Enhanced role of private sector through public private partnerships in low income urban housing in Kenya

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Abstract

Purpose – Low income urban housing in Kenya is underdeveloped as a result of uninnovative financing, hence the many slums and informal settlements in the country, hence the need for enhanced participation of the private sector through application of Public Private Partnerships (PPPs), which has been cited as one of the possible solutions. The purpose of this study was to investigate and make predictions of the need for enhanced role of private sector in developing low income urban housing in Kenya through PPPs.

Design/methodology/approach – Delphi method of research was used to forecast the enhanced role of private sector through PPPs in the development of low income urban housing in Kenya. Three rounds Delphi iterations using three panels of housing financiers (30 in number), housing developers (28 in number) and housing practitioners (30 in number) were used. Data was collected through questionnaires throughout the three rounds, where the first round was exploratory in nature, the second round built on answers from round one, while round three was based on answers from round two, after which the mean and standard deviation values were calculated to show the level of consensus.

Findings – Results showed that PPPs is one of the plausible ways through which low income urban housing in Kenya can be developed to address its shortage. Private sector in PPP transaction brings innovative technology, finance and efficiency, while government brings its assets such as land and other regulations long term contracts.

Research limitations/implications – The research was focussed on the Nairobi city county area in analysing the need for enhanced role of the private parties. It focussed on a panel of Housing practitioners-officers in the State Department for housing and Nairobi city county; housing financiers and housing developers, without interviewing the beneficiaries of the method.

Practical implications – It was, therefore, found out that PPPs models are applicable in developing low income urban housing because the country has the enabling environment for its effective application going forward. The implication of this study is that low income urban housing can be developed through the model.

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Social implications – The slums and informal settlements will have adequate, affordable and quality housing being introduced within their neighbourhoods, which reduces political and societal animosities.

Originality/value – This research has benefited from published literature on PPPs and original research on PPPs.

Keywords Innovative financing, Low cost housing, Public private partnerships, Private and public sector/entities, Private party/entity/player

Paper type Research paper

Introduction

Housing and associated infrastructure is essential for sustainable living, which has been provided through public sector, privatization, municipalization and nationalization (Hugh, 2014; Estache, 2004; Esfahani and Ramirez, 2003). The enhanced role of the private sector in the designing, financing and provision of housing infrastructure has been appreciated, hence countries have scouted for best ways of engaging the private sector in development discourse. Urbanization and failure of conventional methods of public sector financing of housing due to deficiencies in financing, management, operationalization and maintenance has put countries under pressure (Babatunde *et al.*, 2012; Akampurira *et al.*, 2008; Global Legal Group, 2007; Jin and Doloi, 2007).

Investments in housing and economic growth of a country have a strong correlation as evidenced throughout the world (Aschauer, 1989; Gramlich, 1994; Romp and de Hahn, 2005; Straub, 2008; and Egert *et al.*, 2009). Challenges facing public sector housing delivery can only be remedied through enhanced role of the private sector, through privatization, liberalization and application of public private partnerships (PPPs).

The Kenyan housing context and delivery strategies

Kenya has addressed shelter issues through various initiatives and interventions such as formulation of Sessional Paper No. 5 on Housing Policy of 1966/67; the National Strategy for Shelter to the year 2000; measures in successive National Development plans; Sessional Paper No 3 of 2004 on Housing Policy for Kenya, sessional paper no. 3 of 2016; and market re-engineering measures (2007), aimed at attracting investors to the provision of housing. Despite these interventions, Kenyan housing sector is still characterized by unaffordable housing supply, low levels of urban home ownership of about 16% and proliferation of inappropriate dwelling units like slums. It is currently estimated that 250,000 housing units are required annually, but only an estimated 50,000 are produced, of which 6,000 or 12% is dedicated to low income urban households. This inadequate supply of low income urban housing is due to: lack of housing infrastructure and under investment by stakeholders, hence need for paradigm shift in developing low income urban housing (Onyemachi *et al.*, 2015; World Bank, 2009; Republic of Kenya, 2007a, 2007b, 2007c; Miraftab, 2004; Pessoa, 2006; Klijn and Koppenjan, 2000).

Three major methods for housing delivery has been used in Kenya, with the first one being the private provision through commercial and banking institutions, which requires beneficiaries to have ability to repay the loans and provide collateral and guarantees (Ira and Claude, 2020; Wapwera *et al.*, 2011; Agbola *et al.*, 2007; Adenji, 2004). Secondly is through public sector led housing developments for the low-income groups and public servants housing schemes. This has been supplemented by utilization of income credits, site and service schemes, new housing constructions, provision of infrastructure and basic services and microcredit for housing improvement (Stein and Castillo, 2005; PM Global Infrastructure Inc., 2003; Centre for Urban Development Studies, 2001). Public housing schemes reduced from the 1960's due to the emerging theoretical and economic thinking, poor financing, poor maintenance of developed houses and social alienation of residents (Wapwera *et al.*, 2011; Agbola *et al.*, 2007; Adenji, 2004; ADB, 2004; Mayo and Shlomo, 1993).

