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Serviceability and Liveability Planning In Yelwa Sector of Bauchi Metropolis, Nigeria

Sani Jibir Dukku
Department of Urban and Regional Planning Abubakar Tafawa Balewa University Bauchi, Nigeria
Corresponding Author: Sani Jibir Dukku

ABSTRACT: *The growing of Yelwa sector of Bauchi metropolis, Nigeria's serviceability and livability planning is presenting a new social, economic and environmental challenges for those who live, work and do business in it. Thus this study assessed the serviceability and Livability indices of the sector that are essential for improvingits identity and values, so as to making it attractive to inhabitants, visitors, talents, business developers and investors,as well asto draw government attention on the spread effects to serve asa model for other sectors in Bauchi metropolis. The study employed exploratory and descriptive design through literature review, and observation and questionnaire survey respectively. The study questionnaire was design to collate data on the serviceability and livability indices adopted from the Australian Geography Teachers Association report.Five percent of 56,260 household heads were administered questionnaires through a stratified random sampling technique, and records about 99% response rate.Data obtainedwere analyze using descriptive statistics. Finding revealed that majority of Yelwa residents are subsistence farmers in the category of low income earners, with poor: infrastructure, maintenance of public spaces, streetscapes, quality of the urban design, and architectural designs. Similarly the healthcare service and the educational indicators were assessed to be poor. However the cultural indices revealed that it has divergent ethnic groups that supportsgood socialization, with low level of violent crime but with high level of alcohol disorder. Moreover it has a very high personal safety. Thus the study recommended that success of serviceable and livable of the sector should be hinged to integrated master planning and a dynamic urban governance approach.*

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I INTRODUCTION

There is an increasing interest across disciplines in examining serviceability and livability of cities in the contemporary context of global urban development (Chazal 2010; Holden & Scerri, 2013; Howley, Scott, & Redmond, 2009; Newton, 2012). The emergence of this concept is as result of all scales of urban form effect on serviceability and livability indices from the design of individual homes, to neighborhood streets and parks, to citywide systems of streets and open spaces (National Complete Street Coalition, 2011).A successful serviceable and livable city do not operate efficiently in isolation from its environment rather, it balances social, economic and environmental needs that offer's investors security, infrastructure operating efficiently, and put the needs of citizens in the forefront of all physical planning perspective (Cities Alliance, 2007). Serviceability and livability of cities are challenges that concerns all. The value of the concept is an ultimate goal and common to all contemporary and competitive cities around the globe, a basis for local economy growth, crucial for the survival of a city and this is the source of concern (ISOCARP, 2010).

The concept fits in to improving city's identity and values while, at the same time, making it attractive to its inhabitants, visitors, and talents as well as to business developers and investors (Economist Intelligence Unit, 2010). A serviceable and livable city provide residents and visitors with interesting, pleasant and safe environment, an efficient public transport system, and a healthy green environment (Herman & Lewis, 2017). A serviceable and livable city needs to provide a sense of belonging, a place and identity connect together (Bandarabad & Shahcheraghi, 2012). The environmental, social and economic index provide the indices for assessing livable and serviceable condition of cities infrastructure, utilities and services, as well as monitor trends of environmental, social and economic activities, and its planning,(Yu *et al.,* 2007). The determinants, comprises host of factors of social, economic, political and environmental integrated together and these factors work so delicately on human psychology that lack or absence of adequate degree of any of it affect living condition (Chaudhury, 2005).

More than half of the world's population and especially Nigeria are living in cities, and the urban population is predicted to continue growing at an unprecedented rate (ISOCARP, 2010). The scale of the growth is presenting a new social, economic and environmental challenges for those who live, work and do businesses in it (ISOCARP, 2010). Africa, and in particular Nigeria, urban planners are facing these huge challenges that

require modification of the urban planning system of our cities and towns from a centrally transitional planned approach to an economy reform approach (Yu, Wang &Li, 2011). The revolutionary change regarding the planning method is to make our cities serviceable and livable in the context of the paradigm of changing global economy as pointed by Moretti (2012), as a tool for the smart growth and creation of good urban form, guiding the compact cities structure toward economic viability.

