Research Article

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Geographical determinants and hotspots of out-of-school children in Nigeria

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Abstract: In Nigeria, children lack access to primary school education, and this hinders their social, cognitive, emotional, and physical skills' development. With one in every five of the world's out-of-school children in Nigeria, achieving universal primary education by 2030 remains a challenge. Several studies have investigated the factors that have led to an increase in out-of-school children (OOSC); however, these studies are based on individual level and household predictors with little evidence on the geographical determinants. Hence, this study examines the relationship between OOSC and the socio-economic attributes of the geographical location where they reside. Findings of the spatial analysis show that Sokoto, Zamfara, Yobe, Taraba, and Plateau are the hotspots of out-of-school children. The result further reveals that there is spatial variation in the predictors of out-of-school children in the country. Poverty and internally generated revenue (IGR) predict more cases of school non-attendance in northern Nigeria while foreign direct investment determines the number of children that are out-of-school in the southern region. The study recommends spatially explicit policies to reduce the number of OOSC in Nigeria.

Keywords: Spatial analysis; out-of-school children; poverty, foreign direct investment, Nigeria.

1 Introduction

Although primary school education is the foremost and basic right of every child, a significant number of children do not have access to this form of education, which hinders their social, cognitive, emotional, and physical skills' development. According to the United Nations (2018), out-of-school children (OOSC) are those kids that are yet to be enrolled in any formal education, excluding pre-primary education. Globally, about 59 million children are out-of-school while the highest rates of education exclusion are in sub-Saharan Africa where over one fifth of children between the ages of 6 and 11 are not in school (UNESCO, 2019). Within sub-Saharan Africa, Nigeria accounts for a significant share of out-of- school children with about 10.1 million children without access to primary school education (UNICEF, 2020).

Nigeria currently has about 40 million children of primary school age (Universal Basic Education Commission, 2018). The educational system in Nigeria requires students to spend 6 years at the primary school level before graduating for secondary school education (Universal Basic Education Commission, 2018). Primary education is provided in public (government owned) and private schools. While the cost of primary education in government owned schools is to some extent free, students in private owned schools pay for this type of education. To improve greater access to primary education, the government has over the years come up with different policies and schemes. Notable among these schemes are the Universal Primary Education established in 1976 and the Universal Basic Education introduced in 1999 with the goal of providing free, universal and compulsory education for every Nigerian child between the ages of 6-15 years (Centre for Public Impact, 2017). Even though there has been an improvement in school enrolment, the results of the schemes have been limited with one in every five of the world's out-of-school children in Nigeria, which means achieving universal primary education by 2030 remains a mirage.

As a result of the high number of out-of-school children in Nigeria, scholarly attention has been drawn to uncovering the predictors or causes. Existing studies on out-of-school children in Nigeria have identified individual level attributes (children living with disabilities, gender, age, early marriage) and household factors (educational status of parents, wealth index, parental occupation,

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child labour, place of residence, large family size, culture) as the predictors (Ndanusa et al., 2021; Okoh et al., 2020; Ali et al., 2021; Shehu 2018; Elgbeleye and Olasupo, 2011; Adikwu 2021; Erhieyovewe et al., 2020; Ajuwon, 2008; Abdu et al., 2020; Adeoye and Dipeolu, 2017; Okuneye and Obasan, 2014). However, little research attention has been given to the geographical determinants of out-of-school children in the literature.

The understanding of out-of-school children within the geographical predictors' lens is important for several reasons. First, the causes of school non-attendance are not likely to be limited to the individual, or to the individual's household characteristics/attributes. It could also be explained by the geographical characteristics where a child resides. In other words, geographical locations with favourable socio-economic factors are likely to have fewer children that are out-of-school when compared with geographical locations with poor socio-economic conditions. Second is that the contextual characteristics of the geographical location where a child is raised tends to modify individual and household level factors. Consequently, this study seeks to provide answers to the following key questions: (1) Where is the hotspot of out-of-school children in Nigeria? (2) What are the geographical determinants of out-of-school children in Nigeria? We believe the findings of this study will guide policymakers in formulating region/state specific policies on curtailing the increasing incidence of out-of-school children in the country.

