Inter-Disciplinary Journal of Science Education (IJ-SED)
Vol. 4(2) June, 2023
Page: 7 - 16

SPATIAL DISTRIBUTION OF PUBLIC SECONDARY SCHOOLS IN BIASE LOCAL GOVERNMENT AREA, CROSS RIVER STATE, NIGERIA.

Uttah, Chinasa[1*], Onuoha, Edwin[2], Awan, Obianuju Emmanuella[3] and Ebok, Adonokpe Godwin[4]

[1]Department of Environmental Resource Management,
University of Calabar, Nigeria,
nasauttah@yahoo.com

[2]Department of Environmental Resource Management,
University of Calabar, Nigeria,
okoroalbert211@gmail.com

[3]Department of Environmental Resource Management,
University of Calabar, Nigeria,
ujuawan@gmail.com

[4]Department of Geography and Environmental Science,
University of Calabar, Nigeria,
adongodwin@gmail.com

Abstract

Education is essential catalyst for a nation's progress and prosperity. Therefore, even distribution of educational resources and facilities is utmost importance in nurturing literate and skilled citizens for any development of a community. This study is aimed at identification of the locations and mapping the distribution of Public Secondary School in Biase Local Government Area. The study used geospatial techniques to obtain data and map the spatial distribution of secondary schools in the study Area. The data is the 20-point locations of sampled public secondary schools. The Average Nearest Neighbor analysis result indicates an index of 0.9912, approximately 1, thus, the pattern exhibits randomness. Also, given the z-score of -0.07479, the pattern never appeared significantly different random. Based on the calculated p-value (0.264053), Average Nearest Neighbor ratio and z-score, it is thus fit to accept the null hypothesis; locational pattern of public secondary schools in Biase LGA is not different from a normal distribution across the study area. The study reveled the location distribution pattern of public secondary schools in Biase LGA if it's different from a normal distribution. Equitable Resource Allocation is recommended.

Keywords: Education, Public Secondary School, Distribution, Spatial,

Introduction

Education stands as a cornerstone for sustainable socioeconomic advancement worldwide. The provision of educational resources and facilities holds utmost importance in nurturing literate and skilled citizens, a prerequisite for nation-building and development in any corner of the globe. Education has evolved into an essential catalyst for a nation's progress and prosperity. Recognized as one of the most significant investments a country can make in its populace, education plays a pivotal role in combating ignorance, poverty, and societal disparities across

diverse strata. It serves as the path to human advancement and the vehicle through which individuals of all ages can unlock their full potential. However, it is a global concern that urban areas, often prioritized, enjoy a surplus of educational amenities from primary to secondary schools, while rural communities, struggling with resource shortages, remain underserved, perpetuating educational disparities. The global challenge lies in bridging this urban-rural educational divide to ensure equitable access to quality education for all, fostering inclusive and sustainable development on a global scale.

Education is a critical central development index to rural planning and community well being. Lack of educational facilities and services in any community is significantly associated with low productivity, illiteracy, ignorance and inherently increases mortality rates across the community. This therefore necessitates the need for equity in the distribution of educational facilities, both in the location, accessibility and utilization**.**

This study is to map the distribution of Public Secondary School in Biase Local Government Area.

Literature

Sanni's 2010 study on the Distribution Pattern of Educational Facilities in Osun State, Nigeria, holds significant importance in the fields of geography, urban planning, and education policy. His research illuminated the regional variations in the distribution of social services, particularly in the context of educational facilities. This topic has been of great interest to geographers, planners, and scientists due to its implications for understanding how spatial variation impacts access to essential services. Sanni's study revealed a consensus among researchers that as the distance from an educational facility increases, fewer people are inclined to utilize it. Moreover, the study underscored the critical role of educational infrastructure as a prerequisite for national development, emphasizing how disparities in distribution, inadequacy, and inefficiency of government-owned secondary schools can lead to the proliferation of privately owned institutions. This insight is invaluable for shaping education policies, addressing inequalities in access to quality education, and ultimately fostering societal progress.

