

Essential Service Delivery as Urban Renewal Strategy in Jos, Plateau State: Findings from a cross-sectional and Ethnographic Study

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ABSTRACT

Jos the Plateau State capital has experienced rapid 'urbanization' from migration and population explosion as fallouts of the conflict situations in Nigeria's North-East and North-West regions, rural-urban migration, and counter-urbanization. These factors have exposed the city to dire urban and environmental conditions that challenge the functionality of the available essential social service facilities. Numerous politico-economic, social, psychological, and population health risks have arisen from the lapses occasioned by the non-expansion of facilities; the lack of enforcement of existing regulations; and the potential hazards from the dearth of effective regulations to cover the administration and utilization of social services. They trigger outcomes with consequences for physical and mental health, and social stability. The paper adopted a mixed-methods design that combined a cross-sectional study with an ethnographic perspective in undertaking the assessment of the evolution of Jos, and determining the prospects of urban renewal for the reinvention of the city. The smart city theory further provided the framework for establishing the imperative and context of urban renewal, including for public health and environmental sustainability. The findings revealed gaps in the security, emergency services, transport, health, and other infrastructure of city management, thereby invariably impacting the day-to-day life of the Jos residents. The conclusions drawn include that in addition to the structural interventions on which the government may be hinging its proposed urban renewal strategies for Jos, essential service delivery should primarily be addressed as central to the policy interventions. This two-pronged approach offers a more holistic measure for achieving the goal of improved quality of life for the residents.

KEY WORDS:

Migration; Over-Urbanization; Urban Renewal; Service Delivery; Population Health

Introduction

Development and modernization have contributed to the spread of urbanization and related facilities and activities, to regions previously designated as hinterlands, fringe and rural areas, etc. with these locations expanding to link up to the pre-existing urban areas. Consequently, Global South countries have experienced the expansion of towns and cities and an increase in their populations, every ten years to about twice their number (Otoo, 1982). Evidence from Nigeria shows that the population size has continued to expand geometrically with projections of 262 million by the year 2030, and 402 million by the year 2050 – when the population will be higher than that of the US

(IARAN, 2016). By 2019, the population stood at about 206.1 million (World Bank Report, 2019). As determined by the prevalent indices of the 2019 UNDP Human Development Report, the effects of Nigeria's population explosion have been an astronomical rise in unemployment, overpopulation in the urban areas, environmental and atmospheric pollution, crime, violent and non-violent conflicts, and the proliferation of urban slums and related vices. These constantly challenge government efforts at essential service delivery across the country. The dearth of corresponding development in spite of increased economic activities and advancement (Oyinloye, et al., 2017), is precipitated by policy failures, poverty and social injustice that pervade Nigerian societies (Shuaeeb, 2011). These constitute social determinants of health that represent gaps in the performance of functions within different sectors and by different agencies.

Jos, Plateau state is located in the North-Central region of Nigeria, an area also described as part of Nigeria's Middle-Belt. It is an ancient city that has lost most of its colonial outlook as a result of modernization involving the demolition of previously existing buildings, and the reconstruction of several others to either replace them, or to serve numerous other purposes for which considerations were not initially made (Jinadu, 2004; Gbadegesin, Oladokun & Ayorinde, 2011). It is the focal point of this study due to its strategic location as a socioeconomic gateway to the Northern part of the country (Adzandeh, et al., 2015).

Most recently, in the years following the rise in insecurity, terrorist acts and conflicts in the North-East and North-West regions of Nigeria, Jos has borne the brunt of conflicts of varying dimensions. In offering succor to an increasing number of migrants and people fleeing conflicts in surrounding states and states in the North, Jos has experienced a fundamental bulge in her population. The outcome has been the development of new townships and settlements within the main town. The increased attractiveness of the centre, from the desire for better facilities including access to jobs, healthcare, security, etc., heightens rural-urban migration, leading to overcrowding at the city centre and in the immediate fringe and suburban areas. Additionally, counter-urbanization and urban-rural migration that allow residents of the metropolis relocate to the 'former fringe areas' to escape the social, economic and environmental hassles associated with life in the city centre; as well as other social, economic and political resettlement strategies, underlie the rapid urbanization of the town. Furthermore, the evolutions in the metropolis have brought about differences in its outlook, that blur the distance between the suburbs in Jos South LGA, and the metropolis in Jos North LGA.

The unguided and uncontrolled expansion without due consideration for related factors including transport, employment and health (Adzandeh, et al., 2015), constitute a corresponding burden on the neglected, and already overstretched social services. Politico-economic, social, and psychological risks arise from the lapses in facility expansion, lack of enforcement of existing regulations, and the absence of effective regulations governing the administration and utilization of social services in Jos. The city is confronted with the outcomes of global dynamics that include socioeconomic advancements and

commerce without borders. These contribute to the growing need for policy interventions, and demand immediate and more logical solutions that are reflective of the characteristics of contemporary cities.