The third source of housing financing is the informal financing sources (savings, informal loans, remittances from diaspora and sale of assets), which have been aided by the emergence of innovative financing options and growth of savings and cooperative societies. This leads to incremental housing supply (Wapwera *et al.*, 2011; Denis, 2011; Wa'el *et al.*, 2011; Agbola *et al.*, 2007; Stein and Castillo, 2005; Finkel, 2005; Mukhija, 2004; PM Global Infrastructure Inc., 2003; Centre for Urban Development Studies, 2001).

The housing challenges in Kenya can be attributed to inadequate financing from the public sector, hence high housing supply backlogs, leading to growth of slums and informal settlements, estimated to be 500 in number (Chege, 2017; Oxford Business Group, 2016; Republic of Kenya, 2015; Mkoji, 2014; National Housing Corporation, 2013). Under the Kenyan Medium-Term Plan (MTP II) of 2013 to 2017, only 6,667 housing units were directly developed through public funds, falling below the target to produce 200,000 units p.a. (Republic of Kenya, 2018; Kutana, 2017; Sheko *et al.*, 2015; Khakhi, 2009; Brown *et al.*, 2006). This is because the government invested shillings 4.5 billion for housing between 2009 and 2012, which could only develop 3,000 units despite the huge demand (AfDB, 2014; Kenya National Housing Survey, 2013; Ministry of Housing, 2012). Private players have cited inadequate access to land (45.9%), returns on investments (43.7%) and profitability (41.4%) as hindrances to effective housing development in the country (Kenya National Housing Survey, 2013).

Owing to these challenges, stakeholders have been pre-occupied with sourcing alternative strategies of cost-effective funding housing development and improvement beyond the public sector led programmes. It has been realized that this situation can only be remedied through enhanced participation of the private sector, which is not a new strategy, as the sector has traditionally been contracted to provide public services (Mohamed, 2017; Gopalan and Venkatarama, 2015; Muhammad and Ado, 2014; Brockerhoff, 2000; Pessoa *et al.*, 1998). The application of PPPs has been proposed as among the possible alternatives to the development of low-income urban housing because it uses the best of the public and private sectors (World Bank, 2017). Through PPPs, the private sector is stimulated through incentivization and creation of enabling environment for housing development (Whitehead, 2007; Brown *et al.*, 2006; Susilawati and Armitage, 2004). PPPs enables the leveraging of the public funds and assets alongside the private sector strengths (Kung'u, 2009; Brown *et al.*, 2006). PPPs enhances the leveraging of expertize, technologies, skills, managerial and capital resources in a collaborative and cooperative manner (UN Habitat, 2011a, 2011b; Moskalyk, 2008).

Rationale for the engagement of the private sector in housing financing

The global urbanization phenomenon has continued to grow such that 55% of the world's population or 4.2 billion persons were living in urban areas by 2018, a big change from 1950, where only 751 million people or 30% of the global population was urban. This population is projected to hit 68% urban and 32% rural by 2050, implying that the future of the world is urbanization, which comes with demands for service provision, a situation which requires concerted efforts to make urban areas livable as per the Shanghai declaration (2010) (UNDESA, 2019; Shanghai declaration, 2010).

African urbanization levels are the fastest in the world and its population is projected to reach 800 million people by 2025, 54% of which will be urban. The continent is 13% urbanized, with Nigeria being among the top three most urbanized countries in the world and it expected to add 189 million persons by 2050 (UNDESA, 2019). Currently, about two thirds of the African population lives in slums and informal settlements and it contributes 189 million slum dwellers between 2000 and 2014 (UNDESA, 2019; UN, 2018b; UN Habitat, 2011a, 2011b; Arimah, 2010), which puts considerable strain on the region's scarce resources (UN Habitat, 2011a, 2011b; Tibaijuka, 2010). Sub Saharan Africa (SSA) has trailed other regions in the world in the provision and delivery of quality and affordable housing infrastructure for a long time, creating an ever widening housing delivery gap, which heavily affects low income urban households (UN Habitat, 2011a, 2011b; AICD, 2009; Binde and Mayor, 2001; Pieterse, 2008).

Governments housing financing options have fallen since 1990's (UN Habitat, 2011a, 2011b; Jerome, 2009). The greater move towards enhanced participation of the private sector through application of PPPs is because of the increasing public policy shifts in service delivery and waves of technological changes in the world, which necessitates change of strategy in the housing delivery. There has also been growing appreciation of the linkages between application of incentive for greater private sector participation and resultant development, hence the acceptance of concepts such as "user pays" principles, which are central in innovative and sustainable infrastructure and housing financing (UN Habitat, 2011a, 2011b; Grimsey and Lewis, 2004).

These conceptual changes necessitated increased private sector participation in infrastructure designing, financing, development and construction, beginning with privatization principles, which infused competitiveness in service provision through the liberalization principles. This enabled private entities to jumpstart service delivery where public bodies performed poorly. The debts and monetary crises facing many countries in the 1980s, further pushed them to accept infrastructure financing alternatives, hence instituting reforms aimed at greater private sector participation in infrastructure financing through privatization, restructuring, enabling legislations and regulations. Liberalization principles introduced as a result of these reforms did not meet the expected outcomes because the public sector seemed disengaged, a situation which was disadvantageous to the poor. Application of PPPs, wherein both private and public players would actively participate in development programmes has, as gained broader acceptance. The Kenya Vision 2030 and the big Four Agenda for 2018-2022, have emphasized the need for sustained infrastructural investments in the country through a mix of strategies, including utilization of PPPs (UN Habitat, 2011a, 2011b; Kempe, 2010).

