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Potentials of Private Sectors Participation in Water Supply in Kano State, Northwestern Nigeria - A Review

[1] Bello, N. I., [2] Abubakar, A. S., [3] Adamu, H. & [4] Ahmad, H. I.
[1, 3 & 4] Department of Geography, Aliko Dangote University of Science and Technology, Wudil
[2]Department of Geography, Aminu Kano College of Legal and Islamic Studies
isyakunura@gmail.com [1]

Abstract

Access to clean and reliable water supply remains a critical challenge in different parts of Nigeria, Kano State is not exception. Kano state located in sudano-sahelian zone of Northern Nigeria and has been blessed with abundance water resources, it houses many earth dams with high potential of water supply. With increasing urbanization, population growth and change of lifestyle, water demand has escalated, thereby putting pressure on existing infrastructure and service delivery mechanisms. This paper explores the potentials of private sector participation (PSP) in addressing the water supply deficit in Kano State. Through a comprehensive analysis of existing literature, policy documents, and case studies, the review examines the role that private sector can play in improving water supply infrastructure, service delivery, and management in the state. Key factors influencing the effectiveness of PSP initiatives, including regulatory frameworks, institutional capacity, financial sustainability, and community engagement. Additionally, the review identifies successful models of private sector involvement in water supply management from both within Nigeria and globally, highlighting lessons learned and best practices. By leveraging the strengths of the private sector and addressing inherent limitations, Kano State can enhance access to safe and sustainable water supply services, thereby improving the quality of life for its residents and promoting socio-economic development in the region. There is need for government to privatize some public utilities to make them more efficient, effective and well manage. Kano state has all the necessary social, economic and environmental potentials that could favor public sector engagement

Keywords: Kano State, Private Sector Participation (PSP), Water Treatment Plants (WTP's)

1. Introduction

Water is fundamental to sustenance of life and safe drinking water is so essential that is why it is recognized as a basic human right (WHO, 2015). It is a key component in poverty alleviation efforts and reflects the health and sanitation of people in a country. Sustainable access to safe water measures the health status and the well-being of a people in each society (United Nations Children Fund/World Health Organisation: UNICEF and WHO, 2000). It is well established that people cannot function well without adequate (in terms of quantity and quality) water (Osumanu, 2008).

Access to clean and reliable water supply remains a critical challenge in many regions across Nigeria, Kano State is no exception. Kano state is in sudano- sahelian zone of Northern Nigeria and has been blessed with abundance water resources, it houses many earth dams with high potential of water supply. With increasing urbanization, population growth and change of lifestyle, water demand has escalated, thereby putting pressure on existing infrastructure and service delivery mechanisms. This paper explores the potentials of private sector participation (PSP) in addressing the water supply deficit in Kano State. Through a comprehensive analysis of existing literature, policy documents, and case studies, the review examines the role that private sector entities can play in improving water supply infrastructure, service delivery, and management in the state. Key factors influencing the effectiveness of PSP initiatives, including regulatory frameworks, institutional capacity, financial sustainability, and community engagement, are critically evaluated. Additionally, the review identifies successful models of private sector involvement in water supply management from both within Nigeria and globally, highlighting lessons learned and best practices. By leveraging the strengths of the private sector and addressing inherent limitations, Kano State can enhance access to safe and sustainable water supply services, thereby improving the quality of life for its residents and promoting socio-economic development in the region.

Although, it is very necessary for human survival, safe drinking water is not adequately available to several households worldwide, due to various reasons such as increasing population, source pollution and poor management of water resources. When drinking water becomes scarce many families, mostly the poor, are prone to securing their drinking water in a manner and condition that could endanger their health (UNICEF/WHO, 2017). The research conducted by UNDP (2006) was able to point out that the way people source their drinking water has impact directly on their health and economic status of the family. According to United Nations it was estimated by the year 2025, up to 20% of the world's population could live in countries where water is in short supply (USAID, 2005).