The conventional approach to urban planning in Africa and Nigeria in particular towards sustainable infrastructure development, is unattainable in meeting the demand and needs of urban development that is serviceable and livable, and this is certainly not meeting the goal of the 21st century civilization (Yu, Wang & Li, 2011), because it is recognized that the importance of good urban structure to economic, social, cultural and political system is very necessary in sustainable development goal. ISOCARP (2010) reported that a general sense of enjoying life and feeling fulfilled, safe and secured should be an integral part of every city structure. This is in agreementwith Veenhoven (1995) affirmation that a sense of comfort, safety and security people feel in their environment, at home, at work and when there are out in the city is enshrine in the concepts of livable cities. The concept ofserviceability and livability vary by geography (Barry 2012). However, a livable community is one that has affordable and appropriate housing, good sanitation with adequate mobility options, which together facilitates personal independence and the engagement of residents in civic and social life (Nation on Livability Communities, 2005). While Ray (2012) stated thatLivability means being able to take your kids to school, go to work, see a doctor, drop by the grocery or post office, go out to dinner and a movie, and play with your kids in a park, all without having to get in your car. Serviceability and Livability has emerged as an important concept in the field of urban and regional planning, often in describing long range goals of urban management.

In light of the foregoing this study aimed at exploring the inherent problems of serviceability and livability of Yelwa sector beyond other neighborhoods sectors in Bauchi metropolis to ascertain what privileges and advantages needed to be created in Yelwa sector, with a view to drawingattention towards them and help decentralize development through backwash effects and promotion of spread effects to serve as a model for other neighborhoods in Bauchi metropolis.

II STUDY AREA

Yelwa sector is one of the largest settlement in Bauchi town, located south of the metropolis along Dass Tafawa Balewa road. The early settlers were Gerawa and Fulani who settled for cattle rearing and farming purposes. The founder Nde Waziri said to have migrated from Inkil a surb of Bauchi town in 1966. He is Ngas by tribe that is why the central settlement of the sector is described as Ngas ward literally called "Angwan Ngas". Because of its vast land, it is described as institutional land use where many institutions are located today these include: General Hassan Usman Katsina Unity College; Bauchi College of Agriculture; Federal Polytechnic Bauchi; Abubakar Tafawa Balewa University Yelwa Campus, and Police Training School. Yelwa sector is made of ethnic diversity that include but not limited to the following tribes: Hausa-fulani; Sayawa;Jarawa; Ngas; Tangle-waja; Igbo; Yoruba; and other minority tribes. Yelwa is divided into sub sectors such as Tudu, Makaranta, Laborer, Kagadama, Tsakani, Lushi, Rafin-zurfi, and Gwalameji among others. The physical terrain is characterized by marshy and dry land. The structure of the settlement is compacted of poor quality urban design and streetscape that are narrow mostly less than 2.0 meters wide with many structures constructed on and under utility lines etc.

Figure 1: Google Earth Map of Yelwa Sector Bauchi

III METHODOLOGY

The study adopted exploratory and descriptive research method. Thus methodof data collation includes: review of literature, maps, observation, and questionnaire survey.The study population is 56, 260 households in Yelwa sector based on an annual urban growth rate of 3% (National Population Commission-NPC, 2010). Five percent of the population was sampled in line with Ball and Gall (1971) method of determining sample size. Subsequently questionnaireswere administeredthrough stratified random sampling technique to 415 household heads on the status of serviceability and livability indices in Yelwa sector, Bauchi metropolis of Nigeria. However only 410 of the questionnaires were retrieved and used for the analysis. The questionnaire was designed to collate respondents' demographic data and respondents' responses on the serviceability and livability indices of Yelwa sector of Bauchi metropolis. The serviceability and livability indices used for the study is adopted from the Australian Geography Teachers Association (2013). The indices was assessed based on a Likert scale of 1-5; 1 very low, 2 low, 3 neutral, 4 good, and 5 very good (see figure 1). The research approach generated both quantitative and qualitative data. Microsoft Excel Window was used as the instrument for data analyses. Data were analyze using descriptive statistics: percentage and frequency