Beyond its academic significance, Sanni's work has practical implications for policymakers, educators, and local communities. It guides resource allocation decisions, enabling more efficient distribution of educational resources. Additionally, it serves as a reference point for researchers and planners interested in exploring the spatial distribution of social services, offering valuable insights and methodologies. Most importantly, local communities in the Zaria Area and similar regions can benefit from the study by potentially gaining improved access to quality education and better educational infrastructure in underserved areas. In essence, Sanni's study is a pivotal contribution to the understanding of the relationship between spatial distribution and education, with far-reaching implications for educational development and societal advancement.

In their comprehensive analysis, Butler and Harnett (2007) scrutinized the geographical distribution of primary and secondary schools within Bida town, employing rigorous methods to discern the spatial extent of inequality and concentration in the provision of fundamental educational facilities. Notably, the study harnessed Geographic Information System (GIS) techniques to visually depict the spatial arrangement of these schools across Bida and, in tandem, utilized advanced statistical methods, including Spearman rank correlation analysis. The principal objective was to assess the degree of inequality characterizing the concentration of basic educational resources. Their findings underscore a compelling narrative: the allocation of primary and secondary schools in Bida town appears to be disengaged from the demographically nuanced landscape of the town's wards, as evidenced by the calculated t-value of 1.28, which significantly falls below the critical t-value of 1.78.

Furthermore, an examination of inequality through the prism of the Lorenz Curve reveals that approximately 50% of the basic educational facilities within Bida town are effectively

utilized. This pivotal observation underscores a palpable deficit in essential educational provisions across certain sectors of Bida, translating to limited access for a substantial portion of its residents. The study unequivocally establishes that the distribution of primary and secondary schools in Bida town was not underpinned by considerations of population concentration within various wards. It follows that the population distribution vis-à-vis the number of primary and secondary schools manifests as a moderately high degree of inequality, as manifested by the Gini Coefficient value of 0.57, highlighting the imperative for a more equitably calibrated allocation of educational resources in Bida town.

Wazzan (2016) carried a study is to detect the spatial degree of inequality and adequacies in the provision of first and second stage of basic education schools between different wards of Lattakia city, with respect to the population they serve. Secondary data were used for this study sourced from the inventory of the Educational Direction and the Direction of Statistic of Lattakia. Statistical techniques were employed to analyze data such as Mean deviation, Locational Quotient, Lorenz Curve and Ratio Schools/pop. The findings of the study indicated that the population and number of schools are not equally distributed. This revealed the existing of gaps in access to this facility between wards with some wards experiencing glut and concentration while other suffering lack and have no adequate access to this facility: for both
F.S. and S.S. schools, L.Q. value varies from 0 to 2.6, and from 1.94 to 0.6 for S.S; Ratio population/schools varies from 1:2971.7 to 1:16776, and from 1:50329 to 1:5057.Lorenz Curve indicates that about 50 % of schools are enjoined by about 50 % for F.S. schools and 60% for S.S. schools. The study concluded that there was a need for intervention of planners and government in the provision of basic schools in deficient wards to enhance human development.

In their empirical investigation, Hafiz, Muhammad, Ibrahim, Watirahye, and Maiwada (2013) conducted a comprehensive examination of the spatial distribution pattern of government secondary schools within the Giwa zone of Kaduna State, situated in the northwestern region of Nigeria. The study leveraged the analytical capabilities of a Geographic Information System (GIS) environment to discern critical insights. Their findings illuminated a distinctive concentration of approximately 80% of secondary schools in the northeastern quadrant of the area, encapsulating the administrative centers of Giwa, Kudan, and Sabon-Gari local government areas. In marked contrast, the central vicinity, encompassing Kakangi, and the southwestern sector, including Kidandan and Kadage, experienced a notable dearth of educational institutions, with certain locales such as Kadage and Idasu entirely devoid of such establishments.

