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Leveraging Rising Urban Land Values to Finance Urban Infrastructure Development in Ghana:

A Case Study of Accra

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Abbreviations

AMA	Accra Metropolitan Assembly
CBD	Central Business District
DDF	District Development Facility
DFID	Department of International Development
GAMA	Greater Accra Metropolitan Area
GDP	Gross Domestic Product
GhIE	Ghana Institution of Engineers
GhIS	Ghana Institution of Surveyors
GIP	Ghana Institute of Planners
GIPC	Ghana Investment Promotion Centre
GLGS	Ghana Local Government Service
GREDA	Ghana Real Estate Developers Association
IGF	Internally Generated Funds
IMF	International Monetary Fund
KNUST	Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
LAP	Land Administration Project
LRD	Land Registration Division
LVC	Land Value Capture
LVD	Land Valuation Division
MMDAs	Metropolitan, Municipal and District Assemblies
OASL	Office of the Administrator of stool Lands
ODF	Official Development Finance
OECD-DAC	Organisation for Economic Cooperation and Development-Development Assistance Committee
PPI	Private Participation in Infrastructure Development
PPP	Public-Private Partnership
P and T	Post and Telecommunications Corporation
PVLMD	Public and Vested Land Management Division
PWD	Public Works Department
RICS	Royal Institution of Chartered Surveyors
SHC	State Housing Company Limited
SIC	State Insurance Corporation
SMD	Survey and Mapping Division
SSA	Sub Saharan Africa
SSNIT	Social Security and National Insurance Trust
TDC	Tema Development Corporation
UDC	Urban Development Corporations
UDG	Urban Development Grant
UWE	University of the West of England, Bristol
VRA	Volta River Authority

Executive Summary

Inadequate urban infrastructure development and its impact on socio-economic development in Ghana continue to engage the attention of a wide range of stakeholders, such as public policy makers, development experts and international development agencies. Indeed, the urban infrastructure deficit in the country is growing and it is anticipated to worsen in the face of rapid urban growth and urbanisation if appropriate steps are not taken to redress the situation. Similar to many African countries, Ghana's urban infrastructure deficit is predominantly attributed to lack of adequate infrastructure development financing. Traditional financing sources, such as central government budgets and official development finance from multilateral institutions are constantly under pressure and are not always regular. They have, thus, proven incapable to finance the development of all the urban infrastructure needs of the country. Leveraging rising urban land and property values using land based financing arrangements, in particular, land value capture is perceived as a plausible source of funding that could be used to finance urban infrastructure development in Ghana. However, the potential of this financing source has not been examined and, thus, remains speculative.

This exploratory research sought to investigate the potential to leverage rising urban land values to finance urban infrastructure development in Ghana using Accra, the country's capital city, as a case study. Specifically, it was to achieve the following objectives:

- Identify growth trends in land and property values in Accra and their determinants;
- Explore the impact of infrastructure on urban land/property values in Accra;
- Explore instruments or methods by which rising urban land values could be leveraged to finance urban infrastructure development in Ghana;
- Identify the potential to generate revenues from rising urban land and property values to finance urban infrastructure development in Ghana; and
- Make recommendations for policy formulation and practice.

Driven by a pragmatic approach, a combination of strategies and techniques was deployed to deliver the research. A systematic identification and review of the extant literature drawing on several sources including academic and industrial was carried out. This was followed by a stakeholder workshop in Accra. The workshop was organised with the assistance of the Ghana Local Government Service. The stakeholder workshop together with the literature enabled the systematic delivery of the research. It particularly contextualised the research and informed the nature of data required, data collection strategies, sampling techniques, the design of data collection instruments, and facilitated the empirical data collection. Empirical data was collected through examination of the Lands Commission's land values database and the State Housing Company Ltd. (SHC) and Manet Real Estate Development Company Ltd's. property sale price databases (archival data) as well as interview and questionnaire surveys of key urban development and real estate market professionals and stakeholders. Both the interview and questionnaire surveys explored land and property value growth trends, impact of infrastructure on land and property values, and the potential to leverage rising land and property values to finance urban infrastructure development. However, whilst the interview survey explored these issues in an in-depth manner, the questionnaire survey examined the extent of these issues. The requisite data were obtained based on Likert scales.

Findings from the research established that there has been substantial growth in land and property values over the timescale in both the central and the peripheral areas of Accra and values keep rising. The questionnaire survey established that the value growth rate in high income areas was the highest compared to those of middle and low income areas. A mixed outcome was, however, established on whether residential land and properties or shop land and properties have the highest value growth rate. A growing demand for land and property particularly in the central areas of the city impelled by urbanisation, growing middle income population, influx of foreign direct investment and wealthy expatriates looking for properties to buy account for growing land property values. Land development and price increase speculation were also found to fuel increases in land values in the peripheral areas. Although a good condition for value capture, the high demand for and increases in land and property values could culminate in the non-availability of land for future strategic investment, and unauthorised developments by the poor. This requires appropriate policy responses. Further research is required to determine whether residential or shop lands and properties have the highest value growth rate.

Findings from the research also established that infrastructure has a significant, positive impact on land and property values particularly in high income areas. Electricity, roads and pipe-borne water infrastructure(s) were found to have a substantial impact. It was, however, unclear whether electricity or roads had the most significant impact. It was also unclear whether or not infrastructure has an impact in central areas undergoing redevelopment and land use conversions. Further research into these two issues is imperative. The findings imply that urban authorities could mobilise revenue from investment in infrastructure, in particular, roads, electricity and pipe-borne water, using value capture finance further infrastructure development. Findings identified seven main value capture instruments by which rising urban land and property values could be leveraged to finance urban infrastructure. These are:

- land re-adjustment/land pooling, negotiation, and voluntary contributions;
- land sales, land acquisition and resale, and public land leasing;
- betterment tax;
- property tax including property tax surcharges, tax increment financing (TIF), and land tax;
- sale of development rights;
- joint development mechanism; and
- 'in-kind' contribution, impact fees and development charges.

Other instruments such as stamp duty, and capital gains and rent taxes were also noted. Although some instruments such as property rate and public leasing are in operation in Ghana, they were not being implemented as value capture to finance infrastructure development. The instruments could, however, be revised to support any future value capture programme. Also, the individual instruments would require in-depth investigation to determine their suitability and areas of applicability given that no single instrument is fit for all purposes.

Findings highlighted that value capture to finance urban infrastructure development has the potential to succeed in high and middle income areas. This potential is supported by Ghana's growing land and property market characterised by increasing investor and developer activities, and the presence of other essentials such as frameworks of land administration, and land use planning and management, land and real estate valuation practice, both public and private land real estate institutions including professional bodies, and several areas, which are well planned and managed, and provided with basic infrastructure. Nevertheless, several challenges that could affect any proposed initiative to harness the potential were identified. These include:

- lack of access to well-planned and secured land and properties, orderly developments and good property address systems due weak land administration and urban planning systems;
- lack of suitable comprehensive valuation methodologies to assist value capture;
- lack of multi-purpose cadastre to provide organised property and property market data; inadequate access to finance for real estate investment and development;
- weak urban authorities and their lack of or inadequate consultation with the broader urban sector stakeholders;
- lack of enabling legislation, modalities, methodologies and protocols to support value capture in Ghana; and perceived lack of political will to support value capture.

The potential to leverage rising urban land and property values to finance urban infrastructure development, therefore, cannot be fully harnessed without redress of the identified challenges and programmes to that effect carefully planned, designed and implemented.

The research made several recommendations based on the findings and their implications. These included recommendations on the introduction of value capture, and the need for research to inform the modalities for the introduction and implementation of value capture, a coordinated effort to develop a multi-purpose and strategies to better land administration, and land use planning and management outcomes.

1.0 Introduction

Cities are vital to the socio-economic progress of Africa (AfDB, 2013; Africa Cities Centre, 2015). Cities account for about 80% of Africa's Gross Domestic Product (GDP) (AfDB, 2013). Apart from being centres of production and consumption, cities continue to be incubators of new ideas and innovation; locations of employment, greater variety of goods and services such as hotels, theatres, restaurants; and the majority of homes on the continent. However, African cities need to be more productive and liveable to make sustainable and meaningful contributions to socio-economic development. This requires that the continent's cities become sustainable, resilient and inclusive to address imperatives, such as the adverse effects of climate change, inequitable and unfair sharing of resources, and poor housing and environmental conditions (UN-Habitat, 2016). Adequate provision of infrastructure is regarded as critical to the production of such cities, as it could ultimately lead to growth, development and poverty reduction (Devkar et al., 2013; AfDB, 2013; Gutman et al., 2015). Indeed, adequate provision of transportation networks between cities and rural areas, reliable and less costly sources of electricity and water provision, and expanse coverage of ITC could improve rural–urban links on the continent. It could also enhance sustainable urbanisation, social equity, improve living conditions and prevent disproportionate flows of rural people to cities (AfDB, 2013). Further, infrastructure could create incentives for investment in commercial developments such as shops, offices and banks (Baffour Awuah et al., 2014a).

African cities continue to have huge infrastructure deficit (Njoh and Akiwumi, 2011; Gutman et al., 2015). For example, at the commencement of the millennium over one billion of the world's urban population lived in inadequate housing. The majority of this population are in the developing world, in particular, Sub-Saharan Africa (SSA) where 70% of the urban population resides in slums and suffer from more than two deprivations compared to 31% in Latin America, 55% in India and 60% in South-Central Asia (Gilbert, 2014). Connected to the foregoing is the consensus among stakeholders including national and urban governments, international development agencies and academia that, the infrastructure deficit in Africa poses a genuine threat to the continent's development, and requires immediate redress (AfDB, 2013; Gutman et al., 2015). Several factors account for the huge infrastructure deficit. However, inadequate finance is regarded as a major and often cited cause for the poor urban infrastructure situation on the continent (Devkar et al., 2013; AfDB, 2013; Gutman et al., 2015). According to AfDB (2013), the annual infrastructure investment for SSA alone is estimated at about USA$93 billion, but current spending is in the region of about USA$45 billion per anum. This implies a huge infrastructure finance gap.

Ghana is one country that vividly demonstrates Africa's poor urban infrastructure situation (Farvacque-Vitkovic et al., 2008; Obeng-Odoom, 2010). At the same time, the country is undergoing rapid urban growth and urbanisation with several urban environmental outcomes. More than 50% of Ghana's population reside in cities and urban centres, and as at 2010, the country's urban population as a percentage of the national population was estimated at 50.9% with an annual growth rate of 4.25% (GSS, 2012). As part of efforts to make cities sustainable, resilient, productive and liveable to promote national socio-economic development, Ghana launched her National Urban Policy in 2012. The policy identified several urban ills such as inadequate infrastructure and services, weak urban economy, land use dis-order and uncontrolled urban sprawl, slums and squatter settlements as well as poverty (GoG, 2012). Further, the Policy noted the adverse impact of inadequate urban infrastructure on socio-economic progress of the country (GoG, 2012). Indeed, the impact of poor urban infrastructure on socio-economic progress in the country is well recognised. For example, the country's current worsening energy crisis partly contributed to the decline in GDP from 7.3% in 2013 to 4.2% in 2014 (AfDB, 2015).

Consistent with the overall situation in Africa, the urban infrastructure deficit in Ghana is largely attributed to inadequate finance (Farvacque-Vitkovic et al., 2008). Urban infrastructure development in Ghana is predominantly financed through both external and internal sources. The external sources of funding are often in the form of private participation in infrastructure development (PPI), official development finance (ODF) from multilateral institutions and most of the OECD-DAC donors, and official Chinese financing (Manu et al., 2015; Gutman et al., 2015). The internal sources comprise central government budget and internally generated funds (IGF) from sub-national governments such as local/urban authorities (Petio, 2013). Apart from facing several challenges, funding from external sources and central government budget is inadequate (Petio, 2013; Gutman et al., 2015). Sub-national governments are also unable to internally mobilise adequate financial resources to undertake community projects, partly because they are weak and under-resourced (GoG, 2012; Petio, 2013).

Leveraging rising urban land and property values through land based financing arrangements, particularly Land Value Capture (LVC), is increasingly being perceived as additional source of revenue to finance urban infrastructure development in Ghana (Cities Alliance, 2015). Although there is an official policy attempt to explore LVC (Cities Alliance, 2015), no study has been carried-out in the country to establish the potential of this revenue mobilisation tool to succeed in the country. Even across SSA, no comprehensive study has been undertaken into the potential of the concept (African Cities Centre, 2015). African Cities Centre (2015) conducted an exploratory study into the applicability of the concept in SSA. However, the study was exploratory and focused predominantly on Southern and Eastern African states. Based on empirical evidence from Accra, Ghana's capital city, as a case study, best practices in the developed world and other developing regions of the world, and through working in collaboration with the Ghana Local Government Service (GLGS), this research sought to explore the potential to apply LVC to finance urban infrastructure development in Ghana.

1.1 Aim and Objectives

The research was an exploratory study. The overall aim was to investigate the potential to leverage rising urban land values to finance urban infrastructure development in Ghana, using Accra as a case study.

To achieve the overall aim, the research sought to achieve the following objectives:

- Identify growth trends in land and property values in Accra and their determinants;
- Explore the impact of infrastructure on urban land/property values in Accra;
- Explore instruments or methods by which rising urban land values could be leveraged to finance urban infrastructure development in Ghana; and
- Identify the potential to generate revenues from rising urban land and property values to finance urban infrastructure development in Ghana; and
- Make recommendations for policy formulation and practice.

The research extends the existing knowledge on land based financing arrangements–LVC. Although LVC is a well studied concept in developed economies such as the UK and the USA, and other developing economies including India and Brazil, not much work has been carried-out on the applicability of the concept in Africa. Findings from the study, therefore, add to the existing literature particularly in terms of how the perculiar situation in Ghana and by extension Africa could promote the implementation of the concept or otherwise. The study also identifies additional sources of financing for urban infrastructure. This is very useful to planning authorities - local and city authorities, land owners and real estate developers, central government agencies such as the Lands Commission, Ghana Revenue Authority and most importantly Ghana Infrastructure Investment Fund to mobilise additional resources to fund infrastructure development. This is essential to building sustainable and resilient cities, which are productive and liveable thereby contributing to the achievement of Ghana's new Urban Policy goals. Aligned to this is the research's contribution to building evidence base such as additional revenue sources for better urban planning, programming and the development of suitable urban strategies. Further, the findings from the research could help to enhance the capacities of built environment institututions and professionals to improve service delivery and subsequently market operations to attract investment. For example, it will provide useful information to public and private land management institutions such as the Lands Commission, real estate valuers and their professional bodies–Ghana Institution of Surveyors (GhIS) and Royal Institution of Chartered Surveyors (RICS) to inform initiatives to improve land and other real estate services delivery, which could culminate in increase real estate investment. This could ultimately lead to growth, development and poverty reduction. The findings could also feed into the design of relevant courses at higher institutions of learning and research both in Ghana and abroad.

The report is organised into seven sections. Following this introduction, the next two sections interrogate the relevant literature. This is followed by an exposition of the methodology used to deliver the research. Findings from the empirical aspect of the research, their discussions and implications are then presented before conclusions of the research are drawn and the recommendations prescribed.

2.0 Financing Urban Infrastructure Through Land Value Capture

The provision of adequate infrastructure is fundamental to the development of productive and liveable cities. For example, the establishment of Infrastructure Australia to advise the Australian Government on priorities for significant national economic infrastructure was in direct recognition that well targeted and high quality investment in infrastructure is vital to lift the productivity of the country's cities (Commonwealth of Australia, 2011). Thus, weak infrastructure and poor public services delivery could undermine investment and productivity. Therefore, deficits in urban infrastructure provision and adverse gaps in service delivery could constrain the potential of cities particularly the ones undergoing rapid urban growth and urbanisation. This is because such cities are unable to take economic advantages from benefit to scale and agglomeration that emanate from dense cluster of people and businesses.

Ghanaian cities and their counterparts across Africa, thus, have to benefit from significant investment in infrastructure. This has become even more compelling given that the continent's urban population continues to outpace existing infrastructure and services. For example, it is estimated that Africa's urbanisation rate is about 40% and it is growing at 3.4% per anum, and outrunning infrastructure developments (UN-Habitat, 2014). Nonetheless, such investments will require huge financial resources. This section discusses financing of urban infrastructure through LVC. It commences with some theoretical expositions followed by a discussion on the LVC concept, its instruments or methods and conditions for its operation.

2.1 Financing Urban Infrastructure Development

Infrastructure is often a complex term to define, and its definition may depend on how it is perceived, the provider, characteristics, use, ownership and the one who is defining the term. For example, economists may define infrastructure differently from urban planners. Hirschman (1958) refers to infrastructure as capital that provides public services. The definition identifies two components of infrastructure namely: capital (stock variable) and public goods (flow variable). This suggests that although infrastructure may not always be a public good, there must be some elements of public involvement in its provision or use (Fourie, 2006). As later discussion will show, this could be due to the perception of what infrastructure connotes. Also, infrastructure could be classified as economic and social infrastructure. Economic infrastructure refers to infrastructure that promotes economic activities and, thus, provides the foundations of efficient, productive and sustainable communities. This infrastructure includes: roads; highways; electricity; telecommunication system; water; airports; railways; and sanitation (Fourie, 2006; McInerney et al., 2007; O'Neill, 2010). Conversely, social infrastructure connotes infrastructure that promotes the quality of life of people in areas such as health, education and culture (Fourie, 2006; O'Neill, 2010). Given that economic and social infrastructure often overlap in terms of their composition, this research takes a holistic view of infrastructure, which is an amalgam of both categories of infrastructure. This view also recognises the division of infrastructure into categories such as basic and advanced (African Cities Centre, 2015), among others.

A cardinal issue underlying urban infrastructure financing is who has the responsibility for infrastructure provision. This is fundamentally steeped in "the state versus the market" discourse particularly the market failure thesis espoused by A.C. Piguo (1929). The market failure orthodoxy suggests that real world markets often fail in their resource allocation function. Such failures often lead to adverse externalities including environmental degradation and non-provision of public goods such as infrastructure. This requires the state to intervene in market operations to correct the failure (Klosterman, 2003; Lai, 2005; Adams, 2008). Thus, real world markets do not provide enough profit incentives to impel economic agents to produce adequate and profitable infrastructure or, better still, they may not have the huge financial resources and expertise required

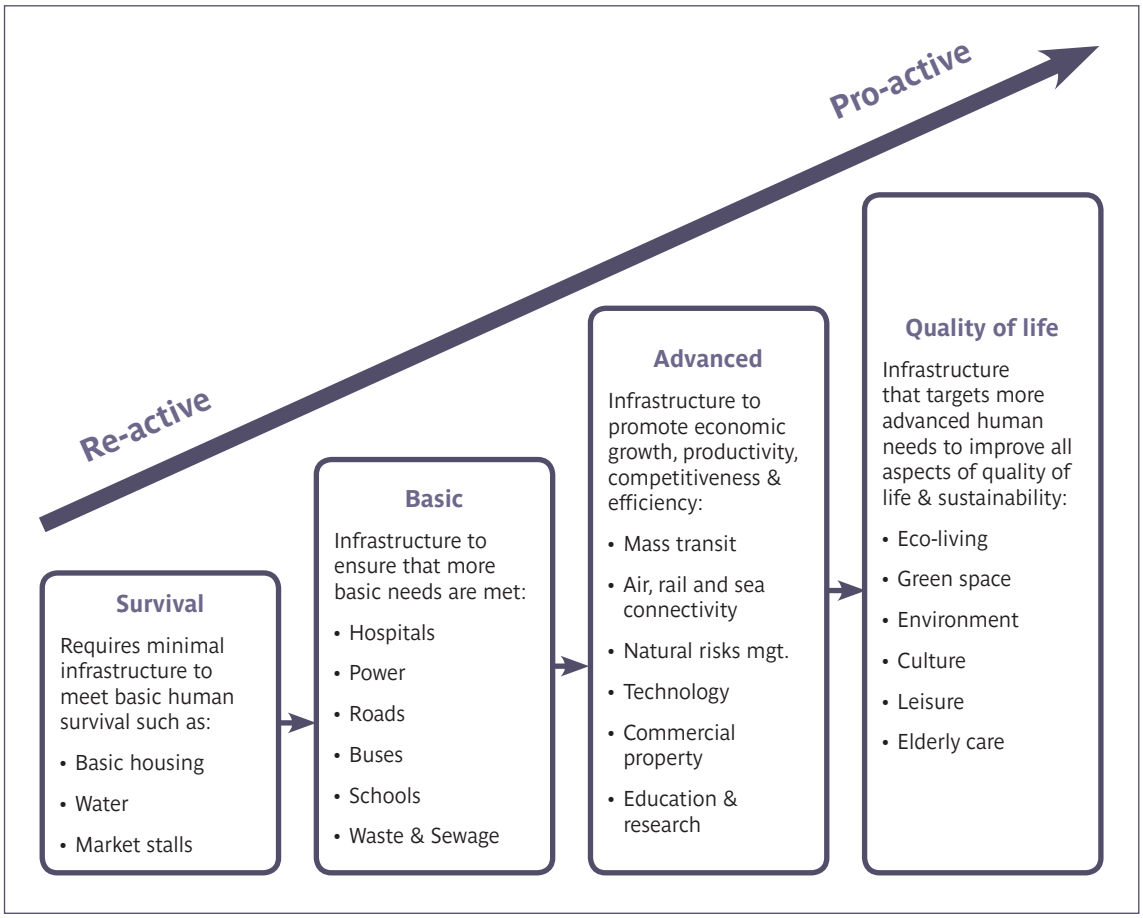
to produce them. This meant that the state will have to step-in to produce them. Indeed, Smith (1776), an ardent market advocate notes that infrastructure provision is a function of the state. Thus, as a provider of infrastructure, the state and its agents, such as departments, agencies and decentralised intuitions including urban and local governments, are supposed to finance infrastructure development.