2 Literature review

It has been established that a significant number of girls are out-of-school. This has been attributed to the barriers associated with girls' education such as child marriage, gender-based violence and the inability of schools to meet the safety, hygiene and sanitation needs of girls (UNICEF, 2020). Also, the possibility of being out-of-school has been associated with the age of the child. The reason is that it matters whether children start school at the prescribed entry age or not. Children who are enrolled for primary school education at an older age are more likely to reject such enrolment due to the possible stigmatisation from their classmates (UNESCO, 2005). In the Maldives, the rate of out-of-school children with disabilities is four times that of non-disabled children, and this has been linked with parental attitudes. In Nigeria for instance, parental attitude can manifest itself in the form of pity, or the belief that children with disabilities are unable to take care of themselves. In other words, some parents prevent their disabled children from attending school in order to protect them from possible bullying from their colleagues (Ajuwon, 2008). Whereas others decline the enrolment of their disabled children in school because they feel a great deal of shame on having a child with disability (Mont, 2014).

Equally, household level characteristics determine school non-attendance. For example, Huisman and Smits (2015) argued that households need to have enough of the right resources to be able to send their children to school. Evidence in literature from Nigeria also suggests that families that have access to socio-economic resources are more likely to have their children in school than families living in poverty (Erhieyovwe et al., 2020). Similarly, a household survey data in Indonesia and India shows that children in the poorest households are three times more likely to be out-of-school than children from wealthy households (UNESCO, 2005). Also, studies in Nigeria, India, Ghana, Ethiopia, and other low-and-middle-income countries found that households that depend on child labour to augment their source of income have a higher propensity for having their children out-of-school (Fuwa et al., 2006; Abdu et al., 2020; Martey, 2020; Mehari and Tadesse, 2020). Due to the low income of the family, such families see the direct cost of education such as the purchase of books and uniforms as burdensome while the wages earned by the child are seen as a coping mechanism in time of crisis (European Commission, 2021).

Empirical evidence has also shown that parental occupation is correlated with whether a child will be in school or not. In a study conducted in Brazil by Parikh and Sadoulet (2005), parents in salaried employment are more likely to have their children in school because they might want their children to obtain a similar kind of employment, which results in investing in their education. On the other hand, in Nigeria, self-employed parents such as farmers and traders are less likely to have their children in school because of the need to help in the family business (Elgbeleye and Olasupo, 2011).

Furthermore, the effect of family size on children being out-of-school has been established. In Ghana for instance, it has been found that the larger the family is, the more the resources are diluted (Azumah et al., 2017). In other words, families with many children would be less likely to have all their children enrol in school due to limited financial resources to adequately cater for them (Martelto and Souza 2015). This is in line with the findings of Adikwu (2021) in Nigeria, that educational opportunities are rationed among children from large family households. This results in the deprivation of other children access to education, which is a violation of the child's right. Culture also plays an important role

in determining the educational status of children. In patriarchal societies, investment in the education of girls is lower because they are expected to remain in private domain and not engage in paid employment (Moletsane, 2017). Conversely, parents might be persuaded to invest in their son's education in cultures where the male child is expected to look after or fend for their parents at old age.

The residential location of the child or parent determines the likelihood that a child will be out-of-school. According to the report of UNESCO (2005), the proportion of children that are out-of-school in rural areas is about 30% while that of the urban area is 18%. In Nigeria and most developing countries, rural areas account for a significant proportion of the children that are out-of-school (Kazeem et al., 2010). This has been attributed to the lack of quality teachers, poor educational facilities, the high level of insecurity and the remote location of schools (OCHA, 2022). In most less developed countries, the high cases of out-of-school children has also been attributed to government failure in performing its duties of financing education. Despite the fact that the United Nations Educational, Scientific and Cultural Organisation (UNESCO) recommended that countries should allocate about 25% of their annual budget for education, the Nigerian government has consistently failed in this regard by budgeting below what was recommended (Adeleke et al., 2021). This perhaps, may have accounted for dilapidated school buildings and shortage of teachers which have discouraged school attendance.