The outcomes of the buffer analysis shed further light on the accessibility landscape within the Giwa zone. Notably, the region surrounding the Giwa local government headquarters and its proximate environs, specifically Shika and Yakawada, emerged as the most accessible areas to secondary schools. Conversely, Kakangi and Kadage were identified as the zones characterized by the lowest degree of accessibility to educational institutions within the study area. This discerning analysis underscores a compelling need to address the educational disparities evident in Kidandan, Kakangi, and Kadage, aligning the provision of secondary schools more closely with the respective population sizes in these wards. Moreover, a pertinent recommendation emerges for the judicious redistribution of secondary schools that exhibit a concentration around the administrative hubs, coupled with a call for the development of enhanced access infrastructure, including roads, to facilitate improved access to educational facilities throughout the Giwazone. Kayal and Roy (2018) examine the spatial disparities in educational facilities in different Districts of Indian state of West Bengal and intern analysis its impact on regional development. A simple multivariate method has been followed to compute a composite Infrastructure Development Index (IDI) by combined various Infrastructural Services available at the District level. Empirical evidence suggests that there is a positive relationship between Infrastructural Development Index and Per Capita Income and negative relationship

between Infrastructural Development Index and Poverty. However, an effort should be made to create more infrastructural facilities at the district level to raise the state domestic product and reduce the level of poverty of the people concern. The existence of geography of education has not been overlooked by geographers alone.

In general, neither specialists nor the general public typically consider geography to be a discipline that should contribute to discuss issues that are concern to education. Consequently, geographers are rarely involved in the formation of education policy, although such policies frequently deal with clearly geographical topics, such as the spatial distribution of school facilities.

According to Al-zeer,(2005) "The fact that geography matters in relation to educational provision applies in a number of different ways. For example, if it is unequally distributed across space." However, what unites geographers is the issue of spatiality‘s of the provision of educational facility, in other words, the distribution of schools‘ facilities, and even more its unequal distribution across space". According to principle of justice as quoted by Malczewski and Jackson (2000) educational services should be organized in a way remotely situated that maximizes individual within a school district" The equity concept can also be operationalized by minimizing variability of access to educational facilities. Variability can be measured in terms of the standard deviations or variance of residence to place of educational services". He adds that "the more schools, the closer each potential user to the one serving him or her". In other word, the distribution of school‘s facilities, and even more its unequal distribution across space". In a review of related literature and studies focusing on the equality of spatial distribution of educational facilities through the relationship between population number and schools, many studies can be mentioned about developing countries as there is a dearth of works and studies about Syria.

Within Bida City, Nigeria, a study conducted by M. Haruna, D., and M. Bala, Banki, in 2012, focused on a meticulous analysis of the distribution of primary schools, conscientiously aligning their evaluation with the prevailing population distribution within the various wards. This discerning approach revealed a sobering reality: certain areas within Bida City grapple with a conspicuous deficiency in fundamental educational facilities. Consequently, a significant portion of the city's residents face a palpable dearth of adequate access to these critical resources.

Meanwhile, in Saudi Arabia, a similar concern has garnered attention, as underscored by studies elucidating the pronounced spatial inequality characterizing the distribution of school facilities. Al-Zeer (2005) conducted an examination of the efficiency of spatial distribution with a focus on secondary public schools in Riyadh city. The outcomes of this investigation unveiled a nuanced landscape, marked by an insufficiency of public secondary schools in the northern precincts of the city, juxtaposed with the issue of overcrowding prevailing in the majority of primary schools. In fact, the capacity of these primary schools was found to exceed the optimum by a substantial margin, ranging from 19.05% to a staggering 141.46% for girls' schools and from 24% to 90% for boys' schools, thereby highlighting a complex challenge in the equitable allocation of educational resources in Riyadhk.