Urban renewal referred to as urban regeneration in the United Kingdom (UK), and urban redevelopment in the United States (HUD, 2016), dates back to the American Housing Act of 1949 (Oyinloye, Olamiju & Popoola, 2017). The term was coined in 1954 to describe processes of urban redevelopment that portend diverse meanings to individuals depending on the roles which they play within society (Wedge, 1958). It draws from some of the positions of the New Urbanists advocating urban and suburban redevelopment (Fulton, 1996).

Urban renewal is different and more popular than slum clearance which is the demolition of decrepit housing and slums, and the relocation of dwellers to other parts of the town (Richards, 2014). It is a process which to municipal officers and taxpayers, describes the revamping and replacement of worn-out, dilapidated areas and structures with newer, better constructed structures and facilities geared to meet the contemporary needs of members of society. Richards (2014) describes urban renewal as the plans and activities to upgrade neighborhoods and suburbs showing physical distress or decay, encompassing deteriorating housing, poor physical infrastructure, dysfunctional water and sanitation services, and poor community services including dilapidated sports, park and other recreational amenities. Lang (2005) defines it as a holistic, wide-ranging policy intervention and implementation process that emphasizes physical, social and environmental regeneration.

Urban renewal is beneficial to society since it advertently ensures a decrease in slums and related vices including crime, disease, street dwellers, and so forth. It ensures an increase in tax returns through enhanced potential for increased revenue from taxpayers, and prospects of exponential economic growth and expansion by upscaling the economic viability of given areas (Caves, 2004). It is relevant to social and environmental sustainability since it ensures that urban spaces continue to be enhanced through periodic revitalization, deconstruction, reconstruction and rehabilitation of substandard downtowns, and the creation and promotion of new towns (Zuckerman, 1991). Urban renewal affords opportunities for future generations to experience life in functional neighbourhoods. For home builders, building material suppliers, and estate developers, it is a regenerative opportunity for economic growth because of the increased value which it bestows on the newly restored areas.

For the wider society, urban renewal represents the opportunities for the enhancement and stabilization of social values, and the improvement of the quality of life of its members (Wedge, 1958). For the city of Jos, it offers an effective policy strategy for regenerating and enhancing the quality of life of the city's inhabitants, by improving the quality of government-provided social services with focus on the attainment of the Sustainable Development Goals (SDGs) 3 - good health and well-being, 6 - clean water and sanitation, and 11 - sustainable cities and communities.

Study Question

How relevant is the provision of quality essential social services to the urban renewal interventions and strategies in Jos?

Study Objective

The effects of migration and population growth on the quality of urban life and available social services in Jos are evident. Potential risk factors with consequences for population health in the metropolis were assessed to establish the nexus between social service delivery as an urban renewal strategy, and quality of life. The paper thus emphasizes quality essential social service delivery as the primary basis on which urban renewal interventions and strategies in Jos should be designed and implemented.

Methodology

The study combined ethnographic observation with a cross-sectional design. Besides the researchers' observations, data on the conditions of the existing social service infrastructure and facilities across the Jos metropolis was collected via a semi-structured questionnaire, to curtail researcher bias. The questionnaire was designed to assess essential service delivery which describes basic services provided to improve the day-to-day living conditions of people; and urban renewal which entails overarching measures undertaken to provide quality living standards for people within their environment.

Study Area

The study sites were the Jos North and Jos South Local Government Areas (LGAs), generally referred to as Jos. The study population was derived from among the members of the public domiciled in the locations.

Data Collection

Random and convenience sampling techniques were adopted for the data collection process. A total of 212 responses to the questionnaires were recorded. Of this number, 69 were respondents to the e-version of the questionnaire disseminated across WhatsApp groups. Informed consent was got from all the respondents. They were assured of the confidentiality of the entire process, and sensitized on their rights to participate, refuse to participate or stop participating in the research. The data were analysed using SPSS Version 20.

Results

Demographic Information

This section covers the questionnaire data presentation.

Table 1: Respondents Demographics

1	Gender	Frequency	Percentage
	Male	124	58.5
	Female	88	41.5
2	Age		
	18-25 years	70	33.02
	26-35 years	79	37.26
	36-45 years	39	16.98
	46-55 years	6	2.83
	56 years and above	2	.47
3	Educational Qualification		
	Primary	6	2.85
	Secondary	4	1.90
	Polytechnic	22	22.00
	University	109	51.99
	Others	69	32.85

58.5% of the respondents are male. Male respondents were more amiable than the females, who expressed a lack of time, or lack of interest in the context of the research. The majority of respondents fell in the 18-45-year age ranges. They are considered youthful, with the tendency to interface more with the realities brought on by government action or inaction. The respondents were also comprised largely of university and polytechnic graduates, while 32.9%, were holders of other educational qualifications. This offers proof of basic understanding and capacity for engagement with the variables of the study.

