

**THE INFLUENCE OF PUBLIC PRIVATE PARTNERSHIPS  
FINANCE ON PROVISION OF AFFORDABLE HOUSING: THE  
CASE OF NAIROBI COUNTY, KENYA**


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**A Research Project Report Submitted in Partial Fulfillment of the Requirements  
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## DECLARATION

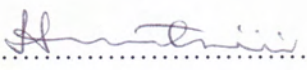
This research project report is my original work and has not been submitted for any academic award in any other institution.

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## **DEDICATION**

This research project report is in memory of my father the late Samuel Ojwang' Onyango, 2010 and to my mother Deborah Agola Ojwang'.

## **ACKNOWLEDGEMENTS**

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

NCC	Nairobi City County.
CCPPP	Canadian Council for Public-Private Partnerships
DBFOM	Design-Build-Finance -Operate-Maintain
GOK	Government of the republic of Kenya
HFCK	Housing Finance Corporation of Kenya
IFC	International Finance Corporation
KNHS	Kenya national housing survey
KPDA	Kenya property Developers Association
Kshs.	Kenya Shillings
MLHUD	Ministry of Land, Housing and Urban Development
MS	Mean Score
NGO	Non-governmental Organization
NHC	National Housing Corporation
O&M	Operation and Maintenance
PF	Project Finance
PPP	Public Private Partnerships
PPPU	Public Private Partnerships Unit
SAP	Service Availability Payment
SPSS	Statistical Package for Social Sciences
SPV	Special Purpose Vehicle
UK	United Kingdom
UN	United Nations
UNGA	United Nations General Assembly
UNHABITAT	United Nations Human Settlements Programme
USA	United States of America
VfM	Value for money

## **ABSTRACT**

The purpose of this study was to establish the influence of Public Private Partnerships (PPP) Finance on Provision of Affordable Housing in Nairobi County, Kenya. The four objectives of this study were to establish the influence of Risk Allocation, to determine the influence of Private Capital, to examine the influence of Delivery Time and to establish the influence of Cost Savings, in PPP Finance on the provision of affordable housing in Nairobi County. Descriptive survey research design was adopted for this study, with the target population being the key public and private sector stakeholders in provision of affordable housing in Nairobi County. In the public sector top management and heads of departments in the Ministry of Land Housing and Urban Development directorate of housing, PPP Unit domiciled in the Treasury, National Housing Corporation and Senior civil servants in the Nairobi City County department of housing, the private sector on the other hand included; Developers, contractors, financiers and professionals forming a total target population of 80. The study considered a sample size of 66 determined using Krejcie & Morgan table, purposive and stratified random sampling was used to draw samples from the population. The researcher collected primary data using semi-structured questionnaire and interview guide, while secondary data was collected from published books, peer reviewed journals reports and other academic articles. The questionnaire was pretested and pilot tested to help in identifying deficiencies in the questionnaire which were then refined for validity. Split-half method was used to test the reliability of the tools, while Cronbach's alpha was computed to measure internal consistency reliability for the multipoint-scaled items in the questionnaire. The quantitative data collected was analyzed using descriptive statistics; frequencies and percentages, through the Statistical Package for Social Sciences (SPSS), while inferential statistic Spearman's rank coefficient was used to measure the influence of independent variables on the dependent variable. Content analysis was used for qualitative analysis of data gathered from interviews and open ended questions in the research questionnaire. The study found out that the risk allocation, private capital, delivery time and cost savings in a Public Private Partnerships model of procurement have an influence in provision of affordable housing in Nairobi County, especially for the lower and middle income groups, all the four independent variables recorded a positive correlation with the dependent variable provision of affordable housing in Nairobi. In conclusion it is the finding of this study that through a measure of government subsidy and cross subsidy affordability of the housing units to the targeted low income households will be enhanced, secondly this would enhance the commercial viability of the PPP affordable housing projects attractive to private partners. Appropriate risk allocation among the partners creates cost savings in the whole life cycle approach where the technology, efficiency and project management expertise of the private sector is harnessed for public social infrastructure project for the low income households.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1. Background to the study**

The universal declaration of human rights gives one of the basic human rights as the right to a decent standard of living, central to which is the access to adequate housing (United Nations General Assembly (UNGA), 1948). The right to housing was further cemented in the Kenyan constitution (GOK, 2010) which states that ‘every person has a right to accessible and adequate housing and to reasonable standards of sanitation’. It is apparent that despite the declarations and legislation a large majority of the population in Kenya especially in the urban areas have been condemned to informal settlements characterized by poor infrastructure with regards to sewerage system, electricity, clean water supply and access roads (Mungai, 2011).

In the Kenyan context, the Kenya vision 2030 is the development blue print covering the period 2008 to 2030 (GOK, 2007), under the social pillar, the second medium term plan for the period 2013-2017 has two key objectives that are relevant to the provision of affordable housing. First, being the facilitation of production of 200,000 housing units annually through Public Private Partnerships (PPPs) and other initiatives. Second, being the development of affordable, quality and affordable houses for lower income Kenyans (GOK, 2013) these objectives are yet to be realized. By the year 2012 Kenya’s urban housing demand was estimated at about 150,000 units per year with an estimated annual average supply of 35,000 units (Nthule, 2012), the current demand supply gap stands at approximately 200,000 housing units annually (Kenya National Bureau of Statistics, 2013).

Nthule (2012) further noted that the challenge of unaffordable housing affects the low and middle income earners due to the fact that the demand is not commensurate to supply. Nthule (2012) identified the following as the key reasons for affordability challenge of low and middle income groups with regard to access to housing; First, developers have focused on high income housing as they are profit making institutions by nature, this is corroborated by the findings of the KNBS (2013) in the basic report of Kenya national housing survey (KNHS) where developers quoted access to affordable land (45.9%), high returns on investment (43.7%), and prospective future returns on investment (41.4%) as the key factors in determining where to develop. Secondly, the cost of housing units is not

affordable for low income groups, thirdly, there is limited land in the city and the available land is very expensive, fourthly, high cost of building materials, finally access to affordable finance to housing.

Rapid urbanization poses a challenge especially in developing countries where the highest growth rates are recorded, Kenya's population has been growing rapidly over the years by 2009 this population had grown to 38.6 million and urban population of 12.5 million (KNBS, 2013). The urban population increased from 19 per cent in 1999 to 32 per cent in 2009 and is expected to increase to 50 per cent by the year 2050 GOK (2010). This represents an average increase of 600,000 people per year in urban areas, most of whom will reside in Nairobi County, necessitating the need to increase the number of housing stock in the urban areas at a rate that will address the back log and provide for the current growing needs.

Public Private Partnerships (PPPs) has been used in both developed and developing countries as a means of delivery of affordable housing, Edggers and Startup (2006) identified Netherlands, United Kingdom (UK) and Ireland as the countries with deepest PPP experience in the housing sector. By the year 2007, in the UK, affordable housing PPPs accounted for 2.1% of the value of all PPP projects amounting to 1.269 billion pounds. It is important to note that the successful PPP projects for affordable housing in the UK involved a measure of subsidy, Hoicka (2007) gave two examples; in Plymouth Grove remodeled estate the government contributed 37.8 million pounds in subsidy while in Stanhope regenerated housing estate 26.7 million pounds was contributed by government in subsidy. Other first world countries that have accomplished PPPs for delivering of affordable housing include; the USA, Canada, Australia (Payne, 2009).

Common form of partnership relates to public private joint venture schemes (Khaled et al, 2014), in this form of provision public authorities usually supply appropriate land and tax incentives, whereas private firms provide finance and construct housing units on these lands in swap for being able to sell an agreed part of the projects on the open market and offer the rest to low-income households (Drakakis-Smith, 2012; Moatazed-Kevani, 1993 cited in Khaled et al, 2014) at agreed prices. Joint venture plans have been tried in numerous developing countries including Malaysia, India and Iran, however, the design criteria of at least the low-income section of the project is settled with, or resolute by, the government side (Drakakis-Smith, 2012).

In the African context PPPs have been employed in Egypt, Tunisia, South Africa (Khaled et al, 2014; Ngcuka, 2010) and Nigeria (Aluko and Oladokun 2012; Ayodele and Ayosike, 2015). The degree of success of housing PPPs in developing countries is highly varied, this is attributable to the fact that most African countries employing the PPP model in provision of housing are in the first stage of PPP maturity Edggers and Startup (2006), where the institutional framework in these countries is still weak. In Kenya historically, the housing challenge began building up in the 1980s when there was a shift in policy where most of the housing projects being undertaken by the government in conjunction with the World Bank were halted. Since then, housing development in Kenya has been dominated by private developers and contractors over the years with the Government playing a more facilitative role. The private sector being a profit making sector has over concentrated its efforts in provision of housing units for the high income and those meant for the middle income are never affordable for the targeted group. It is, therefore, apparent sustainable supply of affordable housing units for the middle and low income groups should involve a concerted effort and collaboration between public and private institutions.

The challenges to the housing sector in Nairobi County include; high population growth rate, rapid urbanization, high poverty levels, high cost of financing housing development, low investment in housing by government, high cost of building materials, shortage of planned land and lack of planning. The government through the Ministry of Land, Housing and Urban Development (MLHUD) in the year 2014 proposed to initiate the pilot PPP project for housing civil servants, the ministry proposed through, Public Private Partnership initiative to develop approximately 10,200 housing units at its land located in Park Road, Starehe and Shauri Moyo areas within the Nairobi County. This is in line with the Ministry's objective of delivering 300,000 housing units in the next five years. This initiative has been enabled by the publishing of the PPP policy statement and the enactment of the PPP act 2013, creating an avenue for large scale production of housing units.

## **1.2 Statement of the Problem**

Provision of adequate and affordable housing is major problem in Kenya especially in urban areas. The challenges of housing access and affordability continues to affect low income and lower middle income households in Kenya (Auko, 2012; Mungai, 2011; Omenya, 2006), this is manifested by the sprawl and growth of slums especially in urban set-up, according to KNBS (2013) in their KNHS

report the renting households spend more than 30% of their income on rent monthly, this percentage increases to 47% when housing related utilities are included. These households are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care. The affordability problem affects both rental units and owner occupiers among the low income and upper middle income categories.

The other problem that this study sought to address was that the supply of rental and owner occupier housing stock for the low and lower-middle income categories of households is not commensurate to demand (Nthule, 2012). The private developers being driven by commercial viability of the projects have focused on the upper middle (48%) and high income (35%) segments leaving out the lower middle (15%) and low income (2%) categories (GOK - Vision 2030, 2013). On the other hand the demand of housing among the low income and the lower-middle income categories is 83% compared to the demand for housing among the upper middle and high income categories whose demand is 17% cumulatively. This deficit results in ever increasing backlog that should be resolved by adopting a procurement method that will ensure mass production of affordable housing. The policy statement on Public Private Partnerships of 2009 and subsequent enactment of the PPP act 2013 gave a lifeline to a more robust delivery vehicle for mass housing that will contribute to the provision of adequate and affordable housing.

### **1.3 Purpose of the study**

The purpose of this study was to establish the influence of Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County, Kenya.

### **1.4 Objectives of the study**

1. To establish the extent to which Risk Allocation in Public Private Partnerships Finance influence the provision of Affordable Housing in Nairobi County.
2. To determine the influence of Private Capital in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County.
3. To examine the influence of Delivery Time in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County.
4. To establish the influence of Cost Savings in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County.

## **1.5 Research questions**

The study was seeking to answer the following research questions.

1. To what extent does Risk Allocation in Public Private Partnerships Finance influence the provision of Affordable Housing in Nairobi County?
2. How does Private Capital in Public Private Partnerships Finance influence the provision of Affordable Housing in Nairobi County?
3. To what extent does Delivery Time in Public Private Partnerships Finance influence the provision of Affordable Housing in Nairobi County?
4. Are there any influences of Cost Savings in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County?

## **1.6 Significance of the study**

The findings of this study may provide an avenue for direct policy formulation to address the demand supply challenges in housing sector. In tackling affordability challenges in housing among low income households, the study may provide a vital theoretical underpinning for policy formulation, through the democratic conception that is founded on equity. Equity is a key principle of social planning and it goes in tandem with access to housing that is affordable to users, viewed in the context of social justice. The study findings might be immensely useful for advocacy especially in lobbying the national and county governments to provide and/or increase the subsidy for low income households in provision of affordable housing.

The research may further give confidence to the private partners on the potential that PPPs in affordable housing sector portends for them by highlighting the framework for overcoming commercial viability challenges. Through extensive public awareness campaigns recommended in this study the key stakeholders may indeed appreciate the Value for Money that the integrated or life cycle approach in PPP accrues in project formulation and implementation to achieve desired outcomes and impacts.

To researchers, it is hoped that this study would generate fresh knowledge by responding to the need for further research on project finance for affordable housing as recommended by previous studies more specifically in the works of Mungai (2011) and Auko (2012). This gap in research is crucial especially since Kenya is still at stage one of PPP maturity and requires research into robust implementation strategies.



### **1.7 Basic assumptions of the study**

One of the assumptions of the study was that the respondents would accept to respond to the questionnaire and that they would be available to the researcher for interview. Another assumption is that the respondents would give truthful and honest responses, however, the ethical considerations in section 3.8 was observed in this research. The study assumed that the current government PPP policy anchored in the vision 2030 regarding the use of PPPs in delivering housing needs of the nation will be implemented. It is also assumed in this study that the rapid urbanization occasioned by the rural urban migration will be broadly tackled by the national and county governments in the integrated medium term development plans, since this has a direct influence on provision of affordable housing in Nairobi County.

### **1.8 Limitations of the study**

The cost of undertaking the study and time factor was a challenge since the research had to be conducted within a specific duration of time, this limitation was overcome through, first, the use of questionnaire as the primary instrument of data collection, the primary data was then augmented with secondary data; secondly the study was also delimited geographically to Nairobi county. Though the PPP procurement model has been employed previously in transport and energy sectors in Kenya, it is a new concept in the housing sector which limited the amount and variety of data that was available, the researcher carried out literature review on regional players who have embraced PPP model in housing sector like Nigeria and South Africa. The other significant limitation was that the study focused on top management especially in public entities, the researcher first sought authority from heads of departments in public entities who were helpful in granting permission to the relevant staff to respond to the research instruments.