Although the different factors identified in the literature contribute to the understanding of the predictors of out-of-school children, these studies are based on individual and multiscale levels of analyses which lack a geographic perspective. In other words, little attention has been given to the geographical determinants of out-of-school children in the literature. Consequently, we examined the geographical determinants of out-of-school children across the states in the country.

3 Explanatory framework for the geographical distribution of out-of-school children in Nigeria

The predictors of out-of-school children are situated within the framework of the socio-economic approach. This approach assumes that school non-attendance is a function of the social and economic structure of the society. For instance, it has been established in the extant literature that foreign direct investment is linked with educational outcome. According to Salim and Bloch (2009), foreign direct investment improves the educational system as a result of the increase in cash inflow into the economy. This eventually leads to an improvement in the education sector through the establishment of new schools and the upgrade of existing ones which improves school enrolment and lowers the number of out-of-school children.

In addition, internally generated revenue (IGR) when adequately utilized is a potent tool for human capital and infrastructural development (Chika et al., 2014). Hence, an increase in government revenue generation is likely to result in an increase in government's expenditure on public education leading to a decrease in the number of out-of-school children. Moreover, deviant behavior has been found to be on the increase in districts with a high number of illicit drug users (Muthikwa, 2016), and this is anticipated to have a negative effect on the educational pursuit of the child. Equally, empirical studies have shown the effect of inflation on educational attainment. Because inflation leads to an increase in the prices of food and essential commodities, low-income families feel the brunt of chronic inflation as they spend a larger chunk of their income on food and other essential commodities, with little or nothing left for parents to finance the education of their children (Witte et al., 2013).

Poverty also impacts considerably on children's educational experiences and outcomes (Dickerson and Popli, 2012). Evidence has revealed that parents living in poverty have more of their children out-of-school because of their inability to sponsor the education of their children. Not only that, children living in poverty have also been found to experience a higher proportion of health problems such as poor mental health. These mental health problems often discourage school attendance, overall academic achievement, and the ability of children to succeed in school (Nathani et al., 2022). The role of unemployment and income on non-attendance of school has been documented. According to Heinrich, (2014), the lack of a job and a source of income reduce the chances of the caregiver to take care of the educational and material needs of the child (Heinrich, 2014). Likewise, lehti (2019), in a study of the heterogenous effects of parental unemployment on education outcomes in Finland, found that poverty led to a decline in school enrollment due to the reduced amount of parental economic resources to cater for the educational exigency of their children.

The educational status of parents has equally been proven to determine if a child will be in school or not. According to Ersado (2005), children of educated parents have a higher prospect of being enrolled in school. This has been linked to the fact that educated parents

acknowledge the importance of education and are ready to invest in the education of their children. In contrast, parents without education might attribute less importance to the education of their children while they prefer to have their children engage in child labour, unpaid work such as household chores and family care, especially for the girl child (European Commission, 2021). To this end, the study hypothesises that the level of poverty, inflation rate, foreign direct investment, internally generated revenue, unemployment rate, GDP per capita, literacy rate and the level of illicit drug use determine the cases of out-of-school children in Nigeria.

4 Methodology

4.1 Data source and measurement

The data on out-of-school children at the primary school level for the year 2018, which is the dependent variable in this study, was obtained from the records of the Universal Basic Education Commission, 2018. On the other hand, the data on the predictors of out-of-school children such as internally generated revenue, foreign direct investment, poverty rate (a measurement based on consumption aggregate which is the monetary value of food and services consumed by households per state and comprises expenditure on food, housing, schooling and education etc. Please see pages 1-4 of the National Bureau of Statistics report on poverty and inequality in Nigeria for detailed information), illicit drug use, inflation rate, and unemployment rate were sourced from the records of the National Bureau of Statistics while the information on literacy rates and GDP per capita came from the Human Development Report published by the United Nations Development Programme (Table 1).

Table 1: Study variables and measurement.

