

The role of PPPs in creating sustainable cities - Lessons for cities in Sub-Saharan Africa

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Abstract

Cities remain an anchor for society. As cities emerge, they fascinate and inspire generations. Existing literature reveals that the term “cities” resonates with opportunities that are increasing difficult to meet with reducing central transfers. Based on a review of literature, this study reveals while central transfers have caused administrative financial distress and messy cities. Existing literature reveals that while PPPs have been adopted among cities in the developed world, adoption in Sub-Saharan Africa (SSA) has been slim despite dire need for escalating service alongside the passing of PPP Policy, legal and regulatory framework with immense literature pointing to capacity gaps. Based on a systematic review of literature this study provides lessons that can guide the applicability of PPPs in cities in SSA. The outcome of this paper is relevant because it adds to knowledge necessary to deliver services through PPPs in Sub-Saharan Africa (SSA), the application of PPPs can enable cities in remaining relevant to their dwellers and visitors while resolving to some extent administrative financial stress that characterises cities in the developing world.

Keywords: *Cities, Public Private Partnerships, private not-for-profit, private-for-profit.*

1. Introduction

The investigation of how cities emerge and transform, continues to fascinate and inspire. While some governments seek to reinvent cities, others are pondering of ways to sustain them. Other governments across the globe have ventured into creating new cities. In Uganda, seven (7) new cities have been rolled out as at 1st July 2020. In Rwanda, preparations are ongoing for creation of new cities. In countries like South Africa, Burundi, Zimbabwe, multiple cities existed but quite distressed in delivering service. Society expects that cities are designed to be smart and eco-friendly taking advantage of all their unique features and qualities [23]. This study conceptualises the idea that city planning management is about strengthening a city's capacity to respond to change. The study argues that, increasing organic revenue to meet demands of cities is unsustainable. As such, we assert that a city of required urban atmosphere needs new approaches such as public private partnerships to thrive as sustainable cities. While other approaches like Municipal or city bonds exist in the developed world, developing countries such as Uganda have not developed neither provided such bonds on the market's menu. In this context, PPPs have emerged as one of the delivery options that cities can embrace [60].

Recent studies view cities as a dominant force in any nation's economic growth and development journey across the world [39]. To illustrate, three largest cities in China occupy only 5% of land but are responsible for 40% of GDP. While in countries like Uganda, the Capital City of Kampala is associated with 60% contribution of GDP [18]. The opportunities have attracted population densities that have overstretched service delivery capacity in some cities. This has resulted into: congested schools; traffic jams; road nuisances such as hawking activity; unmanaged waste and slums. Existing literature indicates that to become a city that is liveable and cherished by dwellers, a city must offer services that are in tandem with the size and needs of the urban dwellers [04; 33]. Such services include: electricity, healthcare, jobs, access to basic resources, adequate housing, sanitation and opportunities. Notwithstanding, public safety and responses to climatic changes are required deliverables of city administrators [39].

Cities display have throughout history been known as centres of excellence for: education; politics; commerce [22,05,48] healthcare; housing; mobility; green spaces; leisure; innovation; entrepreneurship; innovation; business; commerce social services; culture and industry [33]. They are centres of productive jobs which do not arise by mistake but rather by well-designed urban systems [20]. Further to this, they are viewed as places for showcasing gigantism and passion [39]. According to the United Nations cities are assets as they provide solutions and act as drivers of economic and social development [58]. A city is deemed to be the nation's connector to the outside world, a status provided by its technology, transportation, telecommunication systems [58].

A city is further acknowledged to be the biggest market in any given country for goods and services while at the same act as the core centre for employment, jobs and livelihoods [33]. Empirical studies by [33] indicates that cities play an important role in growing Gross Domestic Product (GDP), noting that cities tend to be

associated with greater output per capita than other areas. Green energy, green spaces and natural habitats are requisites for cities and must be highly competitive for international capital and that their enterprises must be highly competitive in trade. Successful cities are characterized by ability to provide personal security, prosperity defined in great jobs and wealth, equity in terms of investment, entrepreneurship, hard work and openness to the world economy, sustainability, nature earth, liberty in terms of freedoms of conceivability and democracy, where needs of city dwellers and citizens at large are listened to and incorporated in the city's planning [04].

Cities and municipalities have financed their development using traditional approaches using traditional financial instruments meet their development agenda [35]. These have included fees and charges (congestion charges, parking fees, high occupancy toll lane, building permits, utility tariffs and fees and electricity user fees), grants (general grants with environmental indicators, specific grants for environmental goods and services, matching grants), land based income (development charges/impact fees, value capture, higher density building rights, loans and green bonds, carbon finance (clean development mechanism or joint implementation, voluntary carbon offsets).

