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GHANA**

Affordable Housing Delivery in Ghana: The Role of Public Private Partnerships

by

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DECLARATION

I hereby declare that this submission is my own work towards the MSc Project 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

The idea of Public Private Partnership (PPP) as a model that sets out a relationship between the Public and the Private sectors has been seen as an arrangement where the two entities combine their strengths and weaknesses in terms of resources and their expertise for the delivery of a service for the benefit of the public such as the affordable housing. Governments over the years have prioritized this need in many forms to provide housing units that are seemingly affordable to its populace. This study aimed at exploring the adoption of the PPP in the delivery of affordable housing to curb the upsurge of Ghana's housing deficit. The objectives included the following: to identify the major causes of housing deficits in Ghana, to identify challenges faced with the effective implementation of PPP in affordable housing deliveries and to identify key success factors regarding the adoption of PPP in affordable housing delivery. The study concentrated on the key players in the housing sector in Ghana; mainly professionals with knowledge and experience in the PPP arrangement system. Data was collected and analyzed using Statistical tools which included: Factor Analysis, RII and percentages. The outcomes of the study depicted that: the high cost of land and building materials were strongly associated with the high housing cost. The effective practice of accountability between parties among others such as shared trust and vision between partners were some success factors identified. It was concluded that housing deficit largely affects the populace which government alone is unable to resolve. Affordable housing delivery should be viewed as national issue. More so, for efficient PPP arrangement, government should put in place equitable policies to attract and sustain the private sector's unflinching participation in partnering to deliver affordable housing to Ghanaians.

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DEDICATION

This dissertation is dedicated to my family, Philomina Newlove-Bonney my wife, my son Palmer Newlove-Bonney, my parents, siblings and in-laws.

LIST OF ABBREVIATIONS

AMA	Accra Metropolitan Assemble
BBO.....	Buy, Build and Operate
BF.....	Build-Finance
BLT.....	Build Lease and Transfer
BOO.....	Build-Own-Operate
BRRI.....	Building and Road Research Institute
BOT.....	Build- Operate and Transfer
DB.....	Design and Build
DBO.....	Design Build and Operate
DBFMO.....	Design-Build-Finance-Maintain-Operate
DBFO.....	Design, Build, Finance & Operate
DBFO.....	Design-Build-Finance-Operate
FDI.....	Foreign Direct Investments
GDP.....	Gross Domestic Product
HND.....	Higher National Diploma
OMC.....	Operation and Maintenance Contract
PPP	Public Private Partnership
NGO.....	Non-Governmental Organization
RII.....	Relative Importance Index
SHC.....	State Housing Corporation
SPSS.....	Statistical Packages for Social Sciences
SSNIT.....	Social Security and Nation Insurance Trust
TMA.....	Tema Metropolitan Authority

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

Infrastructure, both physical and social form integral part of the economic development of most countries as well as providing basic services and human needs. All over the world, policies regarding housing are formulated purposely to address challenges faced with housing quantity, quality and cost. The subject of housing is key to governance as it is prime to human and social development, economic growth and enhancement of a country's security and stability (Giddings, 2007).

As recorded by Kissick et al. (2006), there is a global housing crisis faced by the world particularly in the cities with almost one billion people living in substandard homes. This partly could be attributed to the hike in populations that have increasingly pushed governments and private sectors to offer some housing solutions to bridge such accommodation deficits to some extent. A considerable gap has been recorded by many countries between the typical price of housing traded on the housing market and the indicative price that is estimated to be affordable to lower-income households (Gilmour and Milligan, 2012). The 'slum problem', 'low-rent housing problem' and the 'housing shortage' which used to define the housing difficulty in some past decades in recent years have transformed into 'housing affordability' in many countries (Hulchanski, 1995).

In most countries (especially outside the United States) after the war period, governments have been the principal provider of infrastructure although this has begun to change over the past few decades (Grimsey and Lewis, 2002). Limitations on public funds in many

aspects normally do not permit governments to solely channel sufficient efforts into curbing this housing deficit. While governments are faced with pressure to reduce public sector debt, they also seek to improve the livelihoods of the people through developments. In recent times, governments have sought to partner with private sectors to finance the provision of infrastructure (including housing) in most countries. This arrangement has been referred to as the Public-Private Partnership (PPP).

Ghana, as a lower middle income country pursuing an accelerated development of physical infrastructure such as housing, the country recognizes the essential role of private sector investment and PPPs in addressing the financing gap and improving the quality of infrastructure services. Although over the years successive governments have experimented development plans somewhat to ensuring that infrastructure of the country is improved (Ofosu-Kusi and Danso-Wiredu, 2014), little can be said about sources of funding, its sustainability and positive impact on the citizens. Private sector participation in financing and eventually addressing Ghana's housing issues, has been identified as key. The PPP is a concept that sets out contractual agreement between a public entity on one part and a private sector on the other part, with clear agreements against mutual goals in the provision of infrastructure conventionally delivered by the former. Governments are increasingly faced with the issue of constrained funds coupled with their inability to generate supplementary revenues. In recent times, governments have turned to this PPP procurement model by partnering with private sectors in infrastructure financing (Havlicek, 2015).

1.2 PROBLEM STATEMENT

Fundamental as it may be, Africa and for that matter Ghana has been challenged with the issue of housing deficits over the years. Coupled with this, the constraints of housing provision in the country are characterized by instability of the macroeconomic environment, high inflation and cost of borrowing, issues with land administration and titling, and most of all the lack of financial muscle for construction (UN-HABITAT, 2011). This implies that the housing issue extends beyond just their scarcity and quality; the cost to individuals, households, corporate bodies and the like in acquiring and or renting such housing facilities is a key factor to consider.

Stakeholders in the housing sector since the early 2000s have come to terms with the fact that Ghana as a country is in lack of about 1.7 million housing units. This figure is expected to worsen with the upsurge in the country's population from the 2010 Population and Housing Census among other factors. The nation's housing needs are diverse; some of which are:

- Lack of secured tenancy, homelessness and unaffordable accommodation,
- Poor housing conditions as a result of inadequate basic amenities such as toilets, baths, kitchen etc.
- Mismatch/unsuitable housing comprising overcrowding and shared amenities,
- Lack of social housing for vulnerable groups such as the aged and persons with disabilities.

It has been the responsibility of Government to provide housing that are affordable to the public for rental or outright ownership. As a result of government's limited budget

considering the other competing and pressing national needs, this expectation has not been realized over the years. Government's financial capacity would need to be somewhat augmented by the private sector in order to address this housing issue via PPP. The absence of policies to regulate and structure this system have continuously restrained the private-sector intervention to be fully harnessed (Tsenkova and Witwer, 2011).

Ghana as compared to other Sub-Saharan African countries has the urban population poorly housed with about 60% of urban households occupying single rooms (UN-HABITAT, 2011). There is the belief that this housing issue could be curtailed through a regulated partnership between the public and private sectors; hence this research.

1.3 RESEARCH QUESTIONS

The following examine three main hypotheses for this study:

1. What are the challenges faced by both the private and public sectors in embracing the PPP system of financing and or delivering affordable housing?
2. What are the key success factors for the adoption of PPP in the delivery of affordable housing?
3. What are the major causes of housing deficits in Ghana and the innovative ways of incorporating the PPP system to curb the menace?

1.4 AIM AND OBJECTIVES

1.4.1 Aim

The main aim of this study is to:

Explore the role of adoption of the Public-Private Partnerships in the delivery of affordable housing to curb the upsurge of Ghana's housing deficit.

1.4.2 Objectives

The specific objectives of the study are to:

1. To identify the major causes of housing deficits in Ghana.
2. To identify challenges faced with the effective implementation of PPP in affordable housing deliveries.
3. To identify key success factors regarding the adoption of public-private partnerships in the delivery of affordable housing.

1.4 SIGNIFICANCE/ JUSTIFICATION OF STUDY

Over the years, both academic and policy-makers have considered adequate provision of infrastructure as a key ingredient for economic growth. Consistently, Sub-Saharan Africa of which Ghana is a member is ranked as the least of all developing regions with regards to infrastructure performance. Increasingly, a number of ‘onlookers’ attribute the major challenges faced with economic growth and poverty reduction to the infrastructural deficiencies across these regions (Calderon *et al.* 2011). It is worth noting that housing is a key aspect of infrastructure and by inference, a boost in this sector shall have a major impact on the economy of the country.

This study is therefore imperative for the following reasons:

- Contribute to the body of knowledge on infrastructure development and sustainability.
- Provoke rethinking into strategizing public reforms and policies to engage the private sector in infrastructure development and poverty alleviation.

- Examine alternative means to hasten the pace of this course and to realize its affordability both in the short and long run without government's full and direct control over the management of such funds.
- Raise awareness on the need of policy makers to strive for a long term national policy vision for Ghana without solely depending government funding.

1.6 METHODOLOGY/ RESEARCH DESIGN

The empirical basis of sources of data for this study are primary and secondary. Primary data were collected from structured interviews based on literatures from other related research. The secondary sources of data included government publications, journals, periodicals, research papers, papers presented by scholars. The secondary information was used to complement the primary data collected in order to enhance the validity and reliability of the findings. In addition, content analysis was employed by examining contents of key reports, theories, government documents and other related studies on the subject matter. The results from the data were then transcribed and analyzed using factor analysis and Relative Importance Index (RII).

1.7 SCOPE OF THE STUDY

This study is limited to the contribution, impact and other dynamics of PPP-inspired execution of affordable housing. It considers strategies available for the effective implementation of the PPP system of financing and or delivering affordable housing. The geographic coverage of the study was in the Greater Accra Region of Ghana.

1.8 STRUCTURE OF REPORT

This thesis has been structured into five (5) chapters. Chapter one comprises the background of the study and the research problem statement. It also includes the research questions and objectives of the study; and discusses the methodology adopted in brief and the definition of concepts and operational definition of terms. It also covers the significance of the study and the scope and limitation of the study. Chapter two examines the conceptual definitions of public-private partnerships and affordable housing, overview of the prevailing situation in Ghana, theoretical framework and then review other literature regarding the study.

Chapter three discusses research methodology as well as the research design employed. The chapter also includes sampling and determination of sample size. Chapter four considers the evaluation of plans and respond to the objectives set out while the chapter five is dedicated to summary of findings, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter encompasses review of literature related to the subject under consideration. The following presentation format is adopted: Review of the housing situation in Ghana; The Public-Private Partnership (PPP) model; The concept of housing affordability; Stakeholders roles in the delivery of affordable housing through the implementation of the PPP; Trends and Emerging Strategies and Policies in Affordable Housing deliveries via PPP concept; Challenges faced with provision of affordable housing through the PPP concept.

2.2 ASSESSMENT OF THE HOUSING SITUATION IN GHANA

In 2010, results from the Population and Housing Census indicated that Ghana is faced with a housing deficit of over 1.7 million units which is an increase of about 500,000 from the previous census in the year 2000. This has been attributed to increase in population growth rate and urbanization against a deteriorating rate of housing units supply to meet such increasing demand (Ansah and Ametepey, 2014). In the view of urban economics regarding the housing markets, Glaeser and Gyourko (2003) attribute the restriction on housing supply mainly to the supposed constraints with land and its acquisition. This is as a result of the fact that land, which is inelastically supplied naturally hampers the delivery of new housing at relatively lower construction costs. It has also been argued that land is fairly in abundance; the challenge however has been attributed to the inadequacies of regulatory bodies such as the zoning authorities which ultimately makes cost of new construction extremely expensive. These costs can take the form of classic impact fees or

underhand approval processes that either slow the process or put up some rather expensive leaps to construction costs (Glaeser and Gyourko, 2003). The situation in Ghana besides the weak institutional framework for housing is also highly unorganized with out-of-date laws concerned with land ownership planning and management, controls in development, mortgage and housing financing, rent charges etc., which impact both directly and indirectly on housing delivery (Ghana Statistical Service, 2014). Although the Ministry of Water Resource, Works and Housing (MWRWH) is ultimately accountable for setting up housing policies and their regulation, it seem to lack the technical capacity and sole commitment to same as it has other seven directorates to oversee. The hike in land scarcity and prices have been associated to rapid urbanization. Land could therefore be described as one of the major drivers of housing delivery and may positively or negatively impact on the eventual cost of provision of housing as they translate into high rental costs and housing prices particularly in the city centres. In other information gathered by the Rent Control Department, the ‘dollarization’ of the rental and sale of housing has been identified as having significant impact on housing prices and access which has resulted in a greater number the populace resorting to ‘fourth class residential areas’ dominated by ‘compound houses (i.e. single bedrooms and chamber/halls with shared utilities and other sanitary facilities. Rental charges per month could be as high as US\$70 per month (without utility bills) even in such places with between 2 to 3 years rent advance payment (Ghana Statistical Service, 2010).