Variable	Measurement
Out-of-school children	Out-of-school children per state (% of children of primary school age)
Inflation rate	Based on the consumer price index
Foreign direct investment	Foreign direct investment (% of GDP))
Literacy rate	Percentage of educated population
Poverty rate	Based on consumption aggregate
Internally generated revenue	Percentage of revenue generated from tax
Unemployment rate	Percentage of unemployed population
Illicit drug use	Percentage of population consuming cannabis, opioids, heroin, tramadol, codeine, morphine and cocaine
GDP per capita	Average income earned

4.2 Data analysis

Analysis of the hotspot(s) and geographical determinants of out-of-school children were performed across the 36 states and the Federal Capital Territory in Nigeria. The hotspot of out-of-school children was determined using the local Getis Ord. The local Getis Ord detects hotspots or cold spots of a given phenomenon in space. In other words, it searches for above and below concentrations of a given occurrence (Getis and Ord, 1995). Hence, the hotspot of out-of-school children refers to the state(s) that has above average concentration of out-of-school children in the country.

For the predictors of out-of-school children, we examined eight variables that depict the geographical attributes of each state. This relationship was examined using both the OLS regression and the geographically weighted regression (GWR). The OLS regression is a global modeling technique that examines the relationship between the dependent variable and a set of independent variables while eliminating for multicollinearity among variables based on variance inflation factor of 7.5 (Rosenshein et al., 2011). The OLS regression is based on the assumption of spatial stationarity. This means that the predictors of out-of-school children are constant over a geographical area. The assumption of spatial stationarity has been regarded as its major limitation because due to the geographical differences in socio-economic factors, the predictors of out-of-school children are likely to vary across space.

The GWR, however, relaxes the assumption of spatial stationarity by detecting spatial variation within a model, and this has been regarded as its major advantage (Fotheringham et al., 2002). It further provides a visualisation of the relationship between the dependent variable and the predictors by showing the geographical locations where the predictors are significant. In other words, it gives us an insight into the local rather than the global predictors of a phenomenon. The Akaike Information Criterion (AIC) and the R^2 were used to determine which of the models better explains the predictors of out-of-school children in Nigeria. In this case, the model with a smaller AIC value and a larger R^2 is regarded as a better model.

The principle guiding the use of the GWR is that for any spatial data, a global modelling of relationships using the OLS regression must be first performed (Fotheringham et al. 2002). If the result of the OLS regression by examining the Koenker statistic indicates the presence of spatial stationarity in the relationship between out-of-school children and the predictors, a robust statistical technique such as the GWR is needed to unpack the observed spatial dependence. However, if no spatial dependence is observed, the OLS regression is enough to explain the relationships between variables (Iyanda et al., 2021). Therefore, the relationship between out-of-school children and the predictors were first investigated using the OLS regression. However, the existence of spatial dependence in out-of-school children data based on the significant Koenker statistic (15.21, P<0.05) means that a more robust statistical technique that explains this spatial dependence is required. Consequently, the GWR was adopted to examine the spatial dependence or spatial non-stationarity between out-of-school children and the predictors. The GWR model is written below:

$$y_1 = \beta_0(u_i, v_i) + \sum \beta_k(u_i, v_i)x_{ik} + \varepsilon_i$$

where y_1 is the dependent variable (Percentage of out-of-school children), β_k is standardised regression coefficient, x_{ik} the independent variables denoted by inflation rate, internally generated revenue, GDP per capita, foreign direct investment, unemployment rate, percentage involved in illicit drug use, literacy rate and poverty index, (u_i, v_i) is the geographical coordinate of point I and $\beta_k(u_i, v_i)$ is the calculated value of the continuous function $\beta_k(u, v)$ in location i while ε_i is the error term. For the ease of interpretation of results, we transformed all the variables used in the regression analyses based on the z – transform, also known as standardisation or autoscaling. Thus, the z scores of all the variables become comparable by measuring the observations in multiples of the standard deviation of that sample (u = 0, s= 1). The cartographic designs, spatial regression, and hotspot analysis were done using ArcGIS 10.5 version. The ArcGIS is a tool to manage and extract answers from imagery and remotely sensed data.