### **1.9 Delimitations of the study**

This study focused on affordable urban housing with the domain being confined to Nairobi County. Nairobi County has been selected due to the well documented housing challenges affecting the low income households; this is manifested in the sprawl of slum dwellings. The study targeted top management in both public and private institutions who are stakeholders in PPPs for affordable housing in Kenya. The focus of study was on project finance model of delivering affordable housing PPPs with a bias on Design Build Finance Operate and Maintain (DBFOM) which offers an opportunity for application of service availability payments.

## **1.10 Definition of significant terms used in the study**

**Affordable housing:** is a measure of access which is defined as being achieved if a 'household can acquire use of that housing unit (owned or rented) for an amount up to 30 per cent of its household income' (Miles, Weiss & Berens, 2000).

**Cost Savings:** is the cost benefit accrued by using the PPP procurement method to deliver affordable housing, it is usually measured using the Value for Money (VfM) comparator, which compares PPP method versus the most efficient traditional government procurement method.

**Delivery time:** is the scheduled time take to complete the Housing project from the date of signing concession agreement to the time when the houses are ready and available for occupation by the end users.

**Low income Households:** those who are unable to participate in labor markets and lack other means of support and those whose wage income is so low that they are below a nominal poverty line.

**Market Housing:** Housing priced at the full market rate to buy or rent.

**Private Capital:** is the financial contribution of the Private Partner in PPP structure which includes both Equity and Debt injection into the SPV for the purposes of realization of the project.

**Provision of Affordable Housing:** the provision of housing which is generally considered to meet the needs of households whose incomes are not sufficient to allow them to access appropriate housing in the market without assistance, these houses could be owned or rented.

**Public Private Partnerships Finance:** is the raising of funds on a limited-recourse or nonrecourse basis to finance an economically separable capital investment project (Special Purpose Vehicle) in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project.

**Risk Allocation:** is the process of sharing risks and allocating them to the party best suited to manage the risk in the PPP structure, this process culminates in binding contractual relationships between Public and Private Partners.

### **1.11 Organization of the study**

The study was organized in five chapters; Chapter one consisted of the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, basic assumptions of the study, limitations of the study, delimitation of the study, definitions of significant terms used in the study and organizational of the study. Chapter two covered literature review which included; introduction, the concept of affordable housing, Public-Private Partnerships in housing projects, risk allocation, private capital, delivery time and construction cost savings in PPPs, theoretical framework, conceptual framework, knowledge gaps and a summary of the literature reviewed.

Chapter three constituted the research methodology; it consisted of introduction, the research design, target population, sample size, sampling procedures, proposed data collection instruments including reliability and validity test results of the research instruments, data collection procedures, data analysis techniques that were used in this research study and ethical considerations in conducting the research and operational definition of variables. Chapter four constituted data analysis, presentation and interpretation; it consisted of introduction, questionnaire return rate, demographic profile of the respondents and descriptive data presentation as per research objectives/variables. Finally, Chapter five constituted introduction, summary of findings as per research questions, discussion of findings as per the study objectives, conclusions, recommendations and suggestions for further research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter contains an in-depth review of the literature pertaining to the study variables. It consists of the concept of affordable housing, the concept of Public-Private Partnerships in affordable housing, risk allocation, private capital, delivery time and construction cost savings in PPPs, the theoretical framework, conceptual framework the knowledge gaps, and a summary of the literature reviewed.

#### **2.2 The concept of Public Private Partnerships Finance and Affordable housing**

The Canadian Council for Public-Private Partnerships, (2003) defines PPP as ‘a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards. When viewed as continuum PPPs span a spectrum of models that progressively engage the expertise or capital of the private sector CCPPP (2003). At one end is total public ownership under the traditional contracting methods, while at the other end, there are arrangements that are publicly administered but within a framework that allows for private finance, design, building, operation and possibly temporary ownership of an asset Eggers & Startup (2006) on the other hand views PPP as a contractual agreement formed between a government agency and a private sector entity that allows for greater private sector participation in the delivery of public infrastructure projects.

The PPPs provide government with a number of benefits, one of which is the ability to spread the capital payments for projects over a longer period of time compared to conventional procurement and the assurance that the project assets will be optimally maintained (Ngcuka, 2010). Partnerships with the private sector come in many forms with a wide array of delivery frameworks to choose from UN-HABITAT (2011), the document further notes that the choice of the model and/or approach to PPPs varies depending on market sector and type of project but is usually structured to try and improve efficiency, quality of service and price.

There are PPP models that can be used for existing services and facilities like; Service contracts, Management contracts, lease, concession and divestiture in increasing degree of responsibility from public to private entity Eggers & Startup (2006). The different models of PPPs vary in degrees of private sector risk as well as involvement, this model vary hierarchically from; Design build, Operation and Maintenance, Build-Finance, Design-Build-Finance-Maintain (DBFM), Design-Build-Finance - Operate -Maintain (DBFOM), Build-Own-Operate, Concession and ultimately outside the PPP framework is privatization. DBFOM model where the private sector designs, builds, finances, operates an asset, provides hard and/or soft facility management services under a long-term agreement/lease Eggers & Startup (2006). DBFOM is a form of availability payment in a PPP structure, where availability payment is a payment made irrespective of demand (Silviu & Michael, 2009) and is critical for affordable housing projects.

Affordable housing projects requires a form of subsidy, therefore, the low and middle income earners cannot generate sufficient revenues to cover full cost of the project construction and ongoing maintenance. Experts have argued that availability payments can be an attractive financing and project delivery alternative for projects which for reasons related to policy, public perception and /or profitability are not feasible or advisable under user fee (Silviu & Michael, 2009), in the case of this study rental income or sales proceeds. There are four main approaches to PPPs thus; collaborative, consultative, contributory arrangements, community development approaches UN-HABITAT (2011). Under collaborative approach both the public and private sectors agree to share the risks and rewards of a particular project. Consultative approach is whereby the government seeks the expert advice from the private sector or groups. Under Contributory approach the government provides funding while the private sector develops and manages the project. Community development approach involves joint contribution of private and public sectors in a particular community. It is important to note that multiple approaches can employed to realize maximum benefits and value for money in a project. Incremental partnering allows for public sector to commission work gradually with a greater degree of flexibility in scope and partners involved.

The Kenya policy statement on PPP of 2011 provided a foundation for the enactment of the PPP Act 2013. Key elements of the policy relevant to affordable housing were twofold; first, establishment of two key institutions to champion the PPP agenda thus; the PPP Steering committee, consisting of

senior officials to guide policy and promote awareness, and the PPP Secretariat (PPP Unit) housed within the then ministry of Finance as a resource center of expertise and best practice. Second, mobilization of domestic and international private sector investment by creating a level playing field and clear rules of the game. The main objective of the PPP policy is to articulate the Government's commitment to be able to attract both domestic and international private sector investment, where appropriate, to help address the deficit in productive and social infrastructure and, in this way, improve delivery of public sector services. GOK (2011).

The PPP projects are usually financed through Project Finance (PF) structure, Finnerty (2007) defines project finance as the raising of funds on a limited-recourse or nonrecourse basis to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project. Under non-recourse financing, lenders can only be paid from project company's revenues, without recourse to equity investors, meaning the project company is ring-fenced from those of equity investors and debt is secured on cash flows of the project (Stefano, 2013; World Bank, 2011). Stefano (2013) further expounds that, project finance is the structured financing of a specific economic entity known as the special purpose vehicle (SPV) also known as the project company. The SPV, therefore, is the private party in a PPP contract World Bank (2012), this company raises project finance through a combination of equity from project company shareholders and debt provided by banks or bonds or through other financial instruments.

The players in a PPP go beyond the relationship between the public authority and the private partner responsible for the delivery of the project, UN-HABITAT (2011) also considers third party interests such as lenders, equity investors and other interests or non-profit groups, noting that they have a large stake in the successful outcome of the project. In delivering affordable housing for the low-income groups the question of participation is key, the SPV provides a vehicle for ensuring participation which is a founding principle in the Kenyan constitution GOK (2010). The PPP model effectively allows for the delivery of public sector goods and services by the private sector using project finance as a funding model, in return for a financial payment from the public sector Ngcuka (2010). When determining the suitability of PPP there are three internationally applied tests to determine whether a PPP is the appropriate vehicle for procuring a public asset or service thus; Risk

transfer to private sector discussed in the next section, affordability to the government entity and user GOK( 2011) and VfM (ROS, 2007; UN-HABITAT, 2011; Eggers & Startup, 2006).

Empirical studies have shown that PPP model is critical for the delivery of low income housing, Taiwo (2013) in his study of Public servants acceptability of PPP in housing delivery for low-income public servants in Akure, Nigeria, sampled 250 respondents in the Federal, state and local ministries. In his findings 63% of the respondents recommended that the government should create enabling environment for private sector participation, while 65.1% endorsed the need for collaborative effort between the public and private sector in delivery of housing. Other studies have supported similar view like Oladokun & Aluko, (2012) whose target population was professionals with significant experience in housing delivery through PPP.

Affordable housing is generally considered to be housing which meets the needs of households whose incomes are not sufficient to allow them to access appropriate housing in the market without assistance Emsley, Phibbs, Crabtree (2008). Emsley et al (2008) noted that housing affordability measures generally assume households on the lowest 40 per cent of incomes are considered unable to adequately meet their other living costs if over 30 per cent of household gross income is allocated to housing costs. The validity of this figure is open to discussion (Gabriel et al, 2005) for instance in Kenya the proportion of housing income spent on housing related costs including rent and utilities for urban renting households is 42.3% and 33.1% on rent only (KNBS, 2013), having been assumed, the '30/40' rule has allowed a large body of empirical work to flourish in addressing housing for low income groups as noted by Emsley et al (2008).

In the KNBS (2013) basic report the median monthly household income, expenditure and savings are indicators of the wellbeing of the household, this is particularly important since it impacts on the ability of households to afford housing. Kenyan urban areas recorded a median monthly income, expenditure and savings of Ksh 13,000, Kshs 9700 and Kshs 3000 respectively (KNBS, 2013). Even though Nairobi County recorded a median monthly income of Ksh 16,000 it is apparent that a majority of the residents of the county cannot afford the market housing and require a form of subsidy from the government to access this basic need. According to Shorebank International ltd (2011) market housing, particularly in the African context, targets middle and upper income housing segments and is developed mainly by the private developer industry in most cases without any government intervention, subsidies

or support. Therefore, the housing supply shortage is often concentrated in the low-income housing market. This assertion is in sync with numerous studies as documented both in developing and developed countries alike (Nthule 2012; Mungai, 2011; Milligan et al, 2007; Susilawati et al, 2009).

In Kenya the social housing definition is broadened to encompass “adequate housing targeting low-income segments of the population comprising a combination of subsidized rental housing or low-cost home ownership, including slum upgrading funded by public resources or grants and managed by a public agency, non-governmental organization or community-based organization” (Shorebank International ltd, 2011). The Shorebank International ltd (2011) noted that social housing should not target the bottom of the pyramid or the very low income but should focus on the low and moderate income segments, Ngcuka (2010) calls it ‘gap market’ and avers that social housing is not a mass housing solution. Beneficiaries’ income, therefore, is a requirement affordable housing delivered through PPP, in that it enhances commercial viability of the project. An example of such PPP project is three flagship housing PPP projects in Nairobi County’s Parkroad, Starehe and Shauri Moyo initiated by the government of Kenya targeting civil servants. The inability of the public sector to provide adequate housing in Nairobi County opened up an opportunity for partnerships in order to pool the synergy between the public and private sector.

## **2.3 The PPPs Finance Risk allocation and affordable housing provision**

The PPP finance structure allows for allocation of risks to the entities best suited to manage them cost effectively (Ngcuka, 2012; UN-HABITAT 2011). Risk is responsible for unexpected changes in the ability of the project to repay costs, debt service and dividends to shareholders in the SPV (Stefano, 2013), cash flows can be affected by risk and if the risk has not been anticipated and properly hedged it can generate a cash shortfall leading to default. In a PPP set up the private party provides a public service or project and assumes substantial financial, technical and operational risk in the project, the risk transfer to the private party being a key characteristic of PPPs (Carpintero & Petersen, 2015; ROS, 2007).

The PPPs are generally structured on the basis that requires all parties to share the risks of the project, project risk sharing is important because the SPV will usually have limited equity which is substantially less than the aggregate net worth of the sponsors (Damian, Alex & Evelyn, 2011; Yescombe, 2007). Factors such as type and scale of the project the country where the project is located



and the type of PPP implemented create a unique set of risks for each project. Damian et al (2011) further avers that, whereas it is impossible to mitigate and contract away all risks, proper identification, allocation and management of risks can create a commercially viable and bankable project. For the purposes of this study, the inherent risks in affordable housing PPPs will be classified in four broad groups, thus; commercial risks, technical risks, economic and financial risks, political and legal risks. The commercial risks arise because of the uncertainty of demand levels due to the possible improvement of an alternative infrastructure, facility or service (Damian et al, 2011). The commercial risks should in theory be taken by the private party, however, sometimes these risks may be too high to be taken only by the concessionaire and, therefore, the allocation of commercial risks remains project specific.

Economic and financial risks are due to the uncertainty of economic growth, inflation rate, risk of interest rates, tax rate convertibility of currencies, and exchange rate. They are assumed by the concessionaire, however, some unforeseen change of circumstances might not always be assumed by the private sector. Political and legal risks are typically taken by the public entity, with some guarantees if needed. They can be mainly of three natures: first, acts of force majeure, war, civil disturbance; secondly, change of legislation; and government policy change, e.g., changes in regulatory regime, impossibility or unwillingness of the Government to meet its contractual obligations. Technical risks are the construction or rehabilitation risks, which include risks on completion, quality, delays, cost overruns and project modification, these risks are typically assumed by the concessionaire.

## **2.4 The PPPs Finance Private capital and affordable housing provision**

In most common form of PPPs for affordable housing, the private party will use its own money to build the infrastructure on behalf of the public procuring entity. The debt financing in these projects usually incentivize the private party to complete the infrastructure on time and within budget ROS (2009). The use of borrowed private sector capital for a project means that the lenders of the capital will apply rigorous measures to make sure that a project is viable and stays on track. Due diligence, and rigorous monitoring and control mechanisms is employed throughout the project. In addition, returns on debt and equity are only secured if a project is successfully completed and operating properly. This provides an incentive to the private party to implement and manage the project well.