Financing and provision of urban infrastructure have traditionally been the responsibility of the state/government in many jurisdictions especially after World War II (O'Neill, 2010). Although this might have also been spurred by the philosophy of nation building, financing of infrastructure during this period came from government budgets. State bureaucracies became responsible for infrastructure spending, design and delivery. This later led, in some cases, to the establishment and growth of monopolistic infrastructure and utilities' institutions as extensions of relevant state institutions. However, a new political and economic management hegemony has emerged, in particular, the introduction of neo-liberal agenda since the 1980s with its attendant economic liberalisation policies (Lord and Shaw, 2009; Allmendinger and Haughton, 2012). These policies led to the rolling back of the state in development and rather encouraged the state to create the enabling environment for the private sector to spearhead developmental efforts in many countries. The rationale was to attract private capital. In the built environment, this led to arrangements such as the public-private partnership (PPP) in urban development particularly to finance urban infrastructure, which were becoming ageing and inadequate, due partly to increases in population. It was also to promote efficiency (Gleeson and Low, 2000). For example, in the UK this led to the introduction of enterprise zoning and the establishment of Urban Development Corporations (UDCs), such as the Docklands in the 1980s (Marshall, 2009). Several PPP urban infrastructure financing arrangements, such as service, management and concession contracts, and leasing/affermage have since emerged (Devkar et al., 2013). However, the outcomes from the introduction of the private sector in urban infrastructure finance and development in Africa since the 1980s have been mixed (Devkar et al., 2013).

Notwithstanding the foregoing, it is suggested that urban infrastructure provision and finance should be contingent upon the stage of urban/city growth and evolution, its level of operating activities, expenditure involved as well as the investment made and revenue generated by cities (Slack, 2010; African Cities Centre, 2015). Advocates suggest that cities evolve progressively as they grow physically and economically, and increasingly take control of management services that make them function effectively (Africa Cities Centre, 2015). This evolution takes place along a trajectory commencing from a reactive to a proactive position, and consists of four stages, namely survival, basic, advanced and quality of life stages. As can be seen from Figure 2.1, the various stages require different levels of infrastructure development. At the survival stage, minimum infrastructure to meet basic human needs is often required. The basic stage is an extension of the survival stage and at this stage, provision of infrastructure is aimed at ensuring that more human basic needs are met. At the advanced stage, infrastructure provision is geared towards improving city's economic growth and productivity as well as their competitiveness and economic efficiency. Provision of infrastructure at the advanced stage of city evolution is to satisfy advanced needs of human beings. The quality of life stage focuses on the provision of infrastructure that ensures that advanced human needs are satisfied to improve quality of life.

Provision of infrastructure for the various stages of city growth entails expenditure both for new construction and maintenance of existing stock. Further, cities and urban areas have other operating expenses such as those on day-to-day administration. This requires that city authorities undertake adequate investment to generate enough revenue to meet their expenditure. Fiscal gap, which leads to shortage of infrastructure compared to what is required often emerges where there is a fall in revenue mobilisation to fund infrastructure development due to inadequate investment.

Figure 2.1 Evolution of Cities and Urban Centres and their Infrastructure Requirements



Adapted from African Cities Centre (2015 p 10)

The fiscal gap is often huge at the survival stage of city evolution and most African cities are said to be at this stage due to inadequate financing (Africa Cities Centre, 2015).

There are several sources through which cities and urban centres could finance expenditures, both operating and capital. These include: city authorities IGF and own resources, and external sources such as central government transfers (Slack, 2010; Petio, 2013; African Cities Centre, 2015). However, most African cities depend largely on central government transfers to fund both their operating and capital expenditures. For example, central government transfers to local authorities in Ghana, Lesotho, Uganda and Malawi constituted 69%, 90%, 88% and 60% of their revenues respectively (Petio, 2013). Yet this funding stream is inadequate, and continues to be under pressure. Sometimes city authorities do not receive these funds at all or do not receive them on time. Further, local authorities (city and urban authorities) by themselves are unable to mobilise adequate resources internally to finance infrastructure and other community projects. This is because they are often weak and under resourced (Chitembo, 2009; GoG, 2012; Petio, 2013; African Cities Centre, 2015). However, LVC or land based financing arrangement is increasingly gaining recognition in Africa as a means by which urban authorities on the continent could mobilise additional financial resources to support infrastructure development (Cities Alliance, 2015; African Cities Centre, 2015). The next sub-section discusses this concept.

2.2 The Land Value Capture Concept

Land value capture is a land based financing arrangement. It is regarded as a public financing arrangement through which government, by public action such as regulation and/or infrastructure investment:

- Triggers appreciation in land/property values;
- Institutes a process to share the value appreciation by capturing part or all the value appreciation; and
- Uses the proceeds to finance infrastructure investments, any other improvements required to offset impacts related to the changes, and/or implement public policies to promote equity (African Cities Centre, 2015 pvii; Medda, 2012; Mathur and Smith, 2013).

Regulatory decisions that trigger land/property value increments occur in several forms. These, for example, may include change in land use, and preparation and implementation of planning schemes. The use of the proceeds from value capture to implement public policies to promote equity may also relate to issues such as provision of affordable housing schemes.

Literature on LVC and its application to finance urban infrastructure, especially transportation systems, are wide particularly in the developed world (Medda, 2012; Mathur and Smith, 2013; Burge, 2014; African Cities Centre, 2015) and emerging economies such as China, India and Brazil (Cho and Choi, 2014; Mathur, 2013, 2015; African Cities Centre, 2015). The concept is based on the economic theory that, all things being equal, economic agents are always willing to pay a certain premium to live, work and conduct certain activities among other things in areas that provide amenities. The premiums paid or to be paid are, thus, regarded or perceived to be embedded or capitalised into the values of land that support these activities (Mathur and Smith, 2013). This implies that increased accessibility of land or property to amenities or infrastructure will lead to increments in the value of the land or property. From this standpoint, therefore, Medda (2012) conceptualises the total value of land in a city or urban area to consist of two components as follows:

TLV = A + B

Where:

TLV = Total value of land in the city or urban area;

A = Capitalised value of the land determined by accessibility to natural and social resources in the city and

B = Capitalised value of improvement and construction in situ.

Value capture focuses on **A**. Medda (2012) decouples **A** into three capitalised land value components namely:

- Urban externalities–benefits gained/value contribution from additional access to urban locations and activities such as natural amenities;
- Social infrastructure–benefits gained/value contribution from social developed infrastructures such as schools, hospitals and public services; and
- Development infrastructure–benefits gained/value contribution from infrastructure such as sewage collection, water reticular and highway systems.

Connected to the foregoing is the idea that urban and population growth lead to land value appreciation with little or no input by land and property owners, although it tends to make them wealthier. This land value appreciation is often referred to as unearned and it is argued that same should be shared by society at large, in accordance with social justice principles (Smolka and Amborski, 2000). However, the conceptualisation of Medda (2012) and the definition by others such as Mathur and Smith (2013), seem to focus only on one aspect

of LVC. For example, a public action through regulation such as compulsory land title registration or stamp duty for land transactions, which could culminate in land value appreciation are not adequately emphasised. Perhaps this is one of the reasons why some other authors such as the African Cities Centre (2015) prefer the terminology "land based financing arrangements" to LVC.

Several LVC instruments and their classifications are identified and discussed in the literature. Medda (2012) identified several LVC instruments/methods, but categorised them into three main methods as follows:

- Betterment tax–levy on properties that benefit from transport accessibility gains;
- Accessibility increment contribution (AIC)–economic development incentive package; and
- Joint development mechanism–a cooperation system between public sector and private developers.

Mathur and Smith (2013) also identified several such instruments including joint development mechanism, sale or lease of air rights, and property tax increment through Tax Increment Financing (TIF), among others. However, this research predominantly dwells on the instruments identified by the African Cities Centre (2015). These include instruments identified by the afore-mentioned two studies. They are briefly discussed below, and also summarised by Table 2.1 after the discussions.

2.2.1 Land Readjustment/Land Pooling

Land readjustment or land pooling is a land management tool that emphasises integration of inter-disciplinary techniques to develop a comprehensive strategy to produce suitable community land development projects and infrastructural facilities, among others (Hong and Brain, 2012; Mittal, 2014). The method often relies on techniques from urban economics, urban planning and design, law and governance, land surveying and real estate appraisal. It is a self-financing tool, which is based on the principle that recipients of benefits, after development, pays for the cost (Mittal, 2014). The mechanics of the method entails pooling and re-configuring or re-parcelling of under-performing contiguous urban lands to provide infrastructure, produce co-ordinated and planned development as well as ensure that all re-parcelled lands get access to the infrastructure produced. The mechanics may also entail reduction in land sizes of private owners to create a pool of lands for the infrastructure project. Portion of the pool of lands not used directly for the infrastructure construction, but become serviced after the infrastructure development, attract higher values. These may be sold to cover parts of the infrastructure development cost. Further, all the other parcels are expected to appreciate in value as a result of the infrastructure and the planned arrangement of lands, which could be captured to pay for the cost of the development.

Application of land readjustment has a long historical antecedent dating back to 1791 and has been applied in several countries, including USA, Germany, Australia, Sweden, France, Holland and France, as well as some Asian countries (Mittal, 2014). An example of its application is the arrangement under which the 47 mile long ring road in Ahmadabad, India was conceived and constructed by the Ahmadabad Urban Development Authority (AUDA) to reduce traffic congestion in the inner city and also to connect the city to several other peripheral villages. Other examples were seen in the tools used to assist the post-earth quake reconstruction efforts in Chile (Hong and Brain, 2012). However, according to Mittal (2014), application of the method in relevant countries was informed by fiscal constraints, rapid urbanisation (population growth), rising real estate values, and active land markets with high demand for infrastructure and serviced properties.

Closely align with land re-adjustment is another instrument or method known as negotiations and voluntary contributions. This instrument is exercised where bilateral negotiations are held with property developers in the relevant neighbourhood to determine how much they will contribute towards infrastructure development before the investment is made. African Cities Centre (2015) notes that, this instrument is very useful when it is difficult to determine the impact of planned development on land values.

2.2.2 Land Sales, Land Acquisition and Resale and Public Land Leasing

Land sales as a method or instrument refers to the sale of public lands or lands owned by local authorities or urban/city authorities to raise revenues to finance infrastructure development. This often occurs where local authorities or urban/city authorities relocate from their prime lands in city centres to peripheral areas and sell such lands to generate revenue. Peterson (2006) in African Cities Centre (2015) identifies such practices in World Bank's City Development Strategies' Studies. An extension of this practice is where local authorities acquire lands usually in prime areas or where there are developments, and subsequently sell when their values appreciate to raise funds for development projects. The idea of public land leasing is to generate revenue through ground rents to finance infrastructure development.

2.2.3 Betterment Tax

Betterment tax is often referred to as betterment charge, levy, and benefit assessment. It is a levy based on increment in land and property values due to public action such as investment in infrastructure or issuance of development rights (Medda, 2012; African Cities Centre, 2015). According to Medda (2012) the Levy often targets beneficiaries of accessibility, reduced congestion and pollution, and of lower transport costs due to transport investment, and its aim is to internalise windfall surpluses of land value borne out of increased accessibility. As noted by Smolka and Amborski (2000), this levy is premised on the notion that, land value appreciation is due to joint community effort, which is social in nature. Therefore, society at large should be the ultimate beneficiary. The method or instrument has seen wide application especially in the developed world. For example, financing of both the Hong Kong and Singapore metro systems was from betterment taxes. The wide application of the betterment levy may be partly due to its advantages, such as being equitable, efficient and easy to understand its mechanics. Further, it may create incentives for higher density developments as it compels land owners to avoid land speculation (Medda, 2012). Nevertheless, it is a very complex and elusive tax programme to undertake as it is often difficult to evaluate the impact of public action on land and property values. Besides, it may require large volumes of data on land and property, which may be non-existent especially in developing countries, and could lead to displacements of people in urban areas (Medda, 2012).

2.2.4 Property Tax

Property tax is known by several names including property rate, land tax, land value tax and real estate tax. It is an annual tax levied on immovable properties such as land and buildings by the state or quasi-state authorities such as local/urban/city authorities (Gerald and Kathleen, 2005; Monkam and Moore, 2015). This tax is often paid by land and property owners (Monkam and Moore, 2015), and it is assessed based on property values (African Cities Centre, 2015). The tax could be classified into benefit tax and wealth tax. Property tax is often referred to as a benefit tax, where its imposition is solely to generate funds to provide municipal services such as provision of water, sewerage, refuse collection, policing and maintenance of public parks and schools among others. Conversely, it becomes a wealth tax where property rights are regarded as social goods and their increment in value borne out of access to municipal services is shared by society as a whole because the value appreciation was created by society (Walters, 2011).

Connected to property tax are property tax surcharges, land tax and tax increment financing (TIF) (African Cities Centre, 2015). Property tax surcharge arises where a surcharge is imposed on a relevant property, for example, if it is located in a business improvement district while land tax focuses solely on land and its appreciation due to access to infrastructure provision. Land owners are supposed to pay this form of tax (African Cities Centre, 2015). TIF is often designed as a public-private partnership infrastructure financing tool (Medda, 2012). The tax is regarded as a way of using anticipated future increases in tax revenue to finance current infrastructure (Squires and Lord, 2012). It is informed by the assumption that public investments such as infrastructure development would lead to new developments and increment in values in existing properties and surrounding areas, which may expand the tax net and revenue. Tax revenue raised from the capture of these value increases in designated areas can then be used to pay-back the cost of the infrastructure development (Squires and Lord, 2012; Medda, 2012). This fiscal tool is very common in the USA and the UK.

Property tax is a widely used fiscal tool to generate revenue for urban government expenditure. According to Kelly (1999) property tax accounts for between 40-80% of local government finance, 2-4% of total government taxes, and 0.5-3% of GDP across the world. It is regarded as highly progressive and equitable tax because its assessment is based on wealth rather than percentage of transactions (Monkam and Moore, 2015). Further, tax revenue is often assured since the subject matters of the tax (land and buildings) are immovable. Therefore, it is difficult to evade the tax. Nevertheless, the unavoidable and uncompromising nature of the tax is making it unpopular with tax payers (Monkam and Moore, 2015).

2.2.5 Sale of Development Rights

This method or instrument is premised on the idea that ownership of property or land connotes ownership of bundle of rights. Development rights is one of these rights, which are often granted to specific parcels of land by the state through its relevant agencies such as planning authorities in many countries. For example, land uses can be controlled through zoning ordinance, which specifies land for various uses such as residential, commercial, educational, industrial and recreational. Also, development intensity can be controlled using instruments such as floor area ratio and building setbacks. Sale of development rights is, therefore, based on unbundling development rights and selling them independently from the land, which they were originally attached (Mathur, 2015). Parcels from which development rights are sold are known as sending areas and those that receive the rights are called receiving areas. According to Mathur (2015) relevant programmes tend to limit intensity of development or prohibit development in sending areas and allow intensity of development to be higher in receiving areas. Sending areas are often noted to be historic preservation sites, farm lands and environmentally sensitive sites. Conversely, receiving areas include transit zones, and downtowns and city centres (Mathur, 2015; African Cities Centre, 2015). Sending and receiving areas could be in the same area. Further, there could be an alternative arrangement where there is no sending or receiving areas, but the state authority responsible for granting development rights sells such rights to developments to generate revenue to undertake infrastructure development. An example of this is how financing of the Rajkot Bus Rapid Transit System (BRTS), India, which comprised a total of 63.5km of 3 different BRT(s) with overall cost of US$18million (Mathur, 2015), was arranged.

2.2.6 Joint Development Mechanism

The joint development mechanism is a public-private partnership arrangement to finance infrastructure development. This is common in the transportation sector. It is often between a local authority/government (transit agency) and private entities, such as real estate development companies to finance infrastructure development (Medda, 2012; Mathur and Smith, 2013). This is usually undertaken through arrangements such as granting of ground leases to real estate developers, air rights development, station interface/connecting fee programmes and other initiatives to incentivise real estate developments close to transit stations for both public and private benefit (Medda, 2012). The instruments are used to raise revenue, for example, ground rent to local governments/transit agencies and also to promote ridership in the case of transport infrastructure (Mathur and Smith, 2013). Further, Mathur and Smith (2013) note three unique features of joint development, as follows: 1. it is a legal binding agreement between two parties; 2. the private party must compensate the public entity through payments or cost sharing arrangements; and 3. agreements are voluntary for all parties. There are also several types of joint development mechanisms. The method is very popular in the USA where it originated (Mathur and Smith, 2013).

2.2.7 "In kind" Contributions, Impact Fees and Development Charge

"In kind" contributions, and impact fees and development charges are forms of land use exactions levied on real estate developers (Bruekner, 1997). "In kind" contributions often arise where developers are required to provide infrastructure such as construction of streets and sewers as a condition to undertake a development project (Bruekner, 1997). There could also be a situation where infrastructure(s) are provided by developers without such express condition from local authorities or even without their consent (African Cities Centre, 2015). This method is often used to provide on-site infrastructure (Bruekner, 1997; African Cities Centre, 2015). Impact fees and development charges are used interchangeably (African Cities Centre, 2015). They are cash payments developers are required to pay for infrastructure development prior to undertaking their development. They are usually suitable for off-site infrastructure development, such as water supply, wastewater removal, parks and electricity (Bruekner, 1997). The amount paid is often assessed based on a transparent formula, and it is regarded as a useful tool that shifts the timing of financing of infrastructure through urban growth as financing is obtained up-front unlike other forms of taxes (African Cities Centre, 2015). Further, although opponents suggest that the method deters economic development and results in dis-proportionate burden on low-income families (Burge, 2014), it has been found to facilitate development in areas, which were previously underdeveloped (African Cities Centre, 2015). The method is widely applied in the developed world, such as the UK and the USA. Nevertheless, the method requires clarity and transparency for its successful application as the new infrastructure should be directly attributed to relevant developments to incentivise developers to pay (African Cities Centre, 2015).