2.3 OVERVIEW OF HOUSING POLICIES IN GHANA

The importance of housing to individual households and the society as a whole cannot be over emphasized (UN-Habitat, 2011). The provision of reasonably priced shelter in most developing countries is key and of paramount importance to low and middle-income households according to (Ametefe et al, 2011). Having identified housing as a vital and critical part of the economy and a factor to minimize poverty, social stabilization and growth in the economy, many governments the world over and for that matter Ghana have strived to contribute to the improvement of the housing situation in their various countries (GoG/MWRWH, 2009). According to the Ghana National Development Plan (2008), several government interventions rolled out over the years have been seen to be ways to solve the ever increasing housing needs which far outstrip the supply generating a dire shortage. The Daily Graphic Online (2014) as a buttress to GoG/MWRWH (2009) assertion, indicated that Ghana's social housing deficit of about 1.7 million requires a minimum of 170,000 housing units to be put up annually for ten years in order to address this problem. It presupposes that government's participation in generating housing delivery-oriented schemes to expedite this course is key to its realization. The chart below presents an estimated housing delivery deficit as against the housing supply rate over the years:

Table 2.1

Year	Housing Deficit	% of Delivery	Need
1980's	250,000	2	133,000
1998	300,000	2	140,000
2000	700,000	2	199,000

2008	1,000,000	2	150,000
2010	1,200,000	2	300,000

Source: Kwofie et al. (2011).

In addition to the several issues with the housing sector in Ghana regarding quality, quantity and cost, the country is also faced with the challenge of the nonexistence of a robust National Housing Policy Framework (NHPF) to help sanitize and regulate the system although there has been a draft policy that has been in minimal use since the 1990s (UN-Habitat 2011). According to ISSER (2013), government’s housing policy since the 1990s had remained unchanged within the context of rapid urbanization and globalization until in the year 2015 when it was revised. This ‘delay’ has had some negative impact in addressing the housing issue. The National Housing Policy (2015) pursues on the basis of its understanding of the “enabling framework” for Government to play a less direct role within the housing sector in future but to boost private sector developers, cooperate groups and other actors in the delivery whiles Government plays the facilitation role equitable to both parties involved. It is further argued that it is unlikely that the private sector shall deliver housing for low-income groups and the poor (where the need is greatest) without adequate incentives from the government to the sector (ISSER 2013). The high cost of land and building materials including town planning procedures preventing stakeholders from utilizing local technology and raw materials, have encouraged private developers to resort to delivering housing units targeted at the middle and upper income earners in the Ghanaian society. Some interventions by Governments with the previous NHPF approach involved Schemes for Roof and Wall Protection Loans, supply of some building materials, Construction of Low-Cost Houses, Government Estate Houses and Rural Housing Co-operatives among others which with time became unsustainable (National Housing Policy,

2015). The policy objectives include:

- a. “To encourage greater participation of the private sector in housing delivery: that is to establish a lasting national housing program decentralized to the Metropolitan, Municipalities and Districts (MMDAs) level, facilitate private sector access to lands through some land ownership confirmation and guarantee arrangements with the MMDAs, provide some financial motivations to boost private-sector investment in housing infrastructure to particularly benefit lower-income households, to encourage partnerships in housing development between public, private and community actors, promote diversity in cost recovery for private sector investors in housing and infrastructure development through mechanisms such as land swaps, ring-fencing arrangements, and the like.”
- b. “To generate an friendly environment for investment in rental of housing including: promoting the expansion of rent-to-own housing schemes to expedite the early access to housing in the short term for low income households and starter-families, appraise the existing Rent Act, Act 220 (1963) to rationalize rent regulations and sanction the Rent Department to promote investments in the construction of rental housing as well as the security of vulnerable households from abuse by house owners, encourage recuperation of disused and/or abandoned properties into rental housing in collaboration with the MMDAs; etc.”
- c. To encourage maximum utilization of land for housing schemes.
- d. To quicken home improvement or upgrading of the current housing stock.
- e. To encourage growth of well-ordered human settlement with physical and social amenities.
- f. “To make housing programs more accessible to the poor (Social Housing)”.

g. “To upgrade existing slums and prevent the occurrence of new ones”.

2.4 SOME CAUSATIVE FACTORS OF THE HOUSING DEFICIT IN GHANA

Several factors can be associated with the current housing deficit being suffered by Ghana; some of which are (1) Lack of Continuity of Policies due to Change of Government, (2) Population Growth and Urbanization, (3) High Cost of Land and Inconsistencies in Land Administration, (4) High Cost of Building Materials, (5) Lack of Infrastructure and Provision of Utility Services, and (6) Inadequate Mortgage Financing Institution (Afrane et al. 2016).

- 1. Lack of Continuity of Policies due to Change of Government:** Successive governments in attempts to address the housing situation in Ghana have over the years initiated policies that sought to boost housing supply. The Government of Ghana in the year 2005 commenced the affordable housing program as one of the interventions to deliver over 100,000 housing units through Private Public Partnerships (PPP) across the country (Bank of Ghana, 2007). All projects related to this program were halted and eventually abandoned following a change in government in the year 2007. This housing program which were at several stages at the time which if completed would have accommodated hundreds of families are currently being occupied by squatters with no convincing reasons for their abandonment (Ghanaweb, 2012).
- 2. Population Growth and Urbanization:** The rapid growth in population especially in the city centres has put some pressure on urban infrastructure, social amenities and most of all housing conditions (Modern Ghana, 2010). Ghana’s urban population is estimated to be about 52% of the national total growth and this pose some severe scare to the country’s already challenged housing and sanitation issues (UN-HABITAT,

2006). According to Business World Ghana (2012), the housing deficit in Ghana can also be heavily attributed to rural-urban drift which has increased urban housing. There has however been an increase to slums that consist of containers, kiosks with very superficial provision of amenities (plumbing, drainage, power connections, etc.) as some means of providing shelter especially in the major cities and towns. In 2005, according to UN-HABITAT (2006), Sub-Sahara Africa recorded about 199 million slum dwellers representing 20% of the world's total slum population and also had the highest urban growth rate of 4.58% with the highest slum growth rate of 4.53% annually. The rapid population growth both in the rural and urban are major dictating factors to the housing deficits in the country as government is unable to meet the current housing demands of the populace.

3. **High Cost of Land:** Land is a basic resource of every country's economic and social growth (Rupprecht et al. 2015). The market for land, its administrative and legal systems are however highly unorganized in Ghana. Information on land titles are cumbersome, property transactions are sluggish and costly, and most of all financial institutions are reluctant to extend credit to property holders with no clear title. In times past, the acquisition of community and family lands in Ghana especially for development purposes was merely a homage where some bottles of liquor and livestock (usually sheep) as symbolic gesture were offered to the 'gods' of the land's disposal to a 'stranger' (Amanor, 2001). Currently however, the rapid urbanization in the regional capitals among other factors have made commercialization of land a normal practice hence it being made a tradable commodity (ISSER 2013). Ollenu (1962) and Appiah et al. (2009) allude that the bureaucratic nature of the country's land ownership processes has over the years resulted in multiple sale of lands to

developers which have unnecessarily caused delays and some other frustrations to projects. These among other factors have contributed to deterring prospective developers and financiers’ participation to helping address the housing situation.

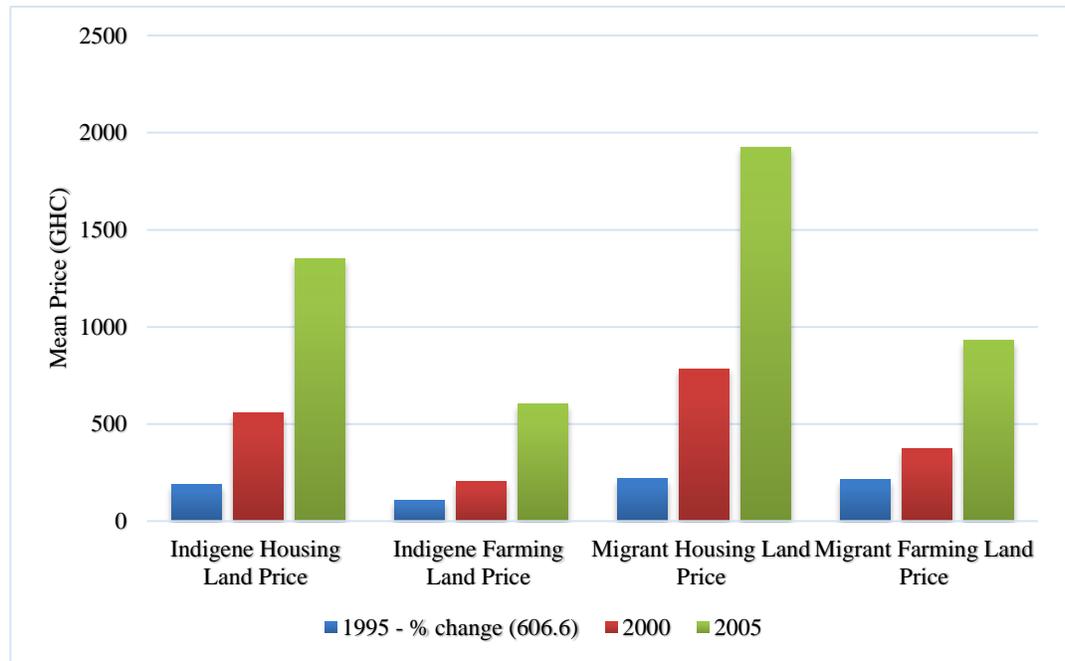


Figure 2.1 Price Trends of land per acre in Ghana by location (1995 – 2005)

Source: Owusu et al. (2008)

4. **High Cost of Building Materials:** According to Danso (2013), building materials contribute about 60% to 70% of the total construction cost in Ghana; which implies that as the cost of building materials increase, the entire project cost also rises. The high cost of materials for infrastructure and housing therefore is one of the major constraints to the provision of affordable housing (BRRI, 2012; Danso and Manu, 2013). Yeboah (2005) indicates also that the high cost of building materials is attributable to the fact that the country over the years has overly been dependent on imported raw materials for buildings for which local substitutes could been used. It is partly because local manufacturers have not received government’s support in relation

to their production. It is anticipated therefore that a decrease in both the direct and indirect costs of building materials will to a large extent cause a significant reduction price of housing units.

5. **Lack of Infrastructure and Provision of Utility Services:** In the construction industry, infrastructural development is one of the key components; hence the provision of these infrastructures boost the development and most of all attract investors to such areas. Unfortunately in most parts of Ghana, these infrastructures and services are lacked (UN-HABITAT, 2011). Most of the long-established top-quality residential areas in Accra such as Tema, Dansoman, Kanda, North Kaneshie, Dzorwulu etc. that were originally developed decades ago exclusively for residential purposes were characterized by functional amenities and infrastructure. In recent years however, newer residential locations, with high quality and modern houses for both owner-occupation and real estate investments generally lack these infrastructure and utility services like drainage, tarred roads and community facilities, such as recreational centers, police stations, and post offices, and a reliable supply of utilities (Anim-Odame et al, 2009). The cost associated with the provision of such infrastructure and utility services which typically is the responsibility of government if borne by these real estate developers are eventually incorporated as part of the cost of such housing units to heighten the initial cost from between 10% to 30% of the price of a dwelling (depending on the site's location). In a World Bank's 2009 report, it recorded Sub-Saharan Africa's infrastructure (i.e. low income countries) deficit as follows based on data collected in year 2005:

Table 2.2 Infrastructure deficit in Sub-Saharan Africa

Infrastructure	Normalized Units	Sub-Saharan African Low-Income Countries
Roads	Paved-road density	31
	Total road-density	137
Electricity	Generation capacity	37
	Electricity coverage	16
Water and Sanitation	Improved water	60
	Improved sanitation	34

Source: Yepes (2008) and reproduced in Foster and Briceño-Garmendia (2009: 1-2).