An estimated 3 million people move to cities every week. By 2050, city dwellers are expected to outnumber their rural counterparts by a ratio of 2:1. Saddled with legacy infrastructure and limited budgets, many urban areas are struggling to keep pace with such rapid growth. The result is increased congestion, reduced quality of life, lost economic potential, and negative health outcomes [17]. While budgets of cities and local government administration were traditionally adequate, they are now constrained while at times underfunded due to rising dwellers by night but more importantly rise of numbers of dwellers during the day [33]. As municipality and city populations increase, new demands for transport, healthcare, social amenities like parks, golf courses, markets, tourism, sports and sporting, facilities, decent accommodation, education. Cities must be energetic, full of inspiration and remain a habitat for enthusiastic communities of nationals and diverse communities [04].

Amidst this context, cities find it difficult to provide necessary character and services for city dwellers and visitors, thus derailing the achievement of UN SDG 11: Sustainable Cities and Communities. To reduce pressure on existing financing available to cities, has come the adoption of blended financing option, public private partnerships (PPPs). Cities around the world are increasingly looking to implement initiatives that respond to these challenges. Just 16 percent of cities are able to self-fund required infrastructure projects. As a result, cities are enlisting the support of private and non-profit partners to advance their smart city agendas [17]. Public Private Partnerships in the SMART sector as argued in this study, differ from traditional PPPs and deserve particular attention for several reasons. PPPs for SMART projects often represent small-scale projects involving technological infrastructure and solutions rather than large-scale physical infrastructure. In fact, SMART PPPs often build on conventional PPPs, adding a SMART technology element

to infrastructure projects. For these reasons, they are sometimes less visible and tangible for the final user [55]. This study sets out to answer three distinct research questions namely: What sectors are PPPs implemented in cities? What are the PPP models implemented across sectors in cities? and; What are the critical success factors for PPPs uptake in cities?

2. Public private partnerships

Globally, the term PPPs in government circles has been adopted to refer to collaborations between the government and private sector coproduction and delivery of public services [42;49]. PPPs can be defined as an arrangement that “is created when a government agency enters into a long-term (typically 25- to 50-year) concession agreement with a project-based legal entity called a special purpose vehicle (SPV), under which the SPV has the right and obligation to finance, design, build, operate and maintain a facility (or some subset of these roles) in accordance with contractually specified performance standards.” [39]. PPPs have also been defined as a procurement method that is feasible for specialized infrastructure [53] projects, confirming earlier studies that argue PPPs as a procurement method for large risky public infrastructure works [15].

During the same period, studies by [32; 30 and 57] affirm the view that PPPs have been implemented as a procurement strategy for large public sector projects. Others suggest that PPPs a mere BOOT contracting strategy. Inconsistent with this view [45] argue that PPPs differ from procurement in way that PPPs carefully involve the identification and allocation of risks to parties that are well suited to manage the risks. In other studies, it has been argued that PPPs have been adopted as a sourcing method for transport infrastructure [55]. While other scholars too define PPPs as “the integrated risk-sharing agreements that hold both public and private partners to account for the project’s success” [59; 260]. This view has been re-echoed by [41] that acknowledges that public infrastructure such as roads have been procured through PPPs. While some distinction exists, a review of existing literature we can deduce that PPPs are a strategic procurement method that is adopted for complex, high value needs where the private sector provides financing unlike other methods of procurement where the state provides financing.

Within cities, PPPs have supported administrators to improve provision of facilities, goods and services such as transport, water, waste management. Most PPP contracts have provided value for money and have helped to solve serious problems of coverage and quality of service both in the developed and developing world [31]. However, some outcomes have been problematic, with failures in many PPP contracts, including breakdowns and early termination of contracts. In fact, most PPP contracts are renegotiated. In a study for Latin America (sample of 1,000 contracts), it was also discovered that 75 per cent of the water concession contracts were renegotiated on average 1.6 years after their signature [34]. Under this circumstance there is bilateral bargaining to restore a mutually acceptable situation for the parties, which undermines the legitimacy of the original contract award.

Nonetheless, it is PPPs and Procurement are and continue to remain cousins. The two terms are intangible. Coexistence of the coexistence of PPPs and procurement are recognized in recent studies [65; 66; 10; 63; 44 and 67]. In addition, it is argued that while PPPs have been implemented across a diverse sector the concept has been applied in urban renewal [68].