Kenyan private sector can be brought on board through PPPs to support the development of low-income urban housing, according to the African Development Bank Strategy paper for Kenya, AfDB (2012-2018). This is because the sector is well resourced for financing low income urban housing, as it contributes 97% of the GDP and 80% of the formal employment opportunities in the country and it is also a global phenomenon for increased role of private sector (AfDB, 2014; HLP, 2011; Bill Gates, 2011). PPPs enables countries to leverage little public resources in meeting their developmental needs; and ensures effective collaboration between stakeholders (UN Habitat, 2016; Guido and Sachs, 2015).

Definitions for public private partnerships

Ong'olo *et al.* (2006) defines PPPs as "...institutional relationships between the state and the private for-profit and/or the private not for profit sector, where the different public and private actors jointly participate in defining the objectives, the methods and the implementation of an agreement of cooperation. PPPs are a variation of privatization in which elements of a service previously run solely by the public sector are provided through a partnership between the government and one or more private sector companies. Unlike a full privatization scheme, in which the new venture is expected to function like any other private business, the government continues to participate in the same way; these schemes are sometimes referred in short as PPP or P3".

PPPs Reference Guide version 1.0 (World Bank, 2012), defines PPPs as "a long-term contract between a private party and a government agency, for providing a public asset or service, in which the party bears significant risk and management responsibility". According to the OECD, PPPs may be defined as an agreement involving the government and one or more private partners/players (including operators and financers); with the arrangement being such that the private partners deliver the agreed service in such a manner that the service delivery objectives of the government are aligned and therefore match or at least compensate the profit objectives of the private partners. The effectiveness of the alignment depends on a sufficient and careful transfer of risk to the private partners best able to handle them (OECD, 2008).

The PPP Act of Kenya 2013 defines PPPs as "a commercial transaction between a contracting authority and a private party where the private party performs a function of the contracting authority on behalf of the contracting authority, for a specified period of time and: acquires the use of state property, equipment or other resource of the contracting authority for purposes of executing the agreement; assumes substantial financial, technical and operational risks in connection with the performance of the function or the use of state property; and receives a benefit for performing the function through payment by the contracting authority or charges fees collected by the private party from users of the infrastructure or service or both" (Public Private Partnerships Act, 2013).

General and specific application of public private partnerships

According to the World Bank, 135 countries are actively using PPPs in diverse areas of their economies, of which 15 are in East Asia and Pacific region including Malaysia, China, Indonesia, Philippines, Singapore, Thailand and Vietnam; 21 are in Europe and Central Asia, including Russia, Turkey and Ukraine; 18 are from Latin America and the Caribbean countries including Brazil, Argentina, Mexico, Jamaica and Uruguay; 12 are in the Middle East and North African, which includes Algeria, Egypt, Iraq, Kuwait, Morocco, Saudi Arabia, Tunisia and EAE; Six are from South Asia such as India, Pakistan and Sri Lanka; 34 are from SSA, including Botswana, Ethiopia, Rwanda, South Africa, Zimbabwe, Tanzania, Ghana and Uganda; and 29 OECD countries such as, namely, Australia, Belgium, Chile, Denmark, Germany, Greece, Italy, Japan, Portugal, Poland, Spain, Sweden. In Europe application of PPPs began in the transportation and built-up areas, including in water supply sectors through user pays principles. This model was used in Australia and Malaysia (World Bank, 2018; Ong'olo, 2006).

In Africa, application of PPPs began only in the mid to late 1990s and to date, the model has been used mainly to make improvements to economic (physical) infrastructure, including in telecommunications, electricity and water, which later changed to include social infrastructure such as health, education, garbage collection and agricultural extension. South Africa has the greatest cumulative experience of applying PPPs in Africa, with over 50 partnerships and 300 projects between 1994 and 2005 (Ong'olo, 2006, SAILA, 2005). PPPs gained greater acceptance after 1980's because unlike privatization where governments lost control of development discourse and which faced challenged of inappropriate incentives and subsidy applications, and hence, political upheavals, alongside the security concerns on privatization of strategic assets, PPPs allowed governments to incorporate private sector financing and development of infrastructure without losing control, but playing the role of regulation and quality control (ACCA, 2012; Abdul, 2007; Gunawansa, 2000; Savas, 2000; Ford and Zussman 1997).

PPPs entails effective participation of government, markets and the private sectors in the provision of infrastructure hitherto provided solely by government (Moskalyk, 2008; Ong and Lenard, 2002; UN – HABITAT, 2006b; Jamali, 2004; Wallace *et al.*, 1998; Fallis and Murray, 1990). Therefore, the concept has been used to accelerate housing delivery in countries such as Egypt, India, Pakistan, South Africa (Payne, 1999), Malaysia (Ong and Lenard, 2002; Aziz and Hanif, 2005; Abd Aziz *et al.*, 2007), Brazil (Freut, 2002), the Philippines, Turkey, India and Canada (UN – HABITAT, 2006b), Nigeria (Ibem, 2011b,; Adegun and Taiwo, 2011) and Kenya (Otiso, 2003). This is because it entails sharing responsibilities, benefits and risks among the public and private forces to deliver public services, which is in line with enabling Markets to work strategy and the New Public Management theories (NPM) (Yamamoto, 2007; UN-HABITAT, 2006b; World Bank, 1993).