Global water consumption tends to double in every two decades it doubles more than twice the rate of population growth (Kummu, et,al, 2016). Presently, more than one billion people worldwide lack access to potable water. It was estimated by the year 2025; the demand for

drinking water is projected to rise to 56% above what currently available water can deliver, if current trends persist (Barlow & Clarke, 2003). Water-related diseases, caused by unsafe drinking water and the absence of proper sanitation facilities, are among the leading causes of death in the developing world (Pal, et.al, 2018). The fact that the world faces a water crisis is obvious. This orchestrated by the steady growth in world population, urbanization and hydrological variability, along with the rampant spread of environmental degradation have all increased the pressure placed on the finite water resources available to mankind (Black, 1990).

1.1 Private sector Participation in Water Supply Sector

Until very recently, the only countries with a significant degree of private participation in the WSS sector were France, the United Kingdom and the United States (Johnstone, 1999). Of all public utilities, WSS was the sector in which the formal private sector was least active and, in developing countries was almost non- existent. However, this is changing rapidly as many developing countries involve the private sector in the provision of WSS in urban areas. Between 1990 and 1997, the cumulative new private sector capital expenditure on WSS projects in developing countries was $25 billion, compared with $297 million in the period 1984-1990. By 1997, 97 projects had been implemented in 35 developing countries, ranging from management contracts to leases, concessions, divestitures and build-operate-own-transfer (BOOT) agreements. (Zaguirre, 2002).

The increase in PSP has been driven in large part by a desperate need for increased capital investment in WSS in many cities. In most developing countries experiencing rapidly growing urban populations and a reduction in assistance for WSS from international development agencies, public sources of finance are no longer able to bear the costs of system rehabilitation and expansion. (Farukawa, 2005). In addition, it is often considered that public authorities have been unable to manage urban WSS efficiently. These are the major reasons which necessitate private sector participation in water supply all over the world (Castro, 2010).

1.2 Gamekeeper-Poacher Problems

The Public water utilities will tend to be ineffective, inefficient and poorly managed, this so because the governments have multiple objectives with limited financial resources. As the government being owner and provider, the water utility's management is subject to a number of conflicting influences, which may not be able to balance if clear priorities are not established.

1.3 Flexibility and Autonomy

At the level of implementations and operations, public utilities are often constrained by bureaucratic requirements, which do not affect private firms. For instance, there is often considerable inflexibility in the management of human resources within public utilities. This is true because the government is not always after the profit as it is obtainable in private sector.

1.4 Absence of Competitive Discipline

Since public utilities are not usually subject to the disciplines of the market, they have fewer incentives to minimize costs (and maximize tariff collection rates) and provide services in the manner customer's demand. However, it must be recognised that there are numerous examples of efficiently managed public water utilities in developing countries. There are documented cases in countries as diverse as Ecuador, Chile, Zimbabwe and Botswana. In many cases, this has been attributable to the provision of a certain degree of autonomy to the service provider, as well as the introduction of effective incentives to the provider and staff members.

2. Forms of Private Sector Participation in Water Supply

2.1 Service contracts

These are the simplest form of PSP, involving short-term contracts to provide limited services, such as reading meters, repairing leaks, and mailing statements for payment. These contracts entail carrying out specific duties and do not require any overall private sector responsibility for system operation. Small service contracts have existed in many cities for several years, but in recent years, there has been a shift towards more comprehensive types of service contracts (Tutusaus,et,a.l, 2018).

2.2 Management Contracts

Here, requires somewhat greater private sector responsibility with the private company assuming day-to-day responsibility for system operation and maintenance. However, management contracts do not usually require any private investment, the private company does not assume commercial risk and does not have any direct legal relationship with the consumer. The national or local government must maintain financial responsibility for the system and the capacity to plan and finance system expansion. The contractor does not get paid unless fees are collected from the consumers and has an incentive to improve system management under the stipulations of the contract (Saghir, 1999).