Note: Road density is measured in kilometres per 100 square kilometres of arable land; generation capacity in megawatts per million population; electricity, water, and sanitation coverage in percentage of population with access to services.

In Ghana, it is the role of the Metropolitan, Municipal and District Assemblies (MMDAs) in the provision of infrastructure and basic services for communities. The accomplishment of this role by the MMDAs have over the years been questioned as most neighbourhoods in the country are without adequate planning and without such infrastructure and services (Badu et al. 2012). This situation partly results in the growing incidence of slums and poor underserved neighbourhoods. This therefore makes it almost impossible to supply affordable houses to the housing market (Afrane et al. 2016).

The chart below in summary describes by mean scores, factors that generally cause housing deficit in Ghana:

Table 2.3 Average mean score of factors causing housing deficit in Ghana (Afrane et al. 2016)

Factors Scale	1	2	3	4	5	Total Average	Average Mean Score
Political Instability	5 5	9 18	4 12	18 72	0 0	36 107	2.97
Consistent Change of Government	0 0	7 14	8 36	21 84	0 0	36 134	3.72
Rural –Urban Migration	0 0	4 8	4 12	27 108	1 5	36 133	3.69
High Population Growth	4 4	4 8	5 5	23 92	0 0	36 119	3.31
Inadequate Mortgage Financing Institutions	0 0	0 0	7 21	22 88	7 35	36 144	4.00
High Cost of Land	0 0	7 14	8 24	14 56	7 35	36 129	3.58
Defective Land Tenure System	0 0	0 0	14 42	0 0	22 110	36 152	4.22
High Cost of Building Materials	15 15	0 0	7 21	14 56	0 0	36 92	2.55
Lack of Infrastructure and Provision of Utilities	0 0	0 0	22 66	14 56	0 0	36 122	3.39

Scale:

- 1 – Not caused by
- 2 – Less caused by
- 3 – Neutral
- 4 – Caused by
- 5 – Highly caused by

With reference to the above schedule, it is observed that the second highest causative factor attributable to the housing deficit being experienced in Ghana is the “inadequacy of

financiers or the high cost of mortgage”, hence the need for government to consider the option of partnering with the private sector (i.e. PPP) in solving this issue whiles putting other measures in place to address the other factors.

2.5 THE PUBLIC-PRIVATE PARTNERSHIP (PPP) MODEL

The PPP in recent years has gained some popularity in the area of infrastructure, both physical and social. This concept has attracted worldwide attention and made waves in most developing countries. The public private partnerships are increasingly foreshadowed as an innovative tool as a policy for remedying the lack of dynamism in traditional public service delivery (Jamali, 2004). According to (Unit, 2003), the PPP is a collaboration between the public and private sectors where both parties bring on board their complimentary skills and resources to a project with varying extents of their involvement and responsibility for the common goal of providing public services. It is an arrangement where government’s responsibilities are outsourced to commercial partners with shared risks between the public and private sectors in order to come up with desired outcomes (Yuan et al. 2009). With such agreement, usually of long term nature, the private sector entity constructs and or manages infrastructure of the public sector entity on behalf of the latter for the period of the agreement; and this can take many forms with some or all of the following features (Peirson and McBride, 1996):

- The operational features of the facility or infrastructure are specified by the public entity;
- Facilities controlled by the public sector are transferred to the private sector entity (with payment in return or otherwise) for the period of the agreement;
- The private sector executes the physical construction of the facility;

- Services are delivered by the private sector entity using the facility for a specified period of time (often with limitations on operations and pricing); and
- The private sector entity sanctions to handover such facility to the public party (with some payment or otherwise) at the end of the period of the arrangement.

According to Peirson and McBride (1996), there is some motivation on the part of governments to enter into PPP arrangements so as to reduce debts (whiles containing taxation) and also to seek to provide finance of public sector infrastructure by via the private sector. Other considerations have to do with the advantage of the allotment of financial risks and gains between public and private sector bodies. Much of such PPP related risks are generated from the extent of complexity of the arrangements themselves in the area of documentation, taxation, financing, technical details, sub-agreements etc. involved in major infrastructure schemes while the extent of these risks affect the project durations.

As the global line of thinking in terms of development swings, housing policies in most developing world have also experienced some substantial changes since the 1960s. Most top-down housing planning approaches over the past years have given rise to market and people-based solutions, process approaches and highlight on building capacities and institutions according to Erguden (2001).

2.6 DYNAMICS OF SOME PPP ARRANGEMENTS

The PPP arrangement comes in many forms where specific operations are contracted out to the private partner and held accountable for the successful delivery (i.e. building and operating/maintenance) of a given project. Among other merits for the choice of this form of arrangement including the funding aspect, the private partner has no incentive to “cut

corners” during the construction stage (hence delivering quality, at reasonable cost and on time); since any shortcuts could hamper the ‘bottom line’ during the operation/maintenance phase (Roman, 2015).

The table below shows some basic types of infrastructure PPPs that are available:

Type of PPP	Description
Design-Build (DB)	The project is financed, operated and maintained by the public partner, however, the design and construction of the project is contracted out for a fee (typically fixed) to a private partner.
Design-Build-Operate-Maintain (DBOM)	The project is financed by the public partner, however, it is designed, built, operated and/or maintained by the private partner.
Design-Build-Finance (DBF)	The project is partially or fully financed by the private partner, which is also responsible for its design and construction. The public partner retains full responsibility in terms of operation and maintenance.
Design-Build-Finance-Operate-Maintain (DBFOM)	The project is financed, designed, built, operated and/or maintained primarily through the private partner. In essence the project is “owned” by the private partner. The public partner provides a tax-exempt status for the project. Typically, there is no direct funding provided by the public partner.

Table 2.4 Types of Infrastructure PPPs (Roman, 2015)

There are several reasons why many governments have turned to partnerships with private entities as a convenient choice for delivering public services or infrastructure projects as governments by themselves (i.e. with their own expertise, devises and funds) are unable to effectively address the existing public issues and demands (Weber and Khademian, 2008). This is because governments’ by their own resources and capabilities are inadequate to curb current issues plagued with the citizenry hence the engagement of the private sectors for such ideas and funding solutions.

2.6 ROLES OF THE PRIVATE AND PUBLIC SECTOR ENTITIES IN PPP ARRANGEMENTS IN AFFORDABLE HOUSING DELIVERY

Typically, the public sector entity procures assets involved from the private sector entity and not the services where the former carries out the initial concept designs prior to procurement of the assets and the latter is responsible for delivering same (Davies and Eustice, 2005). The five major roles of the public sector in affordable housing delivery aside the provision of land at subsidized cost, provision of physical infrastructure such as roads and power supply, provision of supervision and monitoring roles and ensuring compliance to set standards (Ibem and Aduwo, 2012) have been discussed by Ernst and Young (2008) as follows: to create a friendly environment for investment, to establish robust legal and regulatory frameworks, to choose suitable concessionaire, to establish a coordinating and supportive authority and ultimately to be actively involved in project life-cycle phases.

Ernst and Young (2014) further explain that the private sector is seen to be better placed to identify and manage risks and costs, provide sound specialist and technical management skills, manage whole-life risks from design responsibility to hand-over to the public sector, coordinate capital costs with whole-life operating costs, help improve quality of soft skills and services, raise funds to finance the project among others. In other school of thought however, the private sector's role in PPP could be extended to providing or contribute to the providing public services which typically is supplied by the public sector (Chou et al. 2012). If this proposal is upheld, the issue with hikes in construction costs are supposedly expected to significantly reduce as it has been established that infrastructure cost heavily affects the overall capital and operating cost of buildings in previous literature. The contracting authorities according to Pallister and Law (2006) are usually

the metropolitan, municipal, and district assemblies (MMDAs), and ministries, departments, and agencies while the private partner could be a developer or a multi-stakeholder consortium not managed by the government.

According to PMBOK 5 (2013), the cost of a construction facility can be categorized into the Initial Capital Cost and the ensuing Operational and Maintenance Costs. The Capital Cost may include the following as the related expenses to the initial establishment of a construction facility:

- Land acquisition, encompassing assembly, holding and improvement
- Planning and feasibility studies
- Architectural and engineering design
- Construction, including materials, equipment and labour
- Field supervision of construction
- Construction financing
- Insurance and taxes during construction
- Owner's general office overhead
- Equipment and furnishings not included in construction
- Inspection and testing

The Operational and Maintenance Costs are the cost incurred in ensuing years over the project life-cycle and these may include:

- Land rent, if applicable
- Operating staff
- Labour and material for maintenance and repairs

- Periodic renovations
- Insurance and taxes
- Financing charges
- Utilities
- Owner's other expenses

The extent of these cost components are largely contingent on the nature, size and location of the project or facility and also the management organization (in this case the private sector entity), among other dynamics (PMBOK 5, 2013).

The above costs as discussed may typically be initially borne by the Private sector entity and recouped with some profit over the concession period agreed.

According to Austin (2008), the four key drivers and factors both the private and public sector entities look out for during their consideration of a PPP approach for affordable housing are as follows:

- Identification of potential financial institution, thus a potential source of grant and loan on favourable terms. Potential opportunists for affordable housing to be linked to existing social and economic strategies.
- Identification of potential sites that could be made available on a reduced cost. That is exploring financial and management options for the most effective way of achieving affordable housing at site.
- Identification of development companies that are interested in the challenges and opportunities that affordable housing could bring unpick.

- Identification of the partners of some level of expertise and calibre. For example some partners may have an excellent understanding of the housing needs but less experience of legal and financial matters.

2.7 THE CONCEPT OF HOUSING AFFORDABILITY

Housing basically serves as shelter and to its occupants (Ahmad et al. 2010) and also as a symbol of a household or an individual's achievement, social belongingness and an indicator of urban growth (Norazmawati, 2015). A household is termed to have affordability issues when there is a lack of sufficient income to keep up with its routine expenditures and other household's needs besides housing (Smith, 1990). This assertion is supported by Feins & White (1977), Gilderbloom (1985) and Lane (1977) in their definition of 'housing affordability problems' likened to a household paying more than a certain percentage of its income to obtain befitting housing.

Bogdon and Can (1997) indicate that there are three major housing problems: affordability, overcrowding, and the physical condition of dwellings. They argue that in the U.S. the highest concern is with housing affordability. Relatively few households are faced with overcrowding or living in physically inadequate dwelling with as fewer households are subject to overcrowding or living in physically inadequate dwellings. Disquiets with housing can be encompassed under the heading of "housing stress." These concerns comprise overcrowding, quality of dwelling, security of tenancy, price risk (i.e. rent increase) among others. Howden-Chapman et al. (2012) contends that "housing is a fundamental determinant of well-being, crucial to health, family stability, and social cohesion." Although Brown et al. (2006) indicates that housing affordability is not meant to necessarily measure a household's well-being, it is essential to note that housing

affordability is of high essence and importance to the national economy. Thalmann (2003) also states that “Housing is not affordable for a household if it excessively crowds out other expenditure.” Maclennan and Williams (1990) offer a more complete definition: “Affordability is concerned with securing some given standard of housing (or different standards) at a price or rent which does not impose, in the eye of some third party (usually government) an unreasonable burden on household incomes.” Multiple terms in the above definition must however be expressly defined in the context of the Ghanaian environment including the “housing standard” and the “burden”, which is often expressed as a percentage of income.

Housing costs can be a considerable financial drain to households, especially for low-income households. The average of the ‘housing cost to income ratio’ gives an overview of the financial burden on households as a results housing costs. Alternatively, the “housing cost overburden rate” measures the quantity of households or population that spends in excess of 40% of their disposable income on housing (Dewilde and De Decker 2014). Housing costs can refer to: (1) a myopic meaning based on rent and mortgage costs (i.e. principal repayment and mortgage interest); or (2), a comprehensive definition that also includes costs of mandatory services and charges, regular maintenance and repair, taxes and utilities, also referred to as “total housing costs”.

