heat emitters etc. In order to begin the development of its building, everyone must also be granted an authorized building permit. It is also underlined that "no developments in any district should be done without the previous consent of the District Planning Authority in the form of a letter of permission. (Local Government Act , 1993). Therefore, it is essential to issue a completion certificate for the construction erected in compliance with the laws to make sure that the construction permit conditions are given and approved before occupants are granted occupation (National Building Regulation, 1996)

2. Building Permit as an important development guide

Besides, the study discovered that there are other developers who view building permit as an important development guide to build. Interview with the Second (2nd) and Fourth (4th) Developers stress the fact that Permit is an important development guide containing useful information or plan regarding the construction and it is important for one to get an application for it to ensure they are building a structure that is accepted by national building regulations and is safe for occupants.

According to the Second (2nd) Respondents,

"When one wants to build after acquiring title to the land, building drawings and any other additional requirements, the next are for the developer to submits directly the application to the respective planning authorities for a permit which is a development guide to commence construction."

Similarly, the Fourth (4th) Respondents also revealed that,

"Building permit provides the plan for construction and without any building permit, it becomes difficult to construct your building especially in Accra where AMA can easily prevent the construction of the building."

From the study, it is observed that respondents are aware that building permit serves as an important development guide and these responses are in line with (Vonweller, n.d) who stated that building regulations or building permits exist to guarantee that the building job complies with minimum building norms, health and security requirements and energy conservation requirements of the occupiers. The purpose of building permit is to among others ensure that the proposed project conforms to the building regulations and development control guidelines

and thereby, uphold the reliability of the proposed structures. Also, building permit guarantees that the proposed land to host the building is suitable for the purpose and that it is covered by the required registered documents. Again, it ensures that the materials being used for the building satisfy the minimum required specification and that all the general architectural engineering and planning standards have been achieved. Thus, it is acceptable to know that building permit is also an important development guide.

4.4 Strategies to enhance compliance with National building regulations.

It was required that the respondents who are Staff of the District Planning Authority of the Accra Metropolitan Assembly to indicate either Agree or Disagree to four most important measures to compliance with National Building Regulations as presented in Table 4 which include Public Education and Sensitization on National Building Regulations, sanctioning of defaulters through intensive punishment, streamlining procedures and systems that reduce bureaucracy. However, surprisingly, findings revealed that all the strategies assessed in the study were marked 100% and therefore considered significant and important for enhancing the enforcement of the NBR.

Table 4.4: strategies to enhance compliance with National Building Regulations

	AGREE	DISAGREE	PERCENT
Public Education and Sensitization on National Building Regulations	65	0	100.0
Sanctioning of defaulters through intensive punishment	65	0	100.0
Streamlining procedures and systems that reduce bureaucracy.	65	0	100.0
Frequent Inspection of Construction with Security Officers and Monitoring Team	65	0	100.0

Source: Field Data, 2019

From Table 4 above, the study discovered that all respondents Agree 100% to the strategies that were listed as paramount to enhance compliance with National Building Regulations. It is very important to develop various strategies and mechanics including what was identified by the respondents in order to increase compliance level. This implies that all respondents have fair knowledge on possible solutions to ensuring building regulations compliance.

Besides, from the study, it was identified that all respondents agree that there should be public education and sensitization on Building National Regulations. Perhaps, since respondents are the staff of the District Planning Authority, they have realized that awareness of the NBR is a challenge, therefore, call for public education and sensitization of the general public. This study is in line with (Dahiru, 2012) who revealed with his report that the lack of awareness among the developers leads to a reduction in the extent of compliance with the relevant regulations. Thus, awareness creation through education and sensitization among people within the municipality on the presence of these regulations is very necessary; their awareness is a partially first good step towards stimulating compliance with the regulations.

In addition, findings from the study discovered that all respondents agree that there should be sanctions of defaulters through intensive punishment. These findings are in line with the Section 52 of the National Building Regulations Acts, LI1630 (1996) under review which reveals that the DPA in accordance with these regulations, therefore, a development authorization may be withdrawn or extra conditions may be imposed for the license already given depending on the current conditions; particularly if a defaultant fails to demonstrate adequate cause for the failure to demolish the building. The individual who violates any of the conditions of the license granting the right shall be guilty of a violation of a fine or prison summary of the conviction. Likewise, the Local Government Act 462 (1993) imposes higher punishment for continuing offences. Thus, it is important to ensure sanity and to enhance compliance by meticulously enforcing the National Building Regulations whenever it is considered appropriate.

From the study, it was revealed that streamlining the procedures and systems of NBR to reduce bureaucracy was agreed on which is in accordance with the findings of (Winter, 2012) on streamlining compliance model. According to (Winter, 2012) rationalization can enhance building regulatory processes, stop records from overlapping or replicating, and enhance administrative procedures for the issuance of construction licenses. By taking and implementing streamlining correctly, it not only increases the efficiency and efficiency of building departments in implementing the construction code specifications, it increases customer service and save the local government, residents and the private sector financially. Accordingly, “the first step in the streamlining process is to determine what regulatory barriers may exist in a jurisdiction’s code administration and enforcement program. This should include both an internal review, as well as soliciting input from clients and other stakeholders. A

complete mapping (flow chart) of the regulatory process, across all agencies/departments involved, is essential to identifying areas for improvement" (Winter, 2012).