Other studies indicate that improvements in public utilities infrastructure (water, roads, electricity, telecommunications, ports, airports) are a necessary condition for enhanced economic performance and poverty reduction [49]. As new cities emerge, this situation posits cities as a lab for trials and accommodation of errors. However, we argue that by learning lessons from existing adoption of PPPs in cities and urban places, nations reinvent and start new liveable and vibrant cities with limited expensive redesigns and reworks.

It is further opined most cities are characterized with high population densities. Such densities expose cities to nuisances such as traffic jams, development of slums [12]. To manage these jams and lost time by city dwellers, cities have developed transit systems manned by buses under bus rapid transport systems, or light train service. Due to budgetary deficits, cities have privatized metros to private investors driven by the need to tap into private finance while seeking for efficient and effective managerial economies. [12] argues that PPPs models have been applied in cities such as Beijing, Shenzhen, and Hangzhou have applied PPP models with operations of PPP lines contracted to private companies. While PPP models have been applied, benefits of this initiative marketisation however, hasn't helped. While it is acknowledged that that metros in Tokyo and Hong Kong have operated with some profits, transit rail systems run on operational deficit [12].

East Asian cities (and countries) differ from most western cities (and countries) in size of metropolitan areas and population densities. The capital and large cities of East Asia typically have populations well above 5 million, high population densities, motor vehicle restriction measures in place, and high proportion of trips made by public transport. Public transport mode shares in Hong Kong, Singapore, Seoul and Tokyo are in excess of 50 percent [69]. These characteristics are favourable for large scale urban rail developments, in particular heavy metro development. Mega populations and high train densities have several implications for urban rail transit operations. In this section, we discuss three distinctive features of East Asian urban rail transit that differentiate them from those in most U.S. and European cities, viz., high fare box recovery, successful land value capture, and vertical structure of urban rail transit companies.

3. PPP experiences in the cities in different parts of the world

While existing literature provides some empirical evidences on the benefits of PPPs from developed country perspectives [37], literature on evidences of successful toll concession PPP projects in the roads sector of many cities in developing countries remain scanty and unfound despite uptake of PPP projects in many countries that has lasted over a decade. This section reviews literature of some of the PPP projects seen across the world. For instance, in North America, the

government of Canada has adopted a number of PPP Projects to improve infrastructure in her cities such as Ontario where a 30-year Design Build Finance Maintain contract for the ministry of justice has been undertaken [70]. It should however be noted that there have been a number of problems with PPP projects in the major cities of United States. In California for instance, State Route (SR) 91 in Orange County was a privately financed project that built additional electronic variable toll lanes along the existing SR 91 highway route in the cities of Los Angeles, San Francisco and San Jose. However, economic growth in the area led to growing congestion on surrounding highways [71].

For South America, in 2016, there were a total of 13 hospitals in operation under the PPP model, located in Brazil, Chile, Colombia, Mexico and Peru [72] PPPs have also been used in courts and courthouses, administrative centres, police stations, town halls or sports stadiums throughout Latin America [73].

With Europe, some PPPs in the cities of the Netherlands have provided disappointing results [26]. However, despite not meeting expectations, some PPPs in public transport are acknowledged to have delivered to expectations such as the A59 motorway between the cities of Geffen and Oss, high speed train that link between Belgium border and Amsterdam under the BOOT Concession. Similar events of disappointment in urban toll concession PPP projects in the roads sector have been reported in many of the European cities. The UK has got more experience in the use of PPPs to refurbish, develop and maintain infrastructure in different sectors such as railways, roads, water, sanitation, education and health sectors in her major cities of London, Manchester, Edenbough, Glassgow, Liverpool, Dublin, Bermingham and black pool than any other country in Europe [2].

In 1992, the UK government passed a legislation to promote the application of Private Finance Initiative (PFI) PPP model, and with the accomplishment of a batch highway infrastructure projects, authority and scholars in England summarized the new progress and experience of PFI. As of March 2016, there were 716 PPP projects in the UK with a capital value of £59.4 billion. The four largest sectors for PPP projects were the health sector, with a value of approximately £13 billion, followed by defence and education at £9.5 billion and £8.6 billion, respectively. The transport sector had £7.8 billion of PPP activity [71]. The cost of capital for the first 12 hospitals made with PFI is about 1.2 billion euros and when the projects are evaluated over the life span of 30 years, the cost to the state is about 6 billion euros. In Asia and Pacific region, China's PPPs which are mostly Build Operate Transfer (BOT), are used in sewerage treatment through local governments granting concession contracts to the private sector. A new list of PPP projects involving 320.7 billion US dollars of total investment selected from a total of 2053 projects submitted by local governments was introduced in September 2016, as part of the country's efforts to promote investment amid an economic downturn [62].