5 Results

Nigeria currently has an estimated number of 40,841,946 children of primary school age. Of this population, about 10,193,918 children are out-of-school with a marked

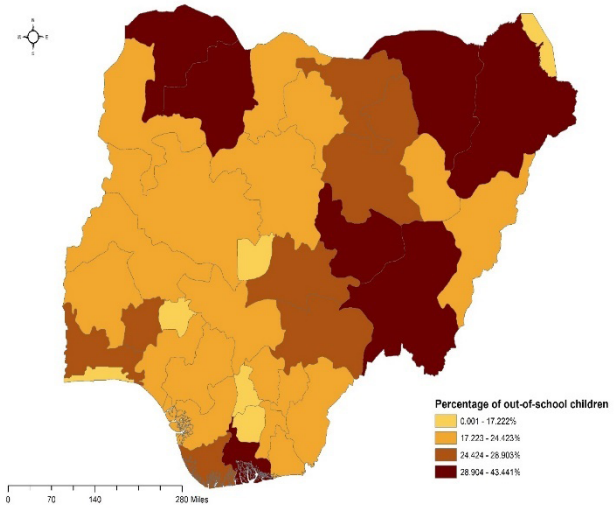

Figure 1: Geographical distribution of OOSC.

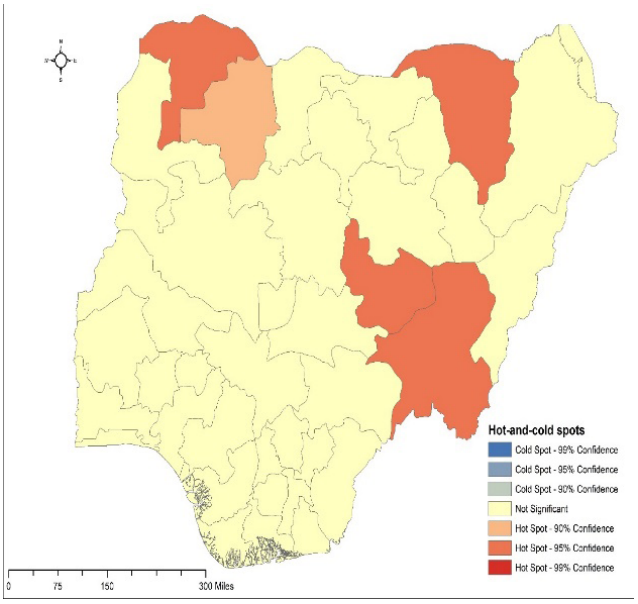

Figure 2: OOSC hotspots in Nigeria.

geographical variation between the northern (26.98%) and southern regions (21.67%). As seen in Figure 1, a significant concentration of out-of-school children was found in the northern region. The states in the North with a high percentage of out-of-school children are Yobe (43.44%) Taraba (41.52%), Zamfara (41.13%), and Sokoto (37.31%). In contrast, Lagos (10.20%), Anambra (15.28%) and Ekiti (16.98%) in southern Nigeria have the lowest cases of out-of-school children. A further examination of the geographical distribution of out-of-school children indicates areas of hotspots. The local Getis Ord analysis revealed that five states in northern Nigeria are the

Table 2: Descriptive statistics of out-of-school children and other variables.

Variables	Correlation	Mean	Standard deviation	Range
Out-of-school children	-	25.090	7.486	10.207 – 43.441
Inflation rate	0.040	316.400	15.981	288.6 – 380.800
Foreign direct investment	0.326	452.123	231.210	
Literacy rate	-0.024	101.67	30.452	44.150 – 136.100
Poverty rate	0.401	53.735	19.177	17.5 – 89.9
Unemployment	0.003	22.945	12.823	3.301 – 57.021
Income	0.059	1655.47	497.941	399.980 – 8174.170
Illicit drug use	0.031	15.856	8.871	1.800 – 32.700
Internally generated revenue	0.301	685.14	232.212	22.470 – 9950.050

Note that all variables were standardised using the z score described in the data analysis section

Table 3: Summary of OLS regression results.