Accordingly, the study also discovered that respondents believe that frequent inspection of construction with Security Officers and Monitoring Team can enhance compliance. In other words, use of specially constituted Task Force or Monitoring Teams which are made up of security guards and supervisors can help improve on compliance since that cause those recalcitrant building developers to adhere to the regulations. As such, the Monitoring Team and the Security Officers will ensure those who are building at unauthorized sites are brought to book and called to stop construction works particularly when they are acting against the law and are unable to produce building permit. On a whole, this practice can effectively ensure that the general public complies with the National Building Regulations while preventing the alarming rates of collapse building and other building accidents.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.0 Introduction

Chapter Five (5) gives a brief summary of the major findings of the study, conclusions drawn from the findings, and suggests recommendations that can be adapted to deal with the limitations.

5.1 Summary of findings

The general objective of this research was to access the barriers to enforcement of National Building Regulations by Relevant Authorities in Ghana. In all, 70 respondents were sampled for the study, comprising of five (5) respondents who are Building Developers and Sixty-Five (65) respondents who are Staff of the District Planning Authority of Accra Metropolitan Assembly. Out of the 70 respondents who participated in the study, it was discovered that there were 52 male respondents who dominated the study representing 74.28% while 18 respondents making 25.72% were females. Key findings from the study were discussed in line with the objectives of the study.

The study found out that there are barriers that inhibit the enforcement of National Building Regulations in Ghana and these factors that hinders the enforcement of NBR are complexity or bureaucratic procedures and systems, corruption, Political Interference, lack of public education on building regulations and lack of relevant education (training) for staff. However, rated high among the factors was complexity or bureaucratic of procedures and systems. In addition, the study sought to access the awareness level of Building developers on what Permit is and it was

discovered that Building Developers are aware of what Building Permit, with a fair idea as its being a license to build or an important development guide.

Additionally, the study sought to identify strategies to enhance compliance with NBR and it required that the respondents who are Staff of the District Planning Authority of the Accra Metropolitan Assembly to indicate either Agree or Disagree to four most important measures to compliance with National Building Regulations which include Public Education and Sensitization on National Building Regulations, Sanctioning of defaulters through intensive punishment, streamlining procedures and systems that reduce bureaucracy. Nonetheless, remarkably, findings revealed that all the strategies assessed in the study were marked 100% and therefore considered significant and important for enhancing the enforcement of the NBR.

5.2 Conclusion

In conclusion, the results indicated that corruption was the most important implementation factor as it has the highest average rank among all the factors. Local authority staff, building owners and building practitioners believe that the most important factor that affects the implementation of the NBR is corruption.

5.3 Recommendations

Based on the findings and conclusions of the study, the following recommendations are made:

The government needs to pay more attention to the National Building Regulations 1996, (L I 1630), particularly by ensuring that it is effectively enforced in Ghana to encourage compliance. Also, it is recommended that the relevant Authorities streamline permit acquisition

process since it was established in the study that the complexity of procedures and systems is the main factor that hinders enforcement of National Building Regulations.

Also, to the District Planning Authority, it is recommended that authorities must continuously educate and train their staff as well as educate the general public on building regulations to increase awareness while seeking for external support from the security agency to ensure those who default are sanctioned to serve as a deterrent to other building developers.

In addition, this study is recommended for future research, by expanding the scope of the study to unravel the effect of those barriers particularly complexity and bureaucratic of procedures and systems on compliance.

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APPENDIX

Appendix: Interview Guide.

I am a final year student researching on the topic "Barriers to Enforcement of National Building Regulations by Relevant Authorities in Ghana." and I would be very grateful if you could kindly help me to complete the questionnaire below. The information gathered shall be used solely for the research purposes and shall be treated confidentially.

Thank you for your anticipated cooperation.

1. Please, what is your gender?
2. Are you a Building Developer?
3. How long have you been working as a Building Developer? Is it 1 to 5 years, 6-10 years or over 10 years?
4. What is your level of education? Is it SHS education, Polytechnic education or University education?
5. Tell me what you know about building permit.
6. How important is Building Permit?

Appendix: Questionnaire

Introduction

I am a final year student researching on the topic "Barriers to Enforcement of National Building Regulations by Relevant Authorities in Ghana." and I would be very grateful if you could kindly help me to complete the questionnaire below. The information gathered shall be used solely for the research purposes and shall be treated confidentially.

Thank you for your anticipated cooperation.

SECTION A: BACKGROUND INFORMATION

1. Sex: [ ] Male [ ] Female

2. Educational background: (your highest completed level of education)

[ ] SHS Education

[ ] Polytechnic Education

[ ] University Education

3. What is your working experience?

[ ] 1 to 5 years

[ ] 6-10 years

[ ] Over 10 years

4. Indicate your Department.

[ ] Planning & Engineering Department

[ ] Building Control Department

[ ] Technical Departments

Section B

5. Are you aware of the National Building Regulations?

[ ] Yes

[ ] No

If yes, answer question 4

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6. Please rank the following in the order of importance, what do you think are the key factors that hinder enforcement of National Building Regulations in Ghana: (1=extremely important 2=Very important 3=important 4=less important 5=less Important)

(a) Factors hindering the implementation of the NBR ……...…….……

(b) Lack of competency/relevant education (training) for staff …….....

(c) Complexity or bureaucratic of procedures and systems …….....

(d) Corruption……..

(e) Political Interference ……..…

(f) Lack of public education about the building regulations ……

Section C

7. Can you describe how much you agree or disagree with the following statements?

1. AGREE 2. DISAGREE

	AGREE	DISAGREE
Public Education and Sensitization on National Building Regulations		
Sanctioning of defaulters through intensive punishment		
Streamlining procedures and systems that reduce bureaucracy.		
Frequent Inspection of Construction with Security Officers and Monitoring Team		

Thank you very much for your time.