It has been argued that China Public Private Partnerships Centre under the Ministry of Finance (MoF) announced that a total of 11 260 PPP-funded projects were registered, 1351 projects of which were signed with a combined investment of 2.2 trillion Yuan, by the end of 2016[62:2]. The country boasts many other large scale PPP projects that are already in existence. Australia has a long history of PPPs.

Cases include the Cross City Tunnel toll concession PPP project in the roads sector connecting the cities of Sydney, Melbourne and Perth went into receivership in 2006 with debts amounting to \$570 million has continued to be constrained by refinancing constraints. Perth Airport is run by a private company financed mostly by superannuation funds, including being owned by a subsidiary of the Australian Government's Future Fund. It is reported that most territories in Australia use the Build Own Operate Transfer (BOOT) model to do away with constraints associated with budget financing because fewer public funds are used when implementing PPPs projects in the roads sector. Accordingly, it has been recognised that in such context the bulk of the funds come from the private sector in countries like Kenya [74].

The first PPP project in Australia was the Harbour Tunnel in Sydney. Construction began in 1987, and operation started five years later at a cost of US\$749 million. Others include the Melbourne 14-mile toll way [71:23]. In West Africa, the energy sector and road sector especially in her major cities of Lagos, Abuja, Ibadan, Port Harcourt, Kano and Kaduna have been earmarked as fundamental areas for economic growth and development of Nigeria and this is being done through [1: iii]. The Victoria Island –Epe Express toll road commonly known as “Lekki Expressway” is critiqued to have failed as a toll concession PPP projects in the roads sector due to lack of stakeholder engagement and approval [75]. Ghana endorsed the Infrastructure Investment Fund Bill [75]. This is because Ghana looks at PPPs as a financing mechanism for implementing a number of infrastructural projects in the roads sector. Such PPPs are aimed at providing improved public services to the people especially in the transport, energy, housing, water, sanitation and education sectors [75].

In southern Africa, South Africa has more than 50 PPP projects being implemented at provincial level. The majority of them are in Gauteng province and 300 PPPs at municipal level especially in the urban centres of Johannesburg, Pretoria, Cape Town, Durban, East London and Port Elizabeth [77:89]. These include a 30-year Maputo Development Corridor BOT contract between South Africa and Mozambique [78] and a high-speed rail known as the Gautrain [76].

In Botswana, PPP projects include road and physical infrastructure among others. The East African experience shows that PPPs have been implemented in the road sector in Kampala-Uganda, Rwanda, Juba, Bujumbura, Nairobi, Dar es Salam, Dodoma and Arusha. A spike in interest of concession PPP Projects has been witnessed in this region [1]. Other areas that have attracted private investment have included street parking [40]. PPP projects in the water and sanitation sector have been implemented in West Africa and Rwanda.

Much as toll roads are deemed to be strategic assets, they are now either being handed over to the private sector in full (BOT) green PPP or partial (Equity share with state), lease (brownfield approach) or divestitures (sale of or part of assets). In Kenya, PPP projects have included the: Airport Cargo Terminal of the Jomo Kenyatta International airport and; the Grain Terminal of Mombasa port can be seen in major cities of Nairobi; technological advancement and transfer in major cities of Kisumu; Mumbasa, Nyeri, Magadi, Naivasha and Nakuru.

The major highways that have so far been constructed in the Kenyan cities using PPP contractual arrangements include Nairobi-Mombasa road, the second Nyali Bridge, Nairobi Southern Bypass, Nairobi-Nakuru-Mau Summit, and Nairobi-Thika 12 lane road. The popular PPP models used in Kenya have for instance in the road infrastructure have included; Lease Renovate Operate Transfer (LROT), Build Own Operate Remove (BOOR), Build Lease Transfer (BLT), Build Operate Transfer (BOT), Design Construct Manage Finance (DCMF), and Build Own Operate (BOO) (74:20). In 2016, Kenya used a leasing PPP model to implement an agro based project that was focusing on improving food security and nutrition in the country. This was a grain warehouse under the auspices of the warehouse receipt system. A review of literature shows that a few studies on PPPs in Tanzania have been carried out. Most studies focus mainly on management solid waste [79:18]; health service delivery in Dodoma, [8:11] [80] urban waste management in Dar es Salaam, [82:6] and [83:5]. Other PPPs executed have included the concession contract of TICTS container terminal of Dar es Salaam Port in 2000 and the concession contract of the central railway corridor with some private companies in 2007 [84:5]. In fact, there was a PPP arrangement in form of a power purchase agreement involving the Tanzania Electricity Service Company (TANESCO) and Independent Power Tanzania Limited (IPTL).