Variable	Coefficient	STDError	t-Statistic	Probability	Robust SE	Robust T
% OOSC	-	-	-	-	-	-
Intercept	-6.776	5.002	-0.064	0.949	5.521	-0.107
Poverty rate	0.131**	0.321	4.187	0.001	1084.907	5.024
Internally generated revenue	0.032**	0.000	2.037	0.050	2.943	2.943
Foreign direct investment	0.031**	0.003	2.279	0.0299	0.001	4.402
Inflation rate	-1.160	164.746	-0.707	0.484	86.019	-1.354
Unemployment	-1.512	2053.525	-1.225	0.230	1330.968	-1.890
Literacy rate	0.013	777.906	0.794	0.433	523.486	1.180
Income	-0.171	19.721	-1.726	0.094	16.729	-2.035
Illicit drug use	-0.120	121.92	-0.031	0.231	10.289	-1.031
$R^2 = 50.4$						
AIC = 1029.81						

Significant at 0.01**

hotspots of out-of-school children because they have above average concentration of out-of-school children in the country. These states are Sokoto, Zamfara, Yobe, Taraba, and Plateau (Figure 2).

Table 2 summarises the descriptive statistics of the selected variables. For example, the mean value for income is 1655.47 while that of unemployment is 22.945. Furthermore, while the standard deviation for illicit drug use is 8.871, foreign direct investment recorded 231.210. The results of the correlation between the variables are also presented. The results of the OLS regression on the predictors of out-of-school children are presented in Table 3. As observed in Table 3, poverty, internally generated revenue and foreign direct investment have a positive and significant relationship with out-of-school children in Nigeria. The result also implies that an increase in poverty rate, internally generated revenue and foreign direct investment determines the non-attendance of school.

Due to the existence of spatial dependence in the relationship between out-of-school children and the predictors, the GWR was applied on the same set of significant variables in the OLS regression. The result of the GWR revealed that the poverty index (Figure 3) and internally generated revenue (Figure 4) predicted more cases of out-of-school children in northern Nigeria, while foreign direct investment was more influential in the southern region (Figure 5). A comparative analysis of the OLS regression and the GWR indicates that the R^2 increased

Table 4: Model diagnostic information for OLS and GWR.

Metrics	OLS	GWR
R^2	50.4	61.2
AIC	1029.81	910.29

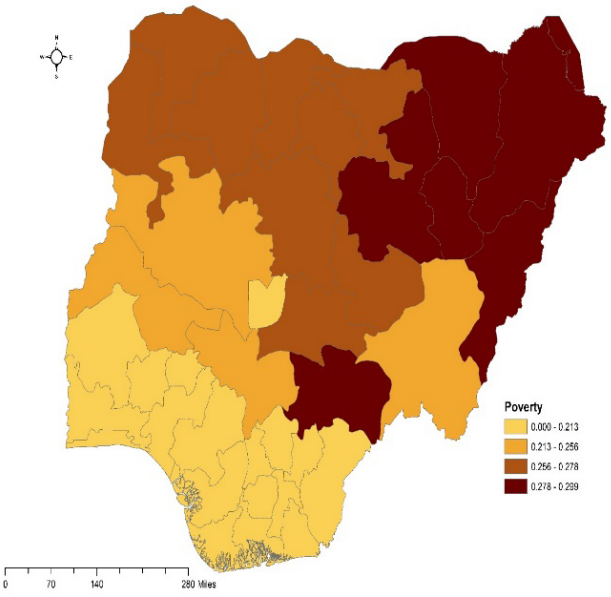

Figure 3: Poverty and OOSC.

from 50.4 percent for the OLS regression to 61.2 percent for the GWR (Table 4), which indicates an improvement in the model fit. In addition, an examination of the model performance based on the Akaike Information Criterion value indicates that the GWR model (910.29) is stronger than that of the OLS (1029.81) (Table 4).