The debt equity ratio for project finance is usually high ranging from 70-95 percent according to Yescombe (2002) or 80 percent Farlam (2005) as cited in UN-HABITAT (2011). The high debt equity ratio is informed by the aim of the project sponsor to minimize the cost of finance for the project. Equity is regarded as a more expensive than debt, due to the fact that any project losses is first borne by equity investors and lenders suffer only if the equity investment is lost. The high ratio has significance not only to the equity investor in limiting exposure to the project World bank (2011), but also to housing provision in that it makes it possible to undertake much larger projects than would otherwise be the case. The enhanced due diligence by the lenders on project cash-flows and contractual structure enhances the chances of the projects success.

When the PPP agreement is signed, the future cost of a PPP project is clear: the procuring institution will receive specific outputs at specific costs and will budget accordingly (Susilawati & Armitage, 2004). In traditional procurement on the other hand, the costs of completing the project and maintaining the assets in the future are not certain, and are the responsibility of the procuring institution. Also, many institutions do not budget appropriately for the maintenance and operating costs of their assets. In their study Susilawati & Armitage (2004) discussed the need for government Subsidy citing Sirmans and Macpherson, (2003) they noted that private investors require additional incentives to put their money into affordable housing projects which provide low rate of return. Therefore, government assistance in overcoming production cost problems will bring down the cost of homes which will benefit new home buyers and renovators and encourage private sector investment. It will also indirectly impact on rents in the private housing sector and housing affordability in general terms.

Indranil, (2012) in his paper presented at the International Finance Corporation PPP workshop, noted that implementation of affordable housing project under PPP framework addresses the following items critical for unlocking private capital, (1) identifying the issues and challenges of each party and addressing them through mitigants and adequate allocation of risks, (2) Identifying the best financial structure to make the project viable for the public sector and attractive to the private sector and (3) Leveraging on the private sector's expertise. Indranil, (2012) further noted that for private capital to be injected Volume off-take, Profitability, Availability of land, Regulatory approval process and Reasonable norms are critical for the private developer. In the Kenyan scene a study by Sila & Olweny (2014) revealed that 83% of the respondents at NHC agreed that cost of capital has a relationship with cost of houses hence a direct impact on affordability of the houses. Cost of land 56%, cost of materials

68% and cost of labor 61%, all require government subsidy to enhance affordability for the low income groups. The PPP structure provides a framework for private capital injection with avenues for direct government in put through a mix of land contribution, tax incentives and even subsidies directed towards commercial viability for private partner and affordability for the beneficiaries. Susilawati & Armitage (2004) consider affordable housing a social infrastructure which should be funded through a measure of subsidy Emsley, Phibbs, Crabtree (2008).

## **2.5 The PPPs Finance Delivery time and affordable housing provision**

With financing risk routinely transferred to the private consortium, any delays in meeting the agreed upon timelines can lead to additional costs for the private partner as it alone carries the debt for a longer period of time. Therefore, the private sector has a direct financial interest in ensuring that projects and services are delivered on-time, if not sooner. For instance given the level three maturity status of PPP market in the UK, 70% of non PPP construction projects were behind schedule, while only 24% of PPP projects came late UK (2003). Given the parties involved and the long-term nature of the contracts, risks and the advisers involved, PPPs take long to conceive, in the UK the average time from start of design until contract signing, is more than 5 years Hoicka (2007).

Authors and scholars have argued that in a DBFOM structure the private partner takes core responsibilities for delivering the project (Ngcuka, 2010; Silviu & Michael, 2009). In this set up there is a strong incentive for the concessionaires to provide efficiency gains in construction, operation and maintenance of a project yielding significant time saving. Given the large scale of PPP housing projects the life-cycle approach delivers more gains in bringing forward projects (Doloi, 2012; Eziyi, 2010; GOK, 2014; ROS, 2007; UN-HABITAT, 2011; World Bank, 2012;). Nyagwachi, (2008) in studying South African PPP Projects noted that PPP may offer VfM which can be in the form of efficiency gains. He further argued that transferring a 'bundle' of services such as design, construction, finance operation and maintenance to the private sector yields VfM than contracting the services separately. Therefore, the resultant output is more gains in integration earlier defined as life cycle approach.

Whereas PPPs yield benefits like collective definition of problem and shared solution, as well as commitment of resources by all partners, there are downsides that should be considered like high capital cost, have long payback periods and requires revenue streams. These merits and demerits require strict adherence to schedule to avoid cost escalations projects (GOK, 2014; Nyagwachi, 2008;

ROS, 2007; UN-HABITAT, 2011; World Bank. 2012). Two critical findings from empirical studies showed that, lack of or inadequate project management approach slows down implementation of PPP projects Nyagwachi (2008). The other being that the low number of PPP projects in South Africa is due to inadequate project management skills among accounting officers and other staff to conceptualize viable PPP project. These findings are relevant to PPPs for affordable housing since it has direct bearing on timely delivery.

## **2.6 The PPPs Finance Cost savings and affordable housing provision**

PPPs are mainly used because they can deliver better value for money (VfM) than the traditional procurement (UN-HABITAT, 2011; ROS, 2007). The VfM test focuses on outputs by identifying risk and appropriately allocating it, and by calculating internal costs to governments through the implementation of the Public Sector Comparator (PSC) test. Designed to quantify value, the PSC captures then compares all necessary costs and savings of PPP procurement against the most efficient form of public procurement (UN-HABITAT, 2011). In the UK for instance 73% of non PPP construction projects were over budget, while only 22% of PPP projects came in over budget UK (2003). A Service Availability Payment (SAP) is a payment for performance made irrespective of demand. Availability payments is an attractive financing and project delivery alternative for affordable housing projects (Ngcuka, 2010) which, for reasons related to policy, public perception and/or profitability are not feasible or advisable under a user-fee based concession (Silviu & Michael, 2009).

The SAP mitigates the demand risk which protects the private party from uncertainty and lowers the overall project costs, on the other hand it enables the Public partner to set affordable price for the low and middle income groups. Affordable housing is a social infrastructure Susilawati & Armitage (2004) which is unaffordable to low and middle income households (Oladokun & Aluko, 2012). In line with the democratic conception earlier discussed government intervention through subsidy is crucial, in a DBFOM model through a joint venture the public partner may provide land and tax incentives, Khaled et al (2014) as a subsidy & capital contribution to enhance affordability by the low and middle income groups. Such cost savings in capital outlay may enable the public entity to determine the prize of the units set within affordable rate for user.

An important feature of DBFOMs is that they encourage otherwise unrelated private parties to work together closely, for example in a DBFOM, any schedule or quality problems which may surface

during construction phase will impact the future costs and revenues of equity holders, lenders and operators who thus have direct interest in closely monitoring the design builders. This structure aligns the private parties' incentives with those of public sector- they should make the most money when project opens on time and performs as specified. (Silviu & Michael, 2009)

Taking a holistic approach of the PPP project that accurately considers all aspect of the project's implementation phases is a useful method to adopt to help drive down costs and alleviate potential structural problems in the long-term. It may be more cost-friendly, for example, to build an infrastructure asset using materials that are more expensive at the outset but which prove more reliable and robust for the long-term, Conference Board of Canada (2010). The private sector takes financial risk over the whole lifecycle of the project, it is argued that the private party's pricing structures in a PPP may seem more expensive than traditional procurement, in calculating and designing its pricing, the private party is including the cost of the risks that it will be managing for the entire duration of the project. In some traditional procurement, not all the risks and their associated cost are reflected in a contractor/service provider's upfront pricing.

It is vital to note that whereas PPPs for affordable housing have delivered VfM in mature markets, preparing a long-term PPP contract is costly for both authorities and bidders. Generally even in today's more settled UK PPP Market, which is infinitely more mature and experienced, procuring authorities can expect to spend at a minimum 250,000 pounds (40 Million Kenya Shillings) on external advisers for even the most simple of schemes. Generally the successful bidder would spend about double what the public sector spends. (Hoicka, 2007, citing the UK Office of Deputy Prime Minister, & UK Department of Communities).

## **2.7 Theoretical framework**

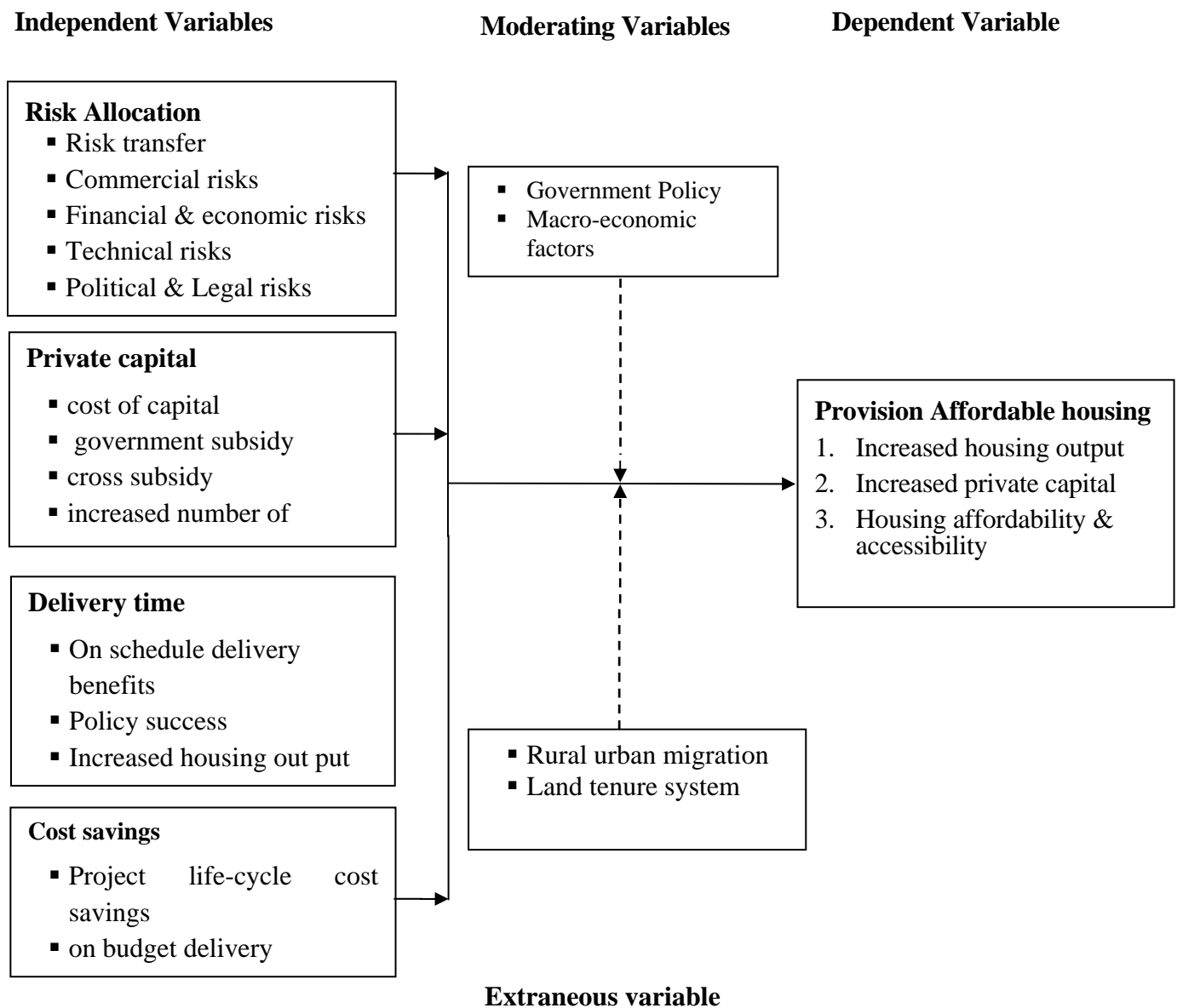
The study adopts the democratic conception postulated by Headey (1978) as cited in Khaled, Nor'Aini, Ruhizal, and Al-Abed (2014). Democratic view advocates for equity, where government intervention in housing sector secures descent basic standards of housing for low income families. The weaker version of democratic conception is that assistance should be given for poor households to be able to afford decent accommodation without paying an excessive proportion of their income (Oteng-Ababio, 2011) as cited in Khaled et al (2014). The strongest version of the representative equity endorses the provision of good quality neighbourhoods and land use planning as well as satisfactory

housing for the entire population and programmes designed to bring significant redistribution of these services in favor of lower income groups (Headey, 1978).

This study adopts the democratic conception by Headey (1978) as the most credible formulation for underpinning the housing policy for provision of affordable housing through Public Private Partnership. This view is in tandem with Davidson & Malloy (2009) pluralist housing ethics for the direction of housing policy and social discussion with regard to affordable housing. The pluralist conceived housing as; an economic good, home, human right, providing social order and land use in a functioning system. Davidson & Malloy (2009) argued that the five varying ethics have different implications for the Public Private Partnerships by guiding the conversation between the public and private entities. For instance there should be economic efficiency that delivers value for money (VfM) while ensuring affordability of the housing units by the lower middle and low income groups.

## 2.8 Conceptual Framework

The conceptual framework shown in Figure 1 is a schematic diagram which illustrates the relationship between the dependent variable that is provision of affordable housing in Nairobi County and the independent variables which are risk allocation, private capital, delivery time and cost saving.



**Figure 1: Conceptual framework**

## 2.9 Knowledge gaps

The Table 2.1 is a summary of the key knowledge gaps that this study seeks to address.