Table 2: Tests of Hypotheses

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	Sig. (2-tailed)
					Lower	Upper		
Over urbanization	Urban Environmental consequences	3.46	20.435	1.046	-35.006	-22.727	1.076	.000
Non-enforcement of regulations governing utilization of social services	Presence of politico-economic social and Psychological Risks	3.186	2.76	2.299	-1.454	7.826	1.386	.0033
Urban Renewal - Policy strategy for Regeneration	Essential Service Delivery	3.644	2.432	0.108	-1.588	2.877	0.582	0.0022

The impact of migration on population explosion and the urban and environmental layout of the metropolis is significant (p value = 0.00). The p value of 0.0033 proves that there are significant politico-economic, social, and psychological risks associated with the lapses in facility expansion, lack of enforcement of existing regulations, and the absence of effective regulations to govern the administration and utilization of social services in Jos. Enhancing the quality and access to social services, is central to the urban renewal strategies for regenerating the city of Jos, and improving the quality of life of the city's inhabitants (p value = 0.0022).

Questionnaire Results

Responses under strongly agree and agree were discussed as agreeing, while responses of strongly disagree and disagree were discussed as disagreeing.

Table 3: Road and Transportation Improvements

Statements	SA (5)	A(4)	N(3)	D(2)	SD (1)
The road improvements significantly reduced the number of road accidents and related deaths in Jos.	32 (15.1%)	67 (31.6%)	51 (24.1%)	43 (20.3%)	19 (9%)
Need for designated pedestrian walkways in the road networks to prevent accidents and deaths.	40 (18.9%)	74 (35%)	42 (19.8%)	39 (18.4%)	17 (8%)
The non-regulation of the transport services may have contributed to the rise in cases of COVID-19 and other contagious diseases in Jos because of passenger and luggage overloads, etc.	136 (64.2%)	63 (29.7%)	4 (1.9%)	3 (1.4%)	6 (2.8%)
The road network in Jos is good.	67 (31.6%)	70 (33%)	40 (18.9%)	26 (12.3%)	9 (4.3%)
Broken down vehicles and vehicles that are not roadworthy should be removed from the roads to prevent accidents and air pollution.	142 (67%)	51 (24.1%)	9 (4.3%)	6 (2.8%)	4 (1.9%)

Though improvements in road networks have significantly reduced the number of road accidents and related deaths in Jos, risks still abound for pedestrians and non-motorized vehicle users for whom clear pedestrian paths have not been delineated. Issues of non-roadworthy vehicles, passenger overcrowding and luggage overloads in vehicles, without concern for the health implications still persist especially in the public transportation sector.

Table 4: Waste Management, Sanitation and Environmental Sustenance

Statements	SA (5)	A(4)	N(3)	D(2)	SD (1)
Waste management is central to population health	135 (63.8%)	61 (28.8%)	7 (3.3%)	4 (1.9%)	5 (2.4%)
Heaps of hazardous solid waste that can affect the health of residents, dot the Jos metropolis	94 (44.3%)	86 (41%)	25 (11.8%)	1 (0.5%)	6 (2.8%)
Open defecation contributes to waste matter in some areas of the metropolis	113 (53.3%)	79 (37.3%)	9 (4.3%)	5 (2.4%)	6 (2.8%)
Waste handling and management should not be the sole responsibility of the government.	28 (13.2%)	32 (15.1%)	13 (6.1%)	53 (25%)	86 (40.6%)
The government should show more commitment to solid and human waste management in Jos metropolis by contracting more companies	114 (53.8%)	86 (40.6%)	5 (2.4%)	3 (1.4%)	4 (1.9%)

Waste management, where the type, volume and effect of waste is to be effectively contained, is better handled when it is not the sole responsibility of the government. The handling of human waste particularly from open defecation, requires more interventions by the government, though it also demands the commitment of the members of the public.

Table 5: Insecurity and Policing

Statements	SA (5)	A(4)	N(3)	D(2)	SD (1)
The registration of newcomers with designated ward heads in the communities and leaders of neighborhood watch units will boost security	110 (51.9%)	79 (37.3%)	14 (6.6%)	4 (1.9%)	5 (2.4%)
The presence of checkpoints, patrols and stops-and-search in the town has improved security	15 (7.1%)	91 (42.9%)	66 (31.1%)	29 (13.7%)	11 (5.2%)
Attacks on communities can be checked by expanding the roles of Operation Rainbow, neighborhood policing and the vigilante groups in the state	101 (47.6%)	92 (43.4%)	12 (5.7%)	6 (2.8%)	1 (0.5%)
State policing should be explored as an option to boost security in Jos	109 (51.4%)	82 (38.7%)	17(8%)	2 (0.9%)	2 (0.9%)

Insecurity in Jos is driven by internal (thefts and robberies) and external factors (armed banditry and terrorism). The impact of checkpoints, patrols, and stops-and-search in the town in improving the security situation in Jos is laudable. The findings suggest that the introduction of a few more measures including expanding the role of Operation Rainbow and enforcing the registration of newcomers in neighborhoods, will further enhance security in the state, and particularly curb the incessant attacks in the hinterland communities. State policing is also canvassed by a 90.1% majority.