Table 2.1: Land Value Capture Instruments/Methods

Instrument	Meaning
Land Re-Adjustment/ Land Pooling	It is based on a combination and an integration of sound real estate and planning principles, such as sound planning policies and governance arrangements among others.
Negotiations and Voluntary Contributions	A bilateral negotiation, before the investment occurs, is used to determine a rate that property owners in the area of influence should pay for the improvement. Land re-adjustment is a self-financing land management tool, which emphasizes recipients of the benefits, after development, should bear its cost.
Land Sales	This instrument relates to the sale of publicly – preferably city -owned land.
Land Acquisition and Resale, and Public Land Leasing	The purchase of land around a development, and subsequent resale of that land by the public sector or relevant authority is a method to capture the full value of the gains that an infrastructure investment may create. If the relevant local authority owns the land, it would lease the land out for a period of time, thus generating revenue.
Betterment Tax	Any tax or charge on an increase in value resulting from some public action, such as the issuing of development rights or the provision of infrastructure
Property Tax, Property Tax Surcharges, Tax Increment Financing (TIF), and Land Tax	A tax levied on the value of a property (sometimes) including land by a local authority. A surcharge may imposed in situations, such as if the property is located in a business improvement district. TIFs relates to arrangement where local authorities are allowed to finance infrastructure development using property tax revenue from increases in assessed values from within designated TIF districts. Land tax is a tax targeted solely on land and its appreciation as a result of infrastructure provision. The focus is, thus, on land owners.
Sale of Development Rights	The sale of the right to convert rural land (agricultural or un-zoned) to urban use; and the right to build at greater densities than normally would be allowed by zoning rules or height restrictions.
Joint Development Mechanism	This is a partnership arrangement particularly in the transportation sector between the public sector, private operator and developers to share the burden of transport investment
'In kind' Contribution, Impact Fees and Development Charges	This is a situation where a developer constructs an infrastructure external to his/her property because a local authority is unable to do so or not willing to do so. This is sometimes under the instruction or permission of the local authority or the developer voluntarily does it. Impact fees are designed to cover the costs of the bulk and connector infrastructure required for a new property development or property development improvements. These charges could also be used to finance other infrastructure directly linked to property development. They are based on a formula, so that they can be applied consistently to all property developers.

Source: Extracted from the literature

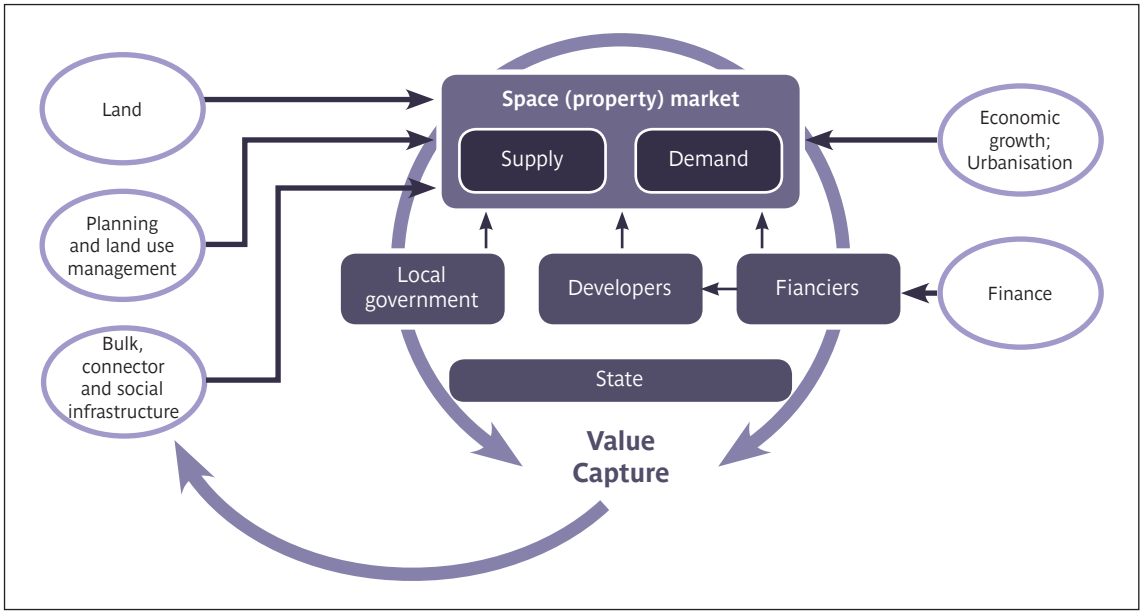
2.3 Conditions for the Implementation of Land Value Capture

The preceding sub-section has outlined and discussed the main LVC instruments or methods. The implementation of these instruments may require different circumstances (Medda, 2012; Squires and Lord, 2012). For example, Medda (2012) makes the point that it is disingenuous to implement a standard model of LVC finance across cities as the model may need different requirements in different locations and may also have different implications for different categories of people in different cities thereby affecting its successful implementation. Squires and Lord (2012) also observe that there is often the temptation for policy makers to replicate policy across cities as a quick fix solution, but a lack of understanding of the structural intricacies of institutions and how policy is set in place could lead to a choice of ineffective LVC instrument or method. However, given the exploratory nature of this research, this sub-section focuses on the general conditions or requirements necessary for the successful operation of LVC.

Land Value Capture takes place within real estate development and improvement as well as their access to infrastructure process (African Cities Centre, 2015). This means that factors that determine demand and supply of land and property, and institutions that underpin value capture are critical to the successful operation or otherwise of LVC. Thus, fundamental to the success of LVC is the effective and efficient operation of land and real estate markets. As can be seen from Figure 2.2, African Cities Centre (2015) identifies four main determinants for the successful operation of LVC. These are:

- Demand for property;
- Supply of property;
- Effective city; and
- Effective state.

Figure 2.2: Determinants of Land Value Capture



Source: African Cities Centre (2015 p 20)

A component of LVCs is land/property value appreciation. Without such value increment, LVCs will not arise at all. All things being equal demand for land and property, is the single most important factor that could culminate in an increment in land and property values. However, demand for land and property is largely determined by factors such as urban economic development, economic growth, population growth and increase in household income, (Africa Cities Centre, 2015). This implies that where an urban economy is well developed, and there is economic and population growth with increases in household income demand for real estate will increase, which all other things being equal, will lead to increment in real estate values. Increase in demand for real estate also means increase in demand for infrastructure to support its use. Indeed, as noted previously, the success of land re-adjustment in cities where they were applied was among others informed by rapid population growth, rising real estate values, and active land markets with high demand for infrastructure and serviced properties (Mittal, 2014).

Real estate markets, like other markets, have two sides; the demand and the supply sides. To achieve active or effective and efficient real estate markets, the supply side needs to be active and produce the kind of products that will meet demand. Thus, there should be easy access to secured and well planned lands for development supported by provision of infrastructure and services that will promote development, as well as enhance value capture. This implies that, an effective and efficient land administration system should be in place. This will promote a clear definition of land ownership rights, ease of access to and allocation of land, a clear determination of boundaries, ease of registration to land and limited disputes over land ownership (Mittal 2014; Mathur, 2015; African Cities Centre, 2015). Connected to this is the need for an effective land information management regime, underpinned by availability of cadastres to support effective and efficient land administration. There is also a need for an effective planning and land use management regime to ensure: availability of master plans and sub-division planning schemes; formal approval of land uses; ease of getting land use approval and development permission among others (Mittal 2014; Mathur, 2015; African Cities Centre, 2015). Walters (2012) in Mabe (2013) noted, for example, that for successful operation of property tax, there must exist, a property right ownership system, forms of recognising property rights ownership and maturity of the property market, among others. Further, there should be developers who can easily access finance to undertake developments, and also support local government/authorities in the provision of infrastructure (Bruekner, 1997; Mathur and Smith, 2013; African Cities Centre, 2015). Beyond the foregoing, there is a need for effective property valuation system with suitable and applicable methodologies to assess value appreciation/value capture and create enabling environment to undertake valuation for LVC (African Cities Centre, 2015).

The other requirements, which are connected to the already discussed factors, are the need for an effective city and state. According to African Cities Centre (2015), effective city is manifested in a number of factors. These include: mandate given to cities and by extension local/urban/city authorities to provide their own infrastructure or control infrastructure provision; and how effective and efficient cities are administered to promote effective planning and land use management, engagement with real estate developers and owners, and existence of transparency. Indeed, where local/city authorities are not responsible for provision of infrastructure there will be lack of incentives to generate revenue through LVC to do so. This implies a need for requisite devolution of infrastructure provision to local authorities. As noted previously, effective planning and land management is vital to the operation of LVC. Therefore, local/city authorities must ensure that this is in place. They need to also engage real estate developers and owners, as well as the entire citizenry, in a transparent manner to provide the rationale and incentives for them to be involved in LVC schemes and also to pay taxes. For example, as demonstrated in the preceding sub-section, without adequate engagement and transparency, methods such as land re-adjustment, sale of development rights and joint development mechanism cannot be implemented. Further, clarity and transparency is a cardinal condition for the operation of impact fees. Another requirement is a city's ability to generate enough revenue to meet other operating expenses else revenues generated through LVC will be used for other things rather than for infrastructure

development. The foregoing suggests a need for cities to have the appropriate institutional and administrative capacities, including adequate material resources and well trained staff (Mabe, 2013).

Although the focus of LVC is on cities and urban areas, there is a need for an effective state to support its operation. Cities and urban areas may have some level of autonomy, but they are still under the state. An effective state will support the operation of LVC in areas such as provision of political will and commitment, and passage of clear LVC policies. For example, Mittal (2014) identified legal and political factors as some of the pre-requisites for the implementation of land re-adjustment in India. These factors, according to the author, manifest themselves in putting the appropriate regulatory framework in place and political leaders showing commitment to its implementation.

The discussions in this section have established that LVC could be a source of revenue to finance urban infrastructure. However, the successful implementation of LVC is contingent upon certain conditions. These conditions are predominantly land and real estate market related conditions. The next section discusses land and real estate market(s) in Ghana in the context of the conditions necessary to implement LVC.

3.0 Land and Real Estate Markets in Ghana and Land Value Capture

Urban infrastructure in Ghana is inadequate in scope and in quality. Cities in the country have huge infrastructure deficit and require sufficient investment to make them more productive and liveable (GoG, 2012). As at 2006, 61% of the urban population had access to potable water. However, coverage has declined since the 1990s (Farvacque-Vitkovic et al., 2008). Further, the five major cities in the country, namely Accra, Kumasi, Tema, Sekondi-Takoradi and Tamale, suffer from insufficient quantities of treated water, and access to urban sanitation facilities is about 40%, with access in some poor communities being as low as 10% and below (Farvacque-Vitkovic et al., 2008). Although there has been some improvement in the telecommunication sector following its deregulation in the 1980s (Boohene and Agyepong, 2011), the poor urban infrastructure cuts across the various infrastructure facilities. For example, Accra roads are described as un-engineered (300–400 km), unpaved and potholed with the effect of creating congestion and long travel times (UN-Habitat, 2009; Obeng-Odoom, 2010; Baffour Awuah et al., 2014a). The recent energy crisis in the country (AfDB, 2015), is another example. Such a poor urban infrastructure has serious implications for productivity and liveability. For example, as noted previously, the recent energy crisis partly accounted for the decline in the country's GDP from 7.3% in 2013 to 4.2% in 2014 (AfDB, 2015).

The oft-stated reason for the deficit in urban infrastructure in Ghana is inadequate funding (Farvacque-Vitkovic et al., 2008; GoG, 2012; Baffour Awuah et al., 2014a). Financing of urban infrastructure in Ghana comes from two main sources; external and internal. The external sources are mainly PPI, ODF from multilateral institutions and most of the OECD-DAC donors; and official Chinese financing (Manu et al., 2015). The internal source, which is the primary source of infrastructure financing in Ghana, is predominantly central government budgets. Most of the development projects in the local government areas are financed by central government through the District Assemblies Common Fund (DACF). It is estimated that inter-government transfers alone constitute about 69% of local government revenue in Ghana (Petio, 2013). Thus, although city authorities are empowered by enabling laws and legislation (the Ghanaian Constitution and the Local Government Act (1993), Act 462) to mobilise internal financial resources to support development and undertake community projects, they are unable to generate sufficient resources. As noted in the previous section, LVC could be a source of revenue to finance urban infrastructure development. However, its implementation, in the main, is contingent on land and real estate markets and their related institutions. Without effective and efficient functioning of land and real estate markets and their related institutions, implementation of LVC to finance urban infrastructure development may not succeed (Medda, 2012; Mabe, 2013; Mittal, 2014; African Cities Centre, 2015). This section opens a discussion on land and real estate markets in Ghana, and LVC. The aim of the section is to examine the markets and their related institutions in the context of the conditions for the implementation of LVC based on the extant literature to provide further insights for a systematic inquiry.

3.1 Land and Real Estate Markets in Ghana

Land and real estate markets have long existed in Ghana and predate the advent of colonialism (Gough and Yankson, 2000). These markets have, over the years, undergone several changes. However, before examining them in detail, it is important to first present an overview of the land ownership structure in Ghana.

3.1.1 Overview of Land Ownership Structure in Ghana

Several studies (Kasanga and Kotey, 2001; Arko-Adjei, 2011) have been conducted into land ownership in Ghana. However, in broad terms, land ownership or holdings in Ghana can be categorised into customary and public lands (Baffour Awuah et al., 2013). Under this broad categorisation, the customary lands comprise stool/skin, family/clan and private lands. Stool/skin lands are owned by stools/skins and particularly refer to lands for which the highest interest known as allodial is vested in stools and skins. These lands are administered and managed by the stools/skins through chiefs or traditional leaders in collaboration with their elders. Conversely, family/clan and private lands are lands for which the allodial is vested in families/clans and private individuals respectively. Family/clan lands are administered and managed by family/clan heads with the assistance of their elders.

Public lands, often referred to as state lands, are owned by the state. These include lands compulsorily acquired and vested in the president on behalf of the people of Ghana and those acquired by private treaty. There is also specie of public lands known as vested lands (Baffour Awuah et al., 2013). This type of public land is characterised by duality of ownership; legal and equitable (Kasanga and Kotey, 2001; Baffour Awuah et al., 2013). The legal ownership is vested in the state, while the equitable ownership could be vested in any of the landholding groups mentioned previously signifying a trust or fiduciary relationship between the state and "owners" or beneficiaries of the other land holdings. All public lands are administered and managed by the country's Lands Commission[1] in co-ordination with other relevant agencies, such as the Town and Country Planning Department (TCPD) and the local authorities. It is estimated that about 20% of all landholdings in Ghana are public lands, while 80% are customary (GoG, 1999).

Several interests in land and rights over land are also recognised in Ghana. Apart from the allodial mentioned previously, these interests and rights include both customary and common law freehold, estate of leasehold, and licenses and easements (Baffour Awuah et al., 2013). However, relevant legislations do not allow the grant of freeholds over public and stool/skin lands, and foreigners cannot acquire interests in land for more than 50 years (Ghana's 1992 Republican Constitution).

1 Ghana's Lands Commission is made up of four divisions namely: the Public and Vested Lands Management Division (PVLMD); the Land Registration Division (LRD); the Land Valuation Division (LVD); and the Survey and Mapping Division (SMD

3.1.2 Land and Real Estate Markets before the 1980s

Land and real estate markets in Ghana can be classified into formal and informal markets (Gough and Yankson, 2000; Konadu-Agyemang, 2001; Mahama and Antwi, 2006). According to Baffour Awuah et al. (2014b), formal land and real estate markets are characterised by large institutionalised organisations both government or quasi-government and private entities, which invest in land and undertake real developments often for the purpose of making profits. Conversely, the informal markets are characterised by owner-developers and small scale enterprises that carry-out developments or construction and maintenance works (Konadu-Agyemang, 2001). These developers, particularly, in the housing industry acquire lands from customary land owners and develop them often on incremental basis relying mainly on personal finance. Developments, therefore, usually take a long period of time sometimes throughout one's life time to complete (Konadu-Agyemang, 2001; Baffour Awuah et al., 2014b).

The informal land and real estate markets constituted the largest and the most common land and real estate markets in Ghana prior to the 1980s. The formal market was not comparatively dominant and it was predominantly spurred by government through its relevant agencies (Baffour Awuah et al., 2016). These agencies include: the then Lands and Survey Departments; Railway Corporation; Public Works Department (PWD); Ghana Housing Corporation and later State Housing Corporation, Social Security and National Insurance Trust (SSNIT) and the Tema Development Corporation (TDC). There were also utility and infrastructure development institutions, such as the Electricity Corporation of Ghana, Ghana Water and Sewerage Corporation, Department of Highways, and the Post and Telecommunication Corporation of Ghana (P and T). Using these institutions and agencies, government acquired lands often through compulsory acquisition, planned and serviced, and ultimately developed some of them for various land uses such as offices, educational, residential, commercial and industrial uses (Baffour Awuah et al., 2016).

The acquired lands, including the planned and serviced ones, and developments were subsequently granted to beneficiary institutions such as government bureaucracies, educational institutions, health centres and the citizenry, through arrangements such as leases/tenancies and use rights like certificates of allocations (Baffour Awuah et al., 2016). For example, SSNIT and the State Housing Corporation had offices across the 10 regions of the country, and built residential accommodation mainly for public sector workers. Also, the 1970s witnessed the development of junior staff quarters for public sector workers. However, the government's presence in the land and real estate market, apart from regulatory purposes, were purely driven by social welfare and political considerations (Konadu-Agyemang, 2001; Arku, 2009). For example, allocation of government bungalows to public sector workers and grants made by SSNIT were not based purely on market conditions.

3.1.3 Land and Real Estate Markets since the 1980s

Despite the informal land and real estate market still being dominant, the face of land and real estate markets in Ghana has recorded a significant change since the 1980s. Ghana, since the 1980s, adopted the World Bank and International Monetary Fund (IMF) economic reforms under the structural adjustment and economic recovery programmes. This ultimately led to the adoption of liberalisation policies by the country and the introduction of pro-market ideas in the land and real estate sector (Konadu-Agyemang, 2001; Arku, 2009). The objectives of these liberalisation policies as applied to the land and real sector were to: stimulate growth of the real estate sector; withdraw government direct participation in the sector; liberalise land markets and build construction materials industry; and encourage formal private sector real estate investment. This was to ensure competition especially in the residential development sub-sector, improve efficiency, and increase commercial development, foreign investment and self-development (Arku, 2009; Baffour Awuah et al., 2016). Also, several financial incentives were introduced to propel the achievement of the new policy regime's goals. These incentives comprised reduction in corporate tax and a five-year tax holiday for real estate developers (Baffour Awuah et al., 2014b, 2016).

Presently, the land and real estate markets in Ghana can be categorised into several markets such as residential, commercial including retail, industrial, office and recreational/leisure (Broll, 2015; Baffour Awuah et al., 2016). These markets could further be classified into several sub-markets. For example, within the residential markets there are sub-markets for two, three and four- bedroom properties, among others. The markets are also characterised by several actors and stakeholders. These include regulatory institutions such as the Ministry of Lands and Forestry, metropolitan, municipal and district assemblies (MMDAs)–the planning authorities, Lands Commission, TCPD, law courts; land owners; investors; developers; financiers/financial institutions; real estate service providers including professionals such as valuers, architects, lawyers and their professional bodies; and community members. There are also enabling legislations and policies that recognise rights and interests in land and real estate, and regulate market transactions. These include the country's constitution, the Local Government Act (1993) (Act 462), National Building Regulation (LI1630), the State Lands Act (Act 125 with its amendments), the Conveyancing Act (1973) and the Land Title Registration Law 1986 (PNDL152).

It is important to state that, following the 1980s reforms, the government's direct intervention in the land and real estate markets has reduced. For example, an institution such as the State Housing Corporation has now become a public company and its name has changed to State Housing Company Limited (SHC). Market activities have also increased substantially with investments from both the informal and formal sectors, especially the formal private sector with some segments of the markets, particularly the prime areas being operated in foreign currencies such as the USA Dollar (USA$) and the British Pound Sterling (£). For example, the organisation of private real estate developers known as Ghana Real Estate Developers Association (GREDA) was for the first time established in the country in the 1980s (Konadu Agyemang, 2001; Baffour Awuah et al., 2016). Further, the Ghana Investment Promotion Centre (GIPC) registered 81 real estate development companies with investible real estate development, civil engineering and residential construction valued at US$105 billion between 1995 and 2005 (Arku and Asiedu, 2009). The residential market constitutes the greatest proportion of the market and, according to the GIPC, registered 85,000 transactions yearly in the past decade (Oxford Business Group, 2012; Baffour Awuah et al., 2016). The retail market also continues to pick up with formal investment interest spurred by international and South African brands, such as Edgars, Foschini, Woolworths, Game, Mr Price, and Mango, T.M Lewin, Sunglass Hut and Pay Less Shoes. Nevertheless, the market is still dominated by the informal sector (Broll, 2015; Baffour Awuah et al., 2016).