**Table 2.1**  
**Knowledge gaps.**

Item	Knowledge gaps.	Study contribution
1.	Previous studies on PPP projects have mainly focused on the affordability constraints on the PPP public implementing institution or agencies (Nyagwachi, 2008)	The affordability of the outputs to the users (renters and buyers) should be incorporated in the commercial viability assessment of the PPP.
2.	Previous studies have focused on documenting the challenges of housing the low income households, however, there has been limited empirical work on the viable options for delivery of affordable housing units (Mungai, 2011; Auko, 2012).	This study adopts the democratic conception which views affordable housing as a social infrastructure that requires a form of subsidy for equity in housing the low income households.
3.	The level one PPP Maturity of the Kenyan market Edggers & Startup (2006) requires extensive research to enhance commercial viability of affordable housing projects through cardinal tests of ; risk transfer to the private sector, affordability and VfM.	This study explores the avenues of enhancing commercial viability of affordable housing PPPs through benefits of life cycle approach in PPP procurement

## 2.10 Summary of the literature reviewed

Affordable housing requires a form of government subsidy especially in mass housing PPP projects Emsley et al (2008), the government subsidy and intervention is a critical aspect of the democratic conception adopted in the theoretical framework (Davidson & Malloy, 2009; Headey, 1978). The literature reviewed showed that housing affordability challenge affects both developed countries (Susilawati & Armitage, 2004) and developing countries (Taiwo, 2013; Ngcuka, 2010). The DBFOM model of PPP allows for service availability payments (Ngcuka, 2012; Damian, Alex, & Evelyn, 2011) which ensures that the government makes unitary payments to the SPV for services and facilities delivered to a prior agreed standards have a greater VfM. The whole life-cycle approach creates an avenue for the critical project risks to be appropriately allocated with the private partner taking the commercial and financial risks.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter provides information about the research methodology that was used for the study. It is divided into eight sections: research design, target population, sample size and sampling techniques, data collection instruments, data collection procedures, data analysis techniques, ethical considerations and operational definition of variables.

#### **3.2 Research design**

The study employed descriptive survey research design, through the administration of semi-structured questionnaire and interview guide. Descriptive study deals with existing phenomenon or population and includes collecting data to test hypotheses or answer questions about the current status of the subject of the study (Hussey & Hussey, 1997; Gay, 1996), it allows the researcher to describe, record, analyze and report conditions that exists or existed (Kothari, 2004). In this study the researcher used four research questions aimed at seeking to establish the extent of the influence of the independent variables on the dependent variables.

#### **3.3 Target population**

The target population for this study consisted of the top leadership and management from key public and private sector players who are Public Private Partnership stakeholders in provision of affordable housing in Nairobi County as shown in Table 3.1. The total target population for the study was 80. The researcher targeted this population because they are deemed knowledgeable in the area under study.

#### **3.4 Sample size and Sampling techniques**

Sampling is the process of obtaining information about the entire population by examining only part of it (Kothari 2004). Purposive sampling and stratified random sampling was adopted for this study due to the heterogeneous nature of the target population. The rationale for sample selection as well as the sampling design will be discussed in the two subsequent sections.

**Table 3.1**  
**Target population and sample size**

Categories	Target Population Ni	Sample Size (ni)	Percentage Ni/N*100 (%)
Ministry of Land Housing and Urban Development	7	6	8.7
PPP UNIT at Treasury	3	2	3.8
National Housing Corporation	4	3	5
Nairobi City Council	5	4	6.3
Financiers ( HFCK & Shelter Afrique)	8	7	10
Developers	9	7	11.2
Contractors	14	12	17.5
Professionals	30	25	37.5
<b>TOTAL</b>	<b>N=80</b>	<b>n=66</b>	<b>100</b>

Where  $Ni/N$  = Proportional Allocation

### 3.4.1 Sample Size

The sample size for the study was 66 derived from the target population using Krejcie & Morgan (1970) table. The sample size within each strata was proportionately distributed according to the proportion of the stratum in the population (Table 3.1).

### 3.4.2 Sampling technique

The sampling design used for the study was purposive and stratified random sampling where the population was divided into homogenous strata of public sector housing implementing agencies and private stakeholders as indicated in Table 3.1. Each stratum was purposively determined by the researcher's judgement (Taiwo, 2013; Nyagwachi, 2008), where the participants were selected according to their suitability for participation in the study (Creswell, 2009). Thereafter, samples were then drawn randomly from each sampling unit in order to give every member of the population an equal chance of being selected, therefore, avoiding biases. The number of elements from each stratum was according to the proportion of that stratum in population as a whole selected at random (Faridullah, 2010).

## 3.5 Data collection instruments

Semi-structured questionnaire and interview guides were used for collection of primary data which encompassed both quantitative and qualitative data. The respondents were drawn from the top leadership and management from key public and private sector players who are Public Private Partnership stakeholders in provision of affordable housing in Nairobi County. Questionnaire was

deemed appropriate for this study for the following key reasons; it is economical, quick and less bias data collection technique, anonymity yields openness in respondents, it is a flexible way to obtain data from a large population (Gay, 1996; Kothari, 2004) and finally, because the target population was considered literate. The questionnaire included an introductory note explaining the purpose of the study, it was prepared in English and divided into sections, in line with the study objectives and contains closed ended questions. Clear, concise and simple instructions were given for completing the questionnaire. Five point Likert scale was used for the items to collect quantitative data, the respondents were asked to place themselves on a continuum from 'strongly agree=5', 'agree=4', 'neutral=3', 'disagree=2' and 'strongly disagree=1'.

### **3.5.1 Piloting the Instruments**

A pilot testing of the questionnaires was carried by randomly drawing four respondents from the target population. The pilot testing questionnaire was designed to include open ended questions to identify other items to be included as recommended by McDaniel & Gates (1996). The four questionnaires were administered by the researcher through drop and pick now method, this allowed the researcher to clarify the queries and assess the respondents comprehension of the questions. The questionnaire was amended to incorporate the feedback from respondents by shortening some of the questions and rephrasing others to eliminate ambiguity.

### **3.5.2 Validity of the Instruments**

Validity refers to the appropriateness, meaningfulness and, usefulness of evidence that is used to support the interpretations (Cooper & Schindler, 2003). The questionnaire was pretested and pilot tested to help in identifying deficiencies in the questionnaire to be refined (Gay, 1996). After initial construction the questionnaire was shown to the research supervisor and two experts as recommended by (Best & Kahn, 1999; Gay, 1996). The two experts had sufficient experience in housing sector, one of them held a position of a director in a public entity, they were asked for comments and suggestion concerning directions, recording procedures and specific items in the instrument.

Experts have argued that before administering the instrument it must be ensured that the instrument; clearly define what is to be measured, checked by experts, pre-tested and contain open-ended questions to identify other items that may be included (McDaniel & Gates, 1996), the

questionnaire that was used for this study was validated in the same manner. An interview guide was used to collect qualitative data for triangulation to further enhance the validity, the line questions were drawn from the study objectives to give an in-depth view of the study variables.

### 3.5.3 Reliability of the Instruments

Reliability refers to the extent to which results are consistent over time and are accurate representation of the total population under the study (Gay, 1996; Joppe, 2000), a Pilot survey to test the questionnaires was carried out to enhance reliability. The use of consistent and systematic line of questions was particularly important for reliability and for possible replication of a study Berg (2001). Split-half method was used to test the reliability of the tools, the coefficient was computed using spearman rank correlation method. The instruments were concluded to be reliable since the coefficient of 0.830 was obtained. The value of the rank nearer to +1 and -1 indicates high degree of positive or negative correlation between the two samples. Cronbach's alpha was computed to measure internal consistency reliability for the multipoint-scaled items in the questionnaire. A reliability coefficient score of 0.846 was computed which is a high level of reliability, generally a score of 0.6 is considered to be an acceptable criterion for scale reliability in the social science (Gay, 1996), however, other scholars consider a higher threshold of 0.7 as the lowest acceptable limit this criteria has been met.

**Table 3.2**  
**Reliability Statistics**

Case Processing Summary		N	%
Cases	Valid	58	100
	Excluded <sup>a</sup>	0	.0
	Total	58	100
Reliability Statistics			
Cronbach's Alpha	Part1	Value	.772
		N of Items	14
	Part 2	Value	.702
		N of Items	14
		Total N of Items	28
Spearman Brown Coefficient	Equal Length		<b>.830</b>
	Unequal Length		.830
Cronbach's Alpha	Total N of Items	28	<b>.846</b>

### 3.6 Data collection procedures

Upon the approval of the project proposal, as a pre-requisite, the researcher obtained a permit from the Ministry of Science Education and Technology after obtaining letter of introduction from the

University of Nairobi. Survey packet was prepared entailing a copy of the questionnaire, a cover letter of introduction for each respondent. The researcher undertook preliminary notification via telephone to each respondent notifying them of the request for response before delivering the questionnaire. Drop and pick now as well as drop and pick later methods were employed to enhance the return rate, the researcher personally administered the instruments to the respondents who were available for a meetings, some respondents preferred email correspondence where the scanned copies of the completed instrument was emailed back to the researcher, some respondents used social media platform, WhatsApp to return their questionnaire. For flexibility, the interviews were conducted face to face with an option of telephone interview for respondents who are not available for a face to face meeting. Secondary data was collected from published books, peer reviewed journals and other academic articles.

### **3.7 Data analysis techniques**

Two types of data were collected in this study; qualitative and quantitative, and hence two types of statistical analysis were used. The quantitative data collected was analyzed using descriptive statistics, the data was scrutinized for completeness, accuracy and uniformity then coded, respondent's data was fed into the Statistical Package for Social Sciences (SPSS version 20.0) and analyzed using descriptive statistics, frequencies and percentages. Inferential statistic Spearman's rank correlation was computed to measure the influence of the independent variables on the dependent variable. The qualitative data generated from the interviews and open ended questions in the questionnaire was analyzed according to constructs and themes aligned to the study objectives. Content analysis and categories identifying similarities and differences that emerge was identified, then the secondary data augmented the primary data.

### **3.8 Ethical Consideration**

Caution was taken in administering questionnaires to avoid any mistrust between the respondents and the researcher. Each questionnaire was accompanied by a cover letter seeking permission from the respondent signed individually as recommended by Gay (1996), respondents were assured of confidentiality. Belmont Report (1979) outlines three basic principles relevant to the ethics of research involving human subjects, namely respect of persons, beneficence, and justice, the principles were observed in this study.

### 3.9 Operational definition of variables

**Table 3.3**

**Operationalization of variables**

Objectives of the study	Variables	Indicators	Scale of Measurement	Tools of Analysis
To establish the extent to which risk allocation in public private partnerships finance influence the provision of affordable housing in Nairobi County	<b>Independent Variables</b>	<ul style="list-style-type: none"> <li>▪ Risk transfer</li> <li>▪ Commercial risks</li> </ul>	Nominal	Descriptive
	Risk allocation	<ul style="list-style-type: none"> <li>▪ Financial &amp; economic risks</li> <li>▪ Technical risks</li> <li>▪ Political &amp; Legal risks</li> </ul>	Ordinal	
To establish the influence of private capital in public private partnerships finance on the provision of affordable housing in Nairobi County.	<b>Independent Variables</b>	<ul style="list-style-type: none"> <li>▪ Cost of capital</li> <li>▪ Government subsidy</li> </ul>	Nominal	Descriptive
	Private capital	<ul style="list-style-type: none"> <li>▪ Cross subsidy</li> <li>▪ Increased number of projects</li> </ul>	Ordinal	
To examine the influence of delivery time in private public partnerships finance on the provision of affordable housing in Nairobi County.	<b>Independent Variable</b>	<ul style="list-style-type: none"> <li>▪ On schedule delivery benefits</li> </ul>	Nominal	Descriptive
	Delivery time	<ul style="list-style-type: none"> <li>▪ Increased housing output</li> </ul>	Ordinal	
To establish the influence of cost savings in public private partnerships finance on provision of affordable housing in Nairobi County.	<b>Independent Variable</b>	<ul style="list-style-type: none"> <li>▪ Project life-cycle cost savings</li> </ul>	Nominal	Descriptive
	Cost savings on budget	<ul style="list-style-type: none"> <li>▪ On budget delivery</li> </ul>	Ordinal	
The purpose of this study is to establish the influence of public private partnerships finance on the provision of affordable housing in Nairobi County.	<b>Dependent Variable</b>	<ul style="list-style-type: none"> <li>▪ Increased housing output</li> </ul>	Nominal	Descriptive
	Provision of affordable housing in Nairobi County.	<ul style="list-style-type: none"> <li>▪ Increased private capital</li> <li>▪ Affordability &amp; accessibility</li> </ul>	Ordinal	Inferential

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATIONS AND INTERPRETATIONS

#### 4.1 Introduction

This chapter covers data analysis, presentations and interpretation of the research findings. It consists of introduction, questionnaire return rate, demographic profile of the respondents and descriptive data presentation as per research objectives/variables, thus; Risk allocation, private capital, delivery time and cost savings. It contains the presentation of the findings emanating from the primary data collected during the study. Data from the respondents was analyzed using the Statistical Package for Social Scientists (SPSS), from which the statistics in the form of frequencies and percentages are discussed and interpreted. Qualitative data collected was analysed using content analysis and categories identifying similarities and differences that emerge as per the research objectives after presentation of quantitative data

#### 4.2 Questionnaire return rate

Out of the (66) questionnaires distributed, 58 were returned, this is 87.8% response rate (Table 4.1). The reason for unreturned questionnaires was because some respondents were not able to return the completed questionnaire by the time of data analysis, some respondents were on leave at the time of data collection. The findings of the study based on the response rate of 87.8% are, therefore, valid for generalization to the entire target population of the study.

**Table 4.1**  
**Response Rate**

Categories	Sample Size	Actual Response	Response Rate (%)
Ministry of Land Housing and Urban Development	6	6	100
PPP UNIT at Treasury	2	1	50
National Housing Corporation	3	2	67
Nairobi City Council	4	3	75
Financiers ( HFCK & Shelter Afrique)	7	6	85
Developers	7	6	85.7
Contractors	12	11	91
Professionals (Architects, Quantity Surveyors and Project Managers)	25	23	92
<b>TOTAL</b>	<b>66</b>	<b>58</b>	<b>87.8</b>

### **4.3 Demographic Profile of the Respondents.**

This section outlines the demographic profile of the respondents who participated in this study. The variables used in this study in establishing social demographic characteristics of the respondents were age, sex, and highest level of education, sector, qualifications, designation, working experience and role in the built environment. These profiles are important in establishing skills and expertise of the respondents relevant to the study.

The results revealed that a majority of the respondents were aged 40 years and above at 56.9% while most of the respondents 43.1% were aged between 30-39 years, followed by 40-49 age bracket at 41.5%, 9 respondents were above 50 age bracket (Table 4.2). Regarding gender, a majority of the respondents were male at 72.4% while the female were 27.6%. This shows that most of the top leadership and management from key public and private sector players who are PPP stakeholders in provision of affordable housing in Nairobi County are predominantly male.