IV REVIEW OF THEORETICAL CONCEPTS

3.1 Serviceability

Serviceability is a concept in urban planning that refers to the ability of the urban settings or city centers to have all the needed services in a sufficient, efficient and effective manner (Rue*et.al.* 2011). These needs are in terms of education, healthcare, sports recreation, telecommunication and other utilities and service that provides easy access and connectivity, aesthetics, functionality, shades and shelter, relaxation, security, socialization, welfare and freedom, income, and other means of livelihood, etc.

3.2 Livability

Livability refers to delightful and desirable urban spaces that offer and reflect cultural and sacred enrichment of an urban system that contributes to the physical, social, mental well-being and personal development of its inhabitants (Adolfo, 2009). Livability is a subjective concept that generally offers choice and diversity in the range of amenities available to people who live and work in the community (Wheeler, 2013). The key principles that give substance to livability are equity, dignity, accessibility, confidentiality, participation and empowerment (Kennedy & Laurie, 2017). Livability is a new planning technique that is used to preserve green space, ease traffic congestion, in pursuance of smart growthstrategies livable agenda (). Livability encompasses multi-dimensional issues relative to community design, land use, environmental protection and enhancement, mobility and accessibility, public health, and economic well-being (ICF International, 2011).A livable community is one that has these supportive community infrastructure and services, and adequate mobility options, which together facilitate personal independence and the engagement of residents in civic and social life (Pollak, 2005). Similarly, Erika and Hermanson (2015) describe livable communities as a neighborhood that are healthy, safe and walkable, offer transportation choices that provide timely access to schools, jobs, services, and basic needs that are imbued with strength and vitality, with features that emerge from preserving the unique characteristics that give our diverse communities a sense of place. However, for older residents, a livable community include elements that help them to maintain independence and quality of life (Pollak, 2005) that have a safe pedestrian environment, easy access to grocery stores and other shops, a mix of housing types, and nearby health centers and recreational facilities that can positively affect daily lives.

3.3 Sustainability

United Nations' (1987) Brundtland World Commission on Environment and Development defines sustainability as meeting the needs of the present generation without compromising the ability of future generations to meet theirs.Thisplaces the quality of life of the inhabitants' at center stage (Wallbaum, Krank & Teloh, 2011). The Increasing focus of this concept for urban planning and general public discourse, is largely because they are representative of values, priorities, and behaviors to which many people and institutions subscribe (Gough, 2015).Sustainability by contrast, brings a necessary pragmatism to the philosophical visions of Livability. Livability is about "now" and "here," focused on immediate and tangible interventions introduced in community plans and policies to impact the experience of place where people live, how they travel to work, and ways that they interact with each other and their surroundings to make them more livable.Figure 1 depicts how environmental, social and economic concepts of sustainability interactThe depiction set these elements in concentric circles; economic social and environmental, showing that the practical realization of sustainability can only happen in the overlap between the three fundamental elements: economic development; social progress and environmental responsibility.

Figure 1: Standard dimensions of sustainable development.

Source: Adopted from Tanguay(2009)

Various sustainablesettlements arestrongly hingedto the level of serviceability and livability**(**Dankani& Abubakar, 2011).Various studies indicated that there is conceptual overlap between serviceability, livability and sustainability and used the concepts interchangeably (Allen, 2010; Rue, *et al..*, 2011; Sanford, 2011). A sustainable city is an inclusive city that gives people a sense of place of belonging, identity and the security of social networks. It provides identification and connects pride with its history, community culture, traditions, heritage and education together with attractiveness, as well as a major driver for economic competitiveness that is always successful, prosperous, vital and full of opportunities for businesses, investors and institutions.

