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SPATIAL PATTERN OF INTRA-URBAN POVERTY OF ADO- EKITI, SOUTH WESTERN NIGERIA

Ayeni, Gabriel Olusegun[i]
Ekiti State Community and Social Development Agency,
Ado, Ekiti, Nigeria

Abstract:
Every nation in the world, developed or developing has a number of the population living below the poverty line. There has been explosive growth in global urban population as a result of natural population growth and rural to urban migration. Most inhabitants in World's cities experience urban poverty. There is the need to know who the poor are and where they are located hence, this study focuses on the evaluation of intra-urban poverty of Ado- Ekiti through the application of Geographical Information Systems. The data used for the study were collected through the administration of 510 copies of well-structured questionnaire. The Stratified Random Sampling technique was used in the administration of the questionnaire and the result was subjected to Factor Analysis Statistics. The following factors: Income, Housing and Housing characteristics (14.65%), Commerce and Communication (8.98%), Educational facilities (5.72%), Roads and Drainages (4.99%) and Water facilities (4.08%) were mapped. It was discovered that there was a spatial variation in the intra-urban poverty of the capital city. The farm settlement ward was found to be the poorest compared to other wards. It was recommended that Geographical Information Systems should be applied to test-run some of the developmental policies and programmes before the actual implementation by the government and other donor agencies.

Keywords: factor analysis, geostatic analysis, inverse distance weighted, poverty, geographical information systems

[i] Correspondence: email segunike@yahoo.com

Introduction

There is no unanimously accepted definition of poverty. As a matter of fact, it is almost never defined in itself, but through other concepts, such as growth, well-being, exclusion or equity. Poverty encompasses inadequate income and denial of the basic necessities such as education, health services, clean water and sanitation (United Nations, 2007). Poverty, being heterogeneous with multi-dimensional links to problems of hunger, illiteracy, diseases, child and maternal mortality is a fundamental challenge facing Africa as well as the rest of the World in the 21st century (Carly, Jenkins and Smith, 2001).

Poverty is a mass phenomenon in sub- Sahara Africa, including Nigeria. The available statistical facts on poverty in Nigeria indicate the following:

- 35% of the population lives in extreme poverty;
- 54% are poor in relative terms;
- almost 52% live on less than a dollar a day, equivalent of N320 per day;
- poverty incidence is highest in North East zone (63%), followed by North West 62.9%), North Central (62.3%), South-South (51.1%), South West (42%) and South East (34.3%);
- about 63% of people living in the rural areas are poor compared with 41% in urban areas (National Planning Commission, 2007).

In recent decades, there has been explosive growth in global urban populations. In developing countries, 40% to 60% of urban dwellers have inadequate sanitation (Tipping *et al,* 2005), and slum-dwellers (urban poor) are the most vulnerable to sanitation-related diseases because they are the most exposed to unmanaged human excreta and waste (Peterson *et al*, 2007). Africa is currently experiencing the highest rate of urbanization, with a four-fold increase in urban dwellers anticipated between 1990 and 2020, to reach 500 million people (Ndahlahwa, 2005). In tandem with this massive shift has come what Tipping, Adom and Tiaijuka, (2005) call "*the rapid urbanization of poverty and ill-health*" and the growth and densification of slums.

The urban growth is attributed to both natural population growth and rural to urban migration. Urbanization contributes to sustained economic growth which is critical to poverty reduction. The economies of scale and agglomeration in cities attract investors and entrepreneurs which is good for overall economic growth. Cities also provide opportunities for many, particularly the poor who are attracted by greater job prospects, the availability of services, and for some, an escape from constraining social and cultural traditions in rural villages. Yet, city life can also present conditions of overcrowded living, congestion, unemployment, lack of social and community networks, stark inequalities, and crippling social problems such as crime and violence.