From the findings, all the respondents attained university education with 100% attaining at least a Bachelor's degree while 43.1% attaining a post graduate degree (Table 4.2). It is evident that the respondents are educated, this further shows that the target population of PPP stakeholders in provision of affordable housing in Nairobi County had requisite academic qualifications to participate in the study. The qualification of the PPPs stakeholders was also sought, the study findings show that majority 43.1% are Architects, followed by Quantity Surveyors 19%, the Financial Managers 15.5%, Engineers 8.6%, Project Managers 5.2% and the rest like Planners and transaction advisors among others share the remaining percentage 8.6%. The findings revealed that Architects play a major role in PPPs projects for affordable housing provision especially in occupying key leadership positions in both public and private institutions.

Most 56.6% of the respondents in this study were Directors of private organizations and of various departments from key public sector entities, followed by the Heads of the Departments 22.4% and the rest 19% were Managers. In line with the target population indeed the respondents were from top leadership and management of key public and private sector in line with the study delimitations. The validity and reliability of the data was enhanced by the experience of the respondents in playing key role as a stakeholders PPPs for affordable housing provision.



**Table 4.2**  
**Respondents' demographic profile**

Characteristics	Frequency	Percentage (%)
<b>1. Age</b>		
30-39	25	43.1
40-49	24	41.4
Above 50	9	15.5
<b>Total</b>	<b>58</b>	<b>100</b>
<b>2. Gender</b>		
Male	42	72.4
Female	16	27.6
<b>Total</b>	<b>58</b>	<b>100</b>
<b>3. Highest Level of Education</b>		
Bachelors	33	56.9
Masters	25	43.1
<b>Total</b>	<b>58</b>	<b>100</b>
<b>4. Sector of operation</b>		
Public	12	20.7
Private	46	79.3
<b>Total</b>	<b>58</b>	<b>100</b>
<b>5. Qualification</b>		
Project Management	3	5.2
Architecture	25	43.1
Financial Management	9	15.5
Quantity Surveying	11	19
Engineering	5	8.6
Other	5	8.6
<b>Total</b>	<b>58</b>	<b>100</b>
<b>6. Designation</b>		
Head of Department	13	22.4
Director	34	58.6
Manager	11	19.0
<b>Total</b>	<b>58</b>	<b>100</b>
<b>7. Working Experience</b>		
6-10	17	29.3
11-15	17	29.3
16-20	9	15.5
20 and above	15	25.9
<b>Total</b>	<b>58</b>	<b>100</b>
<b>8. Role in Built Environment</b>		
Consultant	23	39.7
Contractor	11	19
Financier	6	10.3
County Government staff	3	5.2
National Government staff	9	15.5
Developer	6	10.3
<b>Total</b>	<b>58</b>	<b>100</b>

The respondents were asked to give their working experience and a combined majority of them 41.4% have a working experience of 16 years and 29.3% having a working experience of 11 – 15 years. It can be said that the data that was collected from respondents with adequate experience in their relevant subject matter, this enhanced the validity and reliability of the data collected and subsequent interpretations. This study went further to examine the role the respondents are playing in the built environment, from the findings 39.7% are consultants, contractors 19.0%, National government staff 15.5%, Developers 10.3%, Financiers 10.3% and a few 5.2% are County government staff. The complexity of conceiving and implementing PPP projects especially for affordable housing requires a broad array of specialist, experts and players, since these projects are considered social infrastructure.

#### **4.4 Public Private Partnerships Finance Risk allocation**

The study sought respondents view on the influence of Risk allocation on the provision of affordable housing in Nairobi County. A five-point Likert scale was used to measure opinions of the key stakeholders in the sample frame, Table 4.3 indicates the perceptions of respondents relative to various statements relating to the influence of risk allocation in every item. Respondents were asked to indicate the frequency: ‘PPP finance structure ensures clarity of where project risks are allocated’, a majority 44.8% of the respondents strongly agreed that PPP finance structure ensures clarity of where risks are allocated, an equal number 44.8% (Table 4.3). This finding was further affirmed by the respondents who strongly agreed and agreed at a combined majority that political risks 84.5%, financial and economic risks 67% (Table 4.3) are transferred through administration of contracts and appropriately allocated respectively. These findings are in tandem with the qualitative responses received where three respondents in acknowledging political risks, recommended that the government should provide payment guarantees to protect the private investors in the partnerships. However, the other moderating factors such as government policy and macro-economic factors may influence the actual allocation.

When respondents were asked to give their views whether: ‘PPP mitigates the tendency of partners seeking to shift risk onto the other party after signing the contract’, 58.6% of them strongly agreed, 24.1% just agreed, 13.8% were neutral, 1.7% disagreed while 1.7% strongly disagreed (Table 4.3).

**Table 4.3**  
**Risk Allocation data presentation**

No.	RISK ALLOCATION ITEM		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
<b>B1.</b>	PPP finance structure ensures clarity of where project risks are allocated	Frequency	26	26	4	2	0	58
		Percentage (%)	44.8	44.8	6.9	3.4	0.0	100
<b>B2.</b>	Affordable housing PPPs ensures that political risks are transferred through administration of contracts.	Frequency	25	24	7	2	0	58
		Percentage (%)	43.1	41.4	12.1	3.4	0.0	100
<b>B3.</b>	It is always clear where Financial & Economic risks lies in a PPP project for affordable housing provision.	Frequency	19	21	13	4	1	58
		Percentage (%)	32.8	36.2	22.4	6.9	1.7	100
<b>B4.</b>	PPP mitigates the tendency of partners seeking to shift risk onto the other party after signing the contract.	Frequency	34	14	8	1	1	58
		Percentage (%)	58.6	24.1	13.8	1.7	1.7	100
<b>B5.</b>	Service Availability Payments mitigates commercial risks for bidders thereby mitigating uncertainty in price variability.	Frequency	22	30	6	0	0	58
		Percentage (%)	37.9	51.7	10.3	0.0	0.0	100
<b>B6.</b>	The PPP finance structure allows the public agency to focus on monitoring and evaluation of projects	Frequency	35	15	5	1	2	58
		Percentage (%)	60.3	25.9	8.6	1.7	3.4	100
<b>B7.</b>	Shifting construction and maintenance risk to the private sector enhances chances of success of PPP affordable housing project.	Frequency	31	21	3	3	0	58
		Percentage (%)	53.4	36.2	5.2	5.2	0.0	100
<b>B8</b>	PPPs for affordable housing provides for appropriate transfer of risks to the party best suited to manage it at least cost, to enhance for affordability.	Frequency	32	16	10	0	0	58
		Percentage (%)	55.2	27.6	17.2	0.0	0.0	100

Respondents were asked to their views whether: ‘Service Availability Payments (SAP) mitigates commercial risks for bidders thereby mitigating uncertainty in price variability’. Their response show that 37.9% of them strongly agreed, 51.7% of them agreed while the rest 10.3% were neutral (Table 4.3). The results shows that the opinion of respondents endorse the view that the PPP model can mitigate commercial risks through the contractual instruments of SAP. Respondents were asked to their views whether the: ‘PPP finance structure allows the public agency to focus on monitoring and evaluation of projects,’ in provision of affordable housing. From the findings, 60.3% of the respondents strongly agreed, 25.9% agreed, 8.6% were neutral, 1.7% disagreed while 3.4% strongly disagreed (Table 4.3) this finding is in agreement with the previous finding that substantial risks are indeed transferred to the private partner.

Finally the respondent’s views on the indicator: ‘Shifting construction and maintenance risk to the private sector enhances chances of success of PPP affordable housing project’ revealed that, 53.3% of the respondents strongly agreed, 36.2% agreed, 5.2% were neutral, 1.7% disagreed (Table 4.3). The frequency analysis indicating the factor ‘PPP for affordable housing require adequate risk management system for appropriate transfer of risks to the party best suited to manage it at least cost’, revealed that most 55.2% of the respondents strongly agreed, 27.6% agreed while 17.2% were neutral (Table 4.3). Given the high percentage of respondents who agreed and strongly agreed PPP finance can be deemed to provide a framework for adequate transfer of risk to the party best suited to manage it at least cost. The high percentages recorded in each frequency indicator among those who strongly agreed and agreed reveals that risk allocation has a direct influence on provision of affordable housing in Nairobi County.

The qualitative data gathered through interview and open ended questions in the questionnaires revealed that PPP finance has an influence on provision of affordable housing in Nairobi County. The respondents were of the opinion that if the government offers payments guarantee to the private partner (SPV) the cost overall of the project can be significantly lowered by mitigating commercial risks, hence increasing the affordability of the product. Another item that was highlighted by the interviewees was the economic risk like inflation, exchange rate, hedging of foreign currency, especially when it is tied to external funding. This risks were deemed to be of great influence on not only the structuring of PPPs for affordable housing but also for implementation.

Given the huge budgets associated with infrastructure projects, affordable housing in this sense was viewed as a social infrastructure that attracts large contract sums. In line with this theme, a

majority of the respondents noted the need for awareness on the nature of PPP contracts, and the obligations of the private partner, this was considered a limitation to private capital injection. one respondent cited ‘stakeholders involvement like local financiers e.g. banks involvement to understand the PPP funding Mechanisms’. With regard to political risks some respondents cited the risk of failure by government to pay the private partner upon delivering the completed housing units, this appeared in the interviews and questionnaire responses, and it is understandable since the institutional framework for affordable housing PPP is still nascent in Kenya.

One respondent identified the following suggestions for enhancing PPPs for provision of affordable housing; 1) ‘cost of land needs to be looked at’ 2) “land tenure needs to be looked at” 3) ‘infrastructure needs to be in place’, the three items identified are central in risk allocation in PPPs for affordable housing. For instance the cost of land could be mitigated through government subsidies by direct contribution of land to the SPV. Most respondents in answering the open ended questions in the questionnaires recorded corruption as a major influence and threat to PPP for affordable housing, others called it “conflict of interest” another recorded ‘ removing loopholes for corruption and kickbacks’ and this was a common view among both public and private stakeholders.

A Spearman rank order correlation was computed to determine the relationship between Risk Allocation in Public Private Partnerships Finance and the provision of Affordable Housing in Nairobi County. There was a strong positive correlation between risk allocation and provision of Affordable Housing in Nairobi County, which is statistically significant ( $r= 0.534$ ,  $p= 0.05$ ). Through this statistical finding it can be concluded that under the theme of risk allocation, the PPPs finance enhances the affordability with regard to provision of affordable housing as well as increased housing output.

#### **4.5 Public Private Partnerships Finance Private capital**

This study sought to examine the impact of PPPs’ Private Capital on provision of affordable housing in Nairobi County. On a 5 Point Likert scale of (1=Strongly Agree and 5=strongly disagree), respondents were asked to rate eight indicators in relation to the influence of PPPs finance Private Capital on provision of affordable housing (Table 4.4). Frequency analysis indicator: ‘use of PPPs in affordable housing projects delivers benefits due to budget constraints in the public sector capital budgets’ the findings revealed that a majority (53.4%) of the respondents agreed, 32.8% of them agreed, 12.0% were neutral on the same while 1.7% disagreed (Table 4.4). With a total of 86.2% of the

respondents agreeing with the statement, it is apparent that the PPP delivers benefits in provision of affordable housing.

**Table 4.4**

**Private Capital data presentation**

No.	PRIVATE CAPITAL INDICATOR		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
<b>C1</b>	The use of PPPs in affordable housing projects delivers benefits due to budget constraints in the public sector capital budgets.	Frequency	31	19	7	1	0	58
		Percentage (%)	53.4	32.8	12.1	1.7	0.0	100
<b>C2</b>	Use of PPPs allows for injection of private capital to affordable housing projects, increasing housing output.	Frequency	32	22	4	0	0	58
		Percentage (%)	55.2	37.9	6.9	0.0	0.0	100
<b>C3</b>	PPP procurement brings forward capital investment in affordable housing projects.	Frequency	35	16	6	1	0	58
		Percentage (%)	60.3	27.6	10.3	1.7	0.0	100
<b>C4</b>	The need for public agency subsidy complimented with cross subsidy will enhance commercial viability of affordable housing projects.	Frequency	23	30	5	0	0	58
		Percentage (%)	39.7	51.7	8.6	0.0	0.0	100
<b>C5</b>	The cost of capital is best managed by private sector PPP for affordable housing provision.	Frequency	34	18	4	2	0	58
		Percentage (%)	58.6	31.0	6.9	3.4	0.0	100
<b>C6</b>	PPP allow for upfront capital expenditure into a flow of ongoing service availability payments, bringing forward the affordable housing units	Frequency	23	30	3	2	0	58
		Percentage (%)	39.7	51.7	5.2	3.4	0.0	100
<b>C7</b>	PPP allow for accelerated and larger housing projects	Frequency	34	19	4	1	0	58
		Percentage (%)	58.6	32.8	6.9	1.7	0.0	100
<b>C8</b>	PPP procurement provides a clear structure for direct injection of private capital in affordable housing projects.	Frequency	25	26	7	0	0	58
		Percentage (%)	43.1	44.8	12.1	0.0	0.0	100

On whether the: ‘use of PPPs allows for injection of private capital to affordable housing projects, thereby increasing housing output’, most (55.2%) respondents strongly agreed, 37.9% agreed while the rest 6.9% were neutral on the same (Table 4.4). A combined 93.1% of the respondents strongly agreed/ agreed with the statement, recording the highest score eight items in the category. It is important to note that none of the respondents disagreed with the opinion that use PPPs allows for injection of private capital to affordable housing projects, this is a vital finding of the study.

Respondents were asked to give their views on the fact that: ‘PPP procurement brings forward capital investment in affordable housing projects’, 60.3% of them strongly agreed, and 27.6% agreed, 10.3% were neutral while the rest 1.7% disagreed (Table 4.4). It can be concluded that indeed PPP procurement model brings forward capital investment in affordable housing projects. Majority 91.4% of the respondents were of the opinion that: ‘the need for public agency subsidy complimented with cross subsidy will enhance commercial viability of affordable housing projects’ while 8.6% of them were neutral, none disagreed or strongly disagreed to the same (Table 4.4). This indicator scored the second highest among those who strongly agreed and agreed in this category, implying that public agency subsidy combined with cross subsidy works very well in enhancing commercial viability of affordable housing projects hence should be provided by government agency especially in provision of affordable housing.