With innovative financing in recent years in the housing market, housing values are increasing and homeowners are taking chances with alternative financing methods and consequently putting their homes on the line (Vacancy Survey Annual Report, 2007). According to the Vacancy Survey annual report, homeownership rates are decreasing in

the United States as householders are unable to afford the homes they are in, and are losing them. Also, renters are facing increasing challenges in meeting their monthly housing costs; including utilities, taxes, and other insurance rates as such costs are eventually be passed on to renters. A study conducted by the American Community Survey (2006), indicated that 46% of renters in America pay 30% or more of their income on housing costs; 37% of owners with mortgages and 16% of owners without mortgages spend 30 percent or more of their income on housing costs. Arguably although historically viewed as such, 30% of a household's income is typically considered as the "Income Standard for Housing Affordability" in the United States, according to Schwartz and Wilson, (2006). Irrespective of a worker's categorization; whether professional or non-professionals, skilled or unskilled, formal or informal, white or blue-collar jobs, such worker is entitled to some reasonable compensation that suits the status and contribution he/she makes towards a country's economic growth. Such compensations come in the form of salaries or wages (Kumah, 2017). According to Mywage.org/Ghana, Ghana's minimum wage per day for its working class has ranged between GHC 3.11 and GHC 9.60 (approximately US\$ 2.14 – US\$ 2.13; based yearly nominal exchange rates) between years 2010 and 2017. Out of the country's workforce, 80% are employed under the informal sector whiles the remaining 20% are with the formal sector according to Osei-Boateng and Ampratwum (2011). In effect, based on the above 'rules of thumb', a typical Ghanaian worker paid at minimum wage is likely to expend or save about US\$ 17.25 out of US\$ 57.51 monthly as rent or housing investment monthly which is less than the US\$ 70 cited by Ghana Statistical Service (2010). This will imply such a household will be expected to live on the remaining US\$ 40.25 for a month which is a tight budget to manage within constricted economy like Ghana's. It is worth noting that according to the UN Household Size and

Composition (2017), the average number of persons in ‘small households’ is fewer than three per household and such are concentrated in Europe and Northern America. Africa and the Middle East record large household sizes with at least five (5) persons per household. In Ghana it is recorded that an average household comprises between three (3) to four (4) persons.

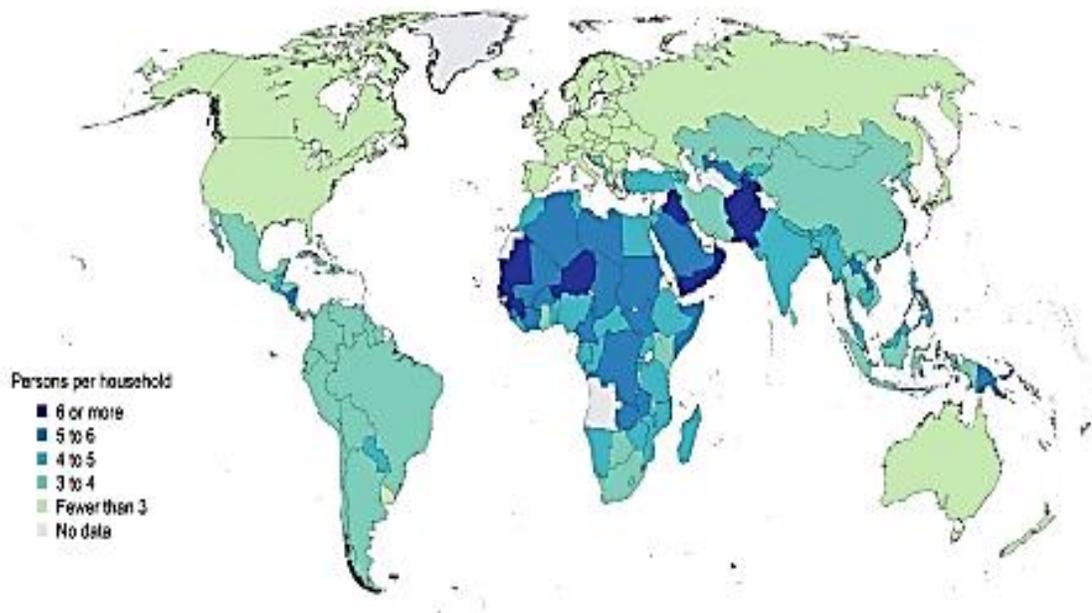


Figure 2.2 United Nations World Average Household Size

Data Source: UN Database of Household Size and Composition (2017)

According to the Ghana Building Regulation, the minimum floor area per person for a residential house should be 4.65m^2 hence for a typical household in Ghana, it is expected that the gross floor area for such family is approximately 20m^2 . The Ghana Property Guide arguably indicates that, the cost of a residential apartment is typically $\text{US\$ } 120/\text{m}^2$.

There are however other methods of measuring housing affordability as indicated by Norazmawati (2015). These are Price to Income Ratio (PIR), Rent to Income Ratio (RIR),

Housing Expenditure to Income Ratio, Market Basket Measure, Quality Based Measure and Residual Income Measure. Among these, the Price to Income Ratio (PIR) is often used as indicators of measuring housing affordability. Although Carver (1948) is of a contrasting view that it is quite misleading to use simple generalizations and rules-of-thumb to calculate a family's financial capacity to pay for housing, it must be said that at least such theories or methods could serve as some basis for determining jurisdiction-based factors.

2.8 CHALLENGES AND SUCCESS FACTORS ASSOCIATED WITH THE ADAPTATION OF THE PPP CONCEPT IN AFFORDABLE HOUSING DELIVERY IN GHANA

The Government of Ghana (GoG), like many other developing countries has demonstrated its keen interest in the PPP concept (MOFEP, 2011). Strains on available public funds for infrastructural works such as housing have led governments to embracing the PPP system by inviting private sector entities to enter into long-term contractual relationships for the financing, construction and/ or operation of capital intensive projects. Obviously to the public entity, value-for-money is key and must be achieved whiles to the project sponsor (i.e. the private entity), such ventures are characterized by low equity in the project vehicle and a dependence on direct revenues generated from such projects to cover operations, capital costs and service debt finance provided by banks and other financiers (Grimsey and Lewis, 2002).

In the Ghanaian context, PPP can be described as “a contractual arrangement between a public sector entity and a private sector party with clear agreement on mutual objectives for the delivery of public infrastructure and services which traditionally are provided by

the public sector” (MOFEP 2011). Understanding the relationships of the drivers of the demand and supply of housing is critical towards addressing any shortfall in housing. Also, in areas where there are challenges, the supply side in broad terms is usually limited by poor policy environment (e.g. control of rents and prices of land and building materials) and weak institutional framework. While the imposition of price controls are aimed at making housing affordable, they have the unintended consequences of demotivating developers from investing in the sector, which in the long term impacts negatively on the poor as new housing are seldom developed leading to hikes in rents due to housing shortage. In fact, Ghana’s current housing shortage is partly blamed on the policy of rent control and the general price control regime imposed throughout the 1970s through the early 1980s (Ghana Statistical Service, 2014).

PPP like other project funding arrangements, is founded on the basis of transferring risk from the public to the private sector under situations where the latter is best placed to manage such risk. The general principles are common to all public sectors as far as the project seeks to assign such risks from itself to the private sector (i.e. developer/ funder) and offer a profit incentive to same in return according to Grimsey and Lewis (2002).

With reference to Table 2.4 above, the PPP arrangement may be faced with certain challenges which if not curbed shall have some negative impact on this strategy and for its goal not be fully realized. Recent debate on bridging the infrastructural gap in the sub-region (Sub-Saharan Africa) has been focused on ways to attract more private sector financing hence dealing with issues that may prevent private-entity involvement in such infrastructural improvement (Gutman et al. 2015). In the year 2013, six countries attracted about 60% of Private Participation in Infrastructure (PPI) program to all developing

market economies globally – including Brazil, India, China, Turkey and Russia. In Sub-Saharan Africa over 2005-2012 period according to the World Bank PPIAF database, South Africa and Nigeria have together benefited from the PPI program worth about US\$ 45.4 million which indirectly would have contributed to the growth or improvement in their housing sectors (Gutman et al. 2015).

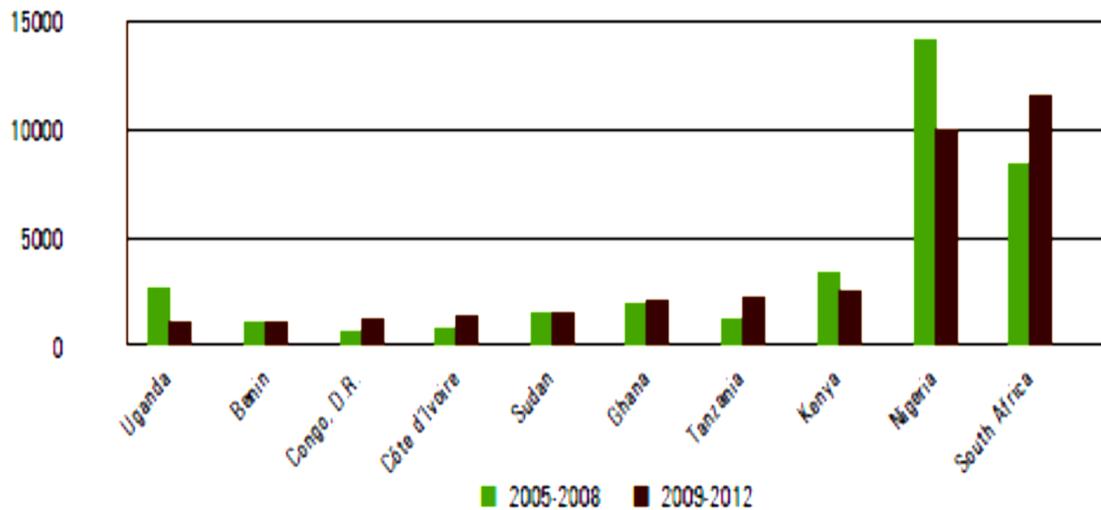


Figure 2.3: Top 10 Infrastructure PPI Recipients in Sub-Saharan Africa, 2005-2012 (in US\$ millions).

From the above chart, it can be observed that Nigeria and South Africa have together attracted about 80% of PPI investments over the years; the other Sub-Saharan African countries which Ghana is part have not been able to attract significant PPI and there must be some reasons for this.

Osei-Kyei and Chan (2017) also describe the key challenges in Ghana's PPP as comprising of the country's lack of experience and appropriate skills in PPP delivery, misallocation and incomplete transfer of risks, and highly use of unsolicited proposals. Osei-Kyei and Chan (2017) further cites the following as some PPP critical best practices

which when adopted shall expand the country's investment environment and to offer more social benefits: transparency and competition, favorable legal framework, right project identification, capacity building, extensive stakeholder engagement, and appropriate risk allocation.

Ernst and Young (2014) note some success factors of PPP as follows:

- Political commitment to ensure projects progress.
- Capacity within government to execute complex infrastructure projects.
- Fair procurement procedures.
- Accessibility of appropriate financing.
- Recognizable channel of realistic projects.
- Impartial concession / contract arrangement – appropriate risk sharing and or reward balance.
- Better involvement from multilaterals (private entities) and governments.
- Address political risk issues such as currency convertibility, FDI restrictions, contract breaches or non-honouring of contracts.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The use of one or a multiple of the following three methods of research approach; qualitative, quantitative and mixed methods is dependent on the purpose of the study (Creswell, 2003). An appropriate research methodology and design when chosen enables the planning and execution of the study. By definition, research design is a framework for data collection and its analysis; the structure that guides the execution of the technique for collecting and analyzing data (Bryman, 1992). It also provides a connection between empirical data and its conclusions which is in sync with the research questions of the study according to Bryman (2006).

3.2 RESEARCH STRATEGY, DESIGN AND PROCESS

A case study design was employed so as to make an intensive investigation and create an understanding on the subject matter based on the findings through previous research.

Regarding the nature of the study, Snowball Sampling was adopted to conduct the selection of respondents. Also referred to as a chain referral strategy of sampling, Vogt (1999) defines snowball sampling as a sampling technique that focuses on finding research subjects where one subject offers the researcher the name of another subject, who in turn provides the name of another and then in subsequent order. It was adopted to take advantage of the social networks of professionals who are in the built-environment and have had some experience with the PPP system of procurement to provide the researcher with an ever-expanding set of potential contacts (Thomson, 1997). This is for the reason that professionals in related fields are expected to provide the most credible and valid

technical information required to substantiate results of the study.