Kenyan context on public private partnerships application and rationale in low income urban housing

Kenya has for many years since the liberalization of the economy in 1994 used various private sector initiatives to develop its infrastructure and deliver services. It is budgets over the years has relied on the private sector and PPPs to be financed (Republic of Kenya, Budget Statement, 2019 and 2018). The PPP unit has prioritized 76 projects to be developed through PPPs in the next few years and this has been aided by well-established legal and institutional framework for PPPs application. Some of the laws and regulations which support this assertion are as follows:

Public Private Partnerships Policy (2011) provides a rationale for the application of PPPs in supplementing government's efforts of meetings its ambitious development goals under Kenya Vision 2030. Public Private Partnerships Act (2013) legalized private participation in the infrastructure financing, development, construction, operation and maintenance of infrastructure assets to serve the citizenry. Urban Areas and Cities Act (2011) provides for partnerships in provision of urban services. The County Governments Act (2012) provides mechanism for counties to use PPPs in their development. The Public Private Partnerships Regulations (2009) anchored the practice and use of PPPs in the country before commencement of other laws that were later developed on PPPs. The Public Private Partnerships Regulations (2014) operationalized the application of PPP Act 2013. Project Facilitation Fund Regulations (2017) enacted to provide technical support to contracting agencies.

Draft PPP amendment Bill (2017) included counties as contracting agencies for PPP in line with Public Procurement and Asset Disposal Act, 2015. Draft County PPP regulations (2015) is being developed to establish county level PPP institutions and structures. Draft PPP Petition Regulations (2015), have been proposed to deal with complaints on PPPs. Draft PPP Manual (2015) has developed PPP project templates and tools to guide the practitioners and governments desirous of applying the concept. National Land Policy of Kenya (2009) proposes application of joint ventures and PPPs for infrastructure development. National Housing Policy for Kenya (2016) recognizes the role of PPPs in mobilization of housing finance. Housing Bill (2016) provides for mobilization of resources for provision of housing development, including formation of National Housing Development Fund. National Urban Development Policy (2016) recognizes that PPPs will be the key thing in urban infrastructure financing.

PPPs have emerged as a strategy for crowding investments and expertize from the private players through enabling off balance project financing, where governments deliver services without burdening their balance sheets. PPPs has become the in thing in the development discourse and alternative financing, including down market urban housing. There has been realization that efficiencies can be attained by the public and private working together (International Institute for Sustainable Development (IISD), 2011; Botlhale, 2020; Colverson, 2011; Osbourne, 2000; United Nations, 2008). Application of PPPs in infrastructure is driven by the concept of public sector management reforms which includes NPM, whose major premise is the need to run governments such as businesses ventures; and the fiscal pressures that have engulfed public bodies, as the global financial crisis (AfDB, 2015; Ala Gore, 1993). The major motivations towards application of PPPs in the provision of low-income urban housing is that the private sector is more mobile and flexible than the public-sector in-service delivery. Public sector does not possess the skills and abilities needed for immense resource mobilization to undertake effective projects delivery, which the private sector has and the participation of the private sector lessens the overall government financial burdens without compromising on the quality and quantity of the infrastructure (Ghobadian *et al.*, 2004; Walker *et al.*, 1995).

The caveat is that there should be proper legal and regulatory environment and appropriate technical skills to manage PPP transactions and appropriate project design (National Council for Public –Private Partnerships, 2016; United Nations, 2008). PPPs application provides a balanced development mechanism, using the best of the partners in the provision of low income urban housing (Babatunde *et al.*, 2012; Elbing and Alfen, 2005); partners should fairly share all the resultant risks and rewards associated works (Department of Economic and Social Affairs, UN, 2016; Roman, 2015; Hodge and Greve, 2008).

Why are public private partnerships preferred than the traditional procurement methods?

PPPs comprise powerful delivery methods which if well-structured are able to mobilize capital and provide solutions to address complex challenges associated with the delivery of low-income urban housing in Kenya. If PPPs are well structured, designed and implemented, they become a powerful mechanism through which delivery of low-income urban housing can be implemented. It can lead to provision of quality and quantity housing more than can be achieved under the traditional approaches of procurement laden with inefficiencies and bureaucracies (Roman, 2015). PPPs is an alternative method of delivering low income urban housing and associated infrastructure because the traditional state led model of housing delivery has failed to deliver up to date results, due to financial constraints facing governments.

Application of PPPs enables the partnerships to be executed in a mutually agreed method where the partners use the strengths and abilities, hence a superior way of delivering such services compared to the traditional model of procurement, where there are no incentives for effective project development. It changes the role of the public sector from being providers of goods and services, to facilitators and enablers to private parties, who are increasingly assigned the roles of: designing, constructing, financing, operating and maintaining infrastructure (Achieng, 2010; Webb and Pulle, 2002). It leads to investments in strategic areas by the private players but allows the same to be owned by governments. It encourages specifications and standards in service delivery as conditions for payments, contrary to traditional procurement where payments are made once asset is developed without due regard to functionality (Achieng, 2010).