2.3 Leases Contracts

This allows a private operator to rent facilities from the public authority for a stipulated period. The public authority retains ownership and responsibility for system finance and expansion, but the private contractor is responsible for financing working capital and accepts some commercial risk in the day-to-day operation of the system. The private contractor is not responsible for any capital costs, and rental fees are often based upon the costs of debt service for capital costs. The contractor has a direct incentive to maximise the collection fee since its returns equal revenue generated fewer operating costs and rental fees. Occasionally the relationship is reversed, with the private firm building a facility and leasing it back to a public provider (Triche, 1990).

2.4 BOOT Contracts

These mechanisms allow a private contractor to Build, Own, Operate, and Transfer a specific capital investment such as potable water treatment plant. Usually,

the investment is quite substantial, and the contract period is long enough to allow for the recuperation of capital expenditure. Generally, the public authority must guarantee a certain demand, such as a volume to be treated. The contractor accepts the risk if this demand is not met. There are numerous variants on this option, such as BOTs, "reverse BOOTs" and others. (Dan, et.al, 2025).

2.5 Concessions

This is a form of long-term contracts, which require the private company to invest in the system. The concessionaire has overall responsibility for the system, including operations, maintenance, investment and expansion. The concessionaire receives payment directly from the consumer and accepts the risk that costs do not exceed revenues. The contract period is usually long enough to Bidding procedures and contract designs are very important in this respect. For different taxonomies of PSP and private-public partnerships that allow the contractor to recover investment costs. Penalties may be imposed upon the contractor if specific targets or standards are not met. (Hongmei, et.al., 2021).

2.6 Divestiture

This allows for shared government and private responsibility for service provision, through a separate corporate entity.A corporate agreement will stipulate private and public responsibilities, including representation on the board of directors and division of profits. Private finance may be facilitated by the establishment of a separate credit rating with support from the public authority. Less frequently, the provider may be fully private, with the government only serving a regulatory role. In general, concessions are the most popular form of PSP in terms of both number and size of investment. Regionally, investment has been concentrated in Latin America and East Asia. Sub Saharan Africa, on the other hand, accounts for less than 1% of total investment. (Neng, et.al., 2019).

3. Factors Responsible for Private Sector Involvement in Urban Water Supply

The major factors responsible for Private Sector Participation in urban water supply across the nations are classified into two (2). The first factor is the internal which is directly related to the government and the second ones are those deriving from pressure by external actors. The overriding objectives for governments has been the need to reduce the public-sector deficit, from which other considerations are derive such as the shortage of new investment resources, the desire to depoliticize payment for water, the pressure to avoid patronage, the wish to reduce personnel costs in particular and need to respond to the more complex nature of water supply activities (Brocklehurst, 2002). In most countries, water utilities have not applied tariff policies based either on cost recovery or on marginal cost pricing. Instead, they have traditionally received substantial subsidies from central government, especially to finance the local cost contributions to capital expenditure (Brocklehurst, 2002). Following the debt crisis of the early 1980s, governments in low-income countries have sought to limit the level of these subsidies to reduce the size of the overall public debt. One of the major factors driving Private Sector Participation in urban water supply worldwide has been the shortage of public-sector investment finance required in order to expand and upgrade existing networks. In adjusting economies, PSP has been encouraged by the growing shortage of concessionary loan finance available for investment purposes in the wake of the debt crisis. In the United States and United Kingdom PSP has been driven by the pressure for new investment arising from tighter environmental controls. The wish of governments to off-load and to depoliticize unpopular decisions over the water tariff increases that are required to achieve cost recovery is another powerful pressure encouraging PSP in urban water supply. In many countries, water tariffs fall way below commercial rates. For example, in Nigeria state-owned water authorities charge on average only 2 percent of the cost of producing water (Mustafa, 1993). In South Africa, the refusal to pay water bills became a powerful tool in the hands of residents of black townships opposed to the apartheid regime. In the aftermath of the transition to majority rule, this legacy of non-payment undermined attempts to phase out subsidies and redress backlogs. As long as the state was perceived as the provider of urban services, this problem of non- payment was likely to prevail.