In Nigeria, the urbanization process is similar to what obtains in several other developing countries; as the growth and complexity of human settlements and in particular the rate of urbanization has been phenomenal (Ujoh *et al.,* 2010). Considering its 2006 population figure of over 140 million people- the highest in Sub-Saharan Africa (Ajanlekoko, 2001; FRN, 2007; Jiboye, 2011a, Ayeni and Adebayo, 2016); available data however shows that the country has been growing at the rate of 5.5% annually from 1980 to 1993, and recently, its growth has increased to the rate of 5.8%, which has resulted in a total urban population of 62.66 million people (or, 43% of the national population). By projection, this proportion is expected to increase to more than 60% by 2025 (UN, 2007). Consequently, Nigeria has one of the highest urban growth rates, having cities ranked among the fastest growing in the world. Not only is the country experiencing one of the fastest rates of urbanization in the world, its experience has been unique in scale, pervasiveness and historical antecedents. This process has resulted in a very dense network of urban centres (Oladunjoye, 2005); thereby constituting a major problem to the urban residents whose quality of life and living conditions have deteriorated considerably (Ajala, 2005; Jiboye, 2009; 2011a). However, it has been established that the degrading condition of the cities' environment in most developing nations affects the socio-economic and national development (Ogunleye, 2005). Therefore, a major developmental challenge facing the nations, particularly those within the developing world, is how to cope with the increasing urbanization and minimize its adverse consequences on the cities' environment as well as overall wellbeing of the people (Jiboye, 2011b).

The concept of "city" as being heterogeneous shows that, there is no single average welfare indicator that can present an overall urban condition that will give a correct picture of poverty within a city. In cities, the poor and rich-with their different levels of assets – live together, and there are significant intra-urban differentials in social, environmental, and health conditions (Stephens, and others, 1997). Manifestations of poverty in urban areas can be strongly site-specific. It is important to know the social and physical conditions of different groups and neighbourhoods within the city, the forms of deprivations that they suffer, and their numbers and characteristics. Since the creation of Ekiti State on the 1st of October 1996, the capital town has been expanding at a phenomenal rate to accommodate the ever- increasing population emanating from rural-urban migration. As the state capital, human influx has been on continuous rate that the infrastructural amenities cannot cope with population expansion. This has led to a situation where many find it difficult to meet their daily needs and only succeeded in falling below the poverty line.

Traditionally, psychological theories of poverty focus more on the individual and their behaviour while sociological theories of poverty emphasise the role of the

social environment (Carr and Sloan, 2003). The economist is more concerned about the income of an individual and the relative power of commanding goods and services but the geographer is more interested in the location of the urban poor because there is an indisputable relationship between poverty and geographic location (Ayeni and Bankole, 2015). In this wise, there is the need to answer the question "*where are the poor located?*" This study therefore, employed an integrated vision of urban poverty by considering both spatial and non-spatial components to evaluate the intra-urban poverty of Ado- Ekiti with the tool of Geographical Information System (GIS).

1.1 Objective of the Study

The aim of the study is to evaluate the spatial distribution of intra-urban poverty of Ado- Ekiti using Geographical Information System.

2. The Study Area

Ado -Ekiti is the capital city of Ekiti State. It is located on the latitude 70 40' North of the Equator and latitude 50^0 16' east of the Greenwich Meridian and shares common boundaries with Irepodun/Ifedore Local Government, Ekiti South West and Gbonyin Local Government (Adebayo and Kolawole, 2010). Politically, the Local Government is delineated into thirteen wards (Fig. 1).The study area is mainly an upland zone rising 250 metres above the sea level. It has within the area underlain by metamorphic rocks of the basement complex with rugged range of hills characterising the landscape.

The study area enjoys tropical climate with two distinct seasons: the rainy season (April - October) and the dry season (November - March). Temperature ranges between 21^0c and 28^0c with high humidity. As the State capital, the rapid pace of urbanization has brought about various environmental challenges like pressure on the available socio-infrastructural facilities, deforestation, housing deficit, road congestion, all resulting to urban poverty.

3. Study Methods

For the purpose of this study, both primary and secondary sources of data were employed. Transect walks and Direct Interview was used to collect data on the location of each of the thirteen wards that make up the capital city. Opinion and community leaders were engaged in transect walk to move round and helped to determine the boundaries of the wards. Global Positioning System (GPS) was used to capture the locational data of the thirteen wards that make up the urban centre. The data were later mapped using GIS Arcview 8.3 software (Fig. 1).

A total of 510 copies of the questionnaire were distributed using systematic random sampling technique. Out of the 13 wards, 7 wards were identified for the administration of the questionnaire (Fig. 1). After the first electoral ward, (Idofin - 01), every other wards were picked respectively. This shows that every ward has equal chance of being picked. An average of 73 copies of the questionnaire were administered in each ward. Having identified the first household, every 4th household was picked. The results of the collated data using SPSS version 10 were subjected to factor analysis statistics. The over 100 poverty variables converged at the 25th rotation into 14 poverty factors (Appendices I & II).