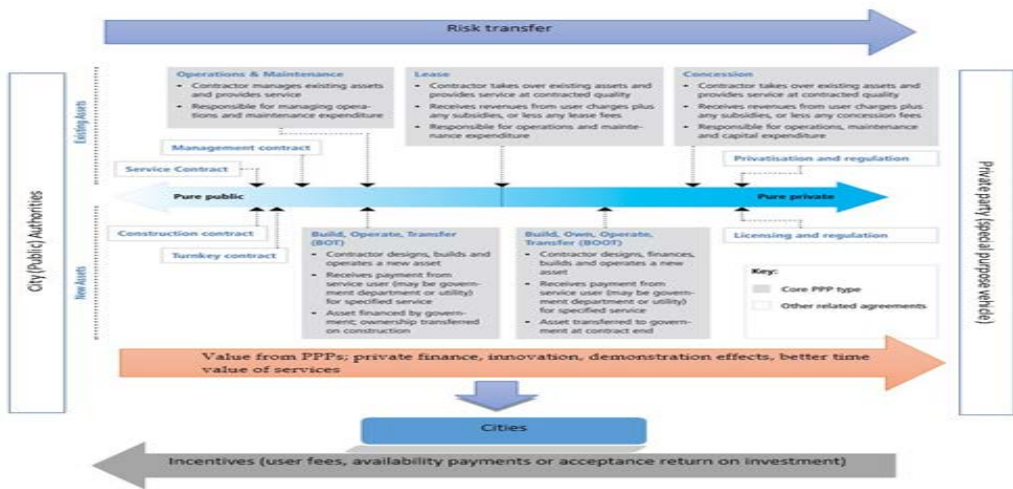


Fig. 1. PPPs and Cities Framework

Source: PPIAF Note 1: PPP Basics and Principles of PPP Framework and modification by authors (2020)

In figure 1, we conceptualize PPPs and cities. The study argues that city authorities usually transfer risk associated with public service delivery such as cost of capital, construction, operation and maintenance risks to the private party, usually known as the special purpose vehicle. In return for acceptance of risk and associated roles, the special purpose vehicle is incentivized through receiving user fees, or availability payment from the city authorities. Availability payment are

conceptualized in line with works of that defines such payments as payments made to the private party for availing a functional asset or service for use by citizens. In reciprocity, PPPs provide value in terms of demonstration effects, private finance, early delivery of services to citizens' innovation.

4. Methodology

As one primary aim was to elucidate the understanding of PPPs and their application in cities on the move to become smart cities. To achieve this objective, the study adopted the study adopted an exploratory design. It has been argued by existing studies that exploratory studies do not provide an understanding of the present and future predications but provide a historical perspective that helps to understand why the current matters are shade and defined they way they are perceived [50]. For collecting data, the main source was review of documentation that included peer reviewed articles. We used Google scholar search engine to search for articles using search words, public private partnerships in municipalities and cities, PPPs in smart cities and PPPs across sectors. Through the search over 1000 articles appeared. We read abstracts and applied delimitation based on search words public private partnerships, cities, public private partnerships and cities, exploratory research methodology. Earlier and similar studies on PPPs such as [56; 6; 85; 26; 86 and 87] and [88] have adopted a methods and materials design. Overall, 100 papers were selected and reviewed under this study.

5. Models of PPPs across city sectors

PPP Models refer to contracting types used in design of public private partnerships. Existing literature indicates that the adoption of PPP models in cities across the world has been increasing and varying. The Build Operate Transfer has been a popular model [29]. Earlier empirical studies by [67] reveal that under BOT, the government grants a concession right to a private company to construct and provide efficient management of public infrastructure. The BOT model aims at increasing the contribution share of the private sector in infrastructure investment, to relieve the burden of public finance, increase efficiency in the presentation of service while giving firms, who invest in developing countries, the opportunity to transfer their technological infrastructure and experience [89].