Four main reasons for adoption of PPPs includes: addressing debt constraints, by structuring PPPs in a way that prevents countries from accumulating bigger by using the private capital in financing developments. The motivation of the private party through incentives makes it to use innovative financing and project development strategies, because of the fact that it earns its revenue on service availability levels, which leads to cost effectiveness (Kuragu *et al.*, 2014; Grimsey and Lewis, 2004; Cheung *et al.*, 2009). PPPs enhances the utilization of expertize, better technologies, modern materials, managerial and innovative techniques from private players. These attributes enable project to be completed faster, on time and on budget. PPPs creates value for money in projects because of the need to deliver more profits to the project sponsors and investors, which makes the private party to avoid cost overruns and project delays, unlike public sector projects. The transfer of considerable risks to the private party motivates them to maximize public assets and deliver on time and budget (Walker and Smith, 1995, Li *et al.*, 2005; Nielsen, 1997; Trim, 2001; Chan *et al.*, 2006).

The maximum use of the public assets such as land through PPPs enables optimum utilization and generation of additional revenues without changing their ownership structures, which stimulates the local economy. This enables government to continue performing the oversight role as usual (Brookings, 2014; Chan *et al.*, 2006; Ankitoye *et al.*, 2003; Cheung *et al.*, 2010; Li *et al.*, 2005).

Challenges facing application of public private partnerships in developing low income urban housing in Kenya

The first is on the existence of differing Goals between public and private sectors, which can lead to different orientations on service delivery, hence mistrusts develops, which affects delivery of project objectives (UN Habitat, 2011a, 2011b; Moskalyk, 2008; Rosenau, 2000). Partners should develop common and shared objectives and more focus should be placed on the "incentive and accountability structure" in the contract (Moskalyk, 2008; Rosenau, 2000; Stiglitz and Wallsten, 1999). The public sector should be actively involved in the application of PPPs through regulations, setting of standards, transparency and accountability and creation of an enabling environment including part financing (UN Habitat, 2011a, 2011b; Corrigan *et al.*, 2005; Moskalyk, 2008; Rosenau,2000; Wallace *et al.*, 1998). The second challenge is public acceptability of PPPs financed projects, alongside political and democratic costs including loss in elections for parties which support such ventures, especially for the traditional urban sector services, like housing (UN Habitat, 2011a, 2011b; Boase, 2009; Moskalyk, 2008). Governments may need to keep the public informed throughout the project lifecycle to ensure the public buy in, hence, sustainability of PPP projects (Syracuse University, 2016; UN Habitat, 2011a, 2011b; Zhang, 2005; Corrigan *et al.*, 2005; Flinders, 2005).

The third challenge relates to capacity to implement low income urban housing projects through PPPs locally, hence adequate laws and skills development are necessary to overcome this (Syracuse University, 2016; Zhou, 2013; Wang *et al.*, 2012; UN Habitat, 2011a, 2011 b; Ho, 2006; Corbett and Smith, 2006; Li *et al.*, 2005). The public sector should, therefore, assess the capacity of institutions and sub national entities to use models such as PPPs for developing low income urban housing, alongside the creation of enabling environment, removal of obstacles and innovative financing and project delivery strategies (UN – HABITAT, 2011; Corrigan *et al.*, 2005). The fourth challenges relate to governance and sustainable development concerns arising from need to ensure projects comply with the wider environmental concerns and principles such as the Equator principles, which brings about sustainability (SDG's 2015; UN Habitat, 2011a, 2011b; International Institute for Sustainable Development (IISD), 2011; UNCECE, 2008; Corrigan *et al.*, 2005; UK department of Transport and Green PPP Guide, 2003; MDG's, 2000). The fifth challenge is attributed to the mechanism of financing PPPs for low income urban housing, due to limited global financing options, which restricts the financial flows to low income urban housing (Epstein, 2013; UN Habitat, 2011a, 2011b; Murphy, 2009).

Methodology

The study adopted the Delphi method of research to gauge and forecast the enhanced role of the private sector in low income urban housing through PPPs in Kenya. Delphi is a qualitative method used where extraction of opinions from experts and practitioners to arrive at an informed group consensus on a complex problem, like development of low-income urban housing through PPPs. The use of Delphi method for this study was based on the fact that even though PPPs have been used in the other sectors of the economy, it has not been used in developing low income urban housing programmes. Delphi method was used to gauge applicability of PPPs for low income urban housing in Kenya going forward (Donohoe and Needham, 2009; Linstone and Turoff, 1975; Ritchie and Goeldner, 1994; Veal, 1992; Moeller and Shafer, 1994; Weber and Ladkin, 2003; Duboff, 2007).

Delphi method uses expertize know how, opinions and judgement to forecast long term trends that affect the development of effective and adequate low-income urban housing through PPPs. The research opines that application of PPPs in the near and foreseeable future will lead to improved housing stock in the country; this will be possible if the underlying challenges in its application re addressed to ensure compliance to the Kenyan constitution 2010 (Somerville, 2008; Gordon, 1994; Linstone and Turoff, 1975). This study used experts involved in the housing policy formulation, housing financing and housing development, who were to give an informed judgement on the applicability of PPPs in developing low income urban housing. They were expected to make informed predictions on the chances of applying PPPs to address the housing backlogs (Erdener, 1994; Paliwada, 1983).