3.4 Primary Goal of Serviceability and Livability for a City

The primary goal of Serviceability and livability of a city is the promotion of better planning, urban design and affordable and equitable access to resources and opportunities including recreational, cultural and community facilities and in working towards this goal the Urban Policy for Serviceability and livability are sets out on four broad objectives these include:

- Facilitating the provision of appropriate infrastructure
- Supporting affordable living choices
- Improving accessibility of movement around cities and
- Supporting community wellbeing

The purpose is to guide and encourage neighborhoods to take a look at the community neighborhood in which they live in with the intent to help residents identify areas where they can direct their energies toward making their community more livable for themselves and others.

3.5 Urban Serviceability and Livability Indicators for Sustainable Development

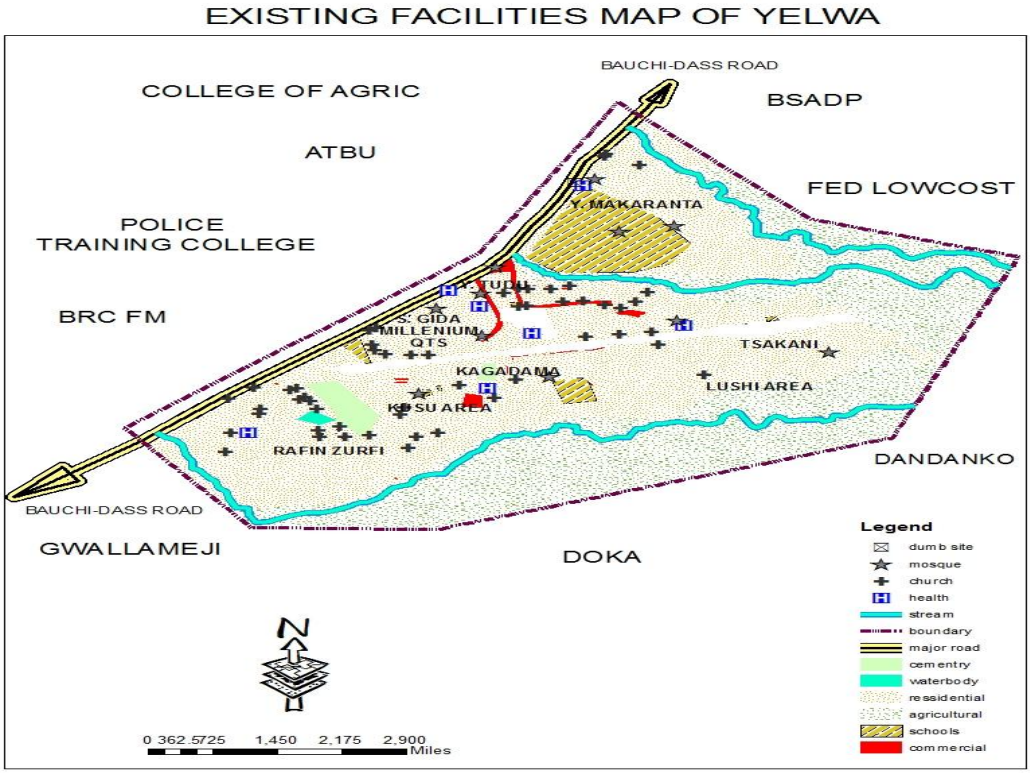
Urban serviceability and livability indicators for sustainability development are tools that allow city planners, city managers and policymakers to gauge the socio-economic and environmental impact of current status of urban designs, infrastructure, waste disposal systems, pollution and access to services by citizenries. The indicator allow for the diagnosis of the urban problems and pressures, on facilities utilities and services. Identification of these areas create room for the problems being addressed through good governance to monitor the success and impact of sustainability interventions.

The index Indicators are selected to provide information about the functioning of the system, for a specific purpose to support decision-making and management (Food and Agriculture Organization of the United Nations- FAO, 2002). The indicator are quantified, aggregated, measured and monitored to determine whether change is taking place. This is in order to understand the process of change, and the needs to help decision-makers understand why change is taking place.