Ojiri, B. I. (2022), examines the concepts of school facilities, classification of school facilities which include: instructional, recreational, residential, health and general-purpose. The study identified Equitable distribution of school facilities is a prerequisite to the realization of secondary education goals and objectives. The discussed the equitable distribution of school facilities with a particular focus on Imo State secondary schools. Highlights were made on problems of facilities distribution in secondary schools such as poor budgetary allocation to the education sector, poor human resource recruitment, incorrect data, politicization, poor supervision, and rural-urban migration. Some ways to ensure equitable distribution of facilities were highlighted as needs identification, inventory survey, adequate specification, and enrolment rate

Al-Sagri and Aldugairi (2013) conducted a study focused on the spatial distribution of public high schools for girls in Buraidah city. Their findings revealed an uneven distribution of schools across the city's 70 districts. Specifically, out of the 70 districts, only 30 had schools, with 44 schools dispersed among them. This distribution pattern included 3 districts with 3 schools, 8 districts with 2 schools, and 19 districts with only one school. Remarkably, 40 districts in the city still lacked schools, accounting for 57% of all districts and covering 62% of the city's area. A similar situation was observed in Iraq, as noted by Juneitt (2015), who examined educational efficiency. In contrast, some developing nations, such as Nigeria, have encountered difficulties in improving access to quality education services. The limitations in the supply of educational resources, including educational facilities and infrastructure, have adversely affected the quality and effectiveness of their education systems. Meanwhile, Indonesia has made education sector development an integral part of its national development agenda. In efforts to enhance educational development, various policies and programs have been proposed. These initiatives encompass the recruitment of qualified teachers and lecturers, curriculum enhancements, and the provision of adequate educational facilities (schools). These policies and programs play a pivotal role in advancing educational development by improving the overall quality of educational resources.

In 2015, Oloko-Oba, Ogunyemi, Alaga, Badru, Ogbole, Popoola, and Samson undertook a study aimed at assessing the distribution of educational facilities across various regions in Nigeria. They noted a troubling trend of political bias in the allocation of these facilities, resulting in certain areas being burdened with over-utilization while others remained underutilized. The research emphasized the importance of considering factors such as population, proximity, and economic efficiency when determining the optimal locations for educational institutions, ensuring sustainable development. To investigate this, geospatial techniques were employed to visualize the spatial distribution of primary schools. Data for the project were gathered from both primary and secondary sources. Primary data collection involved the use of a handheld Germin 60 Global Positioning System (GPS) receiver to record the precise coordinates of primary schools. Secondary data encompassed high-resolution imagery, administrative maps, and existing school records. Data analysis was executed using Nearest Neighbor Analysis as the statistical method, which allowed the researchers to determine the pattern of primary school distribution by comparing the observed mean distance (Do) between each feature to the expected mean distance (De) for the given features within a random pattern.

The study employed specific parameters, including school location, the total count of primary schools, and the land area in square kilometers for each ward, to analyze the distribution pattern of primary schools within the research area. However, the outcomes of the spatial distribution analysis conducted in Ilorin West Local Government revealed an uneven distribution pattern of schools, as follows: Well-served areas constituted 41.66%, marginally served areas comprised 25%, underserved areas accounted for 16.67%, and areas that were not served were also at 16.67%. This distribution pattern resulted in five (5) wards displaying a random distribution pattern, three (3) wards characterized by clustered patterns, and two (2) wards exhibiting dispersed distribution patterns.

Theoretical framework

Central place theory

Central Place Theory, initially introduced by Walter Christaller in 1933, offers a structured framework for understanding the intricate relationship between the availability of goods or services, the requisite supporting population, the spatial extent of the hinterland encompassing this population, and the dimensions of the central place itself. This theory serves as a valuable

tool in the field of urban and regional planning, enabling the assessment of settlement patterns and the organization of economic activities within a geographical area.