Respondents were asked to give their views on the fact that: ‘the cost of capital is best managed by private sector PPP for affordable housing provision’. From their responses, 58.6% of them strongly agreed, 31% of them just agreed, 6.9% were neutral while 3.4% disagreed. The results emphasizes the benefits of engaging private sector in PPPs for affordable housing. Respondents were asked whether: ‘PPP allow for upfront capital expenditure into a flow of ongoing service availability payments, bringing forward the affordable housing units’. Majority of them (51.7%) agreed, 39.7% strongly agreed, 5.2% were neutral while 3.3% disagreed (Table 4.4), the finding is an endorsement of the statement. When respondents were asked whether: ‘PPP allow for accelerated and larger housing projects’, a significant majority of the respondents replied positively with 58.6% of them strongly agreeing, 32.8% just agreed, 6.9% neither agreed nor disagreed while 1.7% disagreed (Table 4.4). The respondents were asked the extent to which: ‘PPP procurement provides a clear structure for direct injection of private capital in affordable housing projects’. Most of them agreed with 43.1% strongly agreeing, 44.8% agreeing while 12.1% being neutral (Table 4.4).

The qualitative data gathered from the interviews and the open ended questions in the questionnaires revealed that, PPPs finance private capital has an influence on provision of affordable housing in Nairobi County. In the interviews conducted one respondent was of the opinion that ‘private capital compliments what government is not able to provide’. In order to incentivize the private sector and enhance affordability by the end users, the respondents identified the following measures, by government, like upfront grants, payment guarantees, provision of land as a subsidiary, direct capital contribution to subsidize to cost for the end users/target buyers and renters of the houses.

The interviewees recommended the following measures/tools to encourage private participation, a majority of the interviewees stated that; the government policy on low income housing and affordable housing in general should be targeted for implementation in PPP framework, Secondly, they noted that the “rules must be clear” this alluded to the procurement procedure and process should be transparent. They stated that the “referee should be neutral” to all competitors to ensure competitive bids, hence delivering value for money. The other tools that were identified by the respondents were private cash injection bonds, benchmarking and adopting global experience was also mentioned by one respondent as a measure that could unlock private capital.

The high percentages recorded in each frequency indicator reveals that private capital has a direct influence on provision of affordable housing in Nairobi County. The quantitative data collected was in harmony with the data collected from the interviews and open ended questions in the questionnaires, for instance the need for government subsidy was mentioned by all the interviewees while the private capital was viewed by a majority of the experts as the primary influence of PPPs finance on provision of affordable housing.

A Spearman rank order correlation was computed to determine the relationship between Private Capital in Public Private Partnerships Finance and the provision of Affordable Housing in Nairobi County. There was a moderate positive correlation between Private Capital and provision of Affordable Housing in Nairobi County, which is statistically significant ( $r= 0.499$ ,  $p= 0.05$ ). Through this statistical finding it can be concluded that under the theme of private capital, the PPPs finance provides for increased private capital injection to provision of affordable housing as well as increased housing output.



#### 4.6 Public Private Partnerships Finance Delivery time

This study measured the influence of delivery time of PPP projects on affordable housing provision. Using a five point Likert scale to rate six items/indicators of delivery time, the Table 4.5 shows the responses from the respondents.

**Table 4.5**

##### **Delivery Time data presentation**

No.	DELIVERY TIME		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
<b>D1</b>	Allocation of design and construction responsibility to the private sector provides incentives for on-time delivery.	Frequency	35	12	10	1	0	58
		Percentage (%)	60.3	20.7	17.2	1.7	0.0	100
<b>D2</b>	The cost of capital in PPP finance structure motivates the private party (Special Purpose Vehicle) to deliver on time.	Frequency	32	22	1	1	2	58
		Percentage (%)	55.2	37.9	1.7	1.7	3.4	100
<b>D3</b>	Service availability payments ensures that the private partner is only paid for a delivered affordable housing units hence the motivation to deliver on schedule	Frequency	37	13	2	5	1	58
		Percentage (%)	63.8	22.4	3.4	13	1.7	100
<b>D4</b>	PPP tendering and negotiations is lengthy compared to the traditional GOK procurement methods	Frequency	22	29	6	1	0	58
		Percentage (%)	37.9	50.0	10.3	1.7	0.0	100
<b>D5</b>	Completion risk carried by private partner ensures that the project schedule is observed in affordable housing PPPs	Frequency	14	36	6	2	0	58
		Percentage (%)	24.1	62.1	10.3	3.4	0.0	100
<b>D6</b>	Fixed prize construction contracts with the private entity enhances timely delivery of housing projects	Frequency	30	22	3	3	0	58
		Percentage (%)	51.7	37.9	5.2	5.2	0.0	100

The frequency analysis indicating the factor, D1: ‘Allocation of design and construction responsibility to the private sector provides incentives for on-time delivery.’ revealed that 60.3% of the respondents strongly agreed, 20.7% agreed 17.2% were neutral, while 1.7% disagreed (Table 4.5), it can then be deduced that Allocation of design and construction responsibility to the private sector provides incentives for on-time delivery. The frequency analysis indicating the factor: ‘The cost of capital in PPP finance structure motivates the private party (Special Purpose Vehicle) to deliver on time’ showed that an overwhelming 93.1% either agreed or strongly agreed 1.7% were neutral, while 1.7% disagreed and 3.4% disagreed (Table 4.5), given the high scores in agreement, the respondents agreed with the opinion statement

The frequency analysis indicating the factor: ‘Service availability payments ensures that the private partner is only paid for a delivered affordable housing units hence the motivation to deliver on schedule’ revealed that 63.8% of the respondents strongly agreed, 22.4% agreed, 3.4% were neutral, while 1.7% disagreed and 1.7% strongly disagreed (Table 4.5). The frequency analysis indicating the factor: ‘PPP tendering and negotiations is lengthy compared to the traditional GOK procurement methods’ revealed that 37.9% of the respondents strongly agreed, 50.0% agreed, 10.3% were neutral, 1.7% disagreed, none strongly disagreed (Table 4.5) therefore, the factor can be deemed to have an influence on provision of affordable housing.

The frequency analysis indicating the factor, D5: ‘Completion risk carried by private partner ensures that the project schedule is observed in affordable housing PPPs ’ revealed that 24.1% of the respondents strongly agreed, 62.1% agreed, 10.3% were neutral, while 3.4% disagreed (Table 4.5). The frequency analysis indicating the factor, D6: ‘Fixed prize construction contracts with the private entity enhances timely delivery of housing projects’ revealed that most 51.7% of the respondents strongly agreed, 37.9% agreed, 5.2% were neutral, 5.2% disagreed none strongly disagreed (Table 4.5), hence the deduction that the fixed price contract may enhance timely delivery of projects.

With regard to the qualitative data collected the respondents recorded mixed reaction to the view that PPP finance for affordable housing accrues timely delivery. When asked to give opinion whether they agree that PPP procurement model effective in timely delivery of projects. Some interviewees stated that it is “true on paper but not in practice”, some cited government procurement process and potential court battles among initiated by the competitors. The other possible factor that was mentioned was the adequate timely allocation of funds to the SPV by the sponsors, given the large

capital outlay, and many lawyers of contracts, same respondents were of the opinion that this was dependent on PPP maturity.

Given the long term nature of the contract some respondents cited macro-economic, political, social and cultural factors that could delay timely delivering of PPP affordable housing projects. Political interference was repeatedly mentioned by the respondents, given that the target population are the vulnerable low-income groups, the interviewers noted that politicians could interfere with the implementations i.e in the question of relocation, citing the PPP housing project in Parkroad, Starehe and Shauri Moyo initiated by the government for civil servants housing. All the six statements included in the category of 'Delivery Time' returned a high score of the respondents who either strongly agreed or agreed with the statements, indicating that respondents can be deemed to be of the opinion that the contentions expressed in the statements under this category apply between agree and strongly agree, in that the delivery time in PPPs for affordable housing have a varied influence on provision of affordable housing in Nairobi County.

The descriptive analysis is further confirmed by a Spearman rank order correlation computed to determine the relationship between Delivery Time in Public Private Partnerships Finance and the provision of Affordable Housing in Nairobi County. There was a moderate positive correlation between Delivery time and provision of Affordable Housing in Nairobi County, which is statistically significant ( $r = 0.454$ ,  $p = 0.05$ ). Through this statistical finding it can be concluded that under the theme of delivery time, the PPPs finance provides for on time delivery of affordable housing as well as increased housing output.

#### **4.7 Public Private Partnerships Finance Cost savings**

The study sought respondents view on the influence of Cost Saving on the provision of affordable housing in Nairobi County. On a 5 Point Likert scale (1=strongly disagree and 5=strongly Agree), respondents were asked to rate six items/indicators in relation to the influence of PPPs Cost Saving on provision of affordable housing. Table 4.6 indicates the perceptions of respondents relative to various statements relating to the influence of cost savings in every item.

**Table 4.6:****Cost saving data presentation**

No.	COST SAVINGS		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
<b>E1</b>	Affordable Housing PPP procurement delivers overall cost savings in comparison to conventional procurement.	Frequency	24	19	5	5	5	58
		Percentage (%)	41.4	32.8	8.6	8.6	8.6	100
<b>E2</b>	PPP procurement brings forward investment and / or ensures that optimal maintenance strategies are followed through project life-cycle approach	Frequency	19	21	10	7	1	58
		Percentage (%)	32.8	36.2	17.2	12.1	1.7	100
<b>E3</b>	PPP utilizes efficiencies of the private sector in delivery of affordable housing projects	Frequency	28	23	6	1	0	58
		Percentage (%)	48.3	39.7	10.3	1.7	0.0	100
<b>E4</b>	Fixed and operational assets in the housing estates will adequately be maintained over the duration of PPP given the life-cycle approach.	Frequency	21	25	10	2	0	58
		Percentage (%)	36.2	43.1	17.2	3.4	0.0	100
<b>E5</b>	PPP delivers greater value for money compared with traditional public procurement methods	Frequency	17	24	12	4	1	58
		Percentage (%)	29.3	41.4	20.7	6.9	1.7	100
<b>E6</b>	Shifting long-term operation and maintenance responsibilities of the housing estate to private sector creates incentive to ensure long-term quality	Frequency	31	20	5	1	1	58
		Percentage (%)	53.4	34.5	8.6	1.7	1.7	100

The frequency analysis indicating the factor, E1: ‘Affordable Housing PPP procurement delivers overall cost savings in comparison to conventional procurement’, revealed that most 41.4% of the respondents strongly agreed, 32.8% agreed, 8.6% neutral, 8.6% disagreed and 8.6% strongly disagreed, (Table 4.6), therefore PPP can be deemed to deliver overall cost savings in comparison to conventional procurement. Respondents were asked to indicate the frequency, E2: ‘PPP procurement brings forward investment and / or ensures that optimal maintenance strategies are followed through project life-cycle approach’, 32.8% of the respondents strongly agreed, a majority (36.2%) agreed, 17.2% were neutral 12.1% disagreed and 3.4% disagreed (Table 4.6), confirming that PPP

procurement brings forward investment and / or ensures that optimal maintenance strategies are followed through project life-cycle approach. On the frequency analysis indicating the factor: 'PPP utilizes efficiencies of the private sector in delivery of affordable housing projects', a majority 48.3% of the respondents strongly agreed, 39.7% agreed, 10.3% were neutral while 1.7% disagreed, none strongly disagreed (Table 4.6) the scores were second highest in this category among those who strongly agreed and agreed, indicating that the respondents opinion were in line with the statement.

Respondents were asked to indicate the frequency, 'Fixed and operational assets in the housing estates will adequately be maintained over the duration of PPP given the life-cycle approach.', 36.2% of the respondents strongly agreed, a majority 43.1% agreed, 17.2% were neutral 3.4% disagreed and none strongly disagreed (Table 4.6). Respondents agreed that, Fixed and operational assets in the housing estates will adequately be maintained over the duration of PPP given the life-cycle approach. The frequency analysis indicating the factor, 'PPP delivers greater value for money compared with traditional public procurement methods', 29.3% of the respondents strongly agreed, 41.4% agreed, 20.7% were neutral while 6.9% disagreed, 1.7% strongly disagreed (Table 4.6), confirming that PPP delivers greater value for money compared with traditional public procurement methods.

Finally respondents were asked to indicate the frequency: 'Shifting long-term operation and maintenance responsibilities of the housing estate to private sector creates incentive to ensure long-term quality.' 53.4% of the respondents strongly agreed, 34.5% agreed, 8.6% were neutral 1.7% disagreed and 1.7% strongly disagreed (Table 4.6) endorsing the view that, shifting long-term operation and maintenance responsibilities of the housing estate to private sector creates incentive to ensure long-term quality.

The qualitative data collected is presented in this section revealed that the PPP model accrues cost saving in provision of affordable housing in Nairobi County. When the respondents were asked whether they agree with the view that 'PPP financing accrues cost savings compared to traditional government procurement models for housing projects, all the respondents agreed. They cited the project management capabilities of the private sector as a key area of cost saving, the efficiency and technological capacity of the private sector was also deemed to offer potential for cost savings.

When asked to state the limitations of the PPP procurement model in delivering affordable housing in Nairobi County, the respondents cited the high cost of capital as a limitation. one interviewee mentioned that “ in practice the debt component of PPP finance could amount to 70%-80% of the overall cost outlay and, therefore, the private partner is bound to employ cost cutting measures since the contracts are usually fixed price contracts’. The respondent noted that whereas the initial cost could be higher the overall life-cycle savings on the project are significant since the SPV is in charge of Designing, Building, Financing, Maintaining (DBFM) and even operating the facilities delivered.

All the six statements included in the category of ‘Cost Saving’ returned a high score of the respondents who either strongly agreed or agreed with the statements, indicating that respondents can be deemed to be of the opinion that the contentions expressed in the statements under this category apply. The qualitative data gathered are in agreement with the data analysed in this section, that the cost savings in PPPs for affordable housing have an influence on provision of affordable housing in Nairobi County.