Table 1: Global Indicators Checklist for Ranking Serviceability and Livability of a City

Scale of Measurement Indicators	Poor	Low	Fair	Good	V.good
Environmental factors	Score				
• Quality of urban design	1	2	3	4	5
• Architecture	1	2	3	4	5
• Streetscapes	1	2	3	4	5
• Parks and gardens	1	2	3	4	5
• Maintenance of public spaces	1	2	3	4	5
Social factors	Score				
Law and order					
• Level of violent crime	1	2	3	4	5
• Level of petty crime	1	2	3	4	5
• Alcohol-related disorder	1	2	3	4	5
• Graffiti and vandalism	1	2	3	4	5
• Personal safety	1	2	3	4	5
Education	Score				
• Choice of schools	1	2	3	4	5
• Quality of public school infrastructure	1	2	3	4	5
• Quality of private school infrastructure	1	2	3	4	5
• Opportunities for post school education	1	2	3	4	5
Healthcare	Score				
• Availability of public healthcare	1	2	3	4	5
• Quality of public healthcare infrastructure	1	2	3	4	5
• Access to doctors	1	2	3	4	5
• Availability of private healthcare services	1	2	3	4	5
• Aged care facilities	1	2	3	4	5
Cultural factors	Score				
• Places of worship	1	2	3	4	5
• Community recreational facilities	1	2	3	4	5
• Entertainment venues	1	2	3	4	5
• Public libraries	1	2	3	4	5
• Restaurants	1	2	3	4	5
• Licensed clubs	1	2	3	4	5
• Ethnic diversity	1	2	3	4	5
Economic factors	Score				
• Employment opportunities	1	2	3	4	5
• Affordable housing	1	2	3	4	5
• Access to shops and departmental stores	1	2	3	4	5
• Services stations and mechanics	1	2	3	4	5
• Hardwires outlets	1	2	3	4	5
• Personal services such saloon/hairdressers	1	2	3	4	5
Infrastructure factors	Score				
• Quality of roads access	1	2	3	4	5
• Availability of public transport	1	2	3	4	5
• Transport interchange and commuters parking	1	2	3	4	5
• Quality of telecommunication	1	2	3	4	5
• Public Infrastructure	1	2	3	4	5
• Reliability of utilities-water, electricity, sewerages	1	2	3	4	5
• Maintenance of public schools and hospitals	1	2	3	4	5
• Pedestrian cycle ways	1	2	3	4	5

Source: Adopted from Australian Geography Teachers Association (2013)



V RESULTS AND DISCUSSION

Table 1 shows the socio-economic characteristics of the respondents in Yelwa sector of Bauchi town. Almost 39% of the respondents are farmers, 30.0% are civil servant and 31.2% are traders/business men, artisans, and laborers. This is slightly in contrast with Gana's (2016) findings that Bauchi town is largely a civil service town. The income structure revealed that almost 51% of the respondents earn below the national minimum wage ₦18,000 monthly. By implication majority of the respondents are low-income earners without improved economic competitiveness through reliable, timely access to employment, educational opportunities, services, and other basic needs, as well as expanded businesses and access to markets in the sector. While 35.1% are in the category of middle income and only 14.4% are classified as high income earners.

Table 1: Result of Socio-economic Characteristic of Respondents in Yelwa Sector

Occupation	**Frequency**	**Percentage (%)**
Farmers 159	38.8	
Civil servants	123	30.0
Artisans 39	9.5	
Trader/business man	69	16.8
Laborer 20	4.9	
Total 410	**100**	

Income level	**Frequency**	**Percentage (%)**
Less than 18000	207	50.5
18000-36000	99	24.2
36000-54000	45	10.9
54000-72000	46	11.2
72000 and above	13	3.2
Total 410	100	

Figure 1 shows the environmental factors indices of serviceability and livability in Yelwa sector. About 55% of the respondents revealed that the maintenance of public space in the sector is poor, 51.3% of the architectural designs in the sector are poor, 44.4% of the sector layout design quality is poor and almost 49% revealed that there is no standard parks and garden in the sector.