For proper urban poverty mapping, data for the other wards that were not considered in the course of questionnaire administration were captured using Advanced Spatial Statistics tool - Geostatic Analytical tool called Inverse Distance Weighted (IDW). IDW is based on the algorithm of distance with the assumption that things that are close to one another are more alike than those that are farther apart. Those measured values closest to the prediction location will have more influence on the predicted value than those farther away (Watson and Philip, 1985). IDW therefore, assumes that each measured point has a local influence that diminishes with distance. It determines the power function (p) value by minimizing the Root Mean Square Prediction Error (RMSPE). An optimal value for the power can be considered to be where the minimum mean absolute error is at its lowest. IDW relies mainly on the inverse of the distance raised to the power. The RMSPE is the statistic that is calculated from cross-validation. In cross-validation, each measured point is removed and compared to the predicted value for the location. The RMSPE is a summary statistic quantifying the error of the prediction surface.

4. Results and Discussion

Ado – Ekiti has thirteen electoral wards. However, seven wards were purposively selected as follows: Ereguru, Okesa, Dalimore, Idofin, Odolofin, Oke Ila and farm settlements. It should be noted that data for other wards were derived from the application of Inverse Distance Weighted (IDW), one of the tools of geo-statistical analyst. The major five factors of poverty, considering the factor loadings were considered as follows:

4.1 Income, Housing and Housing Characteristics

Housing and housing characteristics include the type of building like face-to-face, flat, storey building, duplex, etc.; number of people living in the building, number of floors, number of rooms, types of toilets, bathrooms, kitchens, age of building and materials

used for the construction. Okesa and Dallimore wards have high average income distribution among the populace while Oke-Ila and Inisa wards have medium level of average income and Ijigbo, Irona, ereguru, Okeyinmi, Idolofin, Ijoka and Igbehin wards have relatively low average income distribution (Fig ii). This equally correlated positively with the types of building and housing characteristics in these wards. This shows that, wards with high average income distribution equally have high standard of houses with the required urban services while the ones with low average income distribution have low standard of houses and poor urban services (Fig. ii).

In the low average income areas, face-to-face structure dictated the types of building while in high income areas; modern buildings like duplexes, storey buildings and the ones on flat basis were common. This is not to say that we cannot find some isolated cases where flat-based structures and even, duplexes were found in low average income areas and by extension, face-to-face structure were found in wards with high average income. The wards with low standard of housing characteristics were majorly inhabited and populated by the indigenes and old people while the elites were settlers from other parts of the state and far beyond. Most at times, the low and even medium housing wards have bathrooms, toilets and kitchens detached from the main building, hence, usually cover longer distances (high mean distances) to access these facilities. Number of households using such urban facilities was very high compared to the medium and high income wards. Since only few wards exhibited the characteristics of affluence, there is the need for urban re-structuring that will pave way for the urban poor to have more and easy access to urban services.

4.2 Commerce and Communication Gadgets

More wards exhibited the characteristics of commercial centres. All the wards that share boundaries with the Central Business Districts (CBD), of the town have high commercial activities (Fig. III). Ereguru, Okeyinmi, Ijoka and Irona wards share high commercial activities compared to Inisa, parts of Dallimore, Okesa,Idofin and Idolofin wards with medium commercial activities while some parts of Ijigbo, Okesa, Oke-Ila and the farm settlement wards experienced low commercial activities compared to others. The commercial activities are very high at the urban centre (CBD) and fades out with longer distance from the centre (Fig. III). This is the effects of distance decay theory. For example, at the farm settlement ward, trading activities commonly found were the sales of agricultural products like plantain, yam, banana, kolanuts etc. The low population of people at the urban fringes encouraged farm products to be transported to the main urban centre for sale.