Table 6: Effect of Housing and Built Environment Development

Statements	SA (5)	A(4)	N(3)	D(2)	SD (1)
Several unauthorized structures continue to spring up in the densely populated areas of the city	93 (43.9%)	83 (39.2%)	23 (10.8%)	8 (3.8%)	5 (2.4%)
Reorganizing commercial activities, trading places and building markets and stalls will improve security, road safety and the outlook of the town	91 (42.9%)	85 (40.1%)	25 (11.8%)	10 (4.7%)	1 (0.5%)
There should be more government involvement in town planning and uniformity of building designs to improve the layout of the metropolis	113 (53.3%)	77 (36.3%)	16 (7.6%)	3 (1.4%)	3 (1.4%)
There is a need for city centres and the maintenance of public recreational centres where people can go and relax, interact, etc. for free.	113 (53.3%)	78 (36.8%)	11 (5.2%)	5 (2.4%)	5 (2.4%)
The governments should enforce compliance with its initiatives for the urban renewal strategies to be effective.	110 (51.9%)	85 (40.1%)	10 (4.7%)	4 (1.9%)	3 (1.4%)

Emphasis on the layout of housing and built environment development in Jos, proves that several unapproved structures continue to spring up, especially in the densely populated areas of the Jos city. 92% of the respondents decried the non-enforcement and selective enforcement of building regulations in sections of the city. For the commercial areas, opinions were rife on the imperative of building markets and providing affordable stalls, rather than simply evicting the street traders. There was a 90.1% majority consensus on the essentiality of accessible public recreational and relaxation centres and parks in line with the growing concern for mental health

Table 7: Effect of Urban Slums

Statements	SA (5)	A(4)	N(3)	D(2)	SD (1)
Asides attacks on communities, slums are also security and health threats in Jos	47 (22.2%)	67 (31.6%)	89 (42%)	5 (2.4%)	4 (1.9%)
Slums contribute to the spread of diseases like cholera, etc.	56 (26.4%)	61 (28.8%)	34 (16%)	13 (6.1%)	49 (23.1%)
Slums need infrastructural facelifts to checkmate insecurity and other vices	44 (20.6%)	112 (52.8%)	41 (19.3%)	11 (5.2%)	1 (0.5%)

The analysis proves that urban slums pose socioeconomic and health risks to the population. They are breeding grounds for disease vectors since they lack basic facilities. They are also the hubs of most social vices that challenge the city's security architecture. Majority opinion (73.4%) is that slums be given the needed facelift.

Table 8: Mental Health and Effect of Substance Use

Statements	SA (5)	A(4)	N(3)	D(2)	SD (1)
There is an increase in the trend of substance use among youth in the metropolis	78 (36.8%)	56 (26.4%)	12 (5.7%)	6(2.8%)	60 (28.3%)
The substance use has implications for human security and sustainability in Jos	101 (47.6%)	106 (50%)	4 (1.9%)	0 (0%)	1 (0.5%)
The rise in substance use among youth has led to a corresponding rise in the number of mentally challenged individuals on the streets	43 (20.3%)	34 (16%)	76 (35.9%)	41 (19.3%)	18 (8.5%)
The majority of individuals suffering with drug-induced mentally-challenges are youthful and probably in the 25-49-year age bracket	54 (25.5%)	76 (35.9%)	27 (12.7%)	36 (17%)	19 (9%)
Government should ensure that there are functional institutions to cater to mentally-challenged individuals, so that they do not roam the streets	51 (24.1%)	92 (43.4%)	41 (19.3%)	23 (10.9%)	5 (2.4%)

There is a rising trend of drug and substance abuse among youth, though only 36.3% of the respondents agree that there is a corresponding rise in the number of mentally challenged individuals on the streets. 61.4% agree that most mentally-challenged individuals are youthful and probably in the 25–49-year age bracket. This has implications for security as noted by an overwhelming 97.6%. Expectations are that the government would provide functional institutions to keep mentally-challenged individuals off the streets.

Table 9: Effect of Emergency Services

Statements	SA (5)	A(4)	N(3)	D(2)	SD (1)
The efficiency of the fire service should be enhanced	98 (46.2%)	38 (17.9%)	56(26.4%)	7 (3.3%)	13 (6.1%)
More accident victims can be saved if there are functional ambulance services in Jos	45 (21.2%)	102 (48.1%)	41(19.3%)	22 (10.4%)	2 (0.9%)
Hospitals that demand police reports before attending to victims of gunshots and ghastly accidents should be sanctioned.	32 (15.1%)	48 (22.6%)	68 (32.1%)	16 (7.6%)	48 (22.6%)
Lives have been lost because of the lack of efficient emergency response equipment for casualty cases	89 (42%)	112 (52.8%)	2 (0.9%)	2 (0.9%)	7 (3.3%)
Revamping mental health services in the state should constitute part of the emergency services	95 (44.8%)	19 (9%)	98 (46.2%)	35 (16.5%)	45 (21.2%)

The responses reveal gaps in the fire, accident, ambulance and hospital emergency services. The dearth of efficient emergency response equipment for casualty cases has portended negative outcomes for residents of the metropolis. 53.8% of respondents also opine that the emergency services be expanded to include mental health services.