Financial and economic aspects have been pular in the evaluation of BOT projects [89]. However, BOT have been largely critiqued for breach of social guards such as environmental and failure by government to provide compensatory trade off benefits in form of reverting foregone expenditure to social sectors like health and education [67]. While studies have acknowledged inconsistency with the application of the model in some sectors as mentioned by [67]), other studies have associated the model with toll road projects [58].

Further to this, there are studies that have been conducted on the application of BOT models in projects such as energy [32; 39]. While PPP models have been associated with challenges, uniquely the BOT model has been faced land acquisition

challenge major challenge asset acquisition [67; 39; 32]. The challenge has majorly been attributed to unfavourable land laws that provide absolute ownership of land by individuals other than the state.

By acknowledging such context, and making BOT PPP attractive to investors studies recommend that government entities should own land acquisition risks and review their land laws to reduce exposure to delayed land acquisition risk that has spiral effects in construction and project completion time. The reasoning is that the government and public entity have power to dictate or issue bylaws that can improve the ease of land acquisition.

Franchising has remained a popular PPP model for delivery of public services in cities. Under franchising PPP arrangement, it is argued that city authorities or public entity, leases equipment to the private party to produce and deliver service while placing direct charges user fees on consumers of services produced [90;91]. The concept has been popular in implementing solid and waste management [7]. In healthcare, franchising PPPs have been implemented in companionship with NGOs to increase to achieve to increase access, affordability and effective health service delivery [90]. Citing Lekki-Epe highway in Lagos-Nigeria, franchising PPP has also been applied in management of toll roads [3]. Other sectors that have evidenced increased uptake in franchise PPPs have involved accommodation.

While the transport and housing sector have received increased uptake of franchising PPPs, success has been limited on a case-to-case basis [7]. The major challenges faced in the implementation of franchise PPP have been majorly the failure to accommodate the interests of the vulnerable and poor in the design of infrastructure and fares charged to access both highway mobility and accommodation units. The assumption is based on the principal agency theory that presupposes that PPP parties come into contact with different objectives [41; 39]. By failing to cater for the poor and most vulnerable, franchise PPP have faced user revolts, abandonment and political risks, affecting the health and objectives of PPPs [3]. The private party seeks to maximize profit while the public entity seeks to offer services to citizens or city dwellers by day and night, calling for the need to provide either subsidies or alternatives for the poor.

6. Discussion

6.1 Where can PPPs be applied in City's administration?

To establish sectors in which PPPs are applied in cities we reviewed literature and official documents of the World Bank, Country Reports. Based on the reviews of existing studies, literature indicates that PPPs can be implemented across a range of sectors.

Table 1. PPP types in Cities by sector

AUTHOR	SECTOR	SUBSECTOR	CITY/ COUNTRY	TYPE OF PPPs
	Water	Piped water		
[8]	Sanitation and Hygiene	Waste management	Jakarta	out-sourcing of routine repairs, billing and payment collection by Jakarta's water supply utility,
[7]	Sanitation and Hygiene	Waste management	Ghana	franchising, contracting-out, open competition, sub-contracting and leasing
[8],[41]	Transport	Toll Roads	Jakarta	BOOT
[39]	Electricity	Generation, Transmission and Distribution of electricity	Kampala	BOOT
[89],[92],[93]	Housing	Accommodation	Dar el Salam and Botswana,	BOT
[94],[95],[96],[97],[98] [13]	Transport	General	General	BOT
94],[95],[96],[97],[98] [13]	Transport	General	General	BOT
94],[95],[96],[97],[98] [13]	Transport	General	General	BOT
94],[95],[96],[97],[98] [13]	Transport	General	General	BOT
[9]	Solid waste management	Waste Management		
[99]	Conservation of Tourism, heritage sites and historical urban environments	Nottingham Lace Market, Nottingham, UK	Nottingham City	BOT

From table 2, it is acknowledged that the adoption and types of PPPs in cities have been diverse. Most PPPs in cities have been in the transport sector. This could be attributed to the history of PPPs in general. From a trace, studies by [68] have linked the transport sector as the first most popular sector for PPP adoption. The analysis also indicates that urban centres like cities follow different models in terms of the degree of public and private-sector involvement in the provision of such city services. However, some patterns hold across the range of city contexts. From the highlight in the table 2, [100] the water and electricity are reported as one of the sectors that as area where the private sector and NGOs has been engaged to delivery of public services to city dwellers in Tanzania. In the water sector, concessions have been structured for piping, maintaining and charging user fees for water consumed by residents. While in waste management PPPs have been adopted in managing waste plants with availability payments constituting the remuneration structure.