The descriptive analysis is further confirmed by a Spearman rank order correlation computed to determine the relationship between Cost Savings in Public Private Partnerships Finance and the provision of Affordable Housing in Nairobi County. There was a moderate positive correlation between Delivery time and provision of Affordable Housing in Nairobi County, which is statistically significant ( $r= 0.581$ ,  $p= 0.05$ ). Through this statistical finding it can be concluded that under the theme of cost savings, the PPPs finance provides for cost saving of affordable housing as well as increased housing output.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter gives the summary of the findings, the discussions of findings, conclusions, recommendations according to the study objectives and suggestions for further research.

#### **5.2 Summary of findings**

The first objective of the study was ‘To examine the influence of Risk Allocation in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County.’ The findings revealed that risk allocation in PPP finance has an influence on provision of affordable housing in Nairobi County, the respondents strongly agreed with the contentions expressed in the study indicators of the construct. That the risks are transferred to the party best suited to manage it at least cost, the finance structure ensures clarity of where the risks is allocated in a PPP structure. Through administration of contracts there is an avenue for transfer of risks in practice and with clarity. 89.6% of the respondents agreed that service availability payments mitigates the commercial risks relating to price variability. The PPP model also allows the public agency to focus on monitoring and evaluation of projects, finally by shifting construction and maintenance risk to the private sector the chances of success of the PPP project for affordable housing is enhanced. The strong positive spearman rank correlation coefficient computed confirmed the influence of risk allocation on provision of affordable housing in Nairobi County.

In the second objective, the study sought ‘to determine the influence of Private Capital in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County’. The findings of the eight statements included in the category of ‘Private Capital’, indicates that respondents can be deemed to be of the opinion that the contentions that private capital has an influence on provision of affordable housing. The study findings confirmed that PPP delivers benefits due to budget constraints in the public sector capital budgets. The findings also confirmed that PPPs allows for injection of private capital to affordable housing projects 93.1%, while bringing forward capital investments. An

overwhelming majority of the respondents agreed that public agency subsidy complimented with cross-subsidy will enhance commercial viability of affordable housing PPP projects.

The findings further showed that cost of capital is best managed by private sector, this is critical in provision of affordable housing since one of the key drivers of the PPP is injection of private capital. From the study results underscored a majority view of the respondents that upfront capital expenditure by private sector will bring forward affordable housing units, thus allowing for accelerated larger housing projects 91.4%, finally the PPP structure was deemed to allow for a clear structure for direct injection of private capital in affordable housing projects. The moderate positive spearman rank correlation coefficient computed confirmed the influence of private capital on provision of affordable housing in Nairobi County.

The third study objective sought, 'To examine the influence of Delivery Time in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County'. The findings in all the six statements included in the category of 'Delivery Time', indicates that respondents can be deemed to be of the opinion that the PPP structure influences the timely delivery of affordable housing projects. The respondents agreed that allocation of design and construction responsibility to the private sector provides incentives for on-time delivery, they strongly agreed that the cost of capital in PPP finance structure motivates the private party (SPV) to deliver on time 93.1%. The respondents agreed that service availability payments ensures that the private partner is only paid for a delivered affordable housing units hence the motivation to deliver on schedule.

With regard to procurement process PPP tendering and negotiations was deemed to be lengthy compared to the traditional GOK procurement methods. The findings of the study confirmed that the Completion risk carried by private partner ensures that the project schedule is observed in affordable housing PPPs and finally the fixed prize construction contracts with the private entity enhances timely delivery of housing projects, according to the study findings. The moderate positive spearman rank correlation coefficient computed confirmed the influence of delivery time on provision of affordable housing in Nairobi County.



The fourth and final study objective sought, ‘To establish the influence of Cost Savings in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County.’ The findings for all the six statements included in the category of ‘cost saving’, indicates that respondents can be deemed to be of the opinion that the PPP finance structure provides for cost savings in affordable housing project. Affordable Housing PPP when compared to conventional procurement was found to deliver overall cost savings 74.2%. PPP procurement was deemed to bring forward investment and ensures that optimal maintenance strategies are followed through project life-cycle approach. The respondents also agreed that PPP utilizes efficiencies of the private sector in delivery of affordable housing projects. The PPP Finance delivers greater value for money compared with traditional public procurement methods and finally by an overwhelming majority of 87.9% the respondents agreed that shifting long-term operation and maintenance responsibilities of the housing estate to private sector creates incentive to ensure long-term quality. The strong positive spearman rank correlation coefficient computed confirmed the influence of cost savings on provision of affordable housing in Nairobi County.

### **5.3 Discussion of findings**

The purpose of this study was to investigate the influence of Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County, Kenya, from which the findings indicate that PPP Finance has an influence on provision of affordable housing in Nairobi County, through the four themes generated in the study objectives.

#### **5.3.1 Risk allocation in Public Private Partnerships Finance**

The first objective of the study was ‘to examine the influence of Risk Allocation in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County’, the respondents by a large majority were of the opinion that risk allocation in PPP finance has an influence on provision of affordable housing in Nairobi County. Having delimited the study to Project Finance (PF) structure of financing PPPs affordable housing projects, the findings confirmed that PPP finance provide a structure for transfer of risk to private partner best suited to manage them at least cost. This finding is in harmony with other studies and literature, for instance Carpintero and Petersen (2015) argued that the private partner (SPV) should deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners, they

further argued that the effectiveness of this alignment depends on sufficient transfer of risk to the private partner. The findings also revealed that the PF structure ensures that there is an avenue for transfer of risk with clarity while also ensuring that the tendency of partners to shift risks to other partners after signing of contract is mitigated.

Under the same theme of risk allocation, another remarkable finding was that service availability payments (SAP) mitigates commercial risks relating to price variability (89.6%), Silviu & Michael (2009) in their paper presented the key prerequisite for SAP key among them was that; there should be transfer of risks of designing, building, financing and operating/ maintaining a project to private partner, secondly the nature of the project of which affordable housing fits should 1) not generate direct revenue; 2) performance and operational outcomes should be easy to define and monitor another key feature that is critical to ensuring affordability of the houses to the target users is that the government should retain the direct rate setting authority, Finally, 3) service quality is more important or applicable goal than revenue maximization. Silviu & Michael (2009) argued that the SAP arrangement results in public retention of demand risk, reducing the risk premium in private cost of capital, but potentially increasing public exposure to shortfalls and volatility.

The study findings also indicate that the PPP model allows for the public implementing agency to focus on monitoring and evaluation of the projects, with the private partner involved in DBFOM the public entity has more leverage in setting high standards for the housing units in terms of density, size, finishes quality and even identification of bonafide beneficiaries of the affordable housing units. The core role of the public partner, therefore, constitutes monitoring and evaluation in order to realize the short term outcomes and long-term impacts of the project.

### **5.3.2 Private capital in Public Private Partnerships Finance**

The second objective of the study was ‘To determine the influence of Private Capital in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County’. The respondents in this study strongly agreed that private capital has a major influence on provision of affordable housing in Nairobi County. This theme scored the highest percentages among those who strongly agreed and affirms previous studies and literature that the main motivation for PPPs by governments is accessing private finance, The study found out that the PPP allows for injection of private capital into affordable housing projects due to budgetary constraints in the public sector, this is

in sync with other studies conducted previously and literature (Ngcuka, 2010; UN-HABITAT, 2011; World Bank, 2012). Private capital and participation of the private sector in provision of housing provided multiple advantages in project management, technology and general efficiency of private sector as noted by some of the interviewees and in harmony with the findings of this study where a large majority strongly agreed that, ‘cost of capital is best managed by private sector’.

At a frequency of 91.4% the study confirmed that there is need for public agency (government) subsidy, this finding was in agreement with the interview responses on the same theme that the subsidies could be in the form of; provision of land as a contribution to the SPV, financial contribution, incentives like tax rebates to encourage private sector participation, provision of infrastructure among others. Such a subsidy will enhance the commercial viability of the projects by making the outputs affordable to the targeted end users who are low and middle income household. The profit objectives alignment for the private sector (Carpintero & Petersen, 2015) cannot be realized if the housing units are prized beyond the ability of the end users, therefore, this finding underpins the democratic conception adopted as the theoretical framework for this study. This finding is in agreement with others especially Emsley et al (2008) who noted that affordable housing requires a form of government subsidy and intervention, others concur (Davidson & Malloy, 2009; Headey, 1978; Ilekojin & Anosike, 2015).

Government subsidy can be complimented with cross subsidy where the SPV is allowed to sell a portion of the project to the open market and re plough the profits in financing affordable housing units, this practice has been carried out in the UK, Hoicka (2007), the finding is further buttressed by previous studies, Khaled et al (2014) where the rest of the project is offered to the low income households at pre-determined price. However, it is important to note that the low-income section of the project should be settled by government side by setting the number of units, room sized, quality of the units, social amenities and infrastructure to be provided and ultimately the price whether rental or owner occupier (Khaled et al, 2014). This subsidy/cross subsidy approach addresses the affordability problem that this study aimed at addressing. The quantitative findings in this study were further buttressed by the interview results where respondents recommended that Government should incentives to attract private capital, relevant to this theme was provision payment guarantees earlier mentioned in section 4.5, tax incentives to affordable housing PPP given to the private partner, SPV.

There could be other factors that would influence the provision of affordable housing related to private capital injection some of them were identified by Ileko & Anosike (2015), in their PPP study in Bauchi, Nigeria noted that factors like macro-level economic, political and socio cultural climates, would influence provision of affordable housing.

### **5.3.3 Delivery time in Public Private Partnerships Finance**

The third objective of the study was ‘To examine the influence of Delivery Time in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County’. Findings of this study suggested that PPP finance structure motivates the private party to deliver on time, the possible reason for this finding can be broadly expressed in the stock of literature reviewed (Doloi, 2012; Ngcuka, 2010; Silviu & Michael, 2009). It is argued that the DBFOM provides a strong incentive for the concessionaires to provide efficiency gains in construction, operation and maintenance of a project yielding significant time saving. Carpintero & Petersen (2015), observed that one of the key motivations of governments for embarking on PPPs include on time delivery and access to private project management expertise, they cited previous works (Mediute & Paliulis, 2011; Grimsey and Lewis, 2002 ).

Another critical finding in this study was that the tendering and negotiations in PPP projects is lengthy compared to traditional GoK procurement methods, the respondents strongly agreed with this assertion and is corroborated by reports and findings in Countries with higher level of housing PPP maturity ( Stage 2 & stage 3). In the UK for instance Hoicka (2007) noted that the average time from start of design of housing PPP until contract signing is more than 5 years. Some respondents stated that ‘the PPP act 2013 should be revised such that the process is shortened, the act stipulates that more than one committee are required to approve the project’. Other macro-level factors identified in the previous section 5.3.3 also have a bearing delivery time for PPP projects for affordable housing.

### **5.3.4 Cost savings in Public Private Partnerships Finance**

The fourth objective of the study was ‘To establish the influence of Cost Savings in Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County’. PPP for affordable housing accrues cost savings according to the findings of this study. By integrating key project elements into a single contract structure, optimizing long-term incentives and by letting each of

the partners do what they do best Carpintero & Petersen (2015) as discussed in section 5.3.3 above the DBFOM leverage on the expertise of each partner and encourage them to work closely. Any schedule and quality problems at construction phase will impact the future costs and revenues of equity holders, lenders and operators, who thus have direct interest in closely monitoring the designers and the builders (Silviu & Michael, 2009).

Findings of this study suggested that PPP delivers greater Value for Money (VfM), A possible reason is the integration of the key project characteristics, DBFOM, into a single and long-term contract between public entity and SPV ( Yescombe, 2007). Experts have argued that an efficient risk transfer and task integration provides the private partner with clear incentives to develop innovative solutions that can deliver more infrastructure with fewer resources in the long-run (Mediute & Paliulis, 2011; Grimsey and Lewis, 2002; Yescombe, 2007).

The qualitative data gathered recorded the sentiments from respondents that ‘PPP makes the overall project cost high’. This corresponds to the questionnaire item E1, which attracted a broad array of opinions, the high percentage of those who disagreed could be explained by the fact that the initial project cost could be higher than conventional contracts, however, the PPP cost savings in the VfM is computed for the entire life cycle of the project, thus; design, finance, construction, operation and maintenance which is usually combined into a single contract. There are other extraneous factor that could limit the realization of VfM like corruption which was cited by many respondents in the interviews.

## **5.4 Conclusions**

The purpose of this study was to investigate the influence of Public Private Partnerships Finance on the provision of Affordable Housing in Nairobi County, Kenya. The findings of this study have indicated that risk allocation, private capital, delivery time and cost saving PPP Finance influence provision of affordable housing in Nairobi County. In the analysis through various indicators the study found out that the PPP finance structure in DBFOM model provides for the risk to be allocated to the party best suited to manage it at least cost, this finding allows for the public entity to leverage on the project management expertise of the private sector.

The second and third theme thus; private capital and delivery time was found to be the key motivator for the public entity to seek partnership with private sector, through the instruments of contracts the PPP framework provide for potential on time and on budget delivery of projects, such benefits are already being accrued in mature housing PPP countries like UK. The need for public sector subsidy is twofold, first, to enhance commercial viability to attract private capital and secondly, to ensure affordability of the housing units by the targeted low income households is key. The study also revealed other aspects of affordable housing PPPs like influence on economic growth, creation of jobs and expansion of infrastructure expansion given the scale of the projects. The success of the projects are also dependent on political goodwill and adequate regulatory framework.

### **5.5 Recommendations of the study**

1. There is need for public awareness campaigns on PPP procurement model by the government through the contracting authorities at both national and county level, the key stakeholders should be informed of the difference between the traditional procurement models versus the PPP model. The awareness should, first, target the professionals in the built environment and the key stakeholders in PPP framework. The training of public servants involved in PPP procurement is also key to appropriate project formulation and success in implementation.
2. Governments should provide subsidies for affordable housing PPPs targeting low income households, this can be in the form of Land and granting incentives e.g., import duty waivers on imported building materials and construction equipment and tax relief, to private housing developers involved in PPP housing provisions for low-income households, contributing to the provision of basic infrastructure. The government can also provide payment guarantee to inspire more confidence to the private partners.
3. Whereas there is a tremendous progress by the government in establishing the institutional framework for implementation of PPP projects, the process should be accelerated to ensure a fair playing ground for interested partners and transparency in the process.
4. Being key stakeholders in PPPs projects the financial institutions, especially the lending institutions like commercial banks, microfinance institutions, Housing Savings and credit co-operatives (SACCOs) among others, should research on how to appraise housing PPP projects for funding. The lending institutions should evaluate the business case/ project proposal from

a project finance perspective based on the future cash flows inherent to the project, rather than the traditional corporate finance approach which emphasized on the net worth of the sponsors.