Discussion -An Ethnographic Perspective on Urban Renewal Strategies for Jos

Core service delivery is described as the promulgation of legal frameworks, the oversight of economic governance, the mitigation of corruption and disruptive actions by elements challenging social stability and post-conflict rehabilitation, and the equitable and efficacious provision of essential human services. These

indispensable objectives require augmentation of foundational administrative and institutional capacities within the government apparatus, a formidable peace process, the establishment of robust mechanisms for accountability and transparency; and the allocation of requisite resources (United States Institute of Peace [USIP], 2020).

Similarly, the Smart City theory of urban renewal posits broad-based interventions that are adoptable if Jos is to function effectively as a modern city. The theory proposes a model that involves the development of a tailored strategy that engages both city and citizen in its self-adjustment and self-improvement. For its objective, the theory incorporates ecology, technology, knowledge-base, and innovation in driving an enhanced sense of happiness, better quality of material and spiritual life, and the coordinated all-round development of economy, environment and society (Mao, et al., 2015). Its people-oriented, development-leading and wisdom-guiding characteristics enhance its assessment of development needs and requirements, design and construction operations. It also canvasses the enhancement of the quality of life of city inhabitants by analyzing current problems, strategic planning, and constituting think-tanks comprised of urban policy sets, industry experts, and the representatives of the local residents (Mao, et al., 2015). The premises of the theory and the USIP underlie the focus of this article on the imperative of a convolution of interventions to mitigate likely risks determined from ethnographic observations and respondent feedback, and improve population health in Jos.

Housing and Built Environment Development

Multi-function, high-density and other designated residential and commercial areas exist within the Jos metropolis in the Tafawa Balewa road, Nasarawa Gwom, Tudun Wada and Abattoir axes. There are also designated medium and low-density residential and commercial areas in the fringes immediately surrounding the metropolis such as Abattoir, Millionaires Quarters, and the Government Reserved Area (GRA) at Tudun Wada and off Ibrahim Taiwo road, etc.

As a consequence of shrinking spaces, areas previously designated as residential are now commercial areas and vice versa, thereby affecting the locations of markets, fruit and vegetable stalls, fuel stations, shopping malls, hotels, car-wash and car-sale stands, and other services. It has also inadvertently influenced the current layouts of the city, leading to a mix-match of the designated purposes of the areas. This mix-match has become a feature of areas like Rayfield, an area that two decades ago was largely residential. The outcome is that new building structures are constantly springing up or being remodeled to accommodate the changing socio-economic spaces.

Asides permissions for the constructions, demolitions and reconstructions, these buildings are in diverse shapes, sizes and shades of paint that do not depict concern for aesthetics in the layout of the areas, by the ways that they are positioned. This may require that the town-planning authorities demand

stricter conformity to plans that inject aesthetically pleasing qualities into the built environment.

Urban Slums

Cities in developing countries have been affected by population growth and rapid urbanization (Wie & Ye, 2014; Ameen & Mourshed, 2017). Over the very recent years, Jos has witnessed a population explosion in response to migration due to conflict situations. An increase in birth rates across the country has also resulted in a sustained 2.58% to 2.64% annual growth rate (World Bank Report, 2019), that has invariably eventuated an increase in urban slums which are gradually infringing and changing the initial designations of the delineated high, medium, low-density and multi-function areas in Jos.

The overflow of populations in Jos metropolis has led to an expansion of the fringe and suburban areas around Dadin-Kowa – Bukuru – Anguldi – Trade Centre, on the one hand, and Farin-Gada – Mile 7 – Army Engineers on the other, alongside the development of more urban slums. These spring up almost on a daily basis to cater to the inevitable needs of individuals for shelter. The proliferation of these areas identified as “anguwa” (Hausa for locality/area), begins first with clusters of a few shabbily-built shanties which metamorphose into houses constructed out of mud bricks and sometimes into real houses built out of cement blocks, or both. Subsequently, the vicinities are comprised of a combination of all these structures.

More closely-clustered structures like these exist along the Bauchi road – Kwararafa - Masalacin Juma'a - Dogon Dutse - Nasarawa Gwom - Gangare – Dilimi, and Farin Gada - Konan Shagari – Bauchi ring road axes, occupied by populations that are a Muslim majority. In the Hwolshe – Tudun Wada - Jenta Adamu - Tafawa Balewa - Apata – Busa Buji – Chobe - Anguwan Rukuba – Tina Junction - Yan Trailer axes, they are inhabited by populations that are largely Christian. Most of these houses springing up at an unprecedented rate, are constructed within barely three feet of each another. They are devoid of the necessary authorization or oversight from the approving bodies, and are seemingly above the powers of these authorities to either curb the rate of expansion, or destroy the emergent and existing structures. Some of the areas where these structures are erected are actually not designated as residential areas. In some cases, the houses are built precariously on the sides of hills and small mountains, and are susceptible to landslides and collapse in extreme weather.