Most of the formal private real estate investments are made by foreign companies. They invest alone or in collaboration with local entities. In the residential sector, these investments are organised in the form of gated communities often located on the fringes of major cities and urban centres where lands are available and at comparatively cheap prices (Baffour Awuah et al., 2014, 2016). The most active investors in this genre are TDC, SSNIT, SHC and State Insurance Company (SIC), but they face competition from private institutional investors such as Regimanuel Gray Limited, Manet Housing Limited and Devtraco Estates among others (Broll, 2014; Baffour Awuah et al., 2016). Comparatively, the real estate investment activities are commonplace in cities and urban centres such as Accra and the adjoining port city of Tema, Kumasi, and recently Sekondi-Takoradi following the discovery of oil in commercial quantities in the area. This is due to the comparatively large and articulate real estate markets in these locations (Baffour Awuah et al., 2014b; Oxford Business Group, 2016). However, Accra remains the prime location. According to Jones Lang Lasalle (2013), Accra is one of the 20 cities in Africa that offers key opportunities for commercial real estate growth. Further, Knight Frank, a UK-based property consultancy in its 2015 Africa Report, ranked Accra 10th in Africa for its prime rent ranking (Oxford Business Report, 2016).

In broad terms, land and real estate markets in Ghana, since the 1980s, have witnessed growth. This growth is partly attributed to the policy reforms introduced in the 1980s and good economic performance resulting in demand for housing and commercial properties such as offices and retail shops (Baffour Awuah et al., 2016). It is also expected that the country will recover from its current economic challenges in the medium term (AfDB, 2015; Oxford Business Report, 2016) and witness further market growth due to growth in middle income population, urbanisation and shortage in residential accommodation (Oxford Business Report, 2016; Baffour Awuah et al., 2016). Already, demand for land and other real estate products seem to outstrip supply culminating in prices increases. According to Global Property Guide (2014) residential property prices in the country continues to surge upwards and as at mid-2013, the average price of a house in Accra was USA$86,957, 12% higher than the rest of the country. The Guide further noted that with the average house price at US$262,250 for the Airport Residential Area, USA$220,842 for East Legon and USA$652,632 for Spintex Road, these areas constitute some of the expensive areas in the city. Coupled with progress in real estate transparency, there are good prospects for land and real estate markets in Ghana to mature in the near future (JLL, 2014; Baffour Awuah et al., 2016).

3.2 Land and Real Estate Markets and Land Value Capture Requirements

It appears LVC is not officially practiced in Ghana. However, there are applications of some existing instruments, which fall within the propositions of the concept. Accordingly, prior to interrogating land and real estate markets in Ghana in the context of LVC requirements, it is imperative to identify these instruments. A scan of the literature reveals a number of these existing instruments as follows: property rate; capital gains tax; rental income tax; gift tax; stamp duty; development charge; assignment value fee; planning permission/development permit charge; and public land leasing.

Property rate has existed in Ghana since the colonial era, and has undergone several changes since its introduction. For example, the basis of rate assessment was changed from number of rooms in 1953 to annual rental value following the passage of the Municipal Councils Ordinance (Ordinance No. 9 of 1953). Further, changes to streamline the operation of the tax regime and make it more effective and efficient were introduced with the promulgation of the Municipal Rating Act of 1959 and the PNDC Law 42, in particular, section 43 of the Law. Presently, Ghana's 1992 Constitution and the Local Act (1993) (Act 462) are the main laws that establish and govern property rate in Ghana. In accordance with relevant sections of Act 462, MMDAs are the rating authorities of their areas of influence. This means that, it is the MMDAs that have the authority to levy

property rates. It further implies that, it is the MMDAs that have to initiate the rating process and devise the necessary tax administrative machinery such as building up-to-date property database, identifying rateable properties and undertaking actual rating among others. In practice, however, the MMDAs are assisted by several institutions and agencies, in particular, the Land Valuation Division (LVD) of the Lands Commission as the enabling act makes provision for the appointment of a commissioner of valuation to assist with the tax administration. This is particularly in areas such as valuation list preparation and assessment of rateable value of premises on the valuation list. The LVD, thus, represents the relevant commissioner in that regard. However, property rates are levied on only the improvements/buildings in accordance with the requirements of Act 462. They are, thus, exclusive of land per se.

Capital gains, rental and gift taxes are charged in Ghana (Oxford Business Report, 2016). These are administered by Ghana Revenue Authority in collaboration with the LVD. Capital gains tax is levied at 15% of the net gains from the sale of an interest in real properties. Rental tax in Ghana is levied on gross rental income earned from lettings and varies between land uses. For example, it is usually 8% for residential properties and 15% for commercial properties. Gift tax is also levied on beneficiaries of transfer of real estate as a gift in Ghana under the Internal Revenue Act, 2000 as amended (Act 509). This is usually levied at 15%. Stamp duty has been in operation in Ghana for a long period of time. It is governed by the Stamp Duty Act (1965) (Act 311) now amended as (Act 689 of 2005). The tax is also administered by the LVD, in conjunction, with Ghana's Revenue Authority and it is often charged as part of land/property registration process. It is basically a fee charge for lodging a real estate transaction in public records. The fee is usually dependent on the nature of the transaction.

Development charge and assignment value fee are common with public land transactions. They are informed by Lands Commission fee fixing resolution - Lands (Miscellaneous Services) Fees (Amendment) Instrument 2009. Development charge is often taken in cases of new public land allocations. It is purposely for activities such as survey, demarcation and pillaring of the lands. However, anecdotal evidence suggests that the basis of and the modalities for assessment of the charge are often unclear and the fee is usually comparatively small. Conversely, the assignment value fee is for the consent of a transfer of an interest in public land and it is levied at 2.5% of the assignment value of the land. The fee is not a service charge and the basis is not quite clear. The Local Government Act of 1993 (Act 462) also empowers the MMDAs to charge planning permission/ development permit fee. This is different from building permit fees. It relates more to grant of development rights. Public land leasing is very much in operation in Ghana, as the Lands Commission does many allocations of public lands as part of its public lands administration and management function, and generates revenue through rents both ground and occupational. Further, the MMDAs are also entitled under the 1992 Constitution and the Local Government Act, 1993 (Act 462) to a portion of stool land revenue collected by the Office of the Administrator of Stool Lands (OASL).

3.2.1 Assessment of Land and Real Estate Markets in the Context of Land Value Capture

It is now established from discussions in section two that, LVC is dependent on land and real estate value increment. This is steeped in the effective and efficient operation of land and real estate markets as a fundamental requirement for the implementation of LVC. One of the key components of well-functioning land and real estate markets is effective demand for land and property. This is also influenced by urban economic growth and development, population growth and increases in household income among others. Despite the challenges of cities and urban centres in Ghana (GoG, 2012), they still account for the bulk of the GDP growth in the country. For example, cities and urban areas in Ghana contribute about 60% of the country's GDP (Cities Alliance, 2016). Further, as reported in the preceding discussions, land and property

prices/values are on the rise, especially in Accra, and other cities such as Tema, Kumasi and Sekondi-Takoradi, due to increases in demand for land and properties with access to good infrastructure and services. Although urban poverty still remains a problem (Cities Alliance, 2016), the increases in demand is largely attributed to good economic performance, rapid urbanisation and the rise in middle income population (Baffour Awuah et al., 2016). The demand is even expected to soar given the inadequate provision of residential accommodation for the increasing urban population (Paller, 2015), the interest in Ghana as an investment destination and growth in market transparency (JLL, 2014). This appears to be a strong condition for the implementation of LVC.

Given the increasing demand for urban land and property in Ghana, there is a need for the supply of land and property to respond accordingly to make the market effective and efficient. The lands and properties supplied should, however, be of required standard. Thus, as noted in section two, there should be easy access to secured and planned lands for development, provision of infrastructure and services as well as access to finance to promote development. This requires an effective and efficient land administration system. There is also a need for an effective planning and land use management regime and an effective property valuation system with suitable and applicable methodologies to assess value increment. As discussed previously (sub-sections 3.1.1–3.1.3), Ghana has a land administration and management framework in place with some enabling legislations. However, surveys of land ownership rights and land claims are poorly developed (World Bank, 2013). Most of the land transactions occur outside the formal land market and registration system (Mahama and Antwi, 2006). For example, it is estimated that only a small proportion of about 6 million parcels of land in Ghana are registered (World Bank, 2013). There are also issues with indeterminate boundaries of land ownership, multiple public land administration institutions, complex land registration procedures and requirements, and multiple sales of same parcels of land especially for customary lands (GoG, 1999). This implies that access to secured land/real estate and transfer of same is quite difficult.

Ghana's urban planning system is weak (Baffour Awuah and Hammond, 2014). Although the planning regime has had some sporadic review, it is still characterised by complex bureaucratic procedures and requirements resulting often in delays in approval processes and non-compliance with planning requirements (Baffour Awuah and Hammond, 2014). Indeed, in most of the urban areas in the country, planning is chasing developments and there are no adequate master and sub-division plans to ensure orderly development, stimulate value appreciation and help create a good property address system for valuation among others. There are about 18 sources of finance for real estate development in Ghana; nine of which are equity finance and the other nine, debt finance (Manu et al., 2015). Manu et al. (2015) further report that the debt finance is the most used financing arrangement and comprise bank loans, mortgages, high purchase, long-term leasing, trade crediting, bonds and debentures. They, however, identified factors such as high interest rates, cumbersome financing arrangement, lack of fiscal/regulatory incentives, lack of long term finance and excessive collateral requirements as constraints to financing of real estate development in Ghana. Also, Ghana has a long history of real estate valuation practice dating back to the colonial era. There are, therefore, private and public valuation institutions, such as the LVD, as well as a professional body, GhIS that regulates the practice of its members. Yet valuation practice in the country has not developed as it ought to. Therefore, comprehensive methodologies for capturing value appreciation appear not existent or underdeveloped. This is compounded by a lack of organised property and market data (Baffour Awuah et al., 2016). For example, the betterment tax was never implemented under the Town and Country Planning Ordinance, 1945 (Cap 84) due partly to valuation methodology difficulties. Compounding the issues discussed is a lack of constantly updated multi-purpose cadastre to provide organised data on land ownership, use and value among other things. Although several institutions, such as the planning authorities and Lands Commission keep some form of records, this information are hardly co-ordinated, updated, and are devoid of key details (Baffour Awuah et al., 2016).

Notwithstanding the above challenges, there are a number of on-going initiatives to streamline the land administration and management system in the country to make it effective and efficient. For example, the country's land tenure reform under the National Land Administration Programme (LAP) has been in operation since 2003 (Baffour Awuah and Hammond, 2014). As part of the programme, four public land sector agencies namely the old Lands Commission, Land Valuation Board, Land Title Registry and the Survey Department has been merged into a new Lands Commission by virtue of the new Lands Commission Act, 2008 (Act 767). Also, a new Spatial Planning Act has been passed and a Lands Act (Bill) that seeks to harmonise all land related policies is currently under preparation. Besides, there are some good land administration and management practices in some areas of the country, such as Sunyani, the Brong Ahafo Regional capital city, Gbawe in Accra and certain public land areas like Cantonments and Airport residential areas also in Accra. Further, as demonstrated in (sub-sections 3.1.1–3.1.3) cities in the country continue to attract real estate investment.

The other two requirements for implementation of LVC are effective cities and state. Ghana operates a decentralised system of administration by virtue of the country's 1992 Republic Constitution and the Local Government Act, 1993 (Act 462). The MMDAs, therefore, have some level of autonomy, but they are financially dependent on the state as they are unable to adequately mobilise internal resources to finance community projects (Petio, 2013; Mabe, 2014). Indeed, the MMDAs are weak and have inadequate administrative and governance structures to mobilise and engage urban sector stakeholders such lands, developers and property owners as they ought to do (Petio, 2013; Mabe, 2014; GoG, 2012). Indeed, one of the fundamental reasons for Ghana's decentralisation programme was to promote democratic practice at the grassroots level. However, it is unclear whether this has been achieved. The country has, since 2012, formulated a new Urban Policy, which seeks to address some of these challenges. As regards the effective state factor, there appear to be a number of existing enabling legislations and practices, as demonstrated previously that could be applied to implement LVC. That said, anecdotal evidence suggests that government and, by extension, political leaders are often unwilling to support such a course. Besides, the existing practices appear not well co-ordinated and lack clear modalities to support value capture for infrastructure development. For example, different institutions administer the existing practices and there is no clear direction as what revenues generated should be used for. Perhaps such modalities will be developed with the recent establishment of the Ghana Infrastructure Investment Fund by virtue of Act 877 (2014). Nevertheless, the discussions so far has established that, there are both favourable conditions and challenges to leveraging rising urban land values to finance urban infrastructure development in Ghana. This makes its potential to succeed unclear. This research is, therefore, to investigate its potential to succeed. In so doing, the next section presents the methodology employed for the investigation.

4.0 Methodology

The mixed methods research methodology was employed to deliver the research. Relying on the pragmatist philosophy, which drives the methodology (Johnson and Onwuegbuzie, 2004; Creswell, 2014) multiple strategies and data collection tools were used to address the research problem. The aim of the research was to primarily investigate the potential to leverage rising urban land/property values to finance urban infrastructure development in Ghana. Addressing this aim required a need to explore and gain an understanding of the research issue, in particular, as applied to the study site and also to design a practical and suitable strategy, data collection methods and measuring criteria to estimate the research variables. Further, there was a need for the strategies and methods employed to complement and in some areas strengthen each other to build a robust evidence base to address the fundamental aim of the research. These imperatives, which are some of the main characteristics of the mixed methods research methodology (Ogbazi, 2013), therefore, informed the choice of the methodology. However, given that all the cities and urban areas in Ghana cannot be studied due to time and resource constraints among other constraints, Accra was purposively selected as the geographical location for the study and empirical data collected from the city, as a case study. Thus, the implementation of the empirical aspect of the research, in the main, focused on Accra. Accra was selected because it is a good location for easy access to data to undertake the research due to the presence of most of the stakeholders relevant to the delivery of the research.

Figure 4.1: Research Methodology Employed

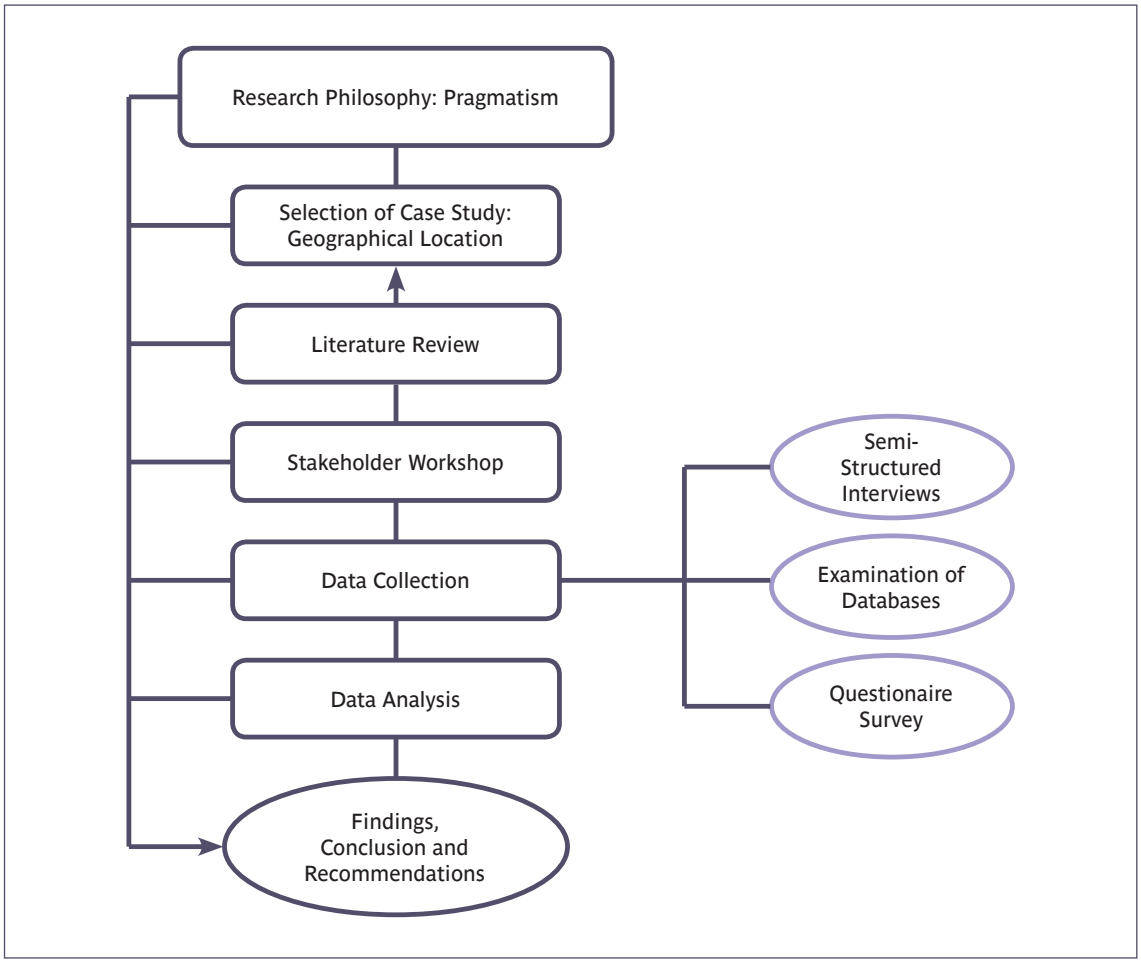


Figure 4.1outlines a summary of the research approach. However, in applying the mixed methods research methodology to deliver the research, four main activities were conducted. The first activity comprised literature identification and review, and hosting of a stakeholder workshop. This was followed by data collection, which utilised three main strategies; examination of the Lands Commission's land value database as well as two real estate development companies' property price databases, and semi-structured interview and questionnaire surveys of key professional and stakeholders in urban development and real estate market in Accra. These strategies were implemented concurrently. Apart from time and resource constraints, the primary reason for implementing all the strategies at the same time was to establish how evidence drawn from data obtained from them was consistent across board or otherwise without necessarily creating the opportunity for one strategy to influence the outcome of another strategy. The next activity was the data analyses, which analysed the data, obtained and then synthesised the results. The final activity focused on the compilation of the research report.

4.1 Literature Identification and Review

Based on relevant keywords, a systematic literature search was carried-out to identify useful literature for the research. The literature review focused on establishing existing knowledge on issues such as the meaning and relevance of infrastructure to socio-economic development, conceptual issues on infrastructure provision and financing, the state of urban infrastructure(s) and their financing in Ghana, the concept of LVC, instruments/ methods used to implement LVC and conditions for its successful implementation, and land and real estate markets in Ghana. The literature(s) were drawn from databases such as Google Scholar, Science Direct, Emerald, Web of Knowledge and those of Government ministries, agencies and departments, professional bodies such as GhIS and RICS as well as international development agencies like the World Bank, the UK's Department of International Development (DFID) and the Cities Alliance. The identified literature(s) were thereafter reviewed to draw insights for the delivery of the subsequent stages of the research.

Since much work had not been undertaken on LVC in Africa, most of the literature(s) examined were on works undertaken in the developed world, such as the USA and the UK, as well as those on emerging Asian and Latin American countries, like India, China and Brazil. The research also drew insights from a recent work on the subject in SSA sponsored by the DFID and carried-out by the African Cities Centre based in South Africa. The rationale of the literature identification and review was to obtain background insights to aid a systematic implementation of the research. It, for example, helped in contextualising the research, the selection of the case study city and the design of questions for the interview and questionnaire surveys.