Another powerful pressure for PSP is the desire to rationalize staffing costs through the elimination of clientelism and patronage in the recruitment and promotion practices of water utilities. Reduction in staff costs can release funds for improved maintenance and other necessary operating expenses. Personnel costs absorb a surprisingly high share of total operating costs in many utilities in low- income countries. On the other hand, utilities in high-income countries generally display lower ratios of staff costs to total operating costs, despite relatively higher unit labour costs. This problem has been particularly acute in Brazil. In the State of Bahía, the elected government appoints the board of directors of the state- owned water company. A final major internal factor for the acceleration of PSP has been the increasingly complicated nature of water supply activities in many countries due to the combined effects of pollution, scarcity of water resources and increasing demands on drinking water quality. Since 1950 municipalities in France believed that the private sector was better at responding rapidly to these problems because of its greater flexibility, delegation of authority and management autonomy. The emerging 'new' agenda of environmentally sustainable development represents a massive new financial burden for governments wishing to improve the aquatic environment. As the burden of public expenditure in the sector shifts towards a greater concern for sanitation and sewerage to reflect this new concern, the pressure increases to limit public spending on urban water supply. Several external actors have also put considerable pressure on governments for the introduction of PSP in urban water supply. The most important of these are international development agencies and transnational corporations. Pressure from the World Bank is probably the most important single factor explaining the trend towards PSP in urban water supply in most low- and middle-income countries. This pressure, which is often exerted through the leverage of structural adjustment lending, also reflects self-criticism of its own previous lending policies in the urban

water supply sector. An internal review of World Bank-supported projects found that the effective price per unit of water was, on average, only one-third of the full economic cost of supplying that increment. Pressures from powerful transnational corporations are today a significant factor in the move towards greater PSP in urban water supply in many countries.

3.1 Water supply in Nigeria

Nigeria is one of the 46 countries in sub-Saharan Africa which affected by global water crisis. Of the 783 million people without access to clean water, 40% live in sub-Saharan Africa and more than 320 million lack access to safe drinking water (World Bank,2019). Rapid population growth has been accompanied by an increase in the delivery of essential urban services such as water supply. It was estimated that currently only about 50% of the urban and 20% has beenhe semi-urban population have access to reliable water supply of acceptable quality. Overall, effective urban water supply coverage may be as low as 30% of the total population due to poor maintenance and unreliability of supplies. Rural coverage is estimated at 35%.

3.2 Historical Perspective of Water Supply in Nigeria

Public water supply started in Nigeria early in the twentieth century in a few towns managed at the lowest administrative level. Amongst the early beneficiaries were Lagos, Calabar, Kano, Ibadan, Abeokuta, (Ogun State) and Enugu. The schemes were maintained with revenue from water sales with virtually no operational subvention from government. With the creation of regional governments in the early 1950s the financial and technical responsibilities for developing new water schemes were taken over by the regional governments who also assigned supervisory high-level manpower to oversee operations and maintenance. The regions were slow to set up independent bodies to develop, operate and manage the water supply. The first water corporation was formed in the western region in 1966, which took over all the assets and liabilities, including the existing staff. The staff of the Water Division of the Ministry of Works transferred to the new corporation. The next corporations were formed in the 1970s. Today, all 36 states and the Federal Capital Territory have water boards/corporations or public utilities boards managing their public water supply. Their efforts are supplemented, in many cases, by local governments who supply water to small villages in their areas of jurisdiction. The Federal Government got involved in the management of water resources in 1976 when the Federal Ministry of Water Resources and the 11 River Basin Development Authorities (RBDAs) were created.