According to [7] there has been a significant growth in the generation of urban solid waste, doubling or tripling the amounts in some cities. In addition to the increase in the number of tons generated, the typology and composition of the waste has also changed. Until recently, organic compounds predominated, but now more toxic waste that is difficult to eliminate has gained prevalence as a direct consequence of the region's development, which has led to a growth in the consumption of more industrialized and artificial products. Traditionally solid waste collection and treatment is, overall, the municipality's responsibility. It is Small and medium-sized cities normally pay for these operations from their own funds and generally have relatively low service levels (only 70% of the population has access to waste collection services). On the other hand, larger and more important cities are using concessions and contracts with the private sector ever more frequently, achieving higher coverage levels, but neglecting, as in the rest of public services, the most marginal neighbourhoods and informal settlements.

Waste management has remained a dominant sector where PPPs have been adopted. As cities merge, re-invent and grow, they attract populations that results into increase of waste production. As waste increases, budgets for waste management have moved in the same direction. Based on this undertone, cities have largely adopted PPPs to collect, sort, treat waste and generate value from the waste at no cost to the city authority. In Africa Ghanaian cities such as Accra, Tema and Kumasi have implemented PPPs in waste management [7]. The PPP models used have included; franchising, contracting-out, open competition, sub-contracting and leasing of LGs' equipment to private agents. However, over time contracting-out became the predominant mode of solid waste collection (SWC) and forms about 60%–70% of all the waste collected. The analysis in this article therefore focuses more on contracting-out and less on the other forms of partnerships. Unlike franchising and open competition, where private agents collect fees directly from users, in a contracting-out arrangement the LGs pay the contractors according to the volume (tons) of solid waste collected and hauled to the landfill site. The private firms involved in PPPs range from small and micro waste collection companies to large-scale local and international ones. By the year 2001, over 90% of SWC services in the three cities were being provided by commercial private agents. PPPs are argued to increase quality of services [39] and attract savings.

In the tourism industry, PPPs have been applied to conserve, develop and promote heritage sites and preserve historical urban environments. According to [100] PPP projects with heritage components are often focused on finding viable and sustainable new uses. In such PPPs, the public sector entity will usually seek to public sector provide the larger community with access to the cultural significance. It is also opined that PPPs for preservation of historical urban environments aims identifying and building role of the assets, with the subsequent promise that such access will catalyse wider social, cultural, and economic development in a country. The private investor will usually view the real estate business, capable of generating revenue from new and existing uses. Citing the Nottingham Lace Market, the dilapidated property known as popular market for lace production was revitalized under PPPs. A special purpose vehicle (SPV) Lace Market Development Company,

was created with both the city and private investor having equity stakes. The third sector party Lace Market Heritage Trust was involved to raise grants for the operations of the SPV. It is revealed that market area is now a thriving, mixed-use centre for retail, housing, and culture, with cinemas and media centers as cornerstone developments [100].

A mixed-use development where residential use was encouraged and the largest lace factory, the Adams Building, was converted into a further education college. Shire Hall was adapted as the Galleries of Justice Museum. Hockley Village, adjoining the Lace Market area, is now a shopping centre and entertainment district. Pedestrian links were created between the Lace Market and Nottingham Castle and an underground cave system. The project attracted federal funds and European Commission funds and utilized a number of different PPPs developed from the late 1980s to today. NCC had to be flexible, responsive to change, and pragmatic, to balance identity and authenticity issues with market forces and demands. City commitment and buy-in were essential, though original efforts were civic based (*ibid*).

PPPs for heritage conservation thus usually require higher-than-average levels of government oversight, knowledge of the real estate market, and specialized skills because of their values-based nature, to ensure that the conservation outcomes remain a shared objective. The public sector acts as a catalyst. This calls for a number of measures to be put in place. To illustrate, there has to be: a strong vision by government for revitalization; an investment of public resources; facilitation of dialogue with local communities; sustained political will; sustained government financial support, with up-front estimation of investment needs; quantification of potential returns; secured financial investment as well as good communication between the various sectors and local communities. Further to this the private sector has to be incentivized and multilateral agencies that can provide technical support and continuity outside local political cycles should be involved.