### **5.6 Suggestions for further research**

1. There should be a study on monitoring and evaluation of PPP projects for affordable housing to ensure that the desired short term outcomes and long term impacts are realized.
2. There should be empirical studies on how to incorporate public participation especially the involvement of the beneficiaries of the housing PPPs from inception of the projects. Such a study may enhance the uptake of completed housing units, success rate of the project and affordability to the targeted low income households. It should also cover the role of non-governmental entities in provision of affordable housing in a PPP set-up.
3. Another area of study will be the exploration of how to integrate microfinance concepts into the long-term PPP affordable housing projects.

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## APPENDICES

### APPENDIX I

#### LETTER OF TRANSMITTAL

Date: July, 2015

Dear Sir/Madam,

#### **SUBJECT: REQUEST TO COMPLETE QUESTIONNAIRE**

My name is Peter Oluoch Ojwang', I am a post-graduate student at the Department of Extramural Studies, School of Continuing and Distance Education, University of Nairobi. I am currently undertaking a research project as part fulfillment for the Masters of Arts in Project Planning and Management (MAPPM) degree. The title of my study is **“the influence of Public Private Partnerships Finance on Provision of Affordable Housing: the case of Nairobi County, Kenya”**.

You have been selected to participate as a respondent in the study being a key stakeholder in housing industry. A student letter of introduction from the university is enclosed for your reference. Kindly assist by filling in the attached questionnaire.

The information given will be treated in strict confidence and will be used purely for academic purposes. Do not indicate your names or details on the questionnaire. A copy of the final report will be availed upon your request.

Your assistance and cooperation will be highly appreciated.

Yours sincerely,



.....  
Peter Oluoch Ojwang'  
(Student) L50/69304/2013

## APPENDIX II

### LETTER OF INTRODUCTION



**UNIVERSITY OF NAIROBI**  
COLLEGE OF EDUCATION AND EXTERNAL STUDIES  
SCHOOL OF CONTINUING AND DISTANCE EDUCATION  
DEPARTMENT OF EXTRA-MURAL STUDIES  
NAIROBI EXTRA-MURAL CENTRE

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

Main Campus  
Gandhi Wing, Ground Floor  
P.O. Box 30197  
NAIROBI

4<sup>th</sup> August, 2015

REF: UON/CEES//NEMC/22/185

### TO WHOM IT MAY CONCERN

**RE: PETER OLUOCH OJWANG' - REG NO- L50/69304/2013**

This is to confirm that the above named is a student at the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Department of Extra- Mural Studies pursuing a Master of Arts in Project Planning and Management.

He is proceeding for research entitled "**the influence of public private partnerships finance on provision of affordable housing.**" The case of Nairobi County, Kenya.

Any assistance given to him will be appreciated.

**CAREN AWILLY**  
CENTRE ORGANIZER  
NAIROBI EXTRA MURAL CENTRE



### APPENDIX III

#### QUESTIONNAIRE

R /NO 

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The purpose of this study is to investigate “**the influence of public private partnerships finance on provision of affordable housing in Nairobi County**”

This questionnaire is a part of Masters of Arts in Project Planning and Management at the University of Nairobi, and is completely anonymous. Your answers will be treated with strict confidentiality.

#### Instructions:

1. Use the scale **1 (Strongly Disagree)** to **5 (Strongly Agree)** and put a check (✓) to indicate the extent to which each of the statements apply to PPP projects for provision of affordable housing.
2. For the questions that require your opinion, please complete the blanks, kindly be brief.

#### SECTION I: GENERAL INFORMATION.

	RESPONDENT DETAILS	DESCRIPTION
1	Age	20-29 <input type="checkbox"/> 31-39 <input type="checkbox"/> 41-49 <input type="checkbox"/> 50 and above <input type="checkbox"/>
2	Sex	Male <input type="checkbox"/> Female <input type="checkbox"/>
3	Highest Level of Education	Phd. <input type="checkbox"/> Masters <input type="checkbox"/> Bachelor <input type="checkbox"/> Diploma <input type="checkbox"/> Others Specify .....
4	Sector	Public <input type="checkbox"/> Private <input type="checkbox"/>
5	Qualifications	Project Management <input type="checkbox"/> Architecture <input type="checkbox"/> Financial Management <input type="checkbox"/> Quantity Surveyor <input type="checkbox"/> Engineering    Others Specify .....
6	Designation:	Head of department <input type="checkbox"/> Director <input type="checkbox"/> Others Specify .....
7	Working Experience	0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-15 <input type="checkbox"/> 16-20 <input type="checkbox"/> 20 and above <input type="checkbox"/>

## A. PPP STAKEHOLDERS IN AFFORDABLE HOUSING PROVISION

A	Which of the following best describes your role in the built environment?	Tick one	Code
1	Consultant		A1
2	Contractor		A2
3	Financier		A3
4	Civil Servant - County Government		A4
5	Civil Servant - National Government		A5
6	Developers		A6

## SECTION II: PPP INFLUENCE ON PROVISION OF AFFORDABLE HOUSING.

SCALE				
Strongly Agree =5	Agree=4	Neutral=3	Disagree=2	Strongly disagree=1

B	RISK ALLOCATION	5	4	3	2	1	Code
1	PPP finance structure ensures clarity of where project risks are allocated						B1
2	Affordable housing PPPs ensures that political risks are transferred through administration of contracts.						B2
3	It is always clear where Financial & Economic risks lies in a PPP project for affordable housing provision.						B3
4	PPP mitigates the tendency of partners seeking to shift risk onto the other party after signing the contract.						B4
5	Service Availability Payments mitigates commercial risks for bidders thereby mitigating uncertainty in price variability.						B5
6	The PPP finance structure allows the public agency to focus on monitoring and evaluation of projects						B6
7	Shifting construction and maintenance risk to the private sector enhances chances of success of PPP affordable housing project.						B7
8	PPPs for affordable housing provides for appropriate transfer of risks to the party best suited to manage it at least cost, to enhance for affordability.						B8

SCALE				
Strongly Agree =5	Agree=4	Neutral=3	Disagree=2	Strongly disagree=1

C	PRIVATE CAPITAL	5	4	3	2	1	Code
1	The use of PPPs in affordable housing projects delivers benefits due to budget constraints in the public sector capital budgets.						C1



2	Use of PPPs allows for injection of private capital to affordable housing projects thereby increasing housing output.						C2
3	PPP procurement brings forward capital investment in affordable housing projects.						C3
4	The need for public agency subsidy complimented with cross subsidy will enhance commercial viability of affordable housing projects.						C4
5	The cost of capital is best managed by private sector PPP for affordable housing provision.						C5
6	PPP allow for upfront capital expenditure into a flow of ongoing service availability payments, bringing forward the affordable housing units						C6
7	PPP allow for accelerated and larger housing projects						C7
8	PPP procurement provides a clear structure for direct injection of private capital in affordable housing projects.						C8

SCALE					
Strongly Agree =5	Agree=4	Neutral=3	Disagree=2	Strongly disagree=1	

D	DELIVERY TIME	5	4	3	2	1	Code
1	Allocation of design and construction responsibility to the private sector provides incentives for on-time delivery.						D1
2	The cost of capital in PPP finance structure motivates the private party (Special Purpose Vehicle) to deliver on time.						D2
3	Service availability payments ensures that the private partner is only paid for a delivered affordable housing units hence the motivation to deliver on schedule						D3
4	PPP tendering and negotiations is lengthy compared to the traditional GOK procurement methods						D4
5	Completion risk carried by private partner ensures that the project schedule is observed in affordable housing PPPs						D5
6	Fixed prize construction contracts with the private entity enhances timely delivery of housing projects						D6

SCALE					
Strongly Agree =5	Agree=4	Neutral=3	Disagree=2	Strongly disagree=1	

E	COST SAVINGS	5	4	3	2	1	Code
1	Affordable Housing PPP procurement delivers overall cost savings in comparison to conventional procurement.						E1
2	PPP procurement brings forward investment and / or ensures that optimal maintenance strategies are followed through project life-cycle approach						E2

3	PPP utilizes efficiencies of the private sector in delivery of affordable housing projects						E3
4	Fixed and operational assets in the housing estates will adequately be maintained over the duration of PPP given the life-cycle approach.						E4
5	PPP delivers greater value for money compared with traditional public procurement methods						E5
6	Shifting long-term operation and maintenance responsibilities of the housing estate to private sector creates incentive to ensure long-term quality						E6

Please write down the any other key influences of PPPs on provision of affordable housing other than the above ones?

- 1.
- 2.
- 3.

What are your suggestions for enhancing PPP for provision of affordable housing in Nairobi County?

- 1.
- 2.
- 3.

Respondent's Signature\_\_\_\_\_

THANK YOU VERY MUCH FOR COMPLETING THE QUESTIONNAIRE.

## APPENDIX IV

### INTERVIEW GUIDE FOR PRIVATE SECTOR

R/NO 

0	1
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1. Are there any influences of PPP on provision of affordable housing in Nairobi County? YES/NO
  - a. If YES, how can the PPP model enhance provision of housing for the middle and low-income households in Nairobi County? If YES what are some of the influences in the county of Nairobi?
  - b. If NO, why?
2. In your opinion how does risk allocation in PPP finance structure impact provision of affordable housing?
  - a. commercial risks, financial & economic risks , technical risks, political and legal risks
3. Do you agree that private capital in PPP contribute to enhanced provision of affordable housing in Nairobi County?
  - a. if YES what do you consider the primary contribution of private capital
  - b. Government subsidy is crucial for motivating private capital injection, do you agree? YES/NO
4. In your opinion do you consider PPP procurement model effective in timely delivery of projects.
5. Do you agree with the view that PPP financing accrues cost savings compared to traditional government procurement models for housing projects?
6. What are the limitations of PPP procurement model on provision of affordable housing in Nairobi County?
7. What is the role of the private sector in affordable housing PPPs?
8. What sorts of government tools constrain and/or enable you to get involved in affordable housing issues in Nairobi County?
9. Based on your experience, what financial tools could the government use to draw the private sector in to affordable housing PPP?
10. How can the government engage the private sector to get involved in affordable housing PPP?
11. Would you say that public-private partnerships are an effective and reliable way of delivering Affordable housing in Nairobi County? Why, or why not?

## APPENDIX V

### INTERVIEW GUIDE FOR PUBLIC SECTOR

R/NO

0	1
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1. Are there any influences of PPP in provision of affordable housing in Nairobi County?
  - a. If yes, how can the PPP model enhance provision of housing for the middle and low-income households in Nairobi County?
2. If yes what are some of the influences in the county of Nairobi?
3. In your opinion are the influences of risk allocation in PPP finance structure on provision of affordable housing? commercial risks, financial & economic risks, technical risks, political and legal risks
4. Do you agree that private capital is a key influence of PPP on provision of affordable housing in Nairobi County?
  - a. if yes what do you consider the primary influence of private capital
  - b. Government subsidy is crucial for motivating private capital injection, do you agree?
5. In your opinion do you consider PPP procurement model effective in timely delivery of projects.
6. Do you agree with the view that PPP financing accrues cost savings compared to traditional government procurement models for housing projects?
7. What are the limitations of PPP procurement model in provision of affordable housing in Nairobi County?
8. What is the potential for “synergism” among the two sectors?
9. What is the role of the public sector in affordable housing PPPs? MLHUD/NHC/NCC
10. Based on your experience, what financial tools could the government use to draw the private sector in to affordable housing PPP?
11. What is the PPP potential for “synergism” among the two sectors?
12. How can we engage the private sector to get involved in affordable housing PPP?
13. Would you say that public-private partnerships are an effective and reliable way of delivering Affordable housing in Nairobi County? Why, or why not?

## APPENDIX VI

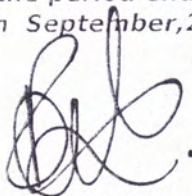
### RESEARCH PERMIT

THIS IS TO CERTIFY THAT:  
MR. PETER OLUOCH OJWANG  
of UNIVERSITY OF NAIROBI, 0-100  
NAIROBI, has been permitted to conduct  
research in *Nairobi County*

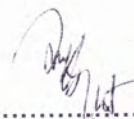
Permit No : NACOSTI/P/15/2361/7566  
Date Of Issue : 15th September, 2015  
Fee Received : Ksh 1,000

on the topic: *THE INFLUENCE OF  
PUBLIC PRIVATE PARTNERSHIPS  
FINANCE ON PROVISION OF  
AFFORDABLE HOUSING: THE CASE OF  
NAIROBI COUNTY, KENYA*

for the period ending:  
15th September, 2016



.....  
Applicant's  
Signature



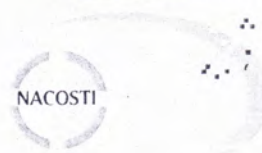
.....  
Director General  
National Commission for Science,  
Technology & Innovation

### CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice *At Kenya*



REPUBLIC OF KENYA



National Commission for Science,  
Technology and Innovation

RESEARCH CLEARANCE  
PERMIT

Serial No. A 0603

CONDITIONS: see back page



## NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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When replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref: No.

Date:

**15<sup>th</sup> September, 2015**

**NACOSTI/P/15/2361/7566**

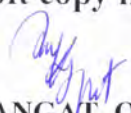
Peter Oluoch Ojwang  
University of Nairobi  
P.O. Box 30197-00100  
**NAIROBI.**

### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *"The influence of public private partnerships finance on provision of affordable housing: The case of Nairobi County, Kenya,"* I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for a period ending **15<sup>th</sup> September, 2016.**

You are advised to report to **the Principal Secretary, Ministry of Land, Housing and Urban Development, the Managing Director, National Housing Corporation, the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
**DR. S.K. LANGAT, OGW**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The Principal Secretary  
Ministry of Land, Housing and Urban Development.

The Managing Director  
National Housing Corporation.