3.3 Water Supply in Kano State

Kano city is the capital of Kano State and is in the northern part of Nigeria. Kano Metropolis has eight (8) LGAs and the population is estimated to be 9,851,554 (NPC, 2006). About 3,493 million m^3 of water is stored in 33 dams. This supply can serve 3,927,300 people and irrigate 52,920 ha of agricultural land. In addition, there are 14,051 tube wells and wash bores for 42,169 ha of dry season farming activities (Barau, 2006). Since 1994, the city has been faced with water scarcity, which is worsening. The dearth of water has caused “aseries of conflicts between the Government and the people who fell prey to the Shylock water sellers” and have experienced various water-borne infections. A water jerry can of 25 litres capacity sold at ₦20 - ₦ 25, even though there is variation in price with distance and yet the source was doubtful (Nura, et.al, 2014).

4. Water Supply Coverage and Levels of Service in Kano State

Water supply coverage refers to the areas that are served by existing water supply schemes. Based on this, water supply coverage in the state can be sub-divided into three categories: Kano Urban (Greater Kano Area), Semi-Urban or Small Towns and Rural Areas

4.1 Greater Kano Water Supply

The greater Kano is an area within a radius of 30km from the centre of the ancient city. It is the responsibility of this division to distribute water coming from Challawa, Watari and Tamburawa water work to the greater Kano. The urban area of Kano comprises of six local government areas. Namely; Tarauni, Dala, Fagge, Kano Municipal, Gwale and Nasarawa, with population of 2,163,2225 (NPC, 2006), while the metropolitan comprises of eight local government areas, the above six mentioned, with addition of Ungogo and Kumbotso with total population of 2,828,861 (NPC, 2006). The greater Kano water supply is the largest portion of water supply to the Kano and environs. These three water schemes have the installation capacity of producing 415 million litres of water to the residences. Tamburawa and Challawa are the giant water work in the entire study area. They are responsible for producing enough water to the Kano city and environs (Bello, et.al, 2014).

4.2 Semi-Urban Water supply

To provide sufficient water to the rural populace, Kano state government established sixteen (16) regional water schemes across the state, with responsibilities of water provision to urban, semi urban areas, mostly local government headquarters and other big towns or settlement in the state (KSWB, 2013). These schemes were distributed across the three senatorial districts of the state that are Kano-Central, Kano-North and Kano-South. These sixteen (16) regional water schemes in Kano state built across different locations in the study area were designed to ensure effective and efficient water supply to the local government headquarters and larger settlements (towns) outside greater Kano. These regional water schemes have the installation capacity to source, treat and pump about 92 million litres of water daily (KSWB, 2013) without which an acute water shortage will be experienced in different local government areas across the state. Nevertheless, due to power failure, cost of operation and logistic problems, the scheme can only supply not more than 65 million litres daily (Bello, et.al, 2014). These regional water supply schemes were operated, managed and maintained fully by the Kano state water board.

4.3 Potentials of Private Sectors Participation in Kano State

Kano is the most populous state in Nigeria with total population of 9,383,682 (NPC, 2006). The state has projected population of 15,462,200 (NPC, 2022). It has high birthrate, high influx of people from different part of Nigeria (NPC, 2006). It is considered as the melting pot of the Northern Nigeria, because of the diverse tribes and ethnic groups. The population will guarantee high water demand. Wherever there is population there is market. Therefore, there is potential market for private sectors engaged in water supply. Large population guarantee market, high demand will result in maximum profits, which in turn ensure sustainability of the water vending business. All entrepreneurs try as much as they can to minimize costs and maximize profits. Investing in water sectors in Kano will lead to wealth accumulation because it needs little input and high output. The major pulling factors of PSP includes

4.4 Power Failure

Almost all the developing countries suffer in one way or the other from erratic power supply. Failure of power supply is one of the crucial and critical issues in developing countries which drastically affect water supply negatively (Baker, 2009). The water supply processes need power/electricity to run the machinery from water abstraction, water treatment and water distribution. There is acute power shortage in Kano State (Bello, et.al, 2014). Running machinery with diesel is very expensive. Therefore, water supply is limited due to power failure. Hence, private sector engagement in water supply in the area will be lucrative.