7. Implications and lessons for cities in Sub Saharan Africa

Experience indicates that cities are synonymous with challenges that range from financial distress, inability to manage waste, affordable education in city public schools public transport and failure to provide decent accommodation for everyone resulting into slum other than smart and progressive cities. Cities have also been characterized for lacking the liveability character, lacking recreational centres among other features. In line with sustainable development Goal No.17 Partnerships for goals, we argue that private participation through public private partnerships is vital for delivering smart and progressive cities, the champions of national and global economy. Based on existing experience we provide several lessons that can be adopted for considering uptake of cities.

PPPs are applicable to all sectors. The engagement of private sector participation has no boundary. PPPs should be applied in any sector where opportunity lies for engagement of the private sector. In other words, in order for government to consider going into a PPP arraignment, the project under

consideration should first demonstrate value for money. While PPPs are boundary less, it is important that PPPs are implemented within country context specific national policy, law, regulations, guidelines and administrative orders.

Engaging the private sector players should be synchronized with objectives of the specific investors. For instance, the education, healthcare sectors may be attractive to the private not for profit investors, such organisations will achieve hybrid objectives-social and cost recovery driven pricing. Due to low return on investment and the high cost to serve, such sectors may not be attractive to the profit for profit investors. Experience has shown that private for-profit investors rarely complete their tenure and or are usually unattractive with education, healthcare but rather are more interested in PPP projects in sectors such as accommodation/housing, waste management, water and public transport.

While public transport has been deemed attractive for private investors under PPPs arrangement in cities, it's important to note that successes have been majorly in public bus and commuter taxi operations but not in railway or metros. The reasoning has been that capital and operating investment for railway/metros transport is unaffordable for the private sector. While private sector engagement is necessary, there is need to adopt a hybrid approach for managing metros/railway transport operations in the city.

Existing wisdom reveals that land PPPs can add value to journeys of smart cities. Land PPPs involve transactions where for instance a city authority hands over its land under lease agreement to private developer to construct a modern market with facilities such as 5 start hotels, offices, stalls, leisure facilities such as restaurants, paid for parking lots. Usually, the design of the purpose and assets to be installed can be defined by the city authority or proposed by the private developer for consideration by the city authority under unsolicited bid approach. Value can be retrieved from such idle land, in the form of taxes or licence paid by other tiered investors renting or using premises, provision of access to smart facilities to city dwellers and creation of markets for products and jobs for city dwellers employed in malls or build environment establishments, reduced traffic in the city if such facilities contain storeyed parking facilities.

Cities are usually faced with housing needs arising from now predominantly urban poor populations. The failure to manage such needs has made cities turn into congregations of slums. By use of PPPs to provide affordable accommodation for the urban poor, city administrators can get their cities out of slums.

As central transfers to city authorities and local government continue to reduce, cities have become filthy losing the status of smart cities. By engaging private players under PPPs for to invest in collection, sorting, recycle of waste for manufacturing, re-export or import, waste can get off the streets in cities in the journey towards becoming smart cities.

In the city education sector, private education players such as Bridge Academies have proved that providing quality and cheap education in cities is possible. While it is too early to conclude on whether such have such investors have supported cities to deliver quality and access to basic education, dialogues with such players with proposals to take over school management as the city authority remain

with the role of maintaining infrastructure may be considered. Concession management should ensure that fees charged are affordable and that teachers deployed meet the minimum requirements for employment of teachers by national and city authority standards. Renewal or extension of concessions should be hinged to access, availability, enrolment and pass grades midday and terminal grades.

8. Conclusion

The study reviewed experience of PPPs in cities. PPPs in cities have been implemented in developing and developed countries. The outcome of the study reveals that cities are applicable to sectors but commonly implemented in sectors such as city education, housing transport, waste management, electricity. While PPPs have supported journeys of cities on the move, and some have been critiqued on grounds of corruption. PPPs have enabled city administrators to improve the financial, social well-being of dwellers but above all making cities liveable, character of smart cities. Quiet importantly PPPs through provision of jobs, business opportunities, decent mobility, improved sanitation and hygiene that are necessary for smart dwellers in cities. The choice of whether to implement brownfield or Greenfield depends of the structure of the private sector. Social enterprise projects in areas such as education and health may be attractive to the private not for profit (PNFPs) but may not be equally attractive to the private for profit (PFP) investors due to low returns on investment. Finally, PPPs in cities have are seemingly great paths. However, uptake has been limited. The study has provided lessons that city administrators should consider when they attempt to implement PPPs especially for cities in Sub-Saharan Africa that are faced with numerous challenges. Further studies should explore why there exists low uptake of PPPs in municipalities that should transform into cities.

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