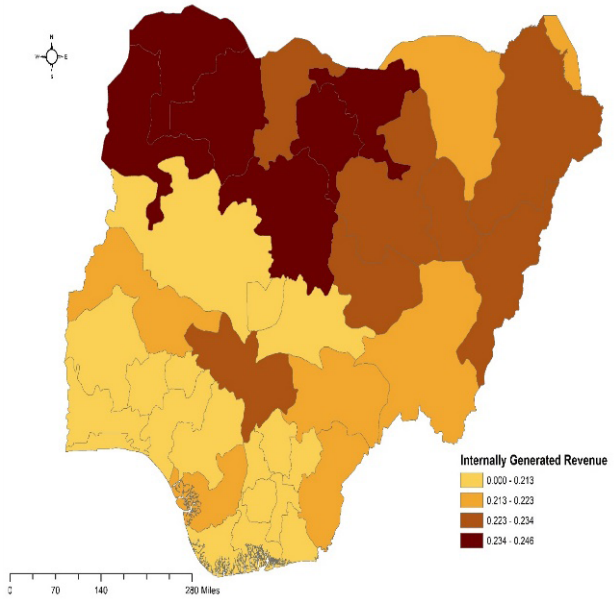

Figure 4: IGR and OOSC.

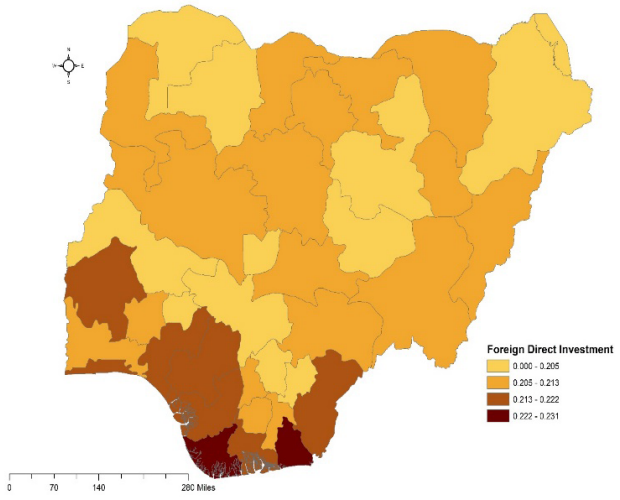

Figure 5: Foreign direct investment and OOSC.

6 Discussion

The high number of children that are out-of-school in Nigeria is alarming, and this calls for an urgent solution if Nigeria is to achieve universal primary education by the year 2030. However, with about 10.1 million children out-of-school (UNICEF, 2020), this looks like a tall order. Interestingly, based on the local Getis Ord analysis, only the hotspots of out-of-school children were discovered in our study with no cold-spots. This connotes that the number of out-of-school children is generally high across the country. The northern states of Yobe, Taraba, Zamfara, Sokoto and Plateau are the hotpots of out-of-school children in Nigeria, and this could be attributed to a few reasons. According to UNICEF (2020), the education deprivation in northern Nigeria is driven by various factors, including economic barriers and socio-cultural norms and practices that discourage attendance in formal education.

The study finds evidence that poverty has a more dominant effect on out-of-school children in north-eastern Nigeria. In other words, an increase in poverty leads to more cases of out-of-school children. Although Nigeria is regarded as the poverty capital of the world with about 93.9 million people currently living below the poverty line, most of the poor people (87%) reside in northern Nigeria (World Bank, 2020). When poverty is geographically

concentrated, this is likely to discourage the inhabitants from educational pursuit in a number of ways. First, there is the tendency for parents to feel it is of no importance to enrol their children in school since this will not take them out of poverty in future. Second, although primary school education is free, the indirect cost of education such as the purchase of books and uniforms could make it unaffordable for majority of parents in the northern region due to the high prevalence of poverty. In addition, most parents cannot bear the cost of transporting their children to school due to the remote location of schools. The finding of this study has been corroborated by Rodriguez (2020) that due to poverty, school remains too expensive for the poorest families. Thus, children are forced to stay at home or need to work to augment the income of the family. A similar finding has also been reported in England (Flouri and Midouhas, 2016) and Ghana (Martey et al., 2022).