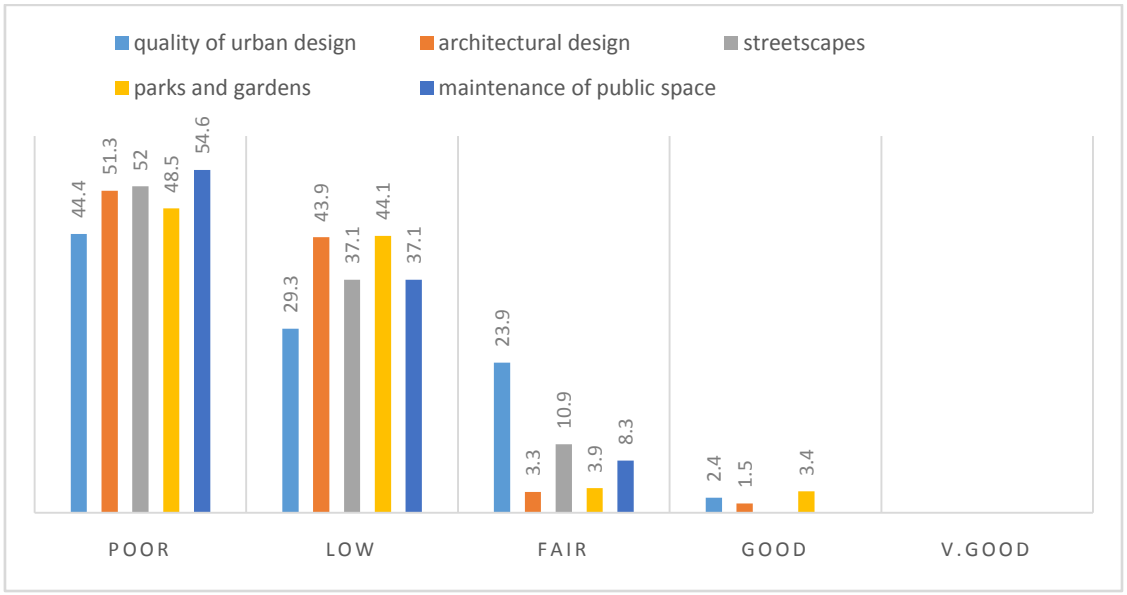


Figure 1: Result of Environmental factors Indicators of Serviceability and Livability in Yelwa Sector Bauchi

Figure 2 shows cultural indices of serviceability and livability in Yelwa sector of Bauchi. It indicatesthat 52.2% of the respondents are considerably of divergent ethnic groups, and as such termed to be very good for socialization. Moreover 51.3% of its places of worships identified are strategically located and ranked very well.However the sector has very poor social center, eateries, public library and entertainment venues.

Figure 2: result of the assessment of cultural indicators of serviceability and livability in yelwa

Figure 3 shows Law and Order indices as a global social factor index of serviceability and livability in Yelwa sector of Bauchi. Yelwa sector records 50.2% low level of violent crime. This is in contrast with Chaudbury (2005) findings that large cities all over the world are known as the Dens for all violent crimes which include: murder; money extortion; burglary; snatching; gang robbery; adduction etc. Moreover the study found out that, Yelwa sectorhas48% of poor level of petty crime, but has 66.1% of very high alcohol related disorder. However despite these identified social indices, the sector was ranked to be fair for personal safety (56.8%).