The Greater Accra Region was selected for this study. With a total of about 4,455 households representing 9.1% of the total 49,003 household's in the country according to Ghana Statistical Service (2012), Greater Accra is one of the two regions with the highest population growth rate and also in infrastructure development.

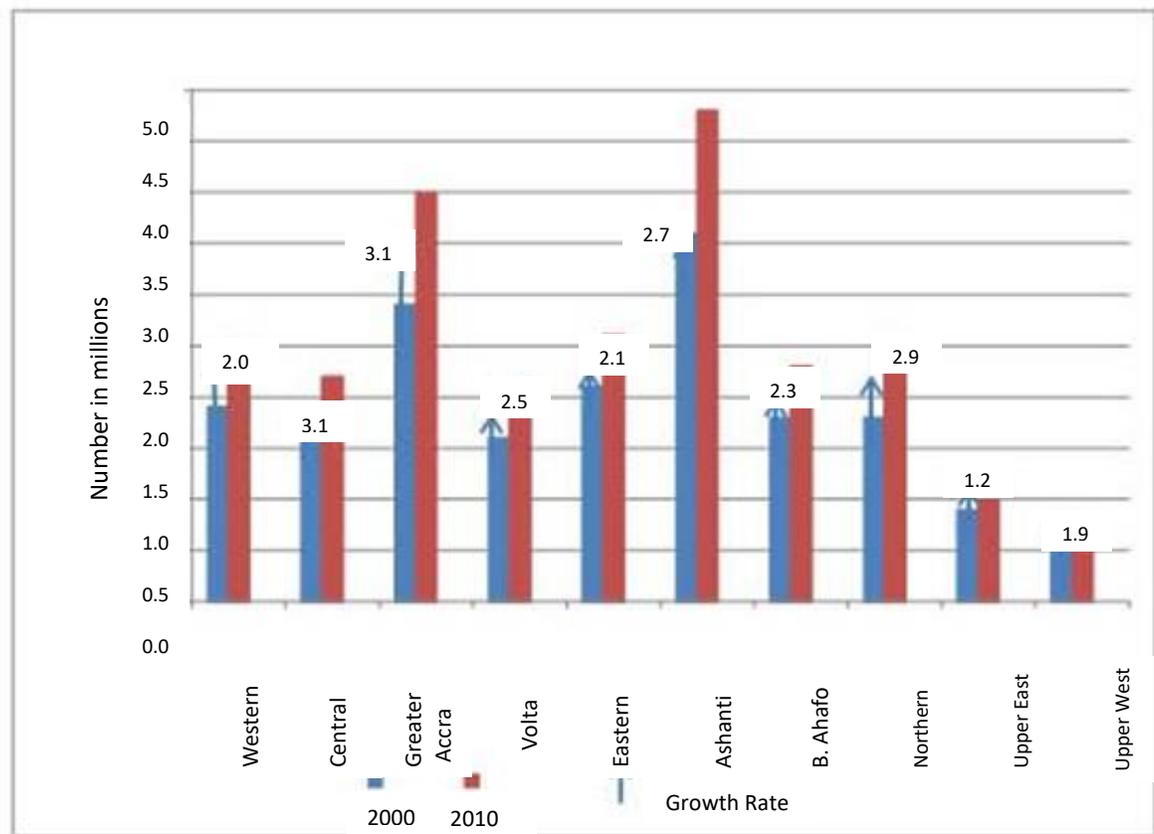


Figure 3.1: Population size/growth by region, 2000 and 2010)

Source: Ghana Statistical Service (2012)

Not only is Greater Accra the region with the highest growth rate, it is also the second region after Ashanti Region with the highest proportion of houses of 14.0% out of 3,392,745 total number of houses. More so, the region has the highest percentage of 'makeshift dwellings' of kiosks, tents, containers and attachment to shops in Ghana,

contributing about 2.0% of the total national dwelling units (Ghana Statistical Service, 2012). Information from the region regarding the subject matter will therefore be of significant relevance and for generalization.

The quantitative research strategy was adapted as the framework within which this study was conducted where opinions of respondents will be ascertained on key players or stakeholders in the Greater Accra Region in the delivery of affordable housing. Targets were selected based on their direct hands-on engagement with PPP projects (Ke et al. 2010) and some experience with affordable housing delivery. For the purpose of this study, survey questionnaire was used in gathering raw data from respondents. The use of this survey questionnaire provided some basis for key stakeholders in PPP-backed affordable housing delivery to adopt the findings of this study in improving the sector.

3.3 DATA COLLECTION

3.3.1 Data Collection

Desk and field surveys was employed in the collection of data for this study. Pertinent literature were gathered and reviewed via desk survey for the identification of variables relevant for the design of survey questionnaire. Survey questionnaire was then used for the collection of raw data from respondents during the field study for analysis and discussion.

3.3.2.1 Sampling Frame and Sample Size Determination

Out of the six (6) number of Metropolitan Assemblies (MAs) in Ghana, Greater Accra Region has two (2). In Ghana, a Metropolis should have a population of not less two hundred and fifty thousand (250,000). Also, the region has got nine (9) Municipalities and five (5) Districts. For the purpose of this study, the two Metropolises in the region

comprising the Accra and Tema Metropolitan Assemblies (i.e. AMA and TMA respectively). These sources were targeted because technical information were required for the authenticity of the research outcomes.

The snowball sampling therefore was adopted and respondents from these sectors were targeted at professionals and related fields or departments with some level of experience with PPP projects such as Finance, Works, Estates, Development Planning and Legal. Other practicing professionals such as Architects, Engineers, Realtors and Quantity Surveyors were also be engaged to elicit technical information in the data collection.

This sampling strategy enable researchers to focus on typical areas where respondents can be located (Struwig and Stead, 2001). In the conduct of this study, the respondents were traced to their various locations of practice to collect coherent information for this study.

A sample size of 113 was obtained eventually through referrals from respondents to other related professionals with experience in the industry within the targeted group.

3.2.3 Survey Questionnaire Design

The design of the questionnaire considered the background of experience. Questions were presented in such a way that they were devoid of technical words. This was to stimulate maximum understanding and response from respondents. Also, the survey questionnaire was pre-coded and structured, consisting of close-ended questions with options for respondents to select using the likert scale. The responses to the questions using the five point likert scale shall be 1= not effective, 2= less effective, 3=moderately effective, 4=effective, 5= very effective. Other noteworthy responses on for the questions consisted of “not severe” to “very severe”. The questionnaire comprised of questions

bordering on background of respondents; strategies for adoption of PPP in affordable housing delivery; challenges confronting the implementation of PPP in affordable housing delivery; and the success factors for implementation of PPP in affordable housing delivery.

3.4 INSTRUMENT ADMINISTRATION

The survey questionnaires were administered by the researcher to all identified members of the population in the Accra and Tema Metropolises by the web via Google Forms and analyzed with same. Administering the questionnaires commenced and ended within the first week of September, 2018. In total, 113 questionnaires were administered and all were received representing a 100% percentage response rate.

3.5 DATA PREPARATION AND TOOLS FOR ANALYSIS

The raw data shall be gathered and processed into a form appropriate for analysis and or data sorting. The Statistical Packages for Social Sciences (SPSS version 16), Google Forms, IBM Statistics and Microsoft Excel shall be used for the analysis of the raw data. Statistical tools such as: Factor analysis (principal component analysis), Relative Importance Index (RII), Correlation analysis and frequency with percentage shall be employed for the analysis.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter comprises research findings and discussion on the innovative approaches with respect to the adoption of the Public-Private Partnerships (PPP) in the delivery of affordable housing to curb the upsurge of Ghana's housing deficit in the Greater-Accra Region. Data for analysis was based on a snowball sample from the two Metropolises in the region. Respondents from professional and related fields or departments including Finance, Real Estates, Development Planning, Legal and were included in the study. Other practicing professionals such as Architects, Engineers, Realtors and Quantity Surveyors were also included for the purpose of adding technical information in the data collection process.

The data is in two sections. The first section comprises personal information of respondents. The second section focuses on the attributed causes and impact of housing deficit in the region, challenges faced with effective PPP implementation and the key success factors in the adoption of PPP in the delivery of affordable housing. IBM Statistics version 23 and Microsoft Excel were used to answer the objectives of the study.

4.2 Demographic description

A total of 113 respondents from the two Metropolises in the region were involved in the study. More than half of them, 68(60.3%) were Private Professional Practitioners. 12 (10.6%) of them were from the Metropolitan Assembly while 4(3.5%) and 5(4.4%) of them were from the State Housing Company and SSNIT respectively. However,

24(21.2%) of them were affiliates of other unnamed institutions. Figure 4.1 graphically shows the number of respondents according to their institutions of affiliation.



Figure 4.1: Affiliated institutions of respondents

Source: Field data 2018

Results on the duration of respondents have been working in their respective institutions showed that majority of them – 79(69.9%) – have been working for less than 10 years with their current institutions. 29 (25.7%) of them have been with their current institutions for 10 – 20 years. Only 5 (4.4%) of them (4.4%) have been with their respective institutions for 21 – 30 years. The highest level of qualification for respondents understudy indicates that all respondents have attained tertiary education and have appreciable knowledge and awareness in the area of study. Table 4.1 shows the highest level of qualification of respondents.

Table 4.1 Highest level of qualification

Qualification	Frequency	Percent
HND	4	3.5
First Degree	58	51.3
Master	51	45.1
Total	113	100.0

Source: Field data 2018

From Table 4.1, 4 (3.5%) of respondents have HND as their highest level of qualification. 58 (51.3%), constituting more than half of the total number of respondents, have first degree as their highest level of qualification while 51 (45.1%) of them have attained their Masters degree.

Results on the professions of respondents are varied. Figure 4.2 below shows the various professions of respondents. The graph shows that 53 (48.9%) of respondents are into Quantity Surveying while 24 (21.2%) have their profession in Real Estates. 11 (9.7%) of them work in Finance departments as well as other Building or Civil Consultancy. Only 8(7.1%) of the total respondents practice Architecture.

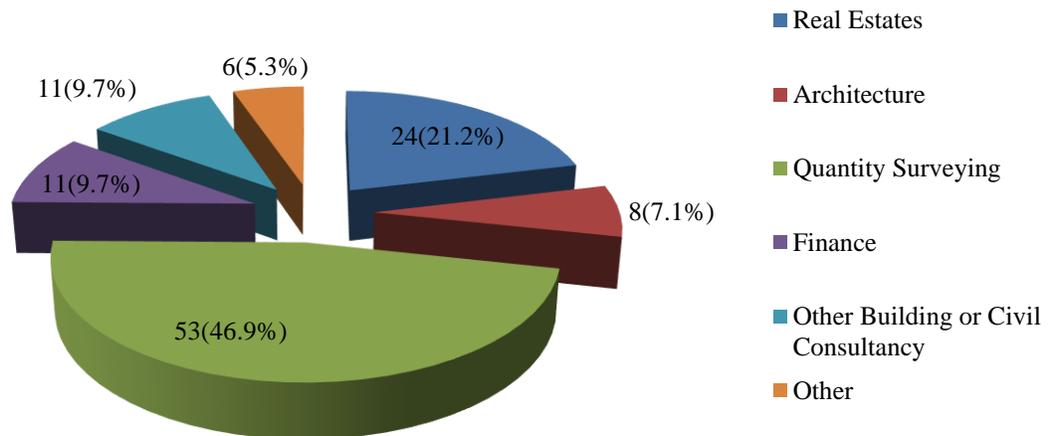


Figure 4.2: Professions of respondents
Source: Field data 2018

A significant number of respondents, 99 (87.6%), are residents in the Greater-Accra region while the remaining, 14(12.4%), are not. In addition, 21(18.6%) of the m have a household size of 1 – 2 people while 70(61.9%), the highest number of respondents, have a household size of 3 – 4 people. 22 (18.5%) of respondents have household sizes of more than 4 people. 69 (61.1%) of them live in rented houses while 44 (38.9%) live in houses that they have claim of ownership. Out of the number that live in rented houses, the percentage range of monthly rent against monthly earning of 84.1% of them fall within 10 – 30% while the remaining (15.9%) fall within 30 – 60%. However, 23 (20.4%) of total respondents are of the opinion that monthly price of rent within the range of GHS50 – GHS100 is affordable. Also, 46 (40.7%) and 40 (35.4%) of respondents are of the view that monthly price of rent within the ranges of GHS100 –GHS300 and GHS300 – GHS1,000 respectively are affordable. Regarding the affordability of the current price range of rent, most of the respondents, 77 (68.1%) are of the view that they are expensive while 38(31.9%) are of the opinion that these price ranges are affordable.