4.2 Stakeholder Workshop

The literature identification and review was bolstered by a one-day stakeholder workshop in Accra to engage with key urban sector stakeholders especially those who have direct stake in urban infrastructure development, finance, and the land and real estate markets in Ghana. The workshop took place at the Cleaver House, along the Barnes Road, Adabraka and opposite the Tigo Head Office on March 30, 2016. The stakeholder workshop was organised with the assistance of GLGS. Thirty (30) participants were present at the workshop. The participants included: officials from the GLGS and Greater Accra Regional Co-ordinating Council including their chief directors; all the eight MMDAs constituting the Greater Accra Metropolitan Area (GAMA) (Accra and Tema Metropolitan Assemblies, Ga East, West and South Municipal Assemblies, and Adentan, Ashiaman, Adentan and Ledzokuku Krowor Municipal Assemblies); all the four divisions of the Lands Commission; TCPD; GhIS, Ghana Institute of Planners (GIP), GREDA and the Cities Alliance.

The workshop was organised into two main sessions as follows: presentation; and break-out sessions. The presentation session focused on talks explaining the research. Three presentations relating to the research background, findings from the literature identification and review, and urban infrastructure development financing in Ghana were made. The break-out session divided the workshop participants into three main groups based on three themes, namely: "land/property value growth"; "impact of infrastructure on land/property values"; and "LVC instruments/methods". With the aid of pre-formulated questions, each group discussed specific issues relating to the research. The discussions were facilitated by chairpersons, and rapporteurs who recorded proceedings at the various group discussion sessions. There was also a plenary session where outcomes from the group discussions were reported and discussed.

The workshop provided additional insights for the delivery of the research. In particular, it provided further insights into financing of urban infrastructure development arrangements, property value growth trends, and challenges for urban authorities in mobilising internal resources for community projects such as infrastructure development. It also provided a platform, which was later used to facilitate empirical data collection. Further, the insights gained from the workshop discussions helped with further contextualisation of the research, choice of data collection approaches, design of interview schedules and questionnaires, and sampling of respondents.

4.3 Data Collection

The research was covered by the Faculty of Environment and Technology, UWE Ethics Committee approval. Thus, prior to the empirical data collection, ethics approval was sought and obtained from the Ethics Committee. This ensured that the research was conducted under the highest possible ethical standards. That said, three main strategies were used to solicit data. These were: examination of the institutional databases of relevant land/real estate organisations in Accra; and interview and questionnaire surveys of key professionals and stakeholders in urban development and real estate market in Accra. The data collection was carried-out with the assistance of the GLGS.

4.3.1 Examination of Institutional Databases of Land/Real Estate Organisations

Objective one of the research sought to identify growth trends in land and property values, and their determinants in Accra. Indeed, the primary aim of the research was to investigate the potential to leverage rising land/property values to finance urban infrastructure development. Findings from the literature review also established that increasing land/property values is a key requirement for the implementation of LVC. Given the foregoing, it was important as a starting point to establish whether or not land/property values are rising in Accra. Examination of databases of land/real estate organisations was, therefore, used to obtain actual land value data and property prices over a period of time to help address the first part of this objective.

Ordinarily, all land/real estate organisations in Accra ought to have been compiled to create a sample frame based on which probability sampling could have been carried-out to draw samples for the study. However, knowledge of the extent of land and real estate organisations in Accra was not clear. Besides, it is often difficult to obtain reliable organised land and real estate data from these organisations due to poor records keeping and confidentiality issues among other factors (Baffour Awuah et al., 2016). This was compounded by the limited time and resources with which the study was to be carried-out. Accordingly, based on the information from the literature review and the stakeholder workshop as well as other informants, the land value database of the Lands Commission, and the property price databases of the SHC and Manet Estate Development Company were purposively used to obtain the requisite data.

The Lands Commission with its four divisions of valuation, public and vested land management, survey and mapping, and registration is the main land administration and management organisation in Ghana. The Commission has been involved in several land transactions such as land grants, valuation of land and properties, grant of consents to transfers of interests in land, and accepting of private land transactions into its database. Although it has its own data management challenges, data obtained from the Commission are often regarded to be reliable and authentic. The research relied on the per acre land values, which were readily available from the Commission's database.

The SHC has been involved in real estate development since the colonial period. As noted in section three, it began as a purely government entity. However, it is now a public company with government owning the majority shares. It has quite a good track record in industry and keeps some form of records. Manet Estate Development Company is one of the first private real estate development companies in Ghana. The Company has been performing well since its entry into the Ghanaian real estate market. The research used sale prices of the various properties offered by the companies. The data collection focused on residential properties given the dominant nature of the residential property market.

Due to organised data challenges, and time and resource constraints, the examination of the Lands Commission database was limited to the period 2011-2016. As noted previously, it also relied on data, which was readily accessible. Due to similar reasons, examination of the SHC and Manet Estate Development Company databases focused on six and three distinct periods, respectively. The periods for the SHC database examination were: 2004; 2007; 2009; 2010-11; 2012; and 2013-14. The data used were on some of the Company's properties in Danfa, Borteyman and Buduburam. Conversely, the periods for the Manet database examination were: 2006-08; 2009-13; and 2014-16. The data used were on the Company's properties in Ogbojo. Also, the periods used in both cases were informed by data accessibility considerations and how the data were organised.

Examination of the land and real estate organisations databases took place from May - July, 2016. It was carried-out by two qualified Land Economists, who were trained for such purpose. They undertook the exercise under the supervision of a senior researcher who was engaged to supervise the exercise as part of the data collection process.

4.3.2 Semi-Structured Interview Survey

An interview survey of the key professional stakeholders in the urban development and real estate market in Accra was used to complement the other strategies to obtain data to address the aim and the objectives of the research. The purpose of the interview survey was to explore the research issue in a more in-depth manner. This required the selection of relevant respondents with in-depth knowledge and experience in the relevant aspects of the research issue. Given the time and budget for the research, and the insights from the literature review and the stakeholder workshop, five respondents were purposively selected for the interview survey. They comprised an urban planner, real estate developer, a land administrator, a real estate valuer and a real estate market expert with a government tax institution. The choice of one each of the various experts was informed by budgetary constraints. All of them had extensive professional experience (not less than 17 years each). The interviews took place between May and June, 2016 in the offices of the respondents. The interviews were conducted by a senior researcher and they covered issues on land/property value growth trends and their causes in Accra, impact of infrastructure on land and property values, instruments/methods to leverage rising land and property values to finance urban infrastructure development, the challenges and potential to succeed among others. The interviews were recorded with a voice recorder and later transcribed for analysis (refer to the appendix for how to obtain a copy of the interview schedule).

4.3.3 Questionnaire Survey

A questionnaire survey of key professionals and stakeholders in urban development and real estate markets in Accra was conducted between May and July, 2016. The survey was also to complement the other strategies to collect the requisite data to deliver the research. It targeted professionals such as real estate valuers and agents, urban planners and estate developers, among others. The questionnaire also focused on land and property value growth trends in Accra, impact of infrastructure on land and property values, the potential to capture rising land and property values to finance urban infrastructure development in Ghana. However, the focus of the questionnaire survey was to obtain data to gauge the extent of the afore-mentioned issues.

The design of the questionnaire was informed by insights from the literature review and the outcome of the stakeholder workshop. It was divided into four sections. The first section focused on the profile of the respondents, which was followed by land and property value growth trends in Accra in the second section. The third and fourth sections concentrated on impact of infrastructure on land and property values, and the potential to leverage rising land and property values to finance urban infrastructure development respectively. Apart from the profile of the respondents section (the first section), all the other sections were designed based on Likert scales.

The questionnaire was pre-tested prior to its administration. This was to ensure that it passed face and content validities tests. In doing so, an experienced valuer, developer and an urban planner were requested to evaluate the questionnaire regarding whether or not it covered what it sought to achieve, and the effectiveness of how the research variables were to be measured. The questionnaires were self-administered (face-to-face questionnaire administration). A total of 120 questionnaires were administered to the respondents using purposive and snow ball sampling techniques as the most pragmatic ways to obtain the requisite data. This was due to a lack of reliable sample frame. Although professional institutions, such as the GIP, GhIS and associations like GREDA, have lists of their members or publish annual lists of their members in good standing, such lists are often unreliable for exercises such as this one. This is because such lists may not contain the current address and location of members. Nevertheless, based on insights from databases of these associations, information obtained from the stakeholder workshop and other informants as well as with the assistance of GLGS the respondents were initially contacted through telephone calls and e-mails to brief them about the survey, and enquired about their readiness to participate. This was followed with a visit to discuss and administer the questionnaires in person. The questionnaire was administered by a team of three trained Land Economists, and supervised by a senior researcher. A response rate of 59.2% was obtained (refer to the appendix for how to obtain a copy of the questionnaire).

4.4 Data Analysis

Discussions during the stakeholder workshop were recorded in note books. The agreements and disagreement arising out of the discussions at the workshop were, therefore, recorded. This was done under the themes, which were developed to guide the division of participants into groups, and to stimulate discussions. Analysis of the semi-structured interviews was carried using thematic analysis procedure. Thus, a systematic procedure, which allowed a narrow perspective of the respondents to inform the broader understanding of the research issue, was followed. In so doing, the significant viewpoints of the respondents were identified. Concepts were, thus, established from the viewpoints and discussed. Accordingly, all the recordings of the interviews were first transcribed verbatim into written statements and read severally to note common patterns in the transcripts and core themes that explain how the respondents describe the research issue(s). This was achieved by using commonly used words in the transcribed data as keywords and recording the number of times they were used. Similar keywords were thereafter merged to form themes, which were then reviewed to arrive at the outcomes. Further, for anonymity purpose the respondents were labelled “participant (P) 1” to “(P) 5”.

Data obtained from both examination of the institutional databases of land/real estate organisations and the questionnaire survey were initially entered into Microsoft Excel spreadsheets and thereafter coded, and transferred to SPSS. The data were then explored, cleaned, diagnosed and checked for consistency. Thereafter, they were subjected to statistical analysis based on which inferences were drawn to help address the objectives of the research. For the data obtained from examination of the institutional databases of land/real estate organisations, it was to help provide evidence to address the first part of research objective one; trends in land and property values in Accra. Descriptive statistics, in particular, mean, median and percentages were used to analyse the data.

The questionnaire survey data was to help gauge the extent of land/property value growth trends, impact of infrastructure on land and property values, and the potential to leverage rising land and property values to finance urban infrastructure development in Accra. The research also examined these issues in high, middle and low incomes areas of the city. The rationale was to find out the potential for the implementation of LVC in these areas to inform policy formulation and implementation purpose. The research, therefore, drew insights from the City of Accra Consultative Citizens' Report prepared by the World Bank in collaboration with the Accra Metropolitan Assembly (AMA) (World Bank, 2010) to define these areas. Based on the insights drawn, high income areas were equated to first class areas. Conversely, middle income areas and low income areas were equated to second class areas, and third and fourth class areas respectively. The data was solicited based on a Likert scale of one-five with one representing the very negative situation and 5 the very positive situation in all the cases. The data from the questionnaire were, in the main, analysed with the consensus/agreement around the mean analytical framework identified by Tastle and Wierman (2007), and subsequently modified by Tastle et. al (2009), to allow for consensus around a given target. The target used in this instance was five, the highest score on the Likert scales. The formula used is as follows:

$$\text{Agr}\,(X|5) = 1 + \sum_{i=1}^{n} pi \log_2 \left(1 - \frac{|X_i - 5|}{2d_x} \right)$$

Where:

Agr= The level of agreement on evaluation of an attribute;

X = The scores;

5 = The highest score;

X_i= Each score; and

d_x= The range of X ($d_x = X_{max} - X_{min}$)

Ordinarily the research should have only used land values and property sale price data obtained from the Lands Commission and the real estate development companies' databases to analyse the growth in land and property values as interview and questionnaire surveys are not often used to confirm facts. However, the land values obtained from the Lands Commission were based on valuation opinions. Further, the property sale prices obtained were for few areas in Accra. Besides, they may not have reflected the market situation in Accra. This made the use of the interview and questionnaire survey data useful to complement the archival data to analyse the growth in land and property values.

4.5 Report Writing

The full research report was written and a draft of the report submitted to UWE for review and comments. A finalised version of the report was re-submitted to the UWE after the redress of the comments.

5.0 Research Findings

The research findings are reported in four parts. These parts focus on:

- Outcome of the stakeholder workshop;
- Results from the analyses of the archival data;
- Results from the analyses of the interview survey data; and
- Results from the analyses of the questionnaire survey data.

5.1 Outcome of the Stakeholder Workshop

Thirty (30) urban sector stakeholders attended the workshop. Plates 5.1 and 5.2 give excerpts of the workshop.

Plate 5.1: Group Picture of Some of the Stakeholder Workshop Participants at Cleaver House, Accra

Plate 5.2: A Presentation Session during the Stakeholder Workshop at Cleaver House, Accra

Deliberations at the stakeholder workshop predominantly centred on three main themes namely: "land/property value growth"; "impact of infrastructure on land/property values"; and "LVC instruments/methods" (Section 4.2). Findings from the deliberations are reported based on these themes as follows:

5.1.1 Land/Property Value Growth

The majority of the participants at the workshop opined that urban land and property values in Ghana are rising, and the situation in Accra is astronomical. Further, they reported that land and property values in prime areas, such as Airport and Cantonments residential areas, gated communities, central business districts, well planned commercial and industrial estates like the Airport City and fully developed land areas, among others, keep rising. It was identified that location, and demand for land and property are probable factors that account for the current value increases in Accra. For example, it was observed that demand for land and properties for special uses, such as church auditoriums/worship centres, partly account for the rising land and property values at the North and South Industrial Areas of the city. Nevertheless, while some participants said that the rising land and property values, in broad terms, are as a result of rise in demand borne out of urbanisation and population growth on the one hand and the limited supply of quality land and properties, on the other hand, others opined that the influx of foreign direct investment and wealthy expatriates looking for properties to buy account for the rise in land and property values. In addition, the workshop participants reported that the rising land and property values require urgent policy response. It was gathered that a need for policies in the areas, such as land taxation to raise revenue for infrastructure development, creation of land banks to make lands available for future strategic developments and investment, and collaboration among stakeholders including local authorities, land owners and central government agencies to develop better management practices.

5.1.2 Impact of Infrastructure on Land/Property Values

Overwhelming majority of the participants said that infrastructure, such as roads, electricity, pipe-borne water, shopping malls and markets, have significant positive impact on land and property values in Accra. Examples of such impact were given of land and properties in areas such as Airport and Airport West, East Legon, East and West Cantonments, and Ridge residential areas, which are well planned, have infrastructure like tarred roads, electricity, pipe-borne water and telephone facilities, and command higher values compared to areas such as Madina, Adentan and Ashale Botwe. Further, it was observed that there have been instances where the introduction or provision of infrastructure in certain areas of the city had led to sudden increases in land and property prices. The provision of: tarred road in Awoshie Poku; electricity in Adjei Kotoku; pipe-borne water in Adentan Housing Down; and community park at Community Three in Tema were cited as examples. The participants also noted that the extent of impact is dependent on the nature of the infrastructure. Participants somewhat agreed that, generally, the impact of tarred roads tends to be higher than electricity, water and community park. Conversely, the impact of electricity was said to be higher than water and community park. The participants explained that, differences in impact of the different types of infrastructure are due to the value people place on them.

5.1.3 Land Value Capture Instruments/Methods

Participants from the MMDAs identified two main sources of financing of urban infrastructure developments used by urban/local authorities in Ghana. These are internal and external sources. The internal source is IGF and comprises property rates, market tolls, and fees and fines. Conversely, the external source comprises central government transfers through the DACF, donor funding, such as District Development Facility (DDF) and Urban Development Grant (UDG), as well as bank loans and PPP in urban infrastructure development. Excepting the PPP arrangements, the obvious LVC instrument/method identified by the workshop was property rate. Nevertheless, workshop participants noted that instruments such as betterment charges, land re-adjustments, negotiation and local authorities reaching agreements with land owners, and government agencies, such as the Lands Commission, TCPD, could be suitable instruments through which revenue may be raised to finance urban infrastructure development. They also reported that site and services schemes could be used to stimulate land value appreciation and then captured to finance infrastructure through cross-subsidisation.

Participants at the workshop also acknowledged that all sources and instruments/methods for generating revenues for urban infrastructure development will require enabling environment for their operation. Participants, in this regard, noted a need for the passage of suitable legal framework–policies, laws and guidelines; strict implementation of the policies, laws and guidelines; eradication of political interference; increased political will; improved living condition; and beautification of Accra.

5.2 Results from the Analysis of the Archival Data

Results from the analyses of the archival data are categorised into two. These are results of the analyses of the data obtained from the Lands Commission, and those procured from the SHC and Manet Estate Development Company Ltd. The results are presented as follows:

5.2.1 Results from the Analysis of Data–Lands Commission

Land values for 27 communities (areas) within GAMA[2] were obtained from the Lands Commission (Table 5.1). These were annual per acre land values for leasehold interest of between 50 and 99 years for the period 2011-2016. As established from the outcome of the literature review, parts of the land and real estate market(s) in Ghana operate in foreign currency such as the USA Dollar ($). Therefore, part of the land values were quoted in USA Dollar ($) as can be seen from the first section of Table 5.1. The relevant communities are often the prime areas and in Accra, these communities are usually the government/public land areas. The land values were not linked to land use classifications. Thus, they were values across all the land use classification as that is the usual practice of the Commission for capturing such data.

2 It is the city region of Accra.

Table 5.1: Results of the Analyses of Land Values in Accra

Area	Annual Per Acre Land Values : 2011 - 2016					
	USA Dollars ($) Market					
	Min	Max	Mean	Median	SD	% Growth in value
Airport	2600000	3500000	2875000	2750000	337268	34.6
North Legon	430000	600000	501667	490000	63692	39.5
East Legon	680000	800000	738333	735000	46655	17.6
East Cantonments	2600000	3500000	2875000	2750000	337268	34.6
Ridge	2600000	4000000	3091667	2900000	551740	53.8
Achimota Forest	1100000	2000000	1483333	1400000	354495	81.8
East Airport	680000	800000	738333	735000	46655	17.6
Achimota	430000	600000	501667	490000	63692	39.5
Dworwulu	1500000	2500000	2050000	2100000	361939	66.7
Abelenkpe	800000	1500000	1150000	1150000	242899	87.5
West legon	430000	600000	501667	490000	63692	39.5
Adjirigano	430000	600000	501667	490000	63692	39.5
Ghana Cedi (GH¢) Market						
Baatsona	230000	350000	288333	290000	44460	52.2
Pokuase	80000	160000	123333	125000	30111	100
Pantang	130000	200000	165000	165000	24290	53.8
Frafraha	80000	150000	113333	110000	28048	87.5
Ashiye	65000	120000	90833	90000	22454	84.6
Agbogba	130000	200000	165000	165000	24290	53.8
Ablaadjei	30000	60000	45000	45000	11832	100
Abokobi	130000	200000	165000	165000	24290	53.8
Malam	130000	200000	165000	165000	24290	53.8
Amasaman	60000	100000	77500	75000	15411	66.7
Kwabenya	180000	260000	223333	225000	30111	44.4
Ashongman	180000	260000	223333	225000	30111	44.4
Madina	380000	600000	455000	425000	81915	57.9
Adentan	400000	600000	486667	475000	77889	50
Ashale Botwe	280000	400000	338333	335000	46655	42.9

Analyses of the data established that land values in the subject areas are rising. For the land values quoted in ($), which were mostly in government land areas, the analyses revealed a minimum per acre land value of $430,000 and a maximum value of $4,000,000 with mean and median values of $501,667 and $490,000, and $3,091,667 and $2,900,000, respectively (Table 5.1). Their standard deviations were also $63,692 and $551,740, respectively (Table 5.1). Further, it was established that Ridge had the highest land value per acre. North and West Legon, Adjirigano and Achimota had the lowest land value per acre within the period under reference. Conversely, for the Ghanaian Cedi market communities, the minimum per acre land value of GH¢30,000 and maximum per acre value of GH¢600,000 with a mean, median and standard deviation values of GH¢45,000, GH¢45,000 and GH¢11,832 and GH¢455000, GH¢425,000 and GH¢81,915, respectively, were established (Table 5.1). Abladjei had the lowest per acre land value within the period under reference, whilst Madina and Adentan communities had the highest land values per acre (Table 5.1).