Furthermore, like studies in other countries (Haaparanta et al., 2021; Archer 2016), this study established that an increase in internally generated revenue is a predictor of non-attendance of school by children, mostly in the north-western part of Nigeria. The state government derives revenue from several sources, chief among which are the personal income tax and the direct assessment tax (Adeleke et al., 2021). However, it appears the revenue generated has not been used to improve school enrolment and this is a worrisome situation. This further lends credence to the fact that the government is only paying lip service to the growth of education. In most of the states in the north-western region, schools are rarely provided with a sufficient budgetary allocation to run their affairs even though these funds are available (Alhasan, 2020). In many cases, the amount budgeted for the education sector is far below the 26 percent recommend by the United Nations Educational, Scientific and Cultural Organisation (Adeleke et al., 2021). It could also be that the taxation is further impoverishing the people of the northern region. This is because taxing poor families drives them deeper into poverty, which hinders their ability to afford the indirect cost of education. This assertion has been reinforced by Oliff et al. (2012) that taxes reduce the resources that poor families have to pay for additional childcare.

In contrast, we found empirical confirmation that an increase in foreign direct investment is related to an increase in the number of out-of-school children, mainly in the southern section of the country. The southern region is the hub of foreign direct investment with about $2.31b in foreign direct investments inflows in 2019, and this has been attributed to its strategic location along the coast (Adeleke, 2022; Osayomi and Adeniyi, 2017). Existing studies have shown that foreign direct investment improves school enrolment and lowers cases of out-of-school children because multinational enterprise often usually requires higher order skills (Ravindranath, 2018; Wang and Zuang, 2021). To acquire these skills, individuals in host communities or countries may make investment in education. However, when foreign direct investment does not improve school enrolment, this points to the fact that multinational companies have an alternative source of skilled labour which could possibly discourage school enrolment. According to Miningou and Tapsoba (2020), multinational companies source for alternative skilled labour when the education system of the host country fails to produce skills that matches their needs. As noted by Agwu (2019), the academic curriculum in Nigeria is outdated which cannot produce skilled manpower. The finding of our study is in line with that of Jacob and Sasso (2015), that foreign direct investment inflows to low-income countries are primarily invested in low-skilled manufacturing sector rather than education.

7 Strength and limitations of study

The strength of this study is that using geographical techniques, we have been able to show that geographical characteristics also determine the cases of school non-attendance by children of primary school age in Nigeria. The study was also able to pinpoint the geographical locations where the predictors of out-of-school children are significant, which enhances targeted policy interventions. Despite the strength of the study, it has some limitations. The limitation is that other equally important determinants of out-of-school children such as child's disability, emotional disorder (anxiety), and parental mental health (Adams; 2021; Finning et al. 2020) could not be examined due to the absence of state-level data.

8 Conclusion

This study examined the relationship between out-of-school children in Nigeria and the socio-economic attributes of the geographical location where they reside. Though we found some states in northern Nigeria to be the hotspots of out-of-school children, the number of out-of-school children is generally high across the country. Empirical evidence further showed that the socio-economic attributes of the geographical location where children of primary school age are located are predictors

of their out-of-school status. Because of the geographical differences in the country, the drivers of out-of-school children were also found to be spatially different. For example, poverty and internally generated revenue have more influence in the prediction of out-of-school children in the northeast and north-western parts of the country, respectively. Meanwhile, foreign direct investment predicts more cases of out-of-school children in southern Nigeria. An inference from this study is that geographical locations that are socio-economically disadvantaged will continue to account for a significant proportion of out-of-school children in the country.

Based on the findings of this study, the following policies are recommended. First, the government should cushion the effect of poverty on out-of-school children in north-eastern Nigeria. This can be achieved by mitigating the indirect cost of education through the provision of free textbooks, notebooks, free feeding and the provision of school uniforms which cannot be afforded by most parents due to poverty. Although the government has been making some efforts in this regard, there is the need for adequate supervision to ensure full compliance by the authorities in charge. Second is that the government, especially in the northern region must show the political will to fund education through internally generated revenue. This can be achieved when about 26 percent of the budget is allocated to the education sector as recommended by UNESCO. For foreign direct investment to have a positive effect on school attendance, the government needs to revisit the current education curriculum in order to produce skilled labour that matches labour market demand.

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