4.3 Causes of housing deficits in the region

Relative Importance Index (RII) was used to identify the various impacts of causes that in the opinion of respondents is attributed to housing deficits in the Greater-Accra region. This is calculated by summing the weights given to every factor by respondents (from 1 to 5) and dividing it by the product of the highest weight (that is, 5) and the total number of respondents.

Table 4.2 shows the Relative Important Index (RII) of attributed causes of housing deficits and respondent scores. Relative Important Indexes above 0.59 were considered significant.

Table 4.2: RII and Ranking of Causes, Respondent Scores

Item	Causes	Respondent scores					RII	Standard Deviation	Rank
		1.	2.	3.	4.	5.			
1	High cost of land	0	6	17	24	66	0.866	0.92	1 st
2	High cost of building materials	0	8	19	34	52	0.830	1.24	2 nd
3	High population growth	0	4	34	38	37	0.791	1.35	3 rd
4	Inefficient land tenure system	5	19	26	36	36	0.788	1.37	4 th
5	Lack of physical infrastructure and provision of utilities	0	12	26	33	42	0.786	1.43	5 th
6	Unwillingness of the private sector or financial institutions to get involved	2	26	22	39	24	0.701	1.59	6 th
7	Negative political influence	14	23	29	19	28	0.643	1.60	7 th
8	Consistent change in government	12	33	39	18	11	0.569	1.63	8 th

Source: Field data 2018

From Table 4.2, high cost of land ($REE = 0.87$) was the most important cause of housing deficit in the Greater-Accra Region. Acquisitions of lands have been a major problem mainly due to the high cost involved in its purchase. This is in line with a report by ISSER in 2013, attributing the current commercialization of lands in profit maximization to the speedy urbanization in the capital region. According to Gleaser and Gyourkor (2003), this situation is primarily because of the fixed supply of land. The constant demand over supply escalates the cost of its acquisition.

The second most important cause of housing deficit was the high cost of building materials ($RII=0.83$). Research has shown that half of the total cost of construction in Ghana is from building materials (Asibuo, 1994; Danso and Manu, 2013). This is because of increasing over-dependency on imported building materials at the expense of existing local ones. According to Yeboah (2005), there is limited or no governmental support for local manufacturing of building materials. A substantial reduction in housing deficits will be achieved when direct and indirect cost of building materials are curtailed.

The third most important cause is attributed to high population growth ($RII = 0.79$). A research by Ansah (2014) showed that increasing population growth rate in the country resulted in an additional 500,000 units of housing deficit from 2010 to 2014. This increased housing deficits to more than 1.7 million units. This affirms that one of the main causes of housing deficit is high population growth rate in the capital region of Ghana.

The fourth most important cause of housing deficit is inefficient land tenure system ($RII = 0.79$), In addition to the high cost of lands, deficiency in strengthening regulatory bodies. A survey by the Ghana Statistical Services in 2010 showed that most of the laws related to housing are outdated

The fifth most important cause attributed to housing deficit was the lack of physical

infrastructure and provision of utilities (RII = 0.79). In a reported by Anim-Odame et al (2009), current locations of residence are deficient in infrastructure and utilities such as drainages, good roads, and recreational centres. Projects on infrastructure within areas of residence are often uncompleted. Owusu et al. (2012) postulated that one of the main reasons is the inadequate planning of infrastructure and provision of utilities. These are possible implications of housing deficits in the region.

The sixth most important cause was the unwillingness of the private sector or financial institutions to get involved (RII =0.70). Although the introduction of the Public Private Partnership (PPP) is forward-thinking, as cited by Jamali, (2004), most financial institutions and the private sector at large have refrained from this partnership. This is mainly as a result of perceived risks involved (Hans et al. 2009). Another reason is that the features of the agreement, as outlined by Peirson and McBride (1996) favors the government more than the private partner involved.

Lastly, the seventh most important cause of housing deficit in the region was negative political influence (RII = 0.64). It is essential for the government to create an enabling environment for investment and development Young et al. (2009) for the private sector to get involved. However, the presence of political influence has negative effects on investments and projects due to personal motives. This eventually affects the provision of housing units leading to large volumes of housing deficits.

4.4 Challenges faced with the effective implementation of PPP in affordable housing deliveries

Factor analysis with principal component method was used for reducing data in order to determine variables that could be measuring portions of the same underlying factors. This

is a way of reducing information in a number of variables to smaller set of factors with minimal information loss (Hair et al., 1992), cited in (DeCoster, 1998). A total of 17 variables were included in this analysis.

The Bartlett's Test of Sphericity is a measure that tests whether or not the correlation matrix is an identity matrix. A significant test indicates that all correlation coefficients are not equal to zero. The test showed a Chi-Square of 637.39 with a degree of freedom of 136. The test further revealed that there is at least one significant correlation between the variables under study. The Kaiser-Meyer-Olkin (KMO-test) showed a value of 0.86, indicating adequacy of sample used for analysis. .

From the analysis, the determinant for the correlation matrix ($8.33E-06$) and the highest correlation value of 0.77 (See Appendices) showed mild multicollinearity, which is not a problem for factor analysis. Therefore, the data is suitable for factor analysis. According to Field (2005), if the determinant matrix is less than 0.00001, then variables correlating very high ($R > 0.8$) must be excluded from the analysis.

Table 4.3 shows the number of components to be extracted for challenges faced in PPP implementation based on the variances in responses of respondents. Components with eigenvalues greater than 1.0 were extracted.

Table 4.3 Total Variance Explained (challenges)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.00	8.18	48.13	48.13	8.18	48.13	48.13
2.00	1.54	9.08	57.21	1.54	9.08	57.21
3.00	1.21	7.14	64.34	1.21	7.14	64.34
4.00	0.87	5.14	69.48			
5.00	0.81	4.76	74.24			
6.00	0.75	4.41	78.65			
7.00	0.65	3.83	82.48			
8.00	0.53	3.13	85.61			
9.00	0.53	3.09	88.70			
10.00	0.38	2.24	90.94			
11.00	0.35	2.06	93.00			
12.00	0.29	1.72	94.72			
13.00	0.27	1.61	96.32			
14.00	0.20	1.15	97.47			
15.00	0.19	1.10	98.56			
16.00	0.14	0.82	99.38			
17.00	0.11	0.62	100.00			

Extraction Method: Principal Component Analysis

From Table 4.3, 3 components were extracted for analysis. The 3 components cumulatively accounted for 64.34% of total variance. The first component accounted for 48.13% of the total variance with an eigenvalue of 8.18. The second and third components accounted for 9.08% and 7.14% of total variance with eigenvalues of 1.54 and 1.2 respectively. This is graphically shown in Figure 4.3.

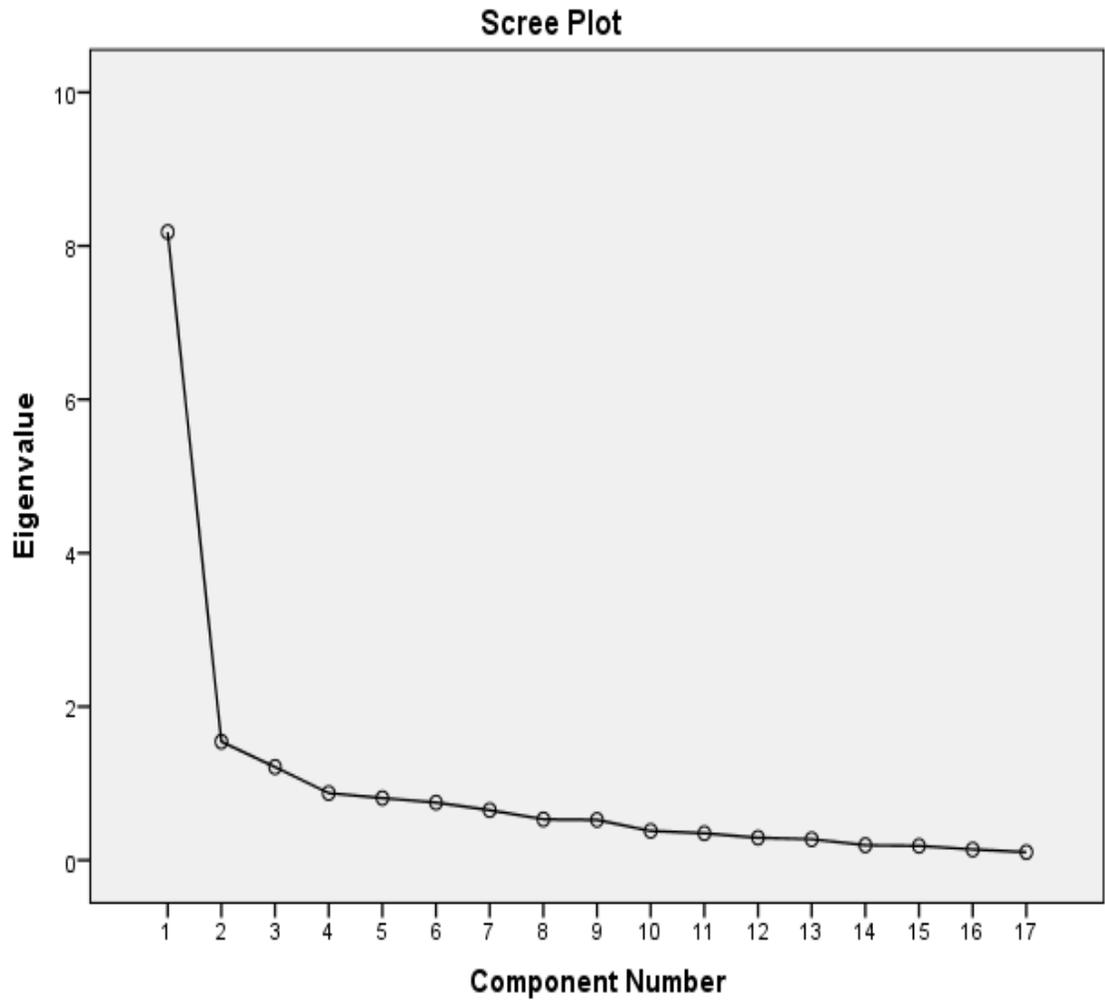


Figure 4.3: Scree Plot for challenges variables
Source: Field data 2018

Table 4.4: Component Matrix (challenges)

Challenges	Component		
	1	2	3
Inadequate information on Public Private Partnerships program	0.57	0.47	-0.49
Lack of institutional capacity to undertake large and complex projects	0.55	0.54	-0.37
Weak Financial strength of private sectors willing to be engaged	0.59	0.20	0.24
Lack of comprehensive policy, legal and institutional frameworks.	0.58	0.15	0.34
Poor design implementation resulting from inability to assess investment proposals.	0.70	0.40	-0.04
Lack of long-term financing instruments and appropriate risk sharing mechanisms.	0.58	0.55	0.13
Inadequate domestic capital markets	0.55	0.26	0.62
Lack of transparency in PPP arrangements	0.67	-0.11	0.05
Inefficient and unsustainable credit delivery to the housing sector.	0.81	-0.16	0.13
Ineffective coordination among Housing Agencies	0.70	-0.21	0.12
Political policies in the country.	0.72	-0.07	0.24
The partners often have divergent strategic and operational realities	0.81	-0.19	-0.07
Lack of public awareness about PPP and its benefits	0.75	-0.20	-0.10
Lack of robust and equitable policies regarding PPP.	0.78	-0.21	-0.24
Wrong project identification	0.79	-0.30	0.00
Inadequate stakeholder engagement	0.74	-0.29	-0.13
Inappropriate risk allocation	0.82	-0.23	-0.27

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Table 4.5 further showed the factor loadings of variables with the components. Factor loadings greater than 0.6 were considered significant.