Delphi ensures that the communication and engagement process of the experts is structured in a group, which enables joint efforts in addressing complex research and policy challenges like the provision of the low-income urban housing in Kenya. The exercise enables experts to measure, test and evaluate their opinions and it ensures anonymity of experts (Rowe and Wright, 1999; Linstine and Turoff, 1975; Erdener, 1994). The three groups or panels were considered experts for the sake of this study because they have experiences on how housing can be developed and financed. Housing practitioners were drawn from the State Department for Housing and Urban Development and the Nairobi city county housing and urban development; The housing developers were drawn from the housing contractors and developers working in Nairobi, who were selected through the Kenya Property Developers Association KPDA; while the Housing financiers were drawn from the leading housing financing and mortgage lending banks identified through Kenya Bankers Association.

Strengths and weaknesses of the delphi method of inquiry

First, Delphi technique is best suited to explore issues that require sound judgement that elicits management decision on issues which do not have an immediate solution, example development of low-income urban housing. Experts on its supply were engaged through a series of iterations to make an informed decision as to whether the PPP model can work in addressing backlogs in the sector (Chitu and Suzanne, 2003; Theodore, 1994). Secondly, the method ensures that the experts remains anonymous, which reduces the dominance by specific individual experts, as happens in group discussions, thereby encouraging divergent opinions on effective ways of developing low income urban housing (Hsu and Sandford, 2007; Rowe and Wright, 1999; Dalkey, 1972). Thirdly, it ensures controlled feedback in the process of data collection and analysis, which reduces the effect of noise communication that might distort the quality of data gathered, hence solving the societal challenges like application of PPPs in developing low income urban housing (Hsu and Sandford, 2007; Dalkey, 1972).

Fourthly, Delphi uses statistical analysis techniques which further reduces the potential for group or peer pressure in seeking conformity with the general group opinions. This allows quantitative and qualitative analysis of responses, and hence further interpretation of data for informed predictions and judgements (Hsu and Sandford, 2007; Rowe and Wright, 1999; Dalkey, 1972). The first weakness of Delphi is that it is time consuming especially where there are large statements gathered from respondents, which requires lot of time to analyse, hence, weariness and tiredness; which might lead to respondents dropping from other rounds (Delbeq Van de Ven and Gustafson, 1975; Ludwig, 1994). It has tendency of undergoing sloppy execution through either poorly worded and ambiguous questionnaires or superficial analysis of the said questionnaires (Rowe and Wright, 1999; Linstone and Turoff, 1975). Deciding the level of consensus in the data analysis stage may have varying interpretations according to the researcher's point of view and content being sought (Hsu and Sandford, 2007).

Sampling frame

The choice of the sampling frame in Delphi is determined by nature, scope and importance of the study (Erdener, 1994). Delphi panels can vary as much as is possible and there is no agreement on what would constitute an appropriate panel for data collection (Somerville, 2008). This is shown in Clayton (1997), who opined that a Delphi panel of 15-30 persons is the ideal for a homogenous group of experts; Dalkey (1969) proposed that 15-20 respondents, while Ziglio and Adler (1996) proposed the utilization of 10-15 persons. On the other hand, Murray (1970) opined that 10-50 persons can be used, while Chitu and Suzanne (2003) preferred the use of responses from 3 panels of 10-18 members.

Another issues key to Delphi is the expertize possessed by the panels and as such, Securing and Muller (2008); Okwoli and Pawlowski (2004) and Martino (1983) pointed out that the expertize possessed by the potential respondents is the most important criteria why they may be used in the Delphi study. Further, Sackman (1975) and Wetly (1974), showed that high levels of expertize are not necessarily required to qualify to validate Delphi study results. The selection of the three panels was based on their experience on developing housing products from policy point of view (housing practitioner's/policymakers); housing financing point of view (housing financiers) and housing development and obstacles inherent in such a strategy (housing developers). This study used 3 panels of 25-30 persons per panel as proposed by Murray (1970), who provided that the panels can range from 10-50 respondents a group. Gordon (1994) concurred noting that Delphi panels of 15-35 respondents or within the range is perfect. Many studies have found no relationship between the panel size and effectiveness of data collected (Rowe and Wright, 1999).

The major statistics used in Delphi studies are measures of central tendency (means, median and mode) and level of dispersion (standard deviation and inter quartile range), which enables presentation of collective judgements of respondents (Dansoh *et al.*, 2014; Hsu and Sandford, 2007; Hasson *et al.*, 2000). Murray and Jarman (1987), proved that the mean is more practical when combined with standard deviation in making informed decisions and hence the study used measures of central tendencies, mean and the measures of dispersion to point out the level of consensus and agreement on the subject matter (Dansoh *et al.*, 2014). This study used 3 panels of 88 persons distributed as shown in Table 1.