The proliferation of such areas results in a corresponding increase in urban slums in Jos, Plateau State. Many of these areas have become 'villages in the city', a phrase which Kilani (2012) used to describe government-abandoned communities within urban areas. They lack basic social amenities, hygiene and sanitation features including water, conveniences, waste management facilities, etc., as demanded by the Water, Sanitation and Hygiene (WASH) initiative. This raises the risks of communicable diseases of epidemiological proportions, exacerbated by the humid temperatures obtainable in the tropics, that the government may be unprepared for. In Jos, they are characteristically occupied by members of the lower and lower-middle classes, and contribute to the increasing

number of ungoverned spaces in the metropolis.

Waste Management, Sanitation and Environmental Sustenance

Waste is categorized as controlled or uncontrolled, especially in developed countries. Controlled wastes are generated from households, industries, commercial activities, and activities relating to construction while the uncontrolled are derived from mining, quarries, dredging and agricultural activities (UK Environmental Agency, 1999). Waste management implies the process of generating, collecting, processing, transporting and disposing waste matter by specialized agencies through recycling, composting, sewage treatment, incineration and landfill (Rushton, 2003). Despite these laid out procedures, solid waste still poses health hazards (WHO, 2007).

Waste management processes in Nigeria, as with other developing countries, lack clarity with regard to responsibilities and procedures. There has also been a proliferation of local industries, neighborhood shops and markets which contribute to the quantity of waste generated within Nigeria. The annual solid waste generation in the country is 32 million tonnes, making her one of the largest producers of waste in Africa. Out of this volume, only 20 – 30% is properly collected (Okorie & Mbalisi, 2018; Bakare, 2020).

In Jos, prior to the emergence and interventions of the newly elected state government, a poor waste management structure existed which allowed 'unattended' waste clutter the streets, further narrowing the already narrow roads around Ahmadu Bello way - Rwang Pam street - old Bukuru park axis, Dilimi - Bauchi road – Nasarawa Gwom axes, and along some feeder roads off the Bukuru expressway. It got into sewers, gutters, and rivers, causing blockages, and widespread air and environmental pollution. Currently, these have been evacuated. However, in the fringe and suburban areas around Cele bridge, Nasarawa Gwom, and Tina junction, this waste is dumped into springs, streams and rivers, from which some of the urban poor source water for everyday use. Contamination from these wastes allows water-borne illnesses like malaria, cholera, typhoid and paratyphoid fever, gastroenteritis, dysentery, etc. to thrive, sometimes with high mortalities recorded during epidemics (Oguntoke, Aboderin & Bankole, 2009; Pirsahab, et al, 2017). Also, open defecation and dumping of other human waste is a trend that remains to be tackled. The provision of clearly marked spaces and facilities across the town will further enhance the management of these types of waste. It also demands the commitment of the members of the public, particularly as regards the hazards of open defecation.

Krystonik, et al (2020) noted that solid waste constitutes urban zoonotic reservoirs, and breeding sites for biological disease vectors which use them as burrowing sites and food sources. Some communities overwhelmed by the waste, burn the dumps as a maintenance strategy but this is inadequate to curb the health risks associated with them. The unprofessional burning of the heaps raises the risks of exposure to the incineration-related emissions released into the atmosphere. Epidemiological studies in France, Portugal and Spain prove that burning releases critical pollutants including heavy metals into the bloodstreams of the population, and increases carbon emissions in the atmosphere (WHO,

2007). Notably, these wastes are rarely a feature of the high-brow residential and commercial areas inhabited or attended by the members of the upper social strata in society.

Road Networks and Transportation

Road safety is assessed more as a personal responsibility than as a political priority for government action though the government has a responsibility to make this service optimally utilizable for its citizens (SDG 3.6, 11.2). The study assesses the impact of the current layout of road networks and access to transportation or the lack of it, in the high, medium, low-density and multi-function areas, as well as within the ungoverned spaces. It also evaluates the efficacy of the transport and road safety emergency service facilities, in improving population health among residents in the vicinities.

An OXFAM (2020) report notes that globally, road accidents kill more people than malaria annually with the figure put at 1.24 million in 2017 and 1.25 million in 2020. Traffic collisions are the leading cause of death and injuries among children and young people. The World Health Organization estimates that the annual economic cost of these deaths constitutes about three percent of the Gross Domestic Product (GDP). In the low and medium-income countries of the Global South especially Africa (with Kenya and Nigeria topping the charts), there has been an increase in fatalities in the last decade. Road accidents are killing more people, yet the inadequacy of record-keeping makes it difficult to obtain actual official statistics (OXFAM, 2018). The report from the assessment of road safety measures in three cities of the Global South – Nairobi, Mumbai and Bogota – shows that pedestrians account for more than 50% of fatalities, with working age males making up 65-80 percent of the casualties (OXFAM, 2018).