It was established that all the communities recorded land value growth of not less 17.6% within the period under consideration. The land value growth rates within the USA ($) market areas were between 17.6% and 87.5% Table 5.1). East Legon had the lowest growth rate and Abelenkpe had the highest growth rate. For the GH¢ market areas, the growth rates were between 42.9% and 100%. Strikingly Abladjei, which recorded the lowest per acre land value, was one of the two communities, which had the growth rate of 100% The other community was Pokuase. The community that had the least growth rate was Ashale Botwe. In broad terms, the rates of land value growth within both markets were quite similar even though the growth in GH¢ market appeared a little bit higher. Although analysis of variance could have been carried out to determine whether, or not, there was a statistically significant difference between the land values, it was not deemed expedient at this stage given the exploratory nature of the research and the fact that the values were obtained in different currencies among other factors.

5.2.2 Results from the Analysis of Data–State Housing Company and Manet Estate Development Co. Ltd.

Data obtained from the SHC were on prices at which the Company sold or have been selling their properties. The accessed data were on some of the Company's properties in Danfa, Borteyman and Buduburam. The data were on 10 different types of properties as shown in Table 5.2 and covered six distinct periods as per the data obtained (Table 5.3). For the periods 2010-2011 and 2013-2014 the prices of the properties were the same. This explains why the SHC organised the data under such headings. All the properties were leasehold properties of 50-years.

Table 5.2: Description of State Housing Company Properties in Accra

Property Type	Description
CH1	Bedsitter with kitchen, Shower, WC, Utility Area and Entrance Terrace
CH3	2 Bedrooms, Shower, WC, Kitchen, Lobby, Varandah, Utility Area and Entrance Terrace
CH4	2 Bedrooms, Shower, WC, Kitchen, Lobby, Living Area and Entrance Terrace
SH1	1 Bedroom, Shower, WC, Kitchen, Living Area, Utility Area and Entrance Terrace
SH3	2 Bedrooms, Shower, WC, Kitchen, Living Area, Utility Area and Entrance Terrace
SH3A	2 Bedrooms, Shower, WC, Kitchen, Living Area, Dinning Space, Utility Area and Entrance Terrace
SH3B	2 Bedrooms, Shower, WC, Kitchen, Living Area, Dinning Space, Utility Area and Entrance Terrace
SHC3	2 Bedrooms, Shower, WC, Kitchen, Living Area, Utility Area and Entrance Terrace
SHC4	2 Bedrooms, Shower, WC, Kitchen, Living Area, Utility Area and Entrance Terrace
SHC5	2 Bedrooms, Shower, WC, Kitchen, Living Area, Dinning Space, Utility Area and Entrance Terrace

Table 5.3: Results of the Analysis of State Housing Company Property Prices in Accra

Property Type	Property Prices in Ghana Cedi (GH¢)- 2004, 2007, 2009, 2010-11,2012, 2013-14					
	Min	Max	Mean	Median	SD	% Growth in value
CH1	9896	47545	25740	18872	16015	380.4
CH3	11950	99907	43061	27393	35440	736
CH4	19800	86964	56444	46689	30615	339.2
SH1	13762	96571	58078	48831	33661	601.7
SH3	21616	112656	57206	48930	33567	421.2
SH3A	22583	120432	63257	51784	38634	433.3
SH3B	23791	124694	66093	53818	39649	424.1
SHC3	19320	96571	54712	47094	31819	399.8
SHC4	21133	112656	57338	49916	33679	433.1
SHC5	25483	127480	67856	49916	33679	400.3

Table 5.3 shows that the property prices range from a minimum of GH¢9896 to a maximum of GH¢127480. The mean and median range values were between GH¢25740 and GH¢ 67856, and GH¢18872 and GH¢49916, respectively. The standard deviation also ranges between GH¢16015 and GH¢33679. Further, the Table shows a significant growth of property prices for all the property types of not less than 339.2% with the highest being 736%. Property types CH4 and CH3 had the lowest and highest growth rates respectively (Table 5.3).

Tables 5.4 and 5.5 give the description of the Manet properties and the results from the analyses of the property prices respectively. All the properties are located in Ogbojo, Accra. The property prices were obtained in USA ($) and covered three distinct periods: 2006-08; 2009-13; and 2014-16 (Table 5.5). Similar to the SHC properties, all the properties were leasehold properties with 50-year terms, and the prices of the properties were the same within each of the distinct periods.

Table 5.4: Description of Manet Properties in Accra

Property Type	Description
SCP	Standard 3-Bedroom House (CP) 80ftX 70ft land
SZ2	Standard 3-Bedroom House 80ftX 70ft land
SZ3	Standard 4-Bedroom House 80ftX 70ft land
DCP	3-Bedroom Deluxe House (CP) 100ftX 80ft land
DZ2	3-Bedroom Deluxe House 100ftX 80ft land
DZ3	4-Bedroom Deluxe House on 100ftX 80ft land
E3BR	3- Bedroom Executive (including 2 master bedrooms) on 100ftX100ft land
E4BR	4- Bedroom Executive (including 2 master bedrooms) on 100ftX100ft land
SD2BR	Semi-detached 2-Bedroom (Expandable) self-contained (fenced) on 40ftX70ft land
SD3BR	Semi-detached 3-Bedroom (including master bedroom) self-contained house (fenced) on 40ftX70ft land

Table 5.5: Results of the Analysis of Manet Property Prices in Accra

Property Type	Property Prices in USA Dollars for 3 Time Periods - 2006–08, 2009–2013 and 2014–2016					
	Min	Max	Mean	Median	SD	% Growth in value
SCP	85000	110000	98333	100000	12583	29.4
SZ2	100000	125000	115000	120000	13229	25
SZ3	120000	140000	130000	130000	10000	16.7
DCP	100000	120000	110000	110000	10000	20
DZ2	120000	140000	130000	130000	10000	16.7
DZ3	140000	150000	145000	145000	5000	7.1
E3BR	180000	200000	190000	190000	10000	11.1
E4BR	210000	220000	210000	210000	10000	4.8
SD2BR	60000	90000	76667	80000	15275	50
SD3BR	70000	100000	86667	90000	15275	42.9

Overall, the properties had a minimum value of $60, 000 and maximum value of $220,000. The mean, median and standard deviation values were also in the range of $76,667 and $210,000; $80,000 and $190,000; and $5000 and $15,275, respectively (Table 5.5). Further, Table 5.5 shows that prices for all the property types grew between the periods 2006-08 and 2014-16. The growth rates were between7.1%and 50%.. Prices for property types DZ3 and SD2BR registered the lowest and the highest value growth rates, respectively. Although prices for all the property types registered growth between the periods 2006-08 and 2014-16, the rates of growth were not as substantial as those of the SHC properties. This could stem from the types of the properties, location and the fact that the property prices were quoted in different currencies.

5.3 Results from the Analysis of the Interview Data

Four main themes emerged from the analyses of the semi-structured interview data. These are: "Rising land/property values"; "Impact of infrastructure on land/property values"; "Generating revenue from land/property values (LVC)"; and "Some suggestions for LVC".

5.3.1 Rising land/property values

All the participants said that there have been rising levels in land/property values in Accra over the years, and that the increases in values are evident across all land use classifications, although it is more evident in the case of residential land use especially in the prime areas. It was, however, noted that for commercial areas like the Central Business District (CBD) increases in values of land/properties for commercial purpose are very evident. The participants explained that both land/property values within the central and peripheral areas of the city are experiencing substantial growth. For example, P1 observed that:

"Land values in Accra are skyrocketing. For instance if you go to high class areas like the Airport Residential Area and the rest, an acre of land cost about USA ($)4,000,000".

The subject participant further noted that:

"…the peripheral areas of the city are also growing fast with increases in land prices"

P4 also noted that:

"The paradox of Accra is that the value keeps rising. Nothing seems to bring it down".

Further, P5 observed that:

"…it is becoming something else because if they mention value of land in Accra, it is something different. It is so high. If you go to the inner perimeter, central district it is so high. Even the outskirts, what we call farmlands in those days".

Nevertheless, P3 intimated that the growth in value for lands in the peripheral areas is not as high as in the central areas of the city. Also, P2 opined that when the land/property values are indexed against the USA ($), the growth in values is not as high as in GH¢ due to the continuous depreciation of the GH¢. The subject participant noted that:

"…generally, the values are increasing especially if you index them in Ghana Cedis. However, in terms of the USA ($) Dollar index, it seems to me that it has stagnated a bit…"

The participants identified several reasons for the continuous rise in land/property values in Accra. However, increasing demand for land/property for investment and other purposes, such housing against inadequate supply was identified as the primary reason for the rising levels of land/property values. Three of the participants said that the city's population continues to grow and as a result of that, demand for land/property for various uses, in particular, housing continues to rise culminating in price increases. Also, it was noted that the city continues to attract real estate investment especially foreign investment, which tends to increase demand and ultimately land/property values. Closely aligned to this, is the nature of development in the city, which, in most areas, is not guided by planning and has resulted in over concentration of investment in the central areas. This continues to increase demand for land/property in the central areas and swells up prices. P3, for example, noted that:

"… you see part of the problem is over concentration on the central areas of the city. Instead of spreading out, we rather engage in redevelopment or in filling or whatever within the city centre. If we are doing lateral development then you will see that the values, even though they may be rising, they wouldn't be that steep".

Further, the participants observed that the high land/property prices in the central areas of the city have culminated in increase in demand for land within the outskirts or peripheral areas of the city, which has led to land price increases. P5 observed that:

"Because the inner part is choking and the values are so high, people are moving outside and that is also pushing the value of land in those areas to go high".

P3, in particular, noted that speculation is also a contributing factor to increases in land prices especially in the peripheral areas of the city. The subject participant explained that this usually happens when there is a likelihood that an area will soon open up for development especially with the construction of a road, a major facility or a major real estate development company purchases a large tract of land in that area for estate development. This then triggers demand and result in price increases.

5.3.2 Impact of Infrastructure on land/property values

In broad terms, the participants agreed that infrastructure has a positive impact on land/property values. P1, for example, observed that:

"Really, if you have a bare land, you plan it well, you tare the roads with electricity and water, definitely it will increase the value. But that is not what we are doing. That is why the estate developers, most at times their land values are higher. Some of them will provide the basic infrastructure. Trassaco Estate Development Company, for instance, they provide the infrastructure. But the chiefs and other land owners, they just sell the land and they don't care where you pass to your house (Laugh)"

P2 also noted that:

"As for that one, we can see clearly that it has a positive impact. Not necessarily in Adjei-kojo area, but in all areas. An example is where the affordable housing project is taking place; Kpone. Those areas have had tremendous increases in land values".

P4, however, had a nuanced view of the impact of infrastructure on land/property values. The subject participant indicated that even if infrastructure has impact on land/property values in built-up areas, the impact may not be significant because the market is artificial. The participant noted that infrastructure is often not provided, and in prime and built-up areas where a lot of re-developments are taking place, the basic infrastructure has not been up-graded; there exist on-street parking, the same old road, the same diameter of water pipe, and even electricity that feed into the neighbourhood is not increased. To the participant, therefore, it is quite unconvincing to say infrastructure account for rising land/property values under such a circumstance and that the suitable way to determine any such impact if it exist all is to undertake a before and after the provision of infrastructure analysis. Further, the participant noted that mere comparison of two areas such as East and North Legon residential areas regarding the impact of infrastructure could be an over simplification of the issues as both areas are unique and may have their own market dynamics. Nevertheless, the participant acknowledged that infrastructure could have significant positive impact on land/property values in new areas.

Despite participants noting that it is difficult to undertake strict categorisation of Accra into the various land use classifications due to lack of effective planning, they opined that the impact of infrastructure is very substantial on residential land/property values especially in high income areas as that land use, in part, drives other land uses in the city and also benefit from infrastructure more than the other uses. For example, P3 observed as follows:

"You see, if you have a factory or a big warehouse in an area, there is a special infrastructure facility you may need like water. Assuming there is no residential development around, the workers are say 30 people come in, and they load and go away. So the infrastructure doesn't impact much on more people. If it is residential, we live there. We want to watch TV and do things. Then the infrastructure is very, very, key".

Further, all the participants agreed that roads and electricity have the most significant impact on land and property values. Although all the participants opined that electricity has the most impact among the two types of infrastructure P2 was of a contrary opinion. The participants who opined that electricity has the highest impact were of the view that supply of water had long been a problem in Accra and people have found ways of addressing it. These ways include sinking their own water wells or bole holes, harvesting rain water and using water tanker services among others. For roads, most people are now used to bad roads. It is, thus, electricity that they cannot do without. Thus, it gives more utility to most people. P2 also opined that roads are visible, provide accessibility, and it is the most expensive infrastructure to provide. The differences in opinion may be due to how the two groups of participants perceive the two types of infrastructure regarding their utility provision.

5.3.3 Generating revenue from land/property values (Land Value Capture)

The participants acknowledged the existence of some of the LVC instruments such as property rate, sale and lease of government/public lands, stamp duty, capital gains tax and development charge or levy. They, however, noted that the said instruments are not being operated as LVC instruments to capture value for urban infrastructure development. Therefore, there seem to be no instrument/method for LVC in Ghana. Further, although some of the participants particularly (P2 and P4) noted that there are thoughts of introducing LVC in the country to finance urban infrastructure development there are several difficulties that could hinder its operation. For example, P4 observed that property rating as it is being implemented in Ghana cannot be considered as a value capture instrument and stated that:

"No it hasn't. That is something we are working on. Emm, to change the whole basis of property rating valuation, including capturing a share of value as may increase through whatever intervention it measures. Obviously, it has to be reasoned out who applies the capital and how the value capture is to be shared around. But that will take a while to discuss".

The identified difficulties to the operation of LVC are:

- The participants noted that the current situation where planning is chasing developments in most parts of the city of Accra and urban centres in the country could affect the effective operation in the country.
- Inadequate basis for determining the true value of land/properties and the lack of suitable methodologies for operating instruments such as betterment. P2 opined that it is very difficult to quantify betterment in Ghana. P3 also observed that:

  "You have to be realistic. Sometimes you even wonder what the Assemblies use to determine rate. How can one live in East Legon and pay a property rate of GH¢180 for a whole year. And that is why people are not even complaining of the lack of tarred roads and drains and all of that because it is so insignificant. I think it has to get to a point where we are charging realistic property rate, which will also reflect in the type of development".

The above difficulty was attributed to lack of data, which is often exacerbated by secrecy associated with land/property transactions. P5 noted that:

"…Information accessibility is very, very difficult. The two of us go to sit down there and we transact a business. I pay, I take the land and you also go. there is no way these people will get the information unless the man wants to register his documents then you come up that I bought the land from …then they will start tracing …to find out whether he has paid any capital gains tax or not. But if the man sits back, he is sitting on the land and therefore he does not need any documentation".

- The lack of clear legislation/policy for introduction and implementation of LVC. The participants opined that there is no formal modalities and mechanisms to capture value and how it should be shared among stakeholders, in particular, government and the private sector as well as where revenue generated should go. Further, it was noted that instruments in operation such as property rate, stamp duty and capital gains tax are administered by different institutions and it is unclear how revenues generated from them are administered and managed. P1 also observed that the inability of government to pass the requisite subsequent legislation to the Act 462 partly account for the reason why the MMDAs are unable to charge development levies in Ghana.
- The participants also opined that the political conditions could be an obstacle against the operation of LVC as Ghanaians are often sensitive to introduction of new taxes and tax increases. Therefore, politicians often lack the will to introduce new taxes and increase existing taxes. P2, for example, observed that:

"Political will is the bane of all development in Ghana i.e. if we don't have the boss to do this, it will only be theoretical. Politicians want votes. That one alone will could change everything"

Notwithstanding the difficulties, the participants observed that LCV could be another option to raise revenue to finance urban infrastructure development if designed and implemented properly. P4 noted that:

"It should be possible by legislation that provide broad basis for enabling whatever it is. But then the system has to be developed to be able to measure accurately the value capture to be shared. If we are just talking English, value capture! value capture! value capture! That won't work. There has to be a lot of modalities in place to capture".

Other participants expressed similar sentiments with P1 questioning why, for example, revenues generated from public lands sold and leased by the Lands Commission cannot be used to finance infrastructure. P3 also noted that with suitable planning system and governance arrange it should be possible to embark on land readjustment/pooling.

5.3.4 Some Suggestions for Land Value Capture

The participants made a number of suggestions that could help with the introduction and implementation of LVC in Ghana. The participants opined that for successful introduction and implementation of LVC, there is a need for enabling legislation with clear policy guidelines to set the modalities and mechanism for its implementation. Further, they noted a need to define or re-define all the existing instruments that can be used to implement LVC, and also determine where revenues generated from them should go as, for example, a central infrastructure development fund. Last but not the least, the participants also identified a need for a collaborative approach where all stakeholders will have to be engaged for them to understand LVC, the need for it and what is required of them. P1, for example, noted as follows:

"I think the cooperation of the citizenry is very important, especially the land owners. Because here is the case where the land owner sells and says, go and develop. And at the same time will employ land guards"

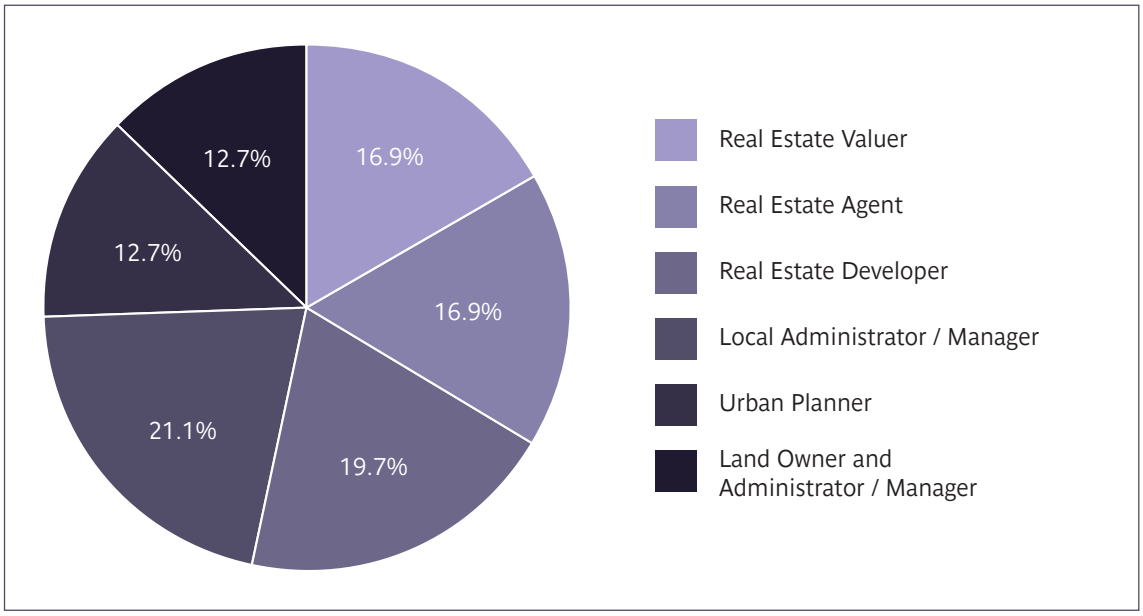
Also, on the issue of levies the subject participant opined that:

"People do not even know why they should pay. So if maybe we sit down and explain to people that if you pay this, these are the benefits, people will buy into it. But at times we sit here and think that we know everything"