Data collection procedures under delphi

It has been pointed out by Linstone and Turoff (2002); Securing and Muller (2008) and Okwoli and Pawlowski (2004) that ideally a Delphi study should be carried out till a level where no further insights or new discoveries emerges. In line with this finding, this research used 3 rounds Delphi process, which have been considered to be adequate in answering underlying issues in the applicability of PPPs in developing low income urban housing in Kenya. Questionnaires were administered to the respondents such at the first round, exploratory questions were asked, after which content analysis was done. The questions for second round Delphi were derived from answers in the first round, while the third round Delphi questions were derived from second round answers, after which mean and standard deviation values were computed to gauge the levels of consensus. Throughout the data collection process, minimum editing of responses took place (Hasson *et al.*, 2000; Pateman, 1998).

During each stage, data obtained was analysed and returned to the respondents to provide additional information or clarifications where necessary, which would also necessitate change or a re-affirmation of opinions. As application of Delphi method is based on the panelist achieving consensus and bearing in mind that there is no standard way to achieve it, most Delphi studies use mean and standard deviations to measure the level of agreements between the experts (Dansoh *et al.*, 2014; Somerville, 2008; Hasson *et al.*, 2000; Mitchel, 1991). Data was then presented in tables ranking the standard deviations and the mean values, after which further remarks on the importance of such scores as developed by Abdul Aziz (2010), in his study on housing private public partnerships: perspective from government agencies in Malaysia. The ranking and remarks obtained from the calculation of the means and standard deviation was arranged such that: 0.00-0.5 standard deviation was denoted in the remarks as "Highly important"; 0.51-0.7 was denoted as "Mild important"; 0.71-1.25 was denoted as "important"; 1.26-2.25 was assigned the remark of "Highly unimportant"; 2.26-3.00 assigned "Mild unimportant"; 3.00-4.00 was assigned as "unimportant". This arises from the fact that it is opinions which are being evaluated and decisions made based on the standpoints of panelists.

Findings

The main ways through which the role of the private sector can be enhanced in the development of low-income urban housing was based on seven variables established in the research, which dealt on: legal and institutional frameworks which have facilitated the application of the concept in financing infrastructure. It was found out that Kenya has a legal and institutional framework for the application of PPPs for developing low income urban housing. Six issues were identified with regard to the legal and institutional arrangements for the application of PPPs in low income urban housing. First, there was need to address bottlenecks which have been noted so far as various sectors tried to apply PPPs for infrastructure development, hence a realization that sensitization, shortening the approval process and other activities are required to actualize its application. Secondly, was the need to develop county governments specific PPP policies, while at the same time broadening the areas under which PPPs can be applied in the Kenyan economy.

Thirdly, the existing legal and institutional structures should address the challenge of housing commodification against the prevailing rationale that housing is a social good which should be provided only through public budget, this should be made by ensuring housing is made a proper tradable good and also ensuring social characteristics of the same is maintained. Fourthly, the laws and institutions should allow for application of innovative financing strategies such as unit trusts, shares, housing bonds and savings and cooperative societies. Fifth, there is need for formulation of laws which allows for capacity building for subnational entities to be able to enter into PPP arrangements. Sixth, it was found out that the current legal, regulatory and institutional environment should be amended to make it responsive to the evolving demands for application of PPPs in various sectors of the economy including low income urban housing, which can be done by removing bureaucracy and other inhibitors for the effective application, including diversifying applicable PPP

No.	Variable	Housing financiers	(%)	Housing developers	(%)	Housing practitioners	(%)
1	*Gender*						
	Male	28		20		28	
	Female	2		8		2	
Total		30	34.1	28	31.8	30	34.1

Source: Mutegi (2019)

Table1.
The composition of the 3 delphi panels

models. These ranked opinions on the laws and institutional arrangements for PPPs application are as provided in Table 2.

The panelists combined provided six major challenges facing he application of PPPs in low income urban housing programmes, namely, The first was the long periods taken to implement and deliver PPP projects, which has a bearing on how fast investors can recoup their investments. Secondly, there are inadequate laws, institutional frameworks and other enabling environment for the construction of low-income urban housing. Thirdly, was the likelihood of political interference in implementing PPPs for low income urban housing and attendant corruption, which may deny the actual beneficiaries the developed units. Fourthly, is the lack of a common shared vision and goal for the development of low-income urban housing through PPPs because stakeholders do not see the need and rationale for the development of such housing programmes to target low income urban households.

Fifth challenge is the inadequate knowledge on how PPPs operate and work in some sectors and how they can be structured to produce win-win situations, due to inadequate sensitization and education on the application of PPPs. Sixth challenge was lack of adequate serviced land with social and physical infrastructure, which slows down the construction of low-income urban housing, hence developers includes this cost in the final housing prices. These six challenges are highlighted in Table 3.

It was found out that there are two major opportunities which accrue to the public and private entities whenever they apply PPPs for low income urban housing. The first one is that the public sector can have a greater access of finance, capital and higher resource mobilization and access than the traditional financing and development process because the private sector has a wide range of sources for capital including raising debts and loans from local and international organizations without having to go through complicated approval process. Under PPPs, the private developers bring new and effective technology, efficiency and effectiveness in the construction and development of housing. Private developers have the ability to maximize on the assets and human resources possessed by the public agencies and hence bring more value for money to the government and citizens who benefit from down market urban housing, the process of developing down market urban housing becomes more transparent, reduces corruption, and hence increases more accountability in the overall project delivery matrix. The government apportions bigger risks to the developers and concentrate on the project monitoring and evaluation which are less risky and hence within the realm of the public sector.