Statistics on the number of accidents or fatalities recorded per day or monthly in Jos are outdated, with current figures virtually non-existent (Mandong, et al, 2006; Bombom & Edino, 2009; PremiumTimes, 2018). Concern for up-to-date documentations that cover vehicular road worthiness, etc. with emphases on the collection of fines from defaulters, are uppermost in the minds of officials of the Directorate for Road Traffic Services (DRTS), and the Federal Road Safety Corps (FRSC), as gleaned from their activities and conduct on the major roads across the town. The condition, functionality and serviceability of the vehicles that ply the roads, and overloading of passengers, animals and luggage, are rarely the focal points of these agencies with the responsibility for ensuring road safety. Consequently, vehicles plying the road contribute to air pollution and respiratory disorders from the volume of toxic gases emitted into the atmosphere through the combustion mechanisms, leakage of vehicular oils, etc. The health issues are aggravated by passengers being crammed into the taxis and buses, thereby significantly raising the risks of disease spread and high rates of mortality when there are accidents.

To curb casualties related to road and traffic issues in Jos, several interventions are expedient. Traffic law enforcement must include restrictions on the number of passengers in particular vehicle sizes, etc. The movement of trailers, trucks and other articulated vehicles should be restricted to roads that are

in the outskirts of the town, and to particular times of the day to prevent pollution, mishaps and related risks that they pose to other road users. This restriction will prevent unnecessary accidents and traffic jams that arise when these vehicles break down on the narrow roads that traverse the town. It will also prevent or reduce the wanton loss of lives which occurs when they lose control and run into pedestrians, other motorists and buildings.

Road expansions must accommodate dual lanes within the medium and high-density neighborhoods, with road medians, bike lanes, and pedestrian walks and pavements introduced to reduce non-vehicular accidents and deaths. More overhead pedestrian bridges and road sections marked as zebra crossings should be introduced on the busiest roads, and fines instituted for crossing the roads at undesignated areas. The road extending from British America junction to Plateau Private School Roundabout has received some attention from the government and has been expanded. However, more road expansions are necessary in the inner-city areas such as those extending from Tafawa Balewa road, Rukuba road, Apata – Busa Buji – Katako – Konan Shagari road, Nasarawa Gwom – Dogon Dutse and a host of other roads where there is population density. These will reduce the incidences of accidents, overheating cars at risk of getting burnt, heat strokes, deep vein thrombosis (DVT) and other ailments, that are rampant in traffic jams.

As in the developed countries, organized systems of transportation disallowing overcrowded commutes and overloaded vehicles should be instituted. Freight and cargo vehicles should be clearly designated as such, to ensure the proper movement of goods. The practice in Jos is that at the designated parks for inter-state travels, people and cargo (personal belongings, foodstuff, pets, etc.) are simultaneously loaded into the same vehicles for road trips that sometimes last as long as five to 17 hours. Consequently, commuters are exposed to inhuman conditions and health hazards capable of causing outbreaks of strange communicable diseases, death from suffocation, etc. in the drivers' zeal to make a little more money from what is charged for the conveyance of such goods. Even intra-state taxis are overloaded such that cars designated to carry five people, transport seven to eight people in a bid to mark-up their profit. This is also the case with the larger commuter vehicles and buses. In some instances, for more profit, commuter vehicles carry luggage on the tops of their open, stuffed trunks and rooftops, with risks and incidences of items suddenly dropping and causing accidents, particularly on busy roads.

Insecurity

The Jos Plateau is almost always in the news as a result of the incidences of attacks and conflicts recorded periodically, to the extent of its being identified as a volatile, conflict-prone town. The conflicts have been evolutionary, categorized under ethno-religious, farmer-herder conflicts (Blench, 2004), and the Boko-Haram insurgency (Higazi, 2010). Several midnight attacks continue to be recorded in communities across the state (Audu, 2023) that require a departure from the usual methods of securing the villages, if the spate of attacks and deaths

are to be curbed. There are also instances of robberies and abductions in cabs and tricycles. Despite concerted efforts to register these vehicles, culprits are hardly ever traced because of a dearth of mechanisms to enforce broad-based compliance with registration requirements by relevant authorities, and gaps in the government security apparatuses, policing networks and structures. Addressing these will mitigate the risks.

Veterinary Services

Around the urban slums in the Jenta Adamu-Chobe-Apata-Konan Shagari axes, it is more common to see stray animals. As these areas are the most densely populated, the government should invest in pet vaccination or euthanasia programs to rid the city of stray disease vector animals, since there are no facilities for clearing and catering to the strays.