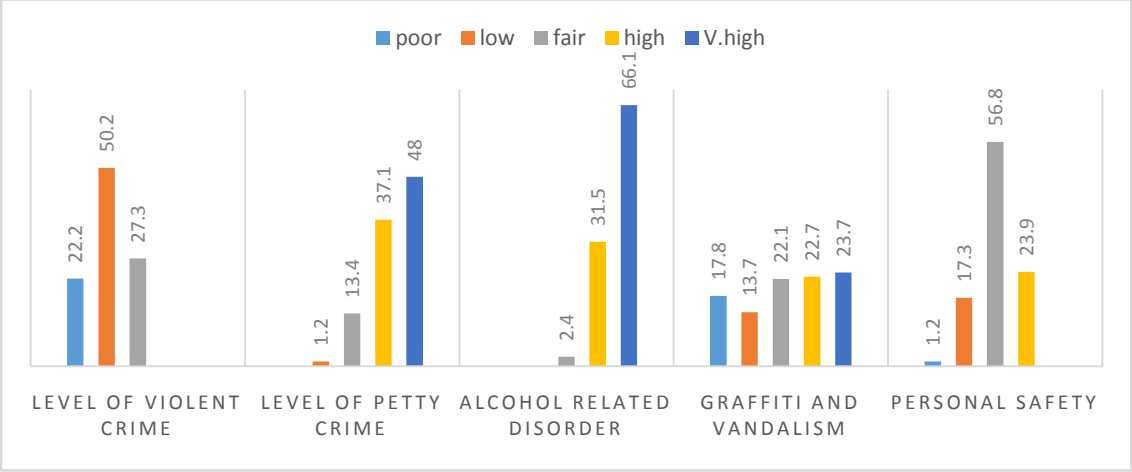


Figure 3: Result of Law and Order (Social Factor Indicators) in Yelwa Sector

Figure 4: shows healthcare services indices of serviceability and livability index in yelwa sector of Bauchi. The indices assessed were availability of public healthcare, quality of public healthcare facilities, access to doctors, and availability of private healthcare facilities, aged care facilities, and access to quality drugs stores. A little above 67% of the respondents ranked the availability of public healthcare facilities to be very poor, whileabout 33% ranked it to be poor. Slightly above 68% ranked quality of public health to be very poor, almost 17% ranked it to be poor,while only 15% ranked it to be fair. About 82% of the respondents ranked accessibility to doctor as very poor, while almost 19% it ranked to be poor. However, about 46% of the respondents rank availability of private healthcare to be fair, while 31% ranked it to be very poor. Slightly above 96% of the respondents ranked age care facilities to be very poor, as against a little above 53% of the respondents'ranked access to quality drug stores to be fair, while slightly above14% rank it to be very poor.

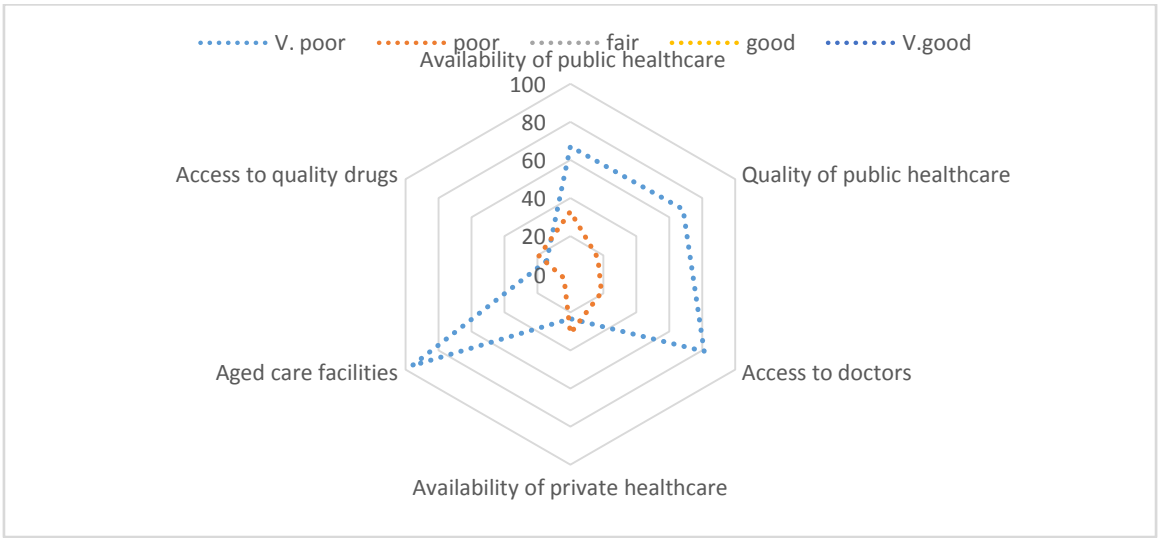


Figure 3: result of healthcare serviceability and livability index in Yelwa sector