Under PPPs, projects are delivered on time and on budget hence, the residents get new housing units and also the government increases its housing stock over time, which are

S/no	Opinion on current legal and institutional framework for PPPs application	Mean	SD	Rank	Remarks
1	Address bottlenecks in application of PPPs	1.95	0.28	1	Highly important
2	Develop county government specific PPPs policies and broaden areas of their applicability	1.43	0.29	2	Highly important
3	There is need to address housing commodification	1.82	0.31	3	Highly important
4	Use innovative financing strategies-unit trusts, shares, bonds	1.24	0.35	4	Highly important
5	Build the capacity of counties on PPPs application	1.25	0.35	4	Highly important
6	Amended current PPP laws and regulations, enact new ones	1.76	0.66	6	Mild important

Source: Mutegi (2019)

Table 2. Opinion on the current legal and institutional frameworks in regards to PPPs application

developed without a strain in its budget, which enables it to concentrate on other core activities not attractive to private developers. In a PPP arrangement, the developers get access to business opportunities, access long term projects which guarantee them a steady source of income over a long period, which further creates good corporate image for participating private entities.

The second major opportunity is the fact that the targeted beneficiaries can leverage their labour as sweat equity, which reduces the final housing unit's costs, which also can be done through cooperative and savings societies. The likely benefits in applying PPPs for down market urban housing are highlighted in Table 4.

Discussion

Kenya has adequate enabling environment (legal and institutional) for the application of PPPs for low income urban housing, including the necessary experience and tradition of using private sector to deliver projects. The laws should be amended in some cases to allow for greater application of incentives and utilization of innovative financing strategies such as unit trusts, pension funds, housing bonds and cooperative and savings societies models of raising financing and guaranteeing uptake. There should be adequate sensitization, capacity building and shortening the PPP approval process to make the model attractive to stakeholders and development of county specific PPP policies and broadening PPPs applicable areas as spearheaded by the national government.

Application of PPPs faces many challenges such as the long periods taken to implement and deliver PPP projects; inadequate laws, institutional frameworks; likelihood of political interference in implementing PPPs for low income urban housing and attendant corruption;

S/no	Challenges facing application of PPPs	Mean	SD	Rank	Remarks
1	Long periods for project implementation and RoI	1.53	0.25	1	Highly important
2	Inadequate enabling environment-legal, institutional	1.41	0.29	2	Highly important
3	Political interference, corruption and low resource mobilization	1.36	0.30	3	Highly important
4	Lack of a commonly shared vision and goals	1.32	0.31	4	Highly important
5	Inadequate knowledge and sensitization on PPPs	1.16	0.37	5	Highly important
6	Lack of serviced land and housing infrastructure	1.13	0.38	6	Highly important

Source: Mutegi (2019)

Table 3. Combined challenges in the application of low-income urban housing PPPs

S/no	Rationale for PPPs to stakeholders	Mean	SD	Rank	Remarks
1	To the Public: Ease of access of Capital, resource mobilization skills; technology, efficiency, effectiveness, value for money, transparency, accountability, risk management skills, projects delivered on time and budget;	1.1	0.38	1	Highly important
2	To the private players, namely, more job opportunities, long term contracts, hence, stable income, social responsibility and high profitability	1.1	0.38	1	Highly important
3	Targeted project beneficiaries can leverage on their labour and land	1.86	0.76	2	important

Source: Mutegi (2019)

Table 4. the Benefits which arise from PPPs to public and private players

lack of a common shared vision and goal for the development of low income urban housing through PPPs; inadequate knowledge on how PPPs operate and work in some sectors and how they can be structured to produce win-win situations; lack of adequate serviced land with social and physical infrastructure. Despite these constraints, PPPs have many opportunities, namely, It enables the public sector to access greater financing, capital, higher resource mobilization and modern project financing opportunities, technology, effectiveness and efficiency in resource utilization because the private sector has a wide range of sources for capital including raising debts and loans from local and international organizations. This enables projects to be delivered on time and budget simply because the private sector is motivated and incentivized to develop the asset faster and as per schedule.

Private developers in a PPP projects have advantages too which makes the model attractive to them, including the fact that they get access to stable and long-term business opportunities, which guarantees a steady source of income over a long period and which are relatively risk free in nature. Private developers participating developing low income urban projects through PPPs create a good corporate image, which may open up more opportunities for developers.

The findings and discussions herein have pointed to the fact that the National and county governments should embrace the application of PPPs in the provision of low-income urban housing. More research should be undertaken on the applicability of PPPs in the social sectors like housing and identify the incentive structure for such ventures. The implication for research for this paper is to advance the idea that PPPs, can be applied in social sectors like low income urban housing as forecasted in the study.

Conclusion

PPPs have been proved to be one of the plausible ways through which low income urban housing in Kenya can be developed to address the huge shortage because private sector can partner with the government to bridge the housing supply gap through PPPs. This is because the country has the right legal and institutional environment for its application, even where constraints exists, they can be addressed through legislations, increased stakeholders' awareness and increased role for the private sector, who brings more resources, innovation, greater risk absorption and maximization, efficiency and effective utilization of scarce assets and experience in delivery of infrastructure projects.

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