At its core, Central Place Theory posits that settlements, whether towns or cities, serve as central places that provide essential goods and services to the surrounding population. Christaller's theory delineates a hierarchy of these central places, with larger, more complex urban centers at the top of the hierarchy, catering to a more extensive hinterland. Smaller settlements, such as villages, occupy lower levels in the hierarchy, offering a narrower range of goods and services to smaller catchment areas.

Central Place Theory aids in understanding the optimal distribution and spacing of central places to efficiently meet the needs of the population while minimizing redundancy. By examining the interplay between population thresholds, market areas, and the functions of central places, this theory offers valuable insights into the spatial organization of human settlements and economic activities, facilitating informed decision-making in urban and regional planning.

Material and methods

Data on the locations of public secondary schools in Biase LGA were gotten using Global Positioning System (GPS).

The study engages geospatial techniques to show spatial distribution of secondary schools. GIS techniques were used to create maps that showed spatial variation in availability, usage and cost of the service in the area, using the Environmental Systems Research Institute (ESRI) Arc Map software. Data obtained from the field were inputted as attributes of the sample points layer and the Inverse Distance Weighted (IDW) interpolation method was applied to derive the maps. The assumption that makes interpolation a viable option is that things that are close together tend to have similar characteristics (ESRI, 2013).

The technique used to design the maps showing the spatial distribution of public secondary schools in Biase LGA, the X (longitude), Y (latitude) and Z (name and attribute) of Public Secondary Schools spots were collected during the field data collection using a Garmin Etrex 10 handheld Global Positioning System machine. The x,y and z data were inputted in the Microsoft Excel software where it was prepared for mapping and spatial analysis in the GIS platform. The set of data were collected had a total of 20 Public Secondary Schools. The data were plotted in the ArcGIS platform and symbolized to show the spatial location and distribution of public secondary schools in Biase LGA as shown in Figure 1.

Results

The study reveled the location distribution pattern of public secondary schools in Biase LGA if it‘s different from a normal distribution, Figures 1.