Healthcare and Emergency services: Quick Response Ambulance and Fire services

Asides the fire service which offers skeletal services due to dearth of facilities and funding, there are barely any functional ambulances in the public-owned hospitals. The majority of citizens rely on the ambulances provided by the private hospitals, usually at exorbitant prices, or on buses and minivans used for public transportation, and converted to 'ambulances' during emergency situations. Emergency cases ensue from the number of casualties and victims of domestic accidents, road transport accidents on day-to-day bases, and the incessant crises that erupt in the largely volatile state (Ozoilo, et al. 2012). This further underscores the essentiality of functional emergency health and medical services. In the Health Digest publication of January 27, 2024, the Nigerian Medical Association, Plateau State Chapter decried the lack of functional emergency medical services across the state and appealed to the government to expeditiously address the gap through the introduction of a properly manned, well-equipped emergency medical response system.

Despite the fact that these indices are widespread in the country, the emphasis of this paper is on the gaps that hinder the efficiency and effectiveness of policies to improve the environment and by extension, the health of the city residents. Most of the anomalies highlighted contribute to stressors that residents of Jos city contend with. Frustrations against the failures of government to adequately meet the basic sustenance needs of the citizenry abound, heightening the sense of hopelessness that generally pervades the society. Evidently, steps have been taken to provide services across the diverse facets but the perpetual lack of funding, oversight, and policy alignment and continuity challenges the efforts.

Conclusion

Globalization has evinced numerous evolutions across all sectors of economies the world over. The advent of social media and its potency in evaluating and determining the trends of government action and inaction is also a consequence of the evolutions. Social media has enabled citizens and netizens connect across 'small spaces' where they make comparisons, exchange ideas, and take

progressive actions geared towards the improvement of quality of life and the enhancement of life expectancy. Currently, there are levels of awareness and exposure among citizens, institutions and organizations that raise questions about what should and should not be, and about government responsibilities and governance, efficient service delivery, commitment to better standards of living, environmental sustainability, etc.

The awareness influences the experiences and perspectives of residents and stakeholders in Jos, and provides valuable insights into the potential efficacy of solutions related to the provision of essential services as an urban renewal strategy. Urban renewal offers both real and psychosocial influences on citizens' perceptions of government commitment, social inclusiveness and development. For Jos city dwellers, it should bring opportunities for socioeconomic development and personal advancement that allow individuals function as social valuables. Contrarily, the perceptions of hopelessness across society raise the rates of reduced health outcomes.

Attaining basic functionality of key social services with a focus on population health, enables the appreciation of urban renewal as a social determinant of health (SDH). The social determinants of health framework states that the distribution of health and wellbeing, and the consequences of illness in people's lives are determined by structural and intermediary factors. These factors include the socioeconomic and political contexts of inequitable distribution of power, resources, policy directions and actions; the healthcare system, and the social positions and conditions in which people are born, grow, live, work, and age (WHO, 2010).

Kadhim, Mourshed and Bray(2016) and Ameen and Mourshed (2017) emphasize that understanding country-specific contexts when identifying and handling urban challenges that deviate from the global perspectives, is essential to achieving overarching sustainability goals that include a healthy environment. Ameen and Mourshed (2017) emphasize further, that stakeholder engagement is central to urban regeneration plans. The recommendations of this study derive from these perspectives.

Recommendations - Preventing a Population Health Crisis

Jos the Plateau State capital is noted for the clemency of its weather and exists as a strategic gateway to the other states in Northern Nigeria. It therefore has potential for socioeconomic development due to the appeal it offers investors. Key aspects of the smart city theory also offer insights on factors that should contribute to the sustainability of any society. The essence of policies is to service these factors by addressing the demands and competing interests of individuals and groups within societies. Consequently, in addition to stakeholder engagement that involves key civil society members to ensure the proper implementation, coordination and success of policy interventions, strategies that conversely improve the health of Jos city dwellers and environmental sustainability should reflect –

- The delineation of locations of particular types of businesses with regulations and guidelines for structures of shopping malls, stand-alone

shops, stalls and other businesses. These should meet approved standards and prevent them from springing up arbitrarily and defacing the town as it is today.

- Poultry and other animal farms should be removed from the residential areas to the outskirts to ensure safety from zoonotic diseases.
- Sanitation in the high-density areas should be given priority to check epidemics, etc.
- Residential homes and fences in every area of the town must be duly approved and constructed with sufficient space from the designated motorways.
- Roofed bus-stops need to be erected at strategic parts of the metropolis to minimize the risks associated with overexposure to sunlight for commuters.
- With the growing concern for mental health globally, more freely accessible aesthetically pleasing parks and gardens should be erected across the metropolis to provide getaway spots for members of the public.
- Security apparatuses should be developed to enhance the existing security structures in the state. Neighborhood watches should be constituted of individuals with proven records of good conduct to ensure safety of lives and property. Security can also be enhanced by the registration of new members of the communities or neighborhoods with the ward or district heads as is done in communes in Switzerland.

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