Table 4.5: Rotated Component Matrix (Challenges)

	Component		
	1	2	3
Inadequate information on Public Private Partnerships program	0.26	0.05	0.84
Lack of institutional capacity to undertake large and complex projects	0.19	0.16	0.82
Weak Financial strength of private sectors willing to be engaged	0.29	0.55	0.24
Lack of comprehensive policy, legal and institutional frameworks.	0.30	0.61	0.15
Poor design implementation resulting from inability to assess investment proposals.	0.32	0.45	0.59
Lack of long-term financing instruments and appropriate risk sharing mechanisms.	0.10	0.58	0.55
Inadequate domestic capital markets	0.16	0.85	0.06
Lack of transparency in PPP arrangements	0.58	0.32	0.16
Inefficient and unsustainable credit delivery to the housing sector.	0.70	0.43	0.13
Ineffective coordination among Housing Agencies	0.65	0.35	0.06
Politicization of housing issues in the country.	0.56	0.51	0.10
The partners often have divergent strategic and operational realities	0.76	0.25	0.23
Lack of public awareness about PPP and its benefits	0.73	0.20	0.22
Lack of robust and equitable policies regarding PPP.	0.78	0.10	0.30
Wrong project identification	0.79	0.27	0.10
Inadequate stakeholder engagement	0.77	0.14	0.16
Inappropriate risk allocation	0.83	0.08	0.31

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

4.4.1 Discussion of factor analysis of the ‘challenges with PPP arrangements’; variables

4.4.1.1 Component 1: Management

The first component extracted explained 48.13% of the total variance with an eigenvalue of 8.18. The variables that loaded onto this component were “Credit delivery to the housing sector”, “Coordination among Housing Agencies”, “Strategies and operational

realities”, “Public awareness about PPP”, “Robust and equitable policies”, “Project identification”, “Stakeholder engagement” and “risk allocation” with factor loadings of 0.70, 0.65, 0.76, 0.73, 0.78, 0.79, 0.77 and 0.83 respectively. “Credit delivery to the housing sector” discusses the issuance of credits in order to facilitate housing projects. This is done to meet the ever increasing demand for housing. “Coordination among housing agencies” ensures adequate support for housing functions and proper information dissemination among housing bodies. “Strategic and operational realities” encompasses the concord between systematic plan of action and actual functioning. “Public awareness” deals with the advertisement and education of the general public about the Private Partnership Program. “Robust and equitable policies” details strong and fair policies contained in the PPP implementation. “Project identification” ensures proper recognition of executable projects in the region. “Stakeholder engagement” centers on the participation of beneficiaries of the PPP implementation. It focuses on the involvement of people who will be positively or negatively affected by any decision made or can influence the execution of a decision. “Risk allocation” is about sharing of risks involved in a project in proportion of the party that plays the more important role. The variables discuss challenges associated with management of the PPP system of financing.

Chism et al. (2010) in their research on challenges of infrastructure development found that ineffective control, accountability and transparency measures affect delivery of infrastructure by the government. This weakens partnerships with the private sector due to uncertainties. According to Ahmed and Ali (2004), the only way for partnerships to be effective and sustained is to introduce incentives for both public and private sectors.

4.4.1.2 Component 2: Framework and domestic investment

The second component extracted explained 9.08% of the total variance with an eigenvalue of 1.54. The variables that loaded onto this component were “Comprehensive policy, legal and institutional frameworks” and “Adequacy of domestic capital markets” with factor loadings of 0.61 and 0.85 respectively. “Comprehensive policy, legal and institutional framework discusses the entire structure of the PPP system. These variables discuss challenges associated with the framework of the PPP system. Frameworks are key in the institution of PPPs. According to Li et al. (2005) the effectiveness of this system can only be realized in an enabling regulatory, legal and political environment. However, most legal and regulatory framework of developing countries are weak and as a result, hinder the formal integration of the private and public sectors (Ahmed and Ali, 2004). Osei-Kyei et al. (2017), in their research mentioned weakness in the country’s framework and investments as one of the main challenges faced in the implementation of PPP. They proposed that the only way the country can expand in its investment environment is the optimal practice of favorable legal frameworks.

4.4.1.3 Component 3: Capacity building

The third component extracted explained 7.14% of the total variance with an eigenvalue of 1.21. The variables that loaded onto this component were “Information on Public Private Partnerships program” and “Institutional capacity” to undertake large and complex projects” with eigenvalues of 0.84 and 0.82 respectively. “Information on Public Private Partnership program” provides details of outlined plan to be embarked upon during the period of partnership. “Institutional capacity” focuses on improving the capacity of governments, businesses and groups to effectively and efficiently plan and manage cost Thus, it goes beyond providing education and training for professionals. These variables discuss challenges associated with capacity building. Research by Ahmed and Ali (2004) revealed that the capacity of the public and private sectors sometimes do

not align with new way of doing business. This is usually because one of the sectors, usually the public sector, is not ready to handle sudden changes. This gives rise to new challenges especially for public agencies. As stated by Hall (2006), capacity building involves the creation and sharing of various kinds of knowledge and is very important in the implementation of PPP systems. Limited human and institutional capacity slows the effectiveness of the implementation of the PPP system.

4.5 Key success factors regarding the adoption of public-private partnerships in the delivery of affordable housing

Mean score ranking was used to identify the key factors with respect to the adoption of public private partnership in affordable housing delivery in the Greater-Accra region. This is calculated by finding the average weights given to every factor by respondents (from 1 to 5).

Table 4.6 shows the mean score ranks of key success factors in affordable housing delivery and respondent scores. This has been ranked on a scale of 1 to 5 where 1: Not very effective and 5: Very effective.

Table 4.6 Mean score ranking of key success factors

Item	Key success factor	Respondent scores					Total scores	Mean score	Rank
		1.	2.	3.	4.	5.			
1	Compelling managerial capabilities	6	11	24	28	44	432	86.4	1 st
2	Equitable allocation of risks	6	13	16	39	39	431	86.2	2 nd
3	Community participation and support	4	12	24	45	28	420	84	3 rd
4	Adequate legal framework and stable political environment	11	7	25	32	38	418	83.6	4 th
5	A common vision and trusted relationship between partners	6	19	20	32	36	412	82.4	5 th
6	No political pressure and interference	6	11	32	34	30	410	82	6 th
7	Transparent and efficient procurement process	12	7	26	35	33	409	81.8	7 th
8	Integration of effective measures	6	17	25	50	15	390	78	8 th

Source: Field data 2018

4.4.1 Discussion of factor analysis of the key success factors variables

From Table 4.6, compelling managerial capabilities was the primal success factor (mean score = 86.4) in the adoption of private partnership in affordable housing delivery.

According to Ernst and Young (2013) the private sector is well equipped to identify and manage risk as well as skilled in technical management. These capabilities play a major role of strengthening the partnership system and enhance delivery of affordable housing. As stated by to Grimsey and Lewis (2002), the reason for the formation of the partnership system is to transfer risk to the private sector because of their vantage in managing related risks.

The second key success factor was equitable allocation of risks (mean score = 86.2). As postulated by Osei-Kyei and Chan (2017), one of the privileges of the system is to ensure fair allocation of risks. This is a part of best practices with the sole aim of expanding the country's investment environment and offer additional benefits to society. With this system, risks are appropriately shared between the private and public sectors to increases expected outcomes of affordable housing delivery (Hans et al. 2009).

The third key success factor is community participation and support (mean score = 86). According to MirafTab (2004), community participation is a very necessary component in the adoption of the public private partnership system. This support is in the form of market-enabling strategy in which they participate in the role played by the private sector

The fourth key success factor was adequate legal framework and stable political environment (mean score = 83.6). As stated by Li et al. (2005), a system can only function efficiently with proper legal regulations and efficient environment. Although formal integration of the private and public sector is hindered as a result of weakness in the legal and regulatory framework, this did not significantly affect the adoption of the system in the delivery of housing affordability in the region (Ahmed and Ali, 2004). Osei-Kyei et al. (2017) proposed that expansion of the country's investment environment is optimally achieved with the practice of favorable legal framework

The fifth key success factor was a common vision and trusted relationship between partners (mean score = 82.4). According to Guttman (2000) and Sclar (2000), trust has become one of the most essential parts of policy questions. Effective practice of accountability ensures proper implementation of the PPP system. This is associated with creating specific relationships accompanied with responsibilities and necessities agreed by both the private and public sector. Kettl (2002) described it as the foundation of successful management due to a common vision of the two sectors. Necessary precautions are put in place to check that public services are not compromised because of private profits.

The sixth key success factor was no political pressure and interference (mean score = 82.) In contrast to finding by Flinder(2004), the adoption of this partnership in the delivery of affordable housing does not only ensure efficient gains and service improvement limits political involvement. This creates the avenue for the system to be run smoothly and unhindered by personal interests.

The seventh key success factor was transparent and efficient procurement process (mean score = 81.8). The arrangement of the private partnership programme enhances the effective procurement process. As cited by Davies and Kathryn (2005), the public sector procures assets from the private sector and delivered by same.

Finally, the eighth key success factor was the integration of effective measures (mean score = 78). As stated by Osei-Kyei *et al.* (2017), this system allows for the consolidation of measures that helps in the smooth delivery of affordable housing delivery. These measures include transparency and competition, favorable legal framework, right project identification, capacity building, extensive stakeholder engagement, and appropriate risk allocation

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The aim of this study was to explore the innovative approaches regarding the adoption of the Public-Private Partnerships in the delivery of affordable housing to curb the upsurge of Ghana's housing deficit. To realize this aim, three objectives were set as guidance to the research questions. This chapter seeks to evaluate the extent to which the research questions were addressed and determine the accomplishment of the aim of the study. The chapter also gives recommendations of the researcher based on findings of the study. It further discusses problems encountered during the study.

5.2 Summary of Findings

The summary of the findings are directly connected to the objectives of the study. The study uncovered that, collaborating with community in PPP well-structured and equitable housing schemes were good strategies for efficient implementation of PPP. Also, involvement of expert advice and input and risk sharing between partners were equally discovered via this study as strategies for PPP implementation in affordable housing delivery. The outcomes of the study depict that: the high cost of land and building materials were strongly associated with the high housing cost and deficit. Also, expert advice inputs, risk sharing between partners, collaborating with community in PPP housing scheme were strategies for effective PPP implementation. In addition, politicization of the housing problems, inadequate information on PPP programme, lack of sound regulatory framework were some of the challenges of PPP implementation the research revealed. Lastly, the research revealed that effective practice of accountability

between parties among others such as shared trust and vision between partners and adequate legal framework and political stability were success factors of the PPP implementation.

5.3 Research Questions

Three main questions were proposed for this study.

1. What are the challenges faced by both the private and public sectors in embracing the PPP system of financing and or delivering affordable housing?
2. What are the key success factors for the adoption of PPP in the delivery of affordable housing?
3. What are the major causes of housing deficits in Ghana and the innovative ways of incorporating the PPP system to curb the menace?

5.3.1 Review of First Objective

The first objective focuses on the challenges faced by both the private and public sectors in embracing the PPP system of financing and or delivering affordable housing. This objective has been achieved by the review of relevant literature. The literature and subsequent data collected indicated what the “technocrats” and policy implementers consider the hindrances to the PPP adoption in delivering affordable housing. Notable among such challenges are:

1. High cost of land attributable to the inefficient land tenure system in the country which is a buttress to the assertion by Afrane et al. (2016).
2. High cost of building materials mainly due to import charges and other taxes on same.
3. Lack of physical infrastructure and provision of utilities as a result of unplanned nature of communities with available lands for such projects.

5.3.2 Review of Second Objective

The third objective concentrated on identifying the success factors under which PPP implementation in affordable housing delivery can be achieved. Relevant institutions and professionals were contacted to elicit these factors. The following are the best success factors under which PPP can be achieved:

1. Effective practice of accountability by both parties so as to prevent any of the parties being compromised and or short-changed.
2. Government's utmost commitment and consistencies with PPP arrangements.
3. Transparency and efficiency in existing procurement procedures so as to gain some level of trust from prospective private investors.

5.3.3 Review of Third Objective

The attainment of the first objective led to the fulfilment of the third objective where major causes of housing deficits were ascertained with some innovative ways to curb the upsurge via PPP arrangement; some of which are:

1. The early involvement of experts inputs from both the private and the public sectors.
2. Sound and well-structured policies, legal and institutional frameworks equitable to both the public and private sectors and specifically relatable to affordable housing delivery including the National Housing Policy, PPP Act, Taxes and other associated Legislative Instruments.
3. Well defined shared risks by both parties.
4. Involvement and collaboration with related stakeholders.