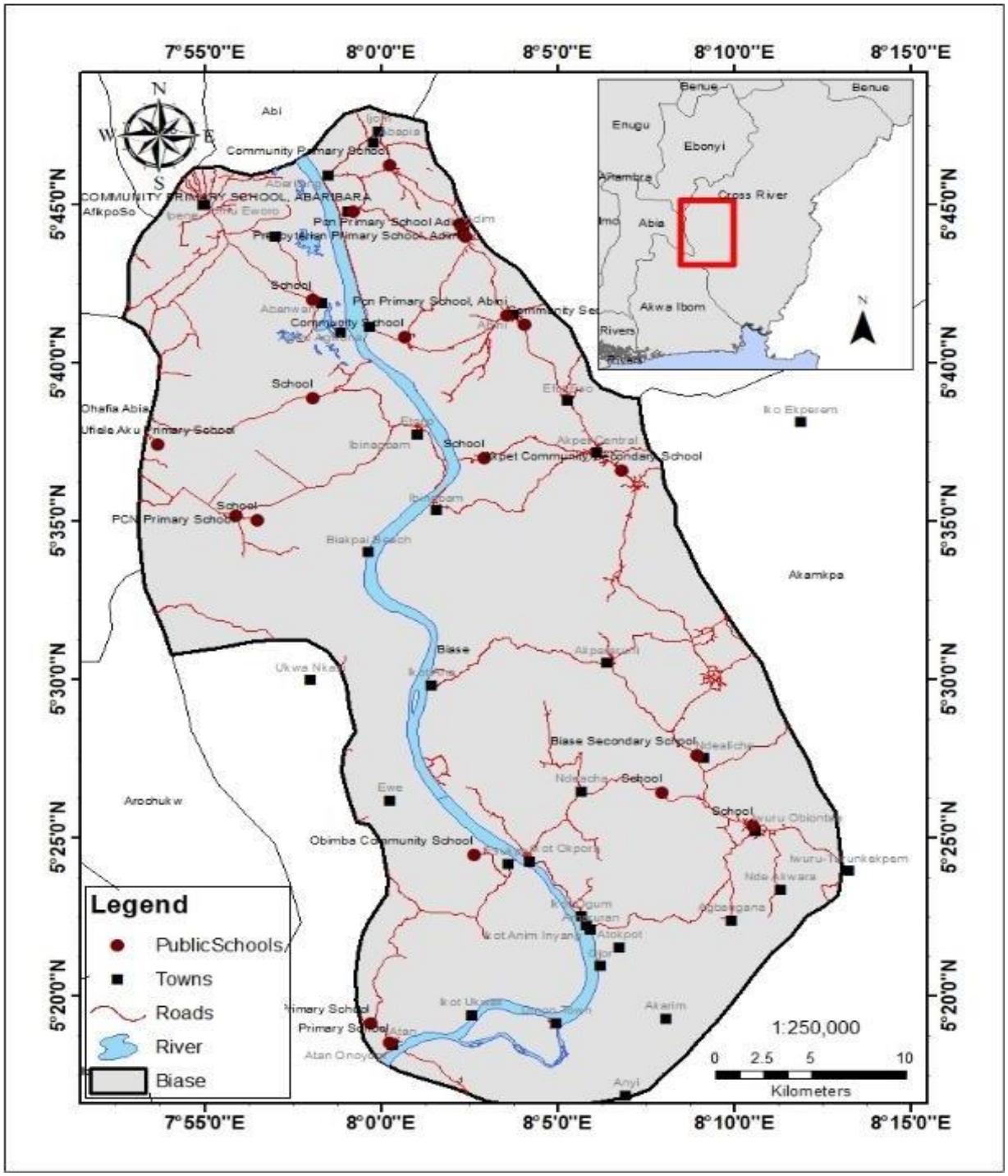

Fig 1. Distribution of Public Secondary Schools in Biase LGA.
Source: Researcher GIS Analysis (2023).

The point data (longitude and latitude) of the locations of public secondary schools in Biase LGA, were employed to conduct the analysis. The data is the 20-point locations of sampled public secondary schools. The Average Nearest Neighbor analysis result indicates an index of 0.9912, approximately 1, thus, the pattern exhibits randomness. Also, given the z-score of -0.07479, the pattern never appeared significantly different random. This means it is very likely that the seen spatial distribution is the output of random processes (ESRI, 2013). Based on the calculated p-value (0.264053), Average Nearest Neighbor ratio and z-score, it is thus fit to accept the null hypothesis; locational pattern of public secondary schools in Biase LGA is not

different from a normal distribution across the study area. This suggests that the sampled public secondary schools in Biase, exhibit a random distribution pattern. The results obtained from the analysis, particularly the Average Nearest Neighbor (ANN), offer valuable insights into how the public secondary schools within the study area are situated.

Conclusion and Recommendations

The findings of this study highlight key areas where targeted interventions and policy adjustments can enhance the positive impact of public secondary schools on rural development in Biase LGA, Cross River State. This serve as a roadmap for policymakers, educational authorities, and community stakeholders to optimize the transformative potential of education in the region. Therefore, Equitable Resource Allocation is recommended:

- Allocate resources, including funding, teaching staff, and infrastructure, in a manner that addresses disparities in school distribution between urban and rural areas.
- Ensure that rural schools receive adequate resources to create conducive learning environments.

References

Abbah, N. (2010). *Development administration: A multi –dispensary approach.* Enugu: John Jacob Classic publishers.

Abumere, S. I. (2002). *Rural infrastructure and the development process in rural Nigeria.* Research Report No. 36. Development Policy Center. Ibadan, Nigeria.

Adefila, J. O. & Bulus, J. S. (2014). Spatial Inequalities in Infrastructural Development in Plateau State, Nigeria. *American International Journal of Contemporary Research,* U.S.A. 2(1), 89-97.