4.5 Poor Urban and Regional Planning

Kano is an ancient settlement established before colonialism. Therefore, it has poor urban planning which makes public water supply difficult in various nooks and crannies of the state. The houses and settlements were haphazardly built with poor drainage and road networks. This supported by Mustapha (2013), which stated that Kano is characterized with poor urban planning resulting in growth and development of haphazard settlement and in sufficient infrastructural facilities water supply systems inclusive. The trends continue even after independence, agricultural lands are continuously converted to residential areas without expert and professionals' input. These serve as bottlenecks to water supply networking and connectivity. This will make private sector involvement very lucrative. In Kano state large part of residents depend on private water suppliers due to informal nature of the settlement which affects water networks development (Ishaku et al., 2010).

4.6 Availability of Water Treatment Plants

The state (Kano) has three major water treatment plants, which supply water to urban Kano and its environs. Similarly, there are more than sixteen (16) regional water schemes distributed across the state for urban and semi-urban water supply, mostly located in the local government areas outside metropolis. These water treatment plants cannot met the demand of the people due to erratic power supply, political reasons, mismanagement and unaccounted for water (Nabegu, 2013; Bello, 2014; Bello, et.al, 2021). Thus, despite the availability of the water supply infrastructures but the water supply remains inadequate because of power failure, political reasons, water mismanagement and unaccounted for water (Suleiman, 2020)

5. Policy Fragmentation in Water Supply

This is another issue about water supply in Nigeria and Kano state. There is no specific institution responsible for water supply for example, in Kano; there is Kano State Water Board (KnSWB), Rural Water Supply and Sanitation Agency (RUWASSA), ministry of water resources, local government authorities, state house of assembly projects and Ministry of rural and community development all these agencies, departments and ministries supplies water to the populace. These multiple agencies involved in water supply without proper coordination, result in conflicts and water resources wastage (Nwankwoala, 2011). There is no synergy between agencies of water supply. As such, there are complications in water supply, which serve as a bottleneck to sustainable water supply in the area. The water sector in Nigeria is displaying short-lived policies, unrealistic assumption and poor implementation (Akpabio, 2012; Obeta, 2018). This paved way greatly for private sectors participation in Kano state.

5.1 Presence of Dams

The state (Kano) has more than 30 earth dams (Barau, 2006) constructed long ago, across three senatorial districts. These dams store millions of cubic metres of water and most of these dams serve multipurpose functions water supply inclusive but unfortunately less than 30% of their potentials are being utilized. The state has many dams and water treatment plants, but their potential is not fully utilized. So also, anthropogenic activities in Kano state such as sand mining and farming near these dams result to erosion and sedimentation which in turn reduce water reservoirs capabilities (Muhammad et.al., 2019). The private sector involvement will make significant impact in proper utilization and management of these water facilities to boost supply to the public for commercial gains and actualization of sustainable water supply.

5.2 Benefits to Derive by PSP in Water Supply in Kano

Increased Access to water: Private sector involvement can expand access to clean and safe drinking water, especially in underserved areas and informal settlements where public utilities may not reach. Kano state has large number of informal settlements. These informal settlements lack proper planning and the structure were erected haphazardly. This limit public utility such as water supply facilities access to those areas (Bello, 2021). Nevertheless, with PSP all these areas are going to be served with potable water.

Revenue Generation: Private sector participation can generate revenue for the Kano state government through public-private partnerships, concessions, or water tariff collection. These revenues can be reinvested in the water sector for maintenance and expansion. The government

will source revenue from companies involved and personnel engage in water supply services. PSP in water sector bring a lot of revenue to the government (Baumert & Bllodgood, 2004; John, 2001; Haladu, etal., 2024).

Job Creation: The water sector can provide employment opportunities, including jobs in construction, operation, maintenance, and customer service (Naik, et.al, 2024). This can contribute to economic development and poverty reduction. Large number of people will be engaged by these water utility companies ranging from white collar to blue-collar labourers.

Capacity Building: Collaboration with private sector entities can enhance the capacity of local water authorities and personnel through training and knowledge transfer, ultimately improving the long-term sustainability of water supply systems.