5.4 Results from the Analysis of the Questionnaire Survey Data

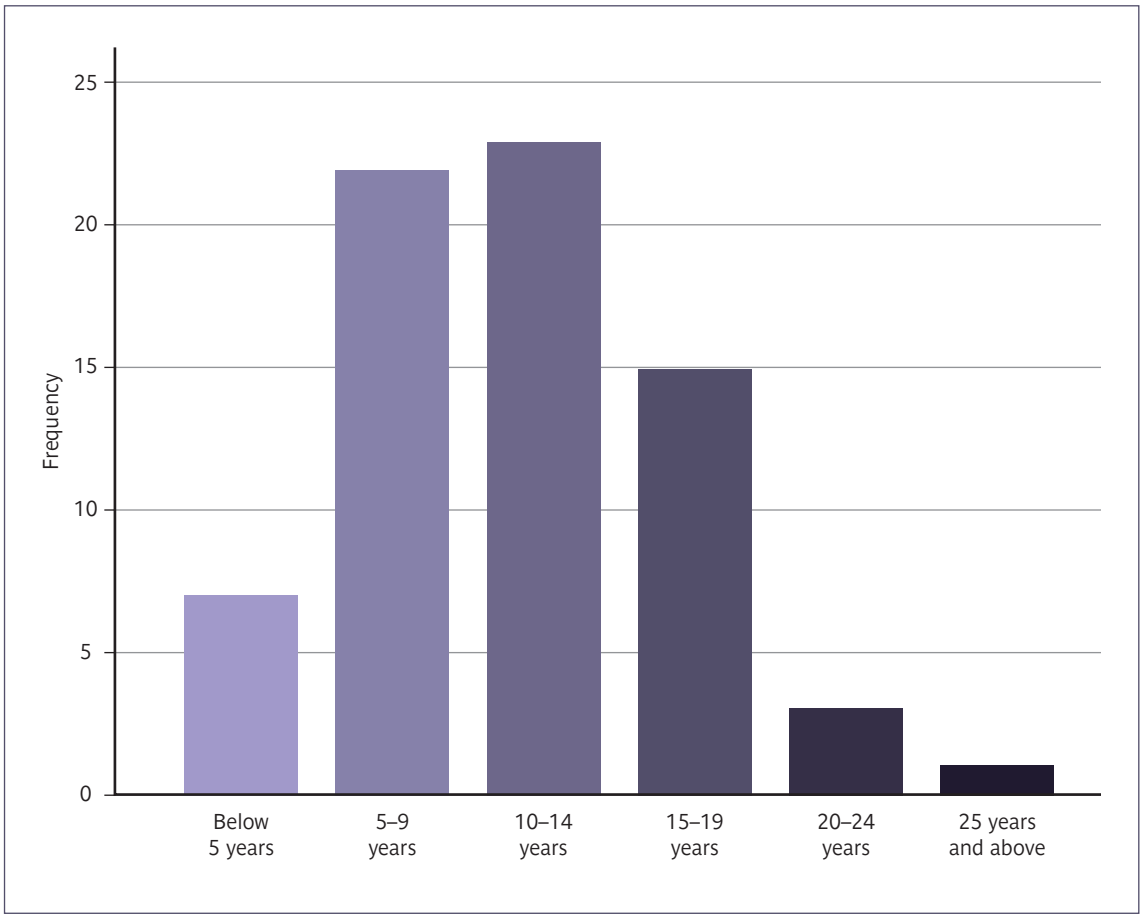
One hundred and twenty (120) questionnaires were administered to six distinct professionals and stakeholders in urban development and real estate market in Accra. The professionals and stakeholders were real estate valuers, real estate agents, real estate developers, land owners & administrators/managers, land administrators and urban planners. Seventy-one (71) of the questionnaires representing 59.2% were received. The response rate is quite similar to other studies, such as Abdulai and Hammond (2010) and Baffour Awuah et al. (2016).

Figure 5.1: Professional Background of Respondents



The majority of the respondents were land administrators. They constituted 21.1% (15) of the total respondents. This was followed by real estate developers 19.7% (14), real estate valuers and agents 16.9% (12) each, and land owners and administrators/managers, and urban planners 12.7% (9) each, respectively (Figure 5.1). In terms of years of professional experience, most of the respondents (32.4%) (23) fell within 10-14 years range of experience, compared to 1.4% (1) who had 25 years and above of professional experience. Further, 4.2% (3), 9.9% (7), 21.1 % (15) and 31% (22) fell within the range of 20-24years, 15-19 years, below 5 years, and 5-9 years of professional experience respectively (Figure 5.2). Almost half (43.7%) (31) of the respondents had first degree/HND level of education, compared to 2.8% (2) who had PhD level of education. Also, 18.3% (13) of the respondents had received secondary level of education, whilst 35.2% (25) had a post-graduate (masters/ postgraduate diploma/certificate) level of education.

Figure 5.2: Years of Professional Experience of Respondents



5.4.1 Rising Land/Property Values

A 5-point Likert scale (refer to Table 5.6 for details of the scaling) was employed to obtain the requisite data. The extent of growth of land/property values in Accra was evaluated with the equation in sub-section 4.4 of this report. Table 5.6 reports the results from the evaluation. The results were consistent with the outcome from the stakeholder workshop, and findings from the analyses of the interview and the archival data. The respondents agreed that land and property values in Accra keep rising (AgrI5 = 0.78). However, in relative terms, the results show that the values of land and properties used for shops have the highest growth rate (AgrI5 = 0.83). This was followed by the growth rate of residential lands and properties (AgrI5 = 0.80) and then, the value growth rate for office lands and properties (AgrI5 = 0.79). The value growth rate for leisure lands and properties was the lowest (AgrI5 = 0.64). The higher value growth rate for shop lands and properties compared to that of residential land and properties maybe due to increases in economic activities, which have led to high demand for shop lands and properties, on the one hand, and shortage in supply of such lands and properties compared to the situation with residential lands and properties. Thus, although demand for residential lands and properties, as shown in the literature discussion, has outstripped supply, the situation may not be as severe as the case of shop lands and properties as the requirements for shops lands and properties seem to be more complex and stringent than those of residential land and properties. The low rate of growth in value of lands and properties for community park/playground and leisure centres maybe due to the slow rate of demand for such land uses in Ghana.

Table 5.6: Extent of Land and Property Value Growth in Accra

Item	No	Frequencies (%)					Min	Max	Mean	Median	Mode	Agrl5
		1	2	3	4	5						
Land/Pty (general)	71	0.00	1.40	29.60	43.70	25.40	2	5	3.93	4	4	0.78
Residential land/pty	71	0.00	1.40	25.40	46.50	26.80	2	5	3.99	4	4	0.80
Office land/pty	71	5.60	7.00	12.70	29.60	45.10	1	5	4.01	4	5	0.79
Shop land/pty	71	0.00	4.20	19.70	31.00	45.10	2	5	4.17	4	5	0.83
Leisure land/pty	71	2.80	5.60	54.90	36.60	0.00	1	4	3.25	3	3	0.64
Industrial land/pty	71	0.00	21.10	36.60	29.60	12.70	2	5	3.33	3	3	0.65
Mixed-use (residential and shop) land/pty	71	1.40	11.30	33.80	43.70	9.90	1	5	3.49	4	4	0.69
Land/Pty in High income areas	71	1.40	8.50	2.80	50.70	36.60	1	5	4.13	4	4	0.82
Land/Pty in Middle income areas	71	1.40	5.60	33.80	33.80	25.40	1	5	3.76	4	3	0.74
Land/Pty in Low income areas	71	4.20	5.60	50.70	23.90	15.50	1	5	3.41	3	3	0.66

1 = Negative/No growth 2= Low growth 3= Average growth 4= High growth 5 Very high growth

Further, the results show that the rate of land and property values' growth is highest within high income areas (Agrl5 = 0.82). This was followed by middle (Agrl5 = 0.74) and low (Agrl5 = 0.66) income areas respectively. A possible reason for this finding could be the levels of real estate market activities in these areas, which tend to be very articulate and vibrant in the high income areas compared to the two other areas.

5.4.2 Impact of Infrastructure on Rising Land and Property Values

Apart from the extent of impact of infrastructure, in general, on land and property values in Accra, the extent of impact of seven basic infrastructures namely: tarred roads; electricity; pipe-borne water; fixed line telephone; community park/playground/leisure centre; school; and hospital, as well as the impact of infrastructure on land and properties in high, middle and low income areas, were examined. The requisite data was elicited based on a 5-point Likert scale (Refer to Table 5.7 for details of the scaling). However, the impact of infrastructure on land and property values was evaluated using the equation in sub-section 4.4 of this report. Table 5.7 summarises the results from the analyses.

Table 5.7: Extent of Impact of Infrastructure on Land and Property Values in Accra

Types	No	Frequencies (%)					Min	Max	Mean	Median	Mode	Agrl5
		1	2	3	4	5						
Infrastructure (general)	71	4.20	2.80	18.30	26.80	47.90	1	5	4.11	4	5	0.81
Tarred roads	71	0.00	4.20	14.10	53.50	28.20	2	5	4.07	4	4	0.81
Electricity	71	0.00	4.20	5.60	66.20	23.90	2	5	4.10	4	4	0.82
Pipe-borne water	71	0.00	4.20	15.50	60.60	19.70	2	5	3.96	4	4	0.79
Fixed line telephone	71	14.10	23.90	52.10	9.90	0.00	2	5	2.58	3	3	0.46
Community park/ playground/ leisure centre	71	23.90	21.10	29.60	25.40	0.00	1	4	2.56	3	3	0.45
School	71	0.00	9.90	9.90	63.40	16.90	1	4	3.87	4	4	0.77
Hospital	71	0.00	4.20	19.70	62.00	14.10	2	5	3.86	4	4	0.77
Impact of infrastructure in high income areas	71	0.00	4.20	7.00	33.80	54.90	2	5	4.39	5	5	0.87
Impact of infrastructure in middle income areas	71	0.00	1.40	29.60	29.60	39.40	2	5	4.07	4	5	0.81
Impact of infrastructure in low income areas	71	0.00	19.47	14.10	9.90	56.30	2	5	4.02	5	5	0.79

1 = Very insignificant 2= Insignificant 3= Quite significant 4= significant 5 Very significant

In broad terms, the results established that the respondents were of the view that infrastructure has a significant or very significant positive impact on land and property values in Accra (Agrl5 = 0.81). However, they opined that electricity has the most impact (Agrl5 = 0.82) followed by tarred roads (Agrl5 = 0.81) and then, pipe-borne water (Agrl5 = 0.79). These were significant or very significant. Both hospital and a school, according to the respondents, have the same levels of impact (Agrl5 = 0.77), which was significant. The impact of community park/playground/leisure centre was comparatively perceived to have the least impact (Agrl5 = 0.45). Further, the results show that the impact of community park/playground/leisure centre and fixed line telephone, as perceived by the respondents, were not significant. They were also not very insignificant or insignificant. The results could be attributed to the perception of the level of utility generated by these infrastructure facilities and their subsequent demand by land users, and property owners and developers, among others.

The impact of infrastructure on land property values in high, middle and low income areas was perceived as significant or very significant (Table 5.7). However, the impact in high income was the highest (Agrl5 = 0.88) followed by middle income areas (Agrl5 = 0.81) and then low income areas (Agrl5 = 0.79). The results could stem from the levels of demand for infrastructure in these areas.

5.4.3 Potential to Leverage Rising Land and Property Values to Finance Infrastructure

Table 5.8 presents the results on the potential to leverage rising land and property values to finance infrastructure development in Accra. Similar to the other variables, the requisite data for this variable was elicited from the respondents using a 5-point Likert scale (Refer to Table 5.8 for details of the scaling).

Table 5.8: Potential to Leverage Rising Urban Land and Property Values to Finance Urban Infrastructure in Accra

Area	No	Frequencies (%)					Min	Max	Mean	Median	Mode	Agrl5
		1	2	3	4	5						
Leverage land/pty values to finance infrastructure (general)	71	21.10	1.40	1.40	31.00	45.10	1	5	3.77	4	5	0.71
In high incomes areas	71	21.10	0.00	4.20	15.50	59.20	1	5	3.91	5	5	0.74
In middle income areas	71	21.10	0.00	31.10	46.50	1.40	1	5	3.07	3	4	0.57
In low income areas	71	15.50	26.80	54.90	2.80	0.00	1	4	2.45	3	3	0.43

1 = No potential 2= Very low potential 3= Low potential 4= High potential 5 Very high potential

Results demonstrate that, from the standpoint of the respondents, there is a high or a very high potential for leverage of rising land and property values to finance infrastructure development in Accra (Agrl5 = 0.71). However, such a potential was perceived to be comparatively higher in high income areas (Agrl5 = 0.74). The potential for the low and middle income areas, are perceived to be very low or low (Table 5.8). The reason for these findings is perceived to stem from the extent to which the various areas meet the conditions for the introduction and implementation of LVC.

6.0 Discussion of Findings

This section focuses on the discussions of the findings with the view to drawing implications for policy formulation and practice. The section is partitioned into five distinct sub-sections as follows:

6.1 Growth of Land and Property Values in Accra

In consideration of the aim of the research, there was a need to establish whether or not land and property values in Accra are rising and, if so, identify the possible determinants as a starting point. Findings from the analyses of the data obtained from all the strategies employed to deliver the research, including the outcome of the stakeholder workshop, suggest that land and property values in Accra over the years have been rising and they keep rising. Indeed, there was a consensus among the stakeholder workshop participants, as well as the interview survey participants, that land and property values in the city keep rising. This was corroborated by the findings from the archival and the questionnaire survey data analyses. For example, results from the analyses of the land values of the 12 (USA ($)) market areas established a land value growth rate of not less than 17.6% and a highest growth rate of 87.5% for the period 2011-2016. Indeed, most of the growth rates were 39.5% and a number of them fell in between 17.6% and 66.7% (Table 5.1). A similar situation was recorded for the Ghanaian (GH¢) market areas with even slight increases in their growth rates compared to the USA ($) market areas. The growth rates for the GH¢ market areas were btn 42.9% & 100% Analyses of the data obtained from the SHC and Manet Real Estate Development Company Ltd. also established property price/value growth rates of between 339.2% and 736%, and 7.1% and 50%, respectively, for their relevant properties, and in between their earlier and later periods (Tables 5.3 and 5.5). The SCH prices/values were in Ghana (GH¢), while those of Manet Real Estate Development Company Ltd in USA ($). Although a number of reasons, such as location and the nature of properties, could account for the disparity in the value growth rates between the Ghanaian (GH¢) and the USA ($) market areas, a possible key reason as identified by P2 in the interview survey (Sub-section 5.3.1) could be the continuous depreciation of the (GH¢) against the ($). Perhaps all the values ought to have been reduced to or re-quoted in a single currency for the purpose of the analyses. This was, however, not deemed expedient given that most real estate development companies and other institutions have their own exchange rates and, therefore, such re-quotation may not reflect the true situation.

Analyses of the questionnaire survey data established that the respondents agreed that growth in land and property values in Accra is high or very high (AgrI5 = 0.78). The growth in land and property values, from the survey results, was also established to be higher in high income areas compared to low and middle income areas (Table 5.6). In addition, the land and property value growth rate for shop land utilisation was the highest (AgrI5 = 0.83). Thus, shop land and properties values were established to be rising faster than those of residential land use (AgrI5 = 0.80). Although this could be due to a severer situation of inadequate supply of shop land and properties given the demand compared to the situation for residential land use, this finding contradicts the outcomes from the stakeholder workshop and the analyses of the interview survey, which established that growth in residential land and property values is dominant. This may, therefore, require further investigations. Nevertheless, findings from the empirical aspect of the research as to the continuous growth in land and property values in Accra corroborate what is in the literature (Oxford Business Report, 2016; Baffour Awuah, 2016; Global Business Report, 2016; Section three). This implies a satisfaction of one of the key requirements for the operation of LVC (Mittal, 2014, Sub-section 2.3). This finding, thus, suggests a need for urgent policy response not only in the area of value capture for infrastructure financing, as noted by the participants at the stakeholder workshop, but also in areas such as setting up land banks for future strategic developments, and fair and equitable sharing of land resources. Indeed, the literature enhances understanding that the competition for land and properties not only in Accra, but across the cities and urban centres in the developing world have led to high prices of land and properties. Accordingly, the poor who are often priced out

in this competition subsequently settle on any available land, such as waterways, close to refuse dumps and road reservation, and partly accounts for the proliferation of informal developments with attendant adverse environmental outcomes (Brown, 2012).

6.2 Determinants of Growth of Land and Property Values in Accra

Excepting speculation, findings from the empirical aspect of the research were consistent with the outcome from the literature review as to the determinants of the current rising levels of land and property values in Accra. Both the outcome of the stakeholder workshop and the analyses of the interview survey data established that increasing demand for land and properties particularly in the central areas of the city for various purposes, such as housing, commercial use and investment, among others, against inadequate supply accounts for the rising levels of land and property values in the city. They also established that the demand is borne out of urbanisation and population growth, and influx of foreign direct investment and wealthy expatriates looking for properties to purchase. This corresponds with the findings from the literature review, which revealed that, following the introduction of 1980 liberalisation policies in the land and real estate sector, there have been increased real estate market activities in Ghana; both formal and informal investment activities. Further, the literature review established that these surging real estate market activities are spurred by good economic performance, urbanisation, growth in middle income population and inadequate supply of land and commercial properties (Oxford business Report, 2016; Baffour Awuah et al., 2016). Findings from the literature even suggest that with the increasing urban population against housing shortages, coupled with improvement in real estate market transparency, there is the likelihood for the land and real estate market activities to increase further leading to the maturity of Ghana's market (JLL, 2013, 2014; Oxford Business Report, 2016, Baffour Awuah et al., 2016). This reinforces the rising levels of land and property values in Accra as meeting one of the requirements for the introduction and implementation of LVC, and thus strengthens the position of policy makers/advocates for the concept to be considered (Section one).

Findings from the analyses of the interview survey data established that speculation is a determinant of increases in land prices particularly in the peripheral areas of Accra. This often happens when there is the likelihood that an area will soon open up for development with, for example, the construction of a road, a major facility or a major real estate development company purchases a large tract of land in that area for estate development. This then triggers demand and result in price increases. Although speculation, in principle, is somewhat accepted as an investment medium, the subject speculation may not necessarily lead to developments and are often not healthy for the operation of real estate markets, and by extension LVC. This finding together with the other determinants identified above further emphasise the reasons behind the rising levels of land and property values in Accra, which could inform policy formulation and practice for future value capture operations, on the one hand, and address the adverse effect of the rising values, on the other hand.

6.3 Impact of Infrastructure on Land and Property Values in Accra

Findings from the research showed that the presence of infrastructure and services has positive impact on land and property values. Outcome from the stakeholder workshop and findings from the interview survey established that infrastructure contributes substantially to land and property value appreciation in Accra. Further, there was an agreement among the questionnaire survey respondents that the contribution of infrastructure to land and property values in Accra is significant or very significant (AgrI5 = 0.81). Given the important role infrastructure plays in societies and communities, this finding was expected. For example, infrastructure such as tarred roads improves accessibility, facilitates traffic flow for both human and materials within communities and ensures good drainage and sanitation. These, in conjunction, with the other infrastructural facilities could create incentives for commercial development (Karley, 2009; Baffour Awuah et al., 2014a). This finding was also consistent with studies such as Cheshire and Sheppard (2004) and Baffour Awuah et al. (2014a). It, thus, suggests that public action, in the form of urban infrastructure investment or development, could generate additional revenue through land and property value appreciation to finance subsequent infrastructure developments. This presents opportunities for urban authorities in Ghana to use value capture instruments such as property tax to generate additional revenue for community projects (Baffour Awuah et al., 2014a).

Findings from the interview survey established that the impact of infrastructure is comparatively very high on residential land and property values especially in high income areas of Accra. This was attributed to the comparatively high demand for infrastructure for such land use, and in high income areas of the city. The finding of the high impact of infrastructure on land and property values in high income areas was further corroborated by the respondents of the questionnaire survey who agreed that the impact is the highest (AgrI5 = 0.88) compared to those of middle (AgrI5 = 0.81) and low (AgrI5 = 0.79) income areas. This implies that LVC in this context has a greater chance of success in high income areas of the city compared to the other two areas. By similar reasoning, the concept is more likely to succeed in middle income areas than in low income areas. Three main individual infrastructural facilities namely: electricity; roads; and pipe-borne water were perceived to have the most impact on land and property value appreciation. However, excepting pipe-borne water which was perceived to have the least impact among the three infrastructure facilities, mixed outcomes were recorded for the other two facilities. There was a consensus among the stakeholder workshop participants that roads have the highest impact on land and property values. However, a contrary view was established from the interview and questionnaire surveys. The majority of the interview survey participants opined that electricity has the highest impact on land and property values. This was corroborated by the questionnaire survey respondents (Table 5.7). These findings from the interview and questionnaire surveys also contradict studies such as Baffour Awuah et al. (2014a), which established that tarred roads with concrete drains contribute more to property value appreciation in Kwabenya Area of Accra than electricity. Although these mixed outcomes could be attributed to the many different participants used in the research and their different perceptions of value regarding the two infrastructure types, the issue warrants further investigations. Nevertheless, the findings imply that the three types of infrastructure should be the immediate target in terms of infrastructure for any LVC policy introduction.