Adejuyigbe, O. (1973). Location of social service centers in Western Nigeria, the case of medical facilities Mimeo, Dept. of Geography, University of Ife, Now Obafemi Awolowo University (O.A.U.), Ile-Ife, Nigeria.

Agbabiaka, A. I., Aguda, A. S. & Nzere, R. B. (2018). Journal of the Operational Research Society.

Akomolafe, O. C. &Adesua, O. V. (2016). The impact of physical facilities on students' level of motivation and academic performance in senior secondary schools in south west Nigeria. *Journal of Education and Practice,* 7(4), 38-42.

Alimi ,O. S., Ehinola, G. B. & Alabi, F. O. (2012). School type and academic performance of students in senior secondary school in Ondo state, Nigeria. *International Education Studies Journal*, 5(3), 44.

Al-Sagri S. H. & Aldagheiri, M. I. (2013). Analyzing patterns of spatial distribution for girls high schools in districts of Burydah City. A study in geography of services. *Journal of faculty of Humanities,* Alexandria University, No. 71.

Al-Zeer, N. M. (2005). Analysis of the spatial distribution of public secondary girls and boys in Riyadh, Saudi Arabia. Unpublished Ph.D Thesis, Department of Geography, University of Leicester. UK. 314p

Australian Government. (2021). Australian education system. https://www.studyinaustralia.gov.au/english/australian-education/education-system

Awoyemi, T. T., Obayelu, A. O. & Opaluwa, H. I. (2023). Effect of distance on utilization of healthcare services in Rural Kogi State, Nigeria. *Journal of Human Ecology*, 35(1), 1-9.

Fabiyi, O. O. & Ogunyemi, S. A. (2015). Spatial Distribution and Accessibility to Post Primary Educational Institution in Ogun State, Southwestern Nigeria: Case Study of Yewa South Local Government Area, Nigeria. *Journal of Scientific Research & Reports*, 5(7), 542- 552

Farooq, M. S., Chaudhry, A. H., Shafiq, M. & Berhanu, G. (2011). Factors affecting students' quality of academic performance: a case of secondary school level. *Journal of Quality and Technology Management*, 7(2), 1-14.

Government of Canada. (2021). Education in Canada: Key facts. https://www.canada.ca/en/canadian-heritage/services/education-canada/facts.html

Government of Ethiopia. (2019). Education Sector Development Program V (ESDP V) 2015/16 - 2019/20. Ministry of Education, Ethiopia.

Government of Ghana. (2021). Free Senior High School (SHS) Policy. Ministry of Education, Ghana.

Idoko, P. (2009). Effect of infrastructure on rural transformation of Gboko Local Government Area of Benue State, Nigeria. *International Journal of Contemporary Research and Review*, 9(12), 20551-20561

Inobeme, J. &Ayanwole, A. K. (2010). An assessment of the spatial distribution of government secondary schools in Zaria Area, Kaduna State

Kayal, P. & Roy, L. (2018). ―Spatial distribution of infrastructural facilities India‖. *International Journal of Current Research*, 10, (11).

Lyson, T. A. (2002). *Journal of Quality and Technology Management*, 7(2), 1-14.

Malczeski and Jackson (2002), Multi-Criteria Spatial Allocation of Educational Resources; An Overview (Social-Economic Planning Sciences). *International Journal of Science for Global Sustainability* 219-235.

Martin, D. & Simandan, D. (2018). School location effects on student performance, neighbourhood quality and adult income. Urban Studies, 55(4), 869-888.

Ministry of Education - Ghana. (2020). National School Entrepreneurship Initiative (NEI) 2019-2023. https://www.moe.gov.gh/assets/downloads/NEI-Policy-Document.pdf.