The level of the usage of communication gadgets like television sets, radio, musical gadgets, handstes and even, computers (e-mailing) was high in parts of Okesa,

Oke-Ila, Dallimore, Okeyinmi wards than in Idofin, Idolofin, Inisa and Ijigbo wards. Today, there is a high usage of computers in the wards within the urban town too than the farm settlement ward where majority of them were illiterate farmers compared to the educated ones (and even, students of higher institutions) that reside in the former wards(Fig. III). However, due to the fact that some communities like Erifun and Ayoko are in farm settlement ward, the presence of students from the Federal Polytechnic, Ado and Afe Babalola University increased the usage of communication gadgets. At the low and medium commercial activities, small shops especially open market shops predominate the commercial landscape while we have shopping malls and super market, lock-up shops that were inter twined with open market shops in the high commercial centres.

4.3 Roads and Drainages

The urban centre is transverse by a major dual-carriage road. Apart from this, some secondary arteries were served with tarred roads. Part of Oke-Ila, Idofin and Okesa wards enjoyed a relative dense networks while Inisa, Dallimore, Idolofin, Igbehin, Ereguru and Okeyinmi wards have a relatively medium road network while the farm settlement, part of Oke- Ila and Ijigbo wards were poorly served with road networks (Fig.IV). Access roads to some of the communities in the wards were mainly untarred and some seasonal. There is the need to create more access roads to encourage the movement of farm produce to urban markets for sales. Most of the new developed areas in the urban settlement were not accessible by roads, hence a major problem to vehicle users. In places where we have accessible roads, there were poor drainage systems, no good culverts or bridges. Thus, easy movement was hampered especially in the rainy season where most places were inundated with floods. Example of these is found in parts of Dallimore, Inisa, Irona, Igbehin wards (Fig. IV).

4.4 Educational Facilities

The supply and access to educational facilities is high in some parts of Oke- Ila, Dallimore and Okesa wards. Here, we have more primary and secondary schools, School of Nursing and Ekiti State University (Fig.V). It may be surprising that part of farm settlement ward in the north- eastern part of the urban settlement has a high density of educational facilities. This is explained by the presence of the Federal Polytechnics and Afe- Babalola University. In the ancient part of the urban centre, wards like Inisa, Idofin, Ijigbo, Idolofin, and part of Okesa wards were serviced with relatively medium educational facilities whereas, Ereguru and parts of Irona wards were poorly served (Fig.V). However, the need for more educational facilities is being complimented by the provision from private individuals.

4.5 Water Facilities

There is high supply of water facilities in Inisa, Idofin, parts of Okeyinmi, Oke-Ila, Irona and Ijoka wards compared to the relatively medium supply of same in Okesa, Dallimore, Ereguru, Irona wards while Ijigbo and farm settlement wards have low supply of water facilities (Fig. VI). Even, with the presence of Ireje dam in the Ado - Ekiti, most households depend on borehole, dug out wells and rainfall as the major sources of getting water for all human uses. The four natural water springs in the town- Amu, Olotoro, Orojuda amd Omi - Olori (besides Mary Immaculate Grammar School) were not developed and therefore not tapped for human consumption. They have been subjected to serious pollution from level of urbanization and constructive works that have changed the eco-system in the environments (Fig.VI).

Rivers and streams channels have been constructed to discharge floods from the surrounding environment and most of the surrounding buildings located their swage system down hills that later discharged human wastes through underground seepages to the springs, thereby, rendering them unsafe for human consumption. Generally, there was high shortage of water supplies in the state capital. Pipe-borne water only serviced a limited portion of the town and water supply was epileptic hence, inhabitants search for water as early as possible especially in the dry season. The shortage of water has provided job opportunities for some private water provider. They use vehicles to hawk water in tanks for sales and this method has been of immense help to the construction and building industries.

5. Conclusion

One of the major findings of the study is that there was a spatial variation in the intra-urban poverty of Ado- Ekiti. The farm settlement ward was seen to be the poorest compared to other wards. Geographical Information Systems, as a test bed for poverty reduction policies and programmes would therefore make necessary intervention to be 'ward-specific'. The differences in local variation with reference to the degree of poverty should guide intervention before applying it as a global poverty reduction policies and programmes for the urban centre.

The scope of social and infrastructural facilities needed to be expanded and made more accessible and affordable to the urban poor. Urban planners would no doubt find these results useful in planning and administering our urban space especially, the capital city of the State.