It is important to stress that, Participant (P) 4 for the interview survey expressed a nuanced view about the impact of infrastructure on land and property values in Accra. The participant among others observed that there is often no provision of infrastructure and where they have been provided particularly in prime and built-up areas undergoing redevelopments, they have not been up-graded; there exist on-street parking, the same old road, the same diameter of water pipe, and even electricity that feed into the neighbourhoods is not increased. The participant, therefore, questioned the impact of infrastructure on land and property values under such circumstances, and noted that if there is any impact at all, it will not be much. The participant

further noted that mere comparison between two neighbourhoods regarding the impact of infrastructure will amount to over simplification of the issue as every area is unique and may have its own market dynamics. The foregoing merits an in-depth investigation into the impact of infrastructure on land and property values in central areas of Accra, which are currently undergoing redevelopments and land use conversions.

6.4 Land Value Capture Instruments/Methods

The literature review identified seven broad LVC instruments/methods that could possibly be applied in Ghana. These instruments are: land re-adjustment/pooling, negotiation, and voluntary contributions; land sales, land acquisition & resale, and public land leasing; betterment tax; property tax including property tax surcharges, tax increment financing (TIF), and land tax; sale of development rights; joint development mechanism; and 'in-kind' contribution, impact fees and development charges (Section two, Table 2.1). The literature review also established some LVC instruments are already in operation in Ghana. These include property rate, capital gains tax, rental income tax, gift tax, stamp duty, development charge, assignment value fee, planning permission/development permit charge and public land leasing (Sub-section 3.2). The stakeholder workshop noted some of these instruments and their suitability to mobilise revenue for infrastructure development. However, the literature review, in conjunction, particularly with the findings from the interview survey highlight that the instruments in operation are not being implemented as value capture instruments to mobilise revenue for urban infrastructure development. Further, the instruments are being administered by different institutions and it is unclear where revenues generated from them go and what revenues mobilised is used for. This may require a clearly defined policy direction and harmonisation of the instruments as suggested by the participants at the stakeholder workshop and those for the interview survey. Further, an examination of each of the instruments to determine their suitable areas of application is imperative since LVC instruments could require different conditions in different locations, as well as have different implications for different people in different locations (Medda, 2012)

6.5 Potential to Leverage Rising Land and Property Values to Finance Infrastructure Development

Findings from the literature review highlight that Accra, and for that matter Ghana's land and real estate markets, keep growing with much investment and developer activities. Given the current spate of urbanisation, the growing middle income population and shortage of urban accommodation among others coupled with growth in market transparency, investment and developer activities are expected to increase signifying a high potential for the real estate markets to reach maturity in the near future (Section 3). Further, the country has a framework of land administration and management including a land use planning and management regime with enabling legislations, well defined broad typologies of landholdings and interests in land as well as institutions and bodies that are supposed to support effective and efficient land administration and management. There are several areas particularly in the high and the middle areas, which are well planned and managed, and provided with basic infrastructure. Also, there are already LVC instruments in operation in Ghana although they are not being implemented as value capture instruments to mobilise revenue for urban infrastructure development (Section 3). However, it signifies that they could be developed to meet LVC requirements.

Findings presented and discussed in the preceding sub-sections showed that land and property values, are substantially rising in Accra, and that infrastructure has a significant positive impact on land and property values in the city. The foregoing presents evidence of the existence of some favourable conditions for the introduction of value capture to leverage the rising land and property values to finance infrastructure development. Indeed, the outcome from the stakeholder workshop as well as the findings from the interview and questionnaire surveys demonstrate that there is a potential for rising land and property values to be leveraged to finance urban infrastructure in Ghana. The stakeholder workshop, for example, noted the suitability of instruments such as betterment charges, land re-adjustments, negotiation and local authorities reaching agreements with land owners, and government agencies like the Lands Commission and TCPD. It also noted that site and services schemes could be used to trigger land and property values and then captured to finance urban infrastructure through cross-subsidisation. Similar sentiments, in terms, of the possibility of leveraging rising land and property values to finance urban infrastructure development were largely expressed by the interview survey participants. There was also high consensus among the questionnaire survey participants that there is a high potential if not very high potential for rising land and property values to be leveraged to finance urban infrastructure development (AgrI5 = 0.713). However, such potential is more likely to be realised in high income areas. These findings, in part, correspond with Mabe (2013) findings, which established that property rates, and ground rent revenue from both public and stool/skin lands could be used to finance infrastructure development within the Sekondi-Takoradi Metropolitan Area, Ghana.

Notwithstanding the foregoing, findings from the stakeholder workshop, literature review and the interview survey also established a number of constraints to leveraging rising urban land and property values (LVC) to finance urban infrastructure development in Accra and Ghana as a whole. Although Ghana has a land administration and management framework in place, the research established that land ownership rights and land claims are poorly developed. These are often exacerbated by issues such as indeterminate boundaries of land ownership, multiple public land administration institutions, complex land registration procedures and requirements, and multiple sales of same parcels of land especially for customary lands. Also, most of the land transactions occur outside the formal land market and registration system (Section 3). Furthermore, it was noted that the country's planning system is weak and the weakness is manifested by delays with planning approval processes and non-compliance with planning requirements, and inadequate master and sub-division plans with planning always chasing developments (Section 3). The cumulative effect is that there is often a lack of access to well-planned and secured land and properties, orderly developments and good property address, among others, which are necessary for the implementation of value capture. Nevertheless, it was established that there are on-going initiatives to streamline land administration and management, and valuation practice in the country. As part of these initiatives, a new Spatial Planning Act has been passed and a new Lands Bill to harmonise all land related legislations is being prepared. Although these efforts are laudable, relevant authorities, such as the Lands Commission, MMDAs and TCPD, should do more to devise and implement suitable and practicable strategies to ensure that the goals of these legislations are achieved.

Findings from the literature review highlighted that, real estate valuation practice in Ghana has not developed as it ought to progress. This has resulted in a lack of suitable comprehensive valuation methodologies to assist value capture. This situation is intensified by a lack of multi-purpose cadastre to provide organised data on land ownership, use and value among other things (Section 3). This outcome from the literature review was in tandem with the findings from the interview survey, which additionally noted that confidentiality associated with real estate market transactions is one of the main causes of access to data problems (Section 5). This presents food for thought for the valuation profession in the country, particularly, the regulatory bodies, such as the GhIS and the RICS, on the need for them to facilitate the development of appropriate methods for capturing value as well as institute initiatives to help improve access to property market data for improved valuation practice. Also, the literature review highlighted that access to finance for real estate investment and development remains a problem in Ghana due to factors such as such as high interest rates, cumbersome

financing arrangement, lack of fiscal/regulatory incentives, lack of long term finance and excessive collateral requirements (Section 3). Further, the interview survey established that inadequate consultation with the broader urban sector stakeholders, such as traditional authorities, land owners, developers, property owners and the entire citizenry, in decision making processes could constrain any effort to introduce LVC. This is because such constraint could lead to a lack of understanding of the idea of LVC and its benefits to the stakeholders, and ultimately dis-incentivise them to support it. This finding was consistent with the findings from the literature review, which also noted that urban authorities under the current Ghana's decentralised system are supposed to practice democratic governance. However, the authorities are not financially independent, weak, and have inadequate administrative and governance structures to mobilise and engage urban sector stakeholders. That said, the findings recognised that the country has formulated a new urban policy as part of efforts to address urban problems including the one highlighted (Section 3).

The stakeholder workshop and the interview survey emphasised the current lack of enabling legislation to support value capture in Ghana. Findings from the interview survey, in particular, noted that there are no modalities, methodologies and protocols by which rising land and property values could be leveraged to finance urban infrastructure development in Ghana. This finding was in tandem with what was identified in the literature. Indeed, the literature review brought to fore the recent establishment of the Ghana Infrastructure Investment Fund, which could serve as a useful platform to facilitate the development of such modalities. Also, the survey recognised that there could be a lack of political will to implement LVC. This is because it is a form of taxation, and politicians often do not want to incur the displeasure of electorate to avoid losing elections. This finding was highlighted in the literature and resonated with the outcome of the stakeholder workshop, which called for strict implementation of LVC legislation upon its introduction and avoidance of political interference.

The findings from the research, therefore, show that there seem to be a potential to leverage rising land and property values to finance urban infrastructure development in Ghana. However, there are equally a number of constraints that could hinder its successful introduction and implementation. This implies a need for careful examination of the constraints to develop suitable solutions to them to ensure smooth introduction and implementation of LVC as an additional source of revenue to finance urban infrastructure development in Ghana.

7.0 Conclusions and Recommendations

The research set out to investigate the potential to leverage rising urban land and property values to finance urban infrastructure development in Ghana. The need for the research was borne out of three distinct, but connected issues. These were: the vital role of infrastructure, in particular, to the production of productive and liveable cities and urban centres to spur socio-economic progress; the prevailing Ghana's urban infrastructure deficit in the face of imperatives, such as rapid urban growth and urbanisation; and a lack of adequate funding options to improve the urban infrastructure situation in the country. Accra, Ghana's capital city, was used as a case study from where empirical data was collected and analysed to help deliver the research. The choice of Accra as a case study was because it is the most urbanised city with the most vibrant real estate market in Ghana. It was also a readily location to easily access data to implement the research due to the presence of most of the stakeholders relevant to the research.

To address the research issue, the research among others sought to achieve the following objectives: identify growth trends in land and property values in Accra, and their determinants; explore the impact of infrastructure on urban land/property values in Accra; explore instruments or methods by which rising urban land values could be leveraged to finance urban infrastructure development in Ghana; and identify the potential to generate revenues from rising urban land and property values to finance urban infrastructure development in Ghana. An amalgam of literature identification and review, stakeholder consultation workshop, examination of land and real estate organisations databases, and interview and questionnaire surveys of key urban development and real estate market professionals and stakeholders was used to address the objectives of the research.

The research established that land and property values in Accra keep growing both in the central and peripheral areas, and that the growth in values is substantial. The questionnaire survey found that the growth in land and property values in high income areas is higher than that of middle and low income areas. Further, the value growth rate for shop lands and properties was found to be the highest, higher than the value growth rate for residential land and properties. This later finding was inconsistent with findings from both the stakeholder workshop and the interview survey, which established that the rate of growth for residential lands and properties is the highest. Also, it was found that increasing demand for land and property both within the central and peripheral areas borne out of urbanisation and population growth particularly middle income population, and influx of foreign direct investment and wealthy expatriates looking for properties to purchase against inadequate supply account for the growth. It was noted that there is over concentration of demand within the central areas, which has resulted in increases in demand for land and properties in peripheral areas from people who are often priced out in the central areas. In addition, Land development and price increase speculation was found to fuel demand for land and property in the peripheral areas and ultimately their increases in value. Whilst the substantial growth rate of land and property values is favourable to value capture introduction, it could result in non-availability of lands for strategic future investment as well as unauthorised developments, such as informal developments, particularly from the poor who are usually priced out in the competition for land resources. Also, the speculation leading to increase land values in the peripheral areas of the Accra may not augur well for planned land developments. The foregoing, therefore, requires urgent policy response. The variation in findings on the value growth rate between shop and residential land and properties is also amenable for further investigations.

The outcome from the literature review and findings from the empirical part of the research established that infrastructure has a significant positive impact on land and property values in Accra. The impact was, however, noted to be more significant in high incomes areas compared to middle and low income areas. The interview survey found that the impact of infrastructure is more pronounced on residential land use due to the comparatively high need of the various types of infrastructure for such land use. It was further found that three types of infrastructure namely: roads; electricity; and pipe-borne water have the most significant impact on land and property values in Accra. However, there was a lack of consensus from the findings on whether roads or electricity has the highest impact on land and property values in Accra. In addition, a nuanced view of the impact of infrastructure on land and property values came to fore. This view noted that infrastructure(s) are rarely provided, and in built-up areas where there are basic infrastructures and are undergoing redevelopments, they have not been up-graded. Therefore, the positive impact of infrastructure is quite questionable. Nevertheless, these findings show that investment in urban infrastructure could generate additional revenues through land and property value appreciation, which could be used to finance further infrastructure development. This presents additional favourable condition for the introduction of value capture by policy makers particularly central and urban government authorities. The findings also suggest a need for further investigations into the impact of both roads and electricity on land and property values to determine which of them has the most impact. An investigation into the impact of infrastructure on land and property values in built-up areas undergoing redevelopments and land use conversion is also imperative.

The research established seven (7) main LVC instruments/methods that could possibly be used to leverage rising land and property values to finance urban infrastructure in Ghana. These instruments are land re-adjustment/pooling, negotiation, and voluntary contributions; land sales, land acquisition and resale, and public land leasing; betterment tax; property tax including property tax surcharges, tax increment financing (TIF), and land tax; sale of development rights; joint development mechanism; and 'in-kind' contribution, impact fees and development charges. Some of these instruments, such as property tax, public land sale and leasing, and development charge, are already in operation or provided for by legislation. A number of other instruments such as stamp duty, and capital gains and rent taxes were also identified. However, all these instruments are not being implemented as value capture instruments to leverage rising land and property values finance urban infrastructure development although they could be revised for that purpose. Besides they are uncoordinated and are being administered by several institutions. There may, therefore, be a need for each of the instruments to be appraised to establish their suitability including their areas of applicability given that no instrument is fit for all purpose and each of them have strengthens and weaknesses.

Apart from the already favourable conditions outlined in the preceding paragraphs, the research established other favourable conditions for the introduction of value capture in Ghana. These include:

- Growing land and property market with increasing investor and developer activities;
- the presence of land administration including land use planning and management framework with well-defined broad typologies of landholdings and interests in land;
- Presence of land and real estate valuation practice;
- Presence of land and real estate institutions, both public and private, including professional bodies such as the GhIS and GIP, as well as some enabling legislation; and
- The presence of several areas particularly in the high and the middle income areas, which are well planned and managed, and provided with basic infrastructure.

Further, the research established that there is a high potential for rising land and property values to be leveraged to finance urban infrastructure development in Accra, particularly in high and middle income areas.

Nevertheless, several challenges were identified, which could affect any proposed initiative to harness the potential to leverage rising land and property values to finance urban infrastructure development in Ghana. These include:

1) Lack of access to well-planned and secured land and properties, orderly developments and good property address system among others due to:
    - Poorly defined land ownership rights and land claims,
    - Complex land registration procedures and requirement,
    - Multiple sales of same parcels of land,
    - Inadequate master and sub-division plans,
    - Delays with planning approval processes, and
    - Non-compliance with planning requirements;
2) Lack of suitable comprehensive valuation methodologies to assist value capture;
3) Lack of multi-purpose cadastre to provide organised property and property market data;
4) Inadequate access to finance for real estate investment and development;
5) Weak urban authorities and their lack of or inadequate consultation with the broader urban sector stakeholders such as traditional authorities, land owners, developers, property owners and the entire citizenry in decision making process;
6) Lack of enabling legislation, modalities, methodologies and protocols to support value capture in Ghana; and
7) A perceived lack of political will to support value capture.

Thus, there is a potential to leverage rising land and property values to finance infrastructure development in Ghana. However, the potential cannot be fully harnessed without redress of the identified challenges and programmes to that effect carefully planned, designed and implemented.

7.1 Recommendations

Based on the findings and conclusions of the research, the recommendations below are made:

There is a potential to leverage rising land and property values through LVC to finance urban infrastructure development in Ghana. However, any efforts to introduce LVC may first target high income areas, and proceed with a pilot programme. Prior to, enabling legislations should be passed, and modalities, methodologies including suitable comprehensive valuation methodologies to capture value and protocols developed to support the introduction and implementation of LVC. The passage of enabling legislations may have to consider existing legislation on instruments that could be used to capture value and the institutions that administer them with a view to providing a clear policy direction. The foregoing may, therefore, require:

Research

The passage of enabling legislation and, in particular, the development of modalities, methodologies and protocols should be research driven. First, in-depth research should be carried out into each of instruments to determine their suitable areas of application and thereafter the development of modalities, methodologies and protocols for their operation. Also, research (es) should be conducted with the aim to develop suitable comprehensive valuation methodologies to support value capture. Further, the research identified a number of areas, which need investigations. These investigations should be carried out, and they relate to:

- The rate of residential land and property value growth compared to shop land and property in Accra;
- The impact of roads on land and property values compared to that of electricity in Accra; and
- The impact of infrastructure on land and property values within built-up areas undergoing redevelopment and land use conversions in Accra.

The development of modalities, methodologies and protocols should involve all urban sector stakeholders, such as: central government and local government authorities like the Ministries of Local Government, and Lands and Forestry, GLGS, Ghana Infrastructure Investment Fund, the TCPD, the Lands Commission, Ghana Revenue Authority, MMDAs; land owners and users; real estate developers; property owners; traditional authorities; professional bodies such as the GhIS, GIP; Ghana Institution of Engineers (GhIE); utility agencies; academia; international development agencies; and NGOs and CBOs. This, among other things, could partly provide understanding and also incentives for acceptance of the outcomes.

Multi-purpose Cadastre - Organised Data

A coordinated effort towards building a multi-purpose cadastre that will ensure the provision of information on land and property such as ownership, use and value as well as property market data like evidence of recent sales is essential. An enabling environment to aid the creation of a multi-purpose cadastre should be promoted. Therefore, the MMDAs through the GLGS, the Ministries of Local Government, and Lands and Forestry with the support of the TCPD, the Lands Commission and professional bodies like the GhIS should take the initiative to create such a cadastre. These institutions should commence programmes to promote discussions and collaborations among all the public and private stakeholders in the land and built environment data industry, such as valuation practitioners, public institutions, financial institutions, estate developers, estate agents and property owners, traditional authorities, road and utility agencies, the media on the need to develop the cadastre, and devise a systematic strategy to do so as well as motivate relevant stakeholders to provide requisite information.

Land Administration and Land Use Planning and Management

It was established from the literature review that there are on-going initiatives, such as the LAP to streamline land administration and management, as well as land use planning and management in Ghana. As noted previously, these initiatives have resulted in the passage of a new Spatial Planning Act and a new Lands Bill to harmonise all land related legislations is currently being prepared. Thus, such initiatives are laudable and they should continue. However, relevant authorities such as the Lands Commission, MMDAs and TCPD should do more to devise and implement suitable and practicable strategies to ensure that the goals of these initiatives are achieved. Such strategies should:

- Ensure sustainable increases in land and property prices;
- Prevent unnecessary land speculation;
- Ensure availability of lands for strategic future investment through, for example, the Establishment of land banks; and
- Ensure access to developable lands especially by the poor at relatively cheaper prices.

Capacity of MMDAS

The capacities of local authorities–MMDAs should be strengthened. Innovative ways should be put in place for MMDAs to attract quality staff and in right amount. Well-designed training and development programme should be instituted by MMDAs to ensure that existing staff undergo regular training to enhance their administrative and management skills and competences to handle any LVC programme that will be introduced. As suggested by the interview participants, MMDAs should also devise practical programmes and identify the right media to promote democratic and transparent practices, as well as to constantly engage urban sector stakeholders, in particular, land owners and users, real estate developers, property owners and traditional authorities for them to understand LVC and the need for it so as to incentivise them to support it.

Finance for Real Estate Development

Following on from the preceding recommendation of MMDAs, regular engagement with urban sector stakeholders, real estate investors and developers could work in collaboration with MMDAs to source concessionary loans internally or externally to finance real estate development activities. They could also work, in conjunction, with central government to raise bonds to finance development activities.

Political Will

Transparent and democratic governance of LVC should create incentives for politicians to fully support LVC practices. This is because meaningful engagement of stakeholders and knowledge of what revenues generated are actually used for should make stakeholders receptive to LVC. Such transparent and democratic practices should also be encouraged to prevent politicians from unnecessary interference in relevant LVC programmes.

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