Musa, H. D. & Mohammed, B. B. (2012). An analysis of spatial distribution of primary and secondary schools in Bida Town, Nigeria. *Abuja Journal of Geography and Development*, 3(2), 30-40.

Mwiria, K. (2019). Challenges facing Kenya's entrepreneurship education and training. In The Routledge Handbook of African Development (pp. 300-317). Routledge.

National Center for Education Statistics. (2020). The condition of education 2020. U.S. Department of Education.

National Population Commission -NPC (2006) Federal republic of Nigeria official gazette. Lagos.

Nigeria News. (2018). 10 Best Girls-Only Secondary Schools in Nigeria. https://www.nigerianews.net/10-best-girls-only-secondary-schools-in-nigeria/

Oduro, R. & Baffour-Awuah, A. (2017). The spatial distribution of public basic education schools in Ghana: Implications for access and quality. *International Journal of Educational Development*, 52, 62-72.

OECD. (2019). Education in Japan: Rising to the challenge. OECD Publishing.

Ogunyemi, S. A., Muibi, K. H., Eguaroje, O. E., Fabiyi, O. O. & Halilu, A. S. (2014). A geospatial approach to evaluation of accessibility to secondary educational institution in Ogun State, Nigeria. *7th IGRSM International Remote Sensing & GIS Conference and Exhibition. IOP Conf. Series: Earth and Environmental Science*, 20, 012-45.

Oguzor, N. S. (2011). Spatial analysis of infrastructures and social services in rural Nigeria: Implications for public policy. *GEOTROPICO*, 5(1), 25-38.

Okafor, S. (1988). Distributive effects of location of government hospitals in Ibadan. University of Ibadan, Nigeria.

Olsen, C. & George, D. M. (2004). Cross-sectional study design and data analysis. The Young Epidemiology Scholars Program (YES). College Entrance Examination Board.

Olufemi, S. & Olayinka, A. A. (2017). School size and facilities utilization as correlates of secondary school students‘ academic performance in Ekiti state, Nigeria. European *Journal of Alternative Education Studies*, 2(1), 69-82.

Olusola, A. R. & Omotade, A. A. (2014).Impact of school location on academic achievement of science students in senior secondary school certificate examination. *International Journal of Scientific and Research Publications*, 4(9), 1.

Ojiri, B. I. (2022). Equitable distribution of school facilities in secondary schools. *International Journal of Institutional Leadership, Policy and Management*, 4(2), 348-363.

Omofonmwan, S. I. (2004). Health and educational service facilities in Esan Area of Edo State. A spatial perspective. *Knowledge Review*, 8(2) 6-14.

Premium Times. (2019). Full List: Top 100 Best Secondary Schools in Nigeria 2019. https://www.premiumtimesng.com/promoted/347807-full-list-top-100-best-secondary-schools-in-nigeria-2019.html

Republic of South Africa. (2021). National Education Infrastructure Management System (NEIMS) Infrastructure Statistics 2021. Department of Basic Education.

Sahlberg, P. (2015). Finnish lessons 2.0: What can the world learn from educational change in Finland? Teachers College Press.

Statistics South Africa. (2021). Quarterly Labour Force Survey - Quarter 1: 2021. http://www.statssa.gov.za/publications/P0211/P02111stQuarter2021.pdf

UN. March 2017. Report of the Inter-agency and Expert Group on Sustainable Development Goal Indicators. UN Statistical Commission, New York.

UNESCO. (2020). Education for People and Planet: Global Education Monitoring Report 2020. UNESCO Publishing.

Voice of Nigeria. (2021). Top 10 Best Secondary Schools in Enugu State. https://www.voiceofnigeria.org.ng/best-secondary-schools-in-enugu-state/

Wazzan, K. (2016). The geographic characteristics of Urban system of the governorate of Lattakia (Syria). *Journal of Tishreen University, Human Sciences Series*, 38(2).

World Bank. (2020). Kenya's Education Sector Support Program: Results and Challenges. World Bank Group.