Environmental Sustainability: Private sector involvement can encourage the adoption of environmentally friendly practices in water treatment and distribution, contributing to sustainability and reduced environmental impact.

However, it is important to note that private sector participation in water supply should be carefully managed to ensure that the interests of the public, particularly vulnerable and low-income communities, are protected. Effective regulation and oversight are essential to prevent price gouging and ensure that water remains affordable and accessible to all residents.

6. Challenges that might likely affect Private Sectors Participation in Domestic Water Supply in Kano State

6.1 Political Instability

Private sector participation in water supply encounter different challenges in developing countries, there most significant are political instability and change in government frequently there are continuous government changes and shifts in policies which can pose significant risks to private sector involvement in water supply (Daneji & Bazza, 2013). The policy discontinuous may likely affect the PSP in Kano state. Political dispensations allow people to vote in and vote for a new government after every four years. A government might come up with good policy after its tenure expires, the subsequent government might come up with new policy to counter the existing one. This may greatly affect private sector participation. The change in government might affect all the government policies due to the discontinuity of our democratic system.

6.2 Economic Problems

Economic instability, exchange rate fluctuations, inflation, and incessant changes in consumer purchasing power also affect financial viability of a private sector investors in a new area in Nigeria and Kano state. Developing countries are characterized with persistent poverty, this limit people purchasing power to patronized water supply services by private sectors. Therefore, large number of people might opt for alternative sources which is hazardous to their health and environment. Recognizing private water sector and providing financial and technical support will help in addressing water supply problems in Kano state (Tajuri, 2017).

6.3 Local Competition

For decades, there have already existed local and traditional water supply systems in Kano state, which established mutual and cordial relationships with the community, therefore, there is great challenge for modern and well-organized private water supply system to compete effectively. The traditional systems have been accepted long ago by community despite their existing challenges. Thus, the PSP in most cases find it very difficult to be accepted and recognised by local community at first instance in Kano state. Despite the challenges of PSP in water supply due to competition from traditional system but still it's very effective and reliable in meeting water demand of large portion of Kano state (Boniface, etal., 2020).

6.4 Security and Safety Concerns

Kano state is the most populous state in the country, the rapid population growth is attributed to high birth rates and migration which in turn accelerated the security concerns and exert pressure on available water resources (Ibrahim, 2014). It is generally accepted all over the world that places with large population are prone to several security threats such as high crime rates and civil unrest which can affect the safety of employees and the continuity of operations of private water investors. Similarly, it was observed that the security challenges in developing deter local and foreign investors in water sector (Achumba,et.al., 2013; Ifeoma, et.al., 2015). These security threats are responsible for scaring willing investors in water sectors to invest in water supply in Nigeria and Kano state.

In a nutshell, in order to overcome the challenges, PS sectors intending to invest in water supply services in Kano state ought to conduct thorough and comprehensive market reconnaissance surveys, engage local experts and practioners in their water business as well as adapting local business strategies already exist area. Additionally, a proactive approach to risk management and compliance is crucial for success in unfamiliar markets.

7. Conclusion

Exploring the potential of private sector participation in water supply management presents a compelling opportunity for Kano to address its water supply challenges more effectively. Balancing the benefits and challenges require careful planning, robust regulatory frameworks, and a commitment to ensuring that water remains accessible, affordable, and of high quality for all residents. The successful integration of private sector expertise with community needs can potentially lead to a more sustainable and resilient water supply system for Kano's growing urban population.

Private sector participation in water supply in Kano State has the potential to address several critical challenges and bring about significant improvements in the water sector. The private sector participation in water supply utilities is very vital, especially nowadays when the government has multiple objectives with limited financial resources. It is obvious that public utilities are in dilapidated conditions due to corruption, politics and mismanagement. There is need for government to privatize some public utilities to make them more efficient, effective

and well managed. Kano state has all the necessary social, economic and environmental potentials that could favor public sector engagement. The private sectors should conduct cost and benefit analysis to address all the grey areas that may likely affect the lucrative of their businesses and end up of crippling the businesses.

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