Table 2: shows education indices of serviceability and livability index as a social factor indicator in Yelwa sector of Bauchi. The study found out that a little higher than 48% rank choices of schools for school going age in the sector as poor, almost 52% ranked quality of public school infrastructure as poor, while slightly above 42% ranked quality of private school infrastructure too as poor and almost 57% ranked opportunities for post education to the pupils in Yelwa sector of Bauchi to be poor

Table 2: Serviceability and Livability of Educational Index in Yelwa Sector

Social factors indicators	Frequency and Percentage Scores										
Education	Poor		low		fair		good		V.good		%Total
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	100
Choice of schools	198	48.3	76	18.5	87	21.2	49	12.0	-	-	100
Quality of public school infrastructure	211	51.5	120	29.3	79	19.2	-		-	-	100
Quality of private school infrastructure	173	42.2	110	26.8	98	23.9	29	7.1	-	-	100
Opportunity for post education	233	56.8	96	23.2	82	20.0	-		-	-	100

VI CONCLUSION

The essence of the paper, is rethinking the status quo of Bauchi town on the nuts and bolt of city management concept for economic vibrancy on a sector basis. This study is with a view to be replicated in each sector of the town to understand the socio-economic characteristics, social, cultural, economic, and infrastructure index of each sector of the town because as the city continue to grow, and becoming more complex there is much that urban authority can do to improve serviceability and livability of the citizenries. Knowing that a community that developed of biased infrastructure provisions compromises community's trust in their leaders and is not conducive to economic competitiveness because such conditions are the biggest enemy of urban development.

A serviceable and livable community is where residents enjoy high quality of life which are envisioned along three dimensions. First, a competitive economy that attracts investments and provides jobs. Second, a sustainable environment. Third, a high quality of life for the urban population with affordable and appropriate housing, supportive community infrastructure and services, and adequate mobility options, which together facilitate personal independence and the engagement of residents in civic and social life.

The challenges in Yelwa sector of Bauchi Nigeria, is enormous, many people are moving in to the sector and the provision of reliable infrastructure, utilities and services that support the life and businesses are indeed in deficit. The pressure on space and demand for services is increasing, the sector agglomerations is becoming hotbeds of social inequality and fragmentation, dis-economies of scale, and environmental degradation.

To transform the struggling state of the sector to a highly serviceable and livable economic engine needed "urban planning" as the agency responsible for the macro-level development of cities rooted in basic principles of good governance have to sets the framework of physical planning for the sector and be responsible for the land use planning preparation and policies, as well as conducting and analysis outcomes of every activities in the sector urban setting.

VII RECOMMENDATIONS

1. **Provision of transportation choices** to decrease household transportation costs, reduce ourdependence on oil, improve air quality and promote public health.
2. **Provision of housing choices** for people of all ages, incomes, races and ethnicities to increase mobility and lower the combined cost of housing.
3. **Improve economic competitiveness of neighborhoods** by giving people reliable access to employment centers, educational opportunities, services and other basic needs.
4. **Target federal funding toward existing communities** – through transit-oriented and land recycling – to revitalize communities, reduce public works costs, and safeguard rural landscapes.
5. **Align federal policies and funding** to remove barriers to collaboration, leverage funding and increase the effectiveness of programs to plan for future growth.
6. **Enhance the unique characteristics of all communities** by investing in healthy, safe and walkable neighborhoods, whether rural, urban or suburban.

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