5.4 Recommendations

5.4.1 Recommendation for Industry

In accordance with the above conclusion, the researcher makes the following recommendations for industry:

1. The public sector should enforce a sound legal regulatory framework and provide a stable political environment to boost private entities' confidence to invest in the sector;
2. It is essential to involve experts inputs and advice from both the private and the public sectors for the decision making in implementation of PPP in affordable housing delivery;

5.4.2 Recommendations for Policy Directions

The researcher therefore recommends that, there should be as part of the existing PPP policy some dynamic policy processes to assure prospective private partners. The key players in the housing industries and Government should developed a national affordable housing polices.

1. According to Ernst and Young (2014), one of the major success factors for the realization of the aim of this study infers that affordable housing delivery should be viewed as a national issue in order not for any political party to truncate active and prevailing policies. It is therefore recommended that the existing PPP national policy must be applied on housing projects devoid of any political preconceptions.
2. Government should exhibit utmost commitment and support for the PPP arrangement in terms of promulgation of policies and laws regarding land tenure system, duties and other related taxes in order to gain the private invertors' trust and interest.

3. Developing countries such as Ghana should endeavour to adopt tried and tested PPP strategies in affordable housing delivery from other developed countries.

5.5 Summary of Chapter

The conclusion can consequently be drawn that in over the years, many countries have sought to provide affordable housing for their populace and the subject is a worldwide issue. The increasing urban population growth rate in recent times coupled with sluggish economic growth in developing countries like Ghana has widened the housing deficit.

The researcher in a way to establish that PPP as an innovative channel of addressing the country's housing deficit had the following objectives that meant to: identify challenges faced with the effective implementation of PPP in affordable housing deliveries, identify key success factors regarding the adoption of public-private partnerships in the delivery of affordable housing and ascertain the major causes of housing deficits in Ghana and the role of PPP in addressing such causes. With these objectives, it has been realized that, although the Government of Ghana has over the years made some effort to curtail the depleting housing situation in the country, such policies and steps have not been sustainable and or viable. It is the researcher's recommendation based on literature and field data collected that the involvement of the private sector via the implementation of PPP shall to a large extent address affordable housing delivery issues in Ghana.

APPENDICES

**APPENDIX A
CORRELATION MATRIX AND COMMUNALITIES (CHALLENGES)**

	1	2s	3	4.	5.	6.	7	8	9.	10	11.	12	13	14	15	16	17
1.Inadequate information on Public Private Partnerships program	1.00 0									.268	.311	.410	.364	.466	.274	.324	.397
2. Lack of institutional capacity to undertake large and complex projects	.631	1.00 0															
3. Weak Financial strength of private sectors willing to be engaged	.388	.237	1.00 0														
4. Lack of comprehensive policy, legal and institutional frameworks.	.279	.323	.310	1.00 0													
5. Poor design implementation resulting from inability to assess investment proposals.	.523	.541	.434	.472	1.00 0												

6. Lack of long-term financing instruments and appropriate risk sharing mechanisms.	.454	.491	.399	.290	.514	1.00 0											
7. Inadequate domestic capital markets	.104	.265	.417	.437	.451	.537	1.00 0										
8. Lack of transparency in PPP arrangements	.312	.234	.354	.331	.449	.333	.329	1.00 0									
9. Inefficient and unsustainable credit delivery to the housing sector.	.366	.355	.448	.501	.389	.412	.430	.497	1.00 0								
10. Ineffective coordination among Housing Agencies	.268	.327	.440	.339	.345	.257	.431	.345	.665	1.00 0							
11. Politicization of housing issues in the country.	.311	.248	.395	.549	.468	.365	.384	.560	.579	.456	1.00 0						
12. The partners often have divergent strategic and operational realities	.410	.340	.458	.351	.472	.371	.348	.595	.627	.452	.621	1.00 0					

13. Lack of public awareness about PPP and its benefits	.364	.304	.330	.273	.400	.405	.401	.475	.603	.547	.478	.611	1.00 0				
14. Lack of robust and equitable policies regarding PPP.	.466	.340	.399	.445	.467	.279	.229	.416	.624	.544	.459	.634	.770	1.00 0			
15. Wrong project identification	.274	.301	.393	.430	.477	.315	.351	.436	.681	.611	.493	.663	.546	.607	1.00 0		
16. Inadequate stakeholder engagement	.324	.317	.282	.356	.418	.300	.311	.481	.556	.473	.478	.690	.486	.535	.715	1.00 0	
17. Inappropriate risk allocation	.397	.454	.339	.304	.548	.319	.272	.603	.580	.595	.529	.640	.656	.691	.703	.710	1.00 0

a. Determinant = 8.33E-006

	Initial	Extraction
Inadequate information on Public Private Partnerships program	1.000	.784
Lack of institutional capacity to undertake large and complex projects	1.000	.735
Weak Financial strength of private sectors willing to be engaged	1.000	.442
Lack of comprehensive policy, legal and institutional frameworks.	1.000	.479
Poor design implementation resulting from inability to assess investment proposals.	1.000	.652
Lack of long-term financing instruments and appropriate risk sharing mechanisms.	1.000	.651
Inadequate domestic capital markets	1.000	.755
Lack of transparency in PPP arrangements	1.000	.459
Inefficient and unsustainable credit delivery to the housing sector.	1.000	.690
Ineffective coordination among Housing Agencies	1.000	.548
Politicization of housing issues in the country.	1.000	.580
The partners often have divergent strategic and operational realities	1.000	.694
Lack of public awareness about PPP and its benefits	1.000	.616
Lack of robust and equitable policies regarding PPP.	1.000	.707
Wrong project identification	1.000	.711
Inadequate stakeholder engagement	1.000	.641
Inappropriate risk allocation	1.000	.794

Extraction Method: Principal Component Analysis.

APPENDIX B

CORRELATION MATRIX AND COMMUNALITIES (KEY SUCCESS FACTORS)

	1	2	3	4	4	5	6	7
1..A common vision and trusted relationship between partners	1.000							
2.Compelling managerial capabilities	.681	1.000						
3.No political pressure and interference	.744	.646	1.000					
4.Community participation and support	.615	.678	.574	1.000				
5.Equitable allocation of risks	.705	.652	.762	.672	1.000			
6.Transparent and efficient procurement process	.766	.608	.760	.679	.744	1.000		
7.Adequate legal framework and stable political environment	.717	.728	.659	.581	.637	.779	1.000	
8.Integration of effective measures	.626	.565	.589	.585	.541	.738	.789	1.000

a. Determinant .001

	Initial	Extraction
A common vision and trusted relationship between partners	1.000	.754
Compelling managerial capabilities	1.000	.673
No political pressure and interference	1.000	.723
Community participation and support	1.000	.628
Equitable allocation of risks	1.000	.716
Transparent and efficient procurement process	1.000	.813
Adequate legal framework and stable political environment	1.000	.762
Integration of effective measures	1.000	.644

Extraction Method: Principal Component Analysis.

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APPENDIX 2

SURVEY QUESTIONNAIRE

This research is a Postgraduate level research entitled “A Study into Affordable Housing Delivery in Ghana: The Role of Public Private Partnership.” Its aim is to explore the innovative approaches regarding the adoption of the Public-Private Partnerships in the delivery of affordable housing to curb the upsurge of Ghana’s housing deficit.

Kindly respond to the questions by ticking (√) as appropriate.

1. Kindly indicate your institution of affiliation.
 Metropolitan Assembly
 Private professional practitioner
 State housing Company
 SSNIT

2. How long have you been with this institution/?
 Less than 10 years
 10-20 years
 20 -30 years
 Over 30 years

3. What’s your profession?
 Real Estates
 Architecture
 Quantity Surveying
 Finance
 Other Building or Civil Consultancy
 Other

4. What is your highest level of qualification
 HND
 First Degree
 Master

PhD

5. Are you resident in the Greater Accra Region?

Yes

No

Other, specify

6. What's your household size?

1 - 2

3 - 4

Above 4

7. In your opinion, what is the affordable price range of rent for a house 'befitting' to a low to medium class household per month?

GHS 50 - 100

GHS 100-300

GHS 300 - 1000

GHS 1000 & above

8. Is your house rented or owned by yourself?

A. Rented

B. Owned

C. Other, specify

9. If your response to (8) is A, please indicate the percentage range of your monthly rent as against your monthly earning?

10% – 30%

30% – 60%

60% & above

10. Would you consider your rent price range indicated in (9) above as affordable?

Yes

No

11. What in your opinion can be attributed to the housing deficit in the region? Please rate these factors using the scale: 1=Not severe, 2. = Less severe, 3= Moderately severe, 4= Severe 5= Very severe

	Causes	1	2	3	4	5
1	Negative political influence					
2	Consistent change in government					
3	High population growth					
4	Unwillingness of the private sector or financial institutions to get involved					
5	High cost of land					
6	Inefficient land tenure system					
7	High cost of building materials					
8	Lack of physical infrastructure and provision of utilities					

12. How would you rate the effectiveness of the following strategies in the adoption of PPP in affordable housing delivery in Ghana? Kindly use the scale: 1= Not effective, 2=Less effective 3 = moderately effective 4= Effective 5= Very effective

	Strategies	1	2	3	4	5
1	Involvement of experts inputs from both the private and the public sectors					
2	Public sector's full participation in PPP arrangements by ensuring compliance to set-out responsibilities					
3	Involvement and collaboration with communities in the promulgation of housing schemes/ policies					
4	Risk sharing between private and public sectors in housing Delivery					
5	Provision of clear and detailed performance specifications by the public sector to the private sector in such arrangements					
6	The private sector uses equity funds to finance housing schemes while the public sector supervises the execution of the housing scheme					

7	The private sector constructs and finances the capital cost of an asset for the public sector to operate.					
8	Transfer of public sector tasks to private partners for a period (Design-Build-Finance-Maintain-Operate (DBFMO))					
9	Developing operational guidelines and tools for PPP projects by both partners					
10	Developing PPP projects and managing capacity of both partners.					
11	The removal of any regulatory obstacles in PPP arrangement					
12	The creation of broad public and political support for PPP					
13	Identifying potential resources in private sector for PPP Arrangements					
14	Identifying potential development companies and financial institutions for PPP					
15	Matching the expertise from both partners					
16	Encouraging proper stakeholder engagement; both public and private					
If others (please specify)						

13. What is the severity of the following challenges in the implementation of PPP in affordable housing delivery? Use the scale: 1=Not severe, 2. = Less severe, 3= Moderately severe, 4= Severe and 5= Very severe

	Challenges	1	2	3	4	5
1	Inadequate information on public private partnerships program					
2	Lack of institutional capacity to undertake large and complex projects					
3	Weak Financial strength of private sectors willing to be engaged					
4	Lack of comprehensive policy, legal and institutional frameworks.					
5	poor design implementation resulting from inability to assess investment proposals					
6	Lack of long-term financing instruments and appropriate risk sharing mechanisms.					
7	Inadequate domestic capital markets					
8	Lack of transparency in PPP arrangements					

9	Inefficient and unsustainable credit delivery to the housing sector.					
10	ineffective coordination among Housing Agencies					
11	Politicization of housing issues in the country					
12	The partners often have divergent strategic and operational Realities					
13	Lack of public awareness about PPP and its benefits					
14	Lack of robust and equitable policies regarding PPP					
15	Wrong project identification					
16	Inadequate stakeholder engagement					
17	Inappropriate risk allocation					
If others (please specify)						

14. How effective are the following success factors in the adoption of the public private partnership in affordable housing delivery? Use the scale: 1= Not effective 2=Less effective 3= moderately effective 4= Effective 5= Very effective

	Success Factors	1	2	3	4	5
1	A Permanent government involvement					
2	A sound regulatory framework					
3	Commitment of partners					
4	A common vision and trusted relationship between Partners					
5	Proper project financing strategy					
6	Good information dissemination and communication System					
7	Continuous project monitoring and control					
8	Compelling managerial capabilities					
9	No political pressure and interference					
10	Community participation and support					
11	Proper planning and infrastructure network					
12	Development policy and institutional framework					
13	Effective Constant communication between partners					
14	Equitable allocation of risks					
15	Transparent and efficient procurement process					
16	Adequate legal framework and stable political Environment					
17	Integration of effective measures					
If others (please specify)						