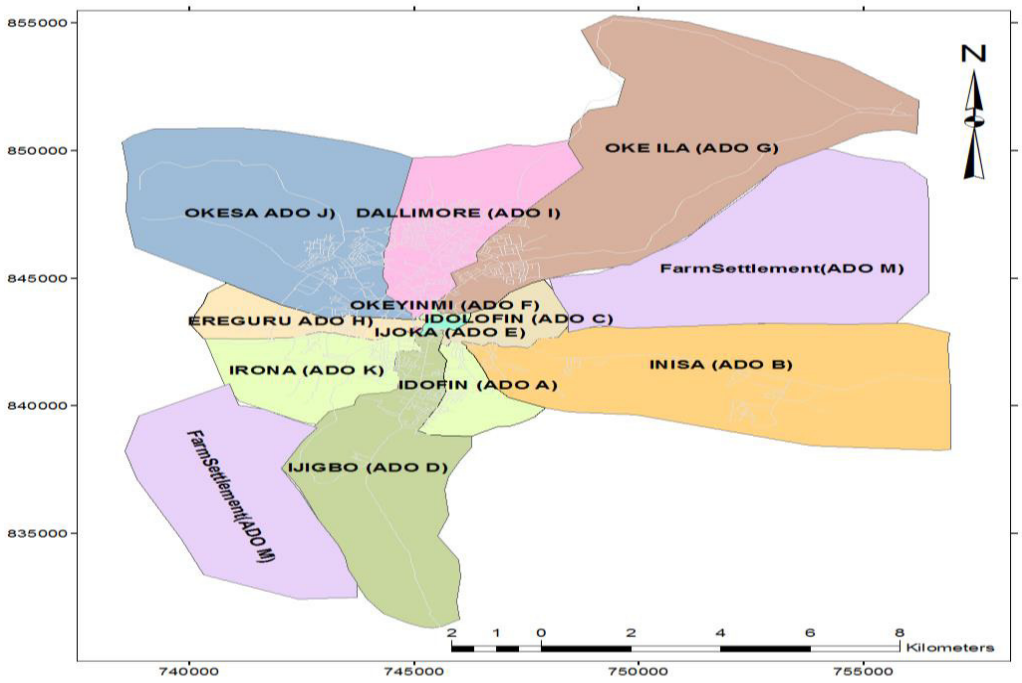

Figure I: The Electoral Wards in Ado- Ekiti

Source: Field Work, 2014.

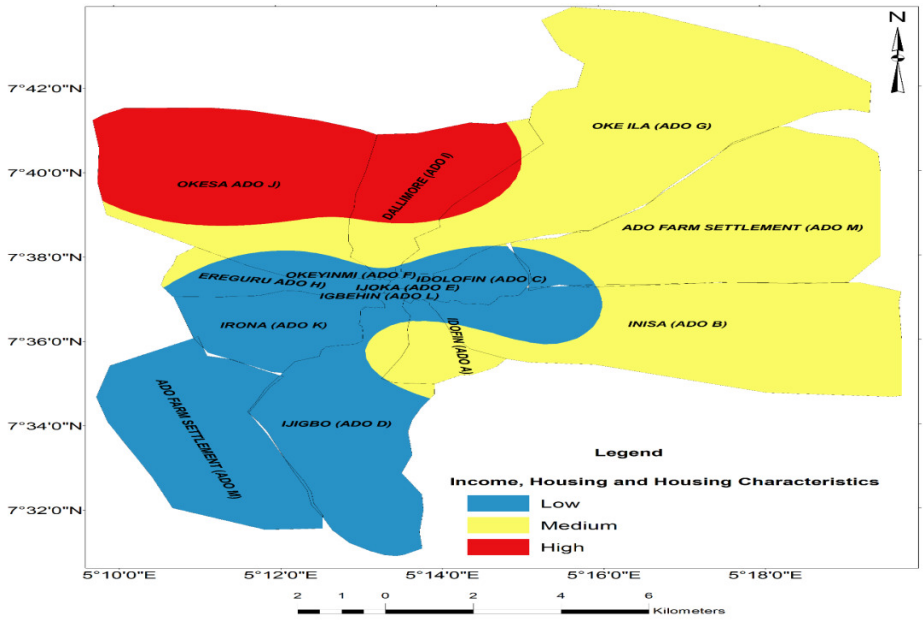

Figure II: Income, Housing and Housing Characteristics in Ado- Ekiti

Source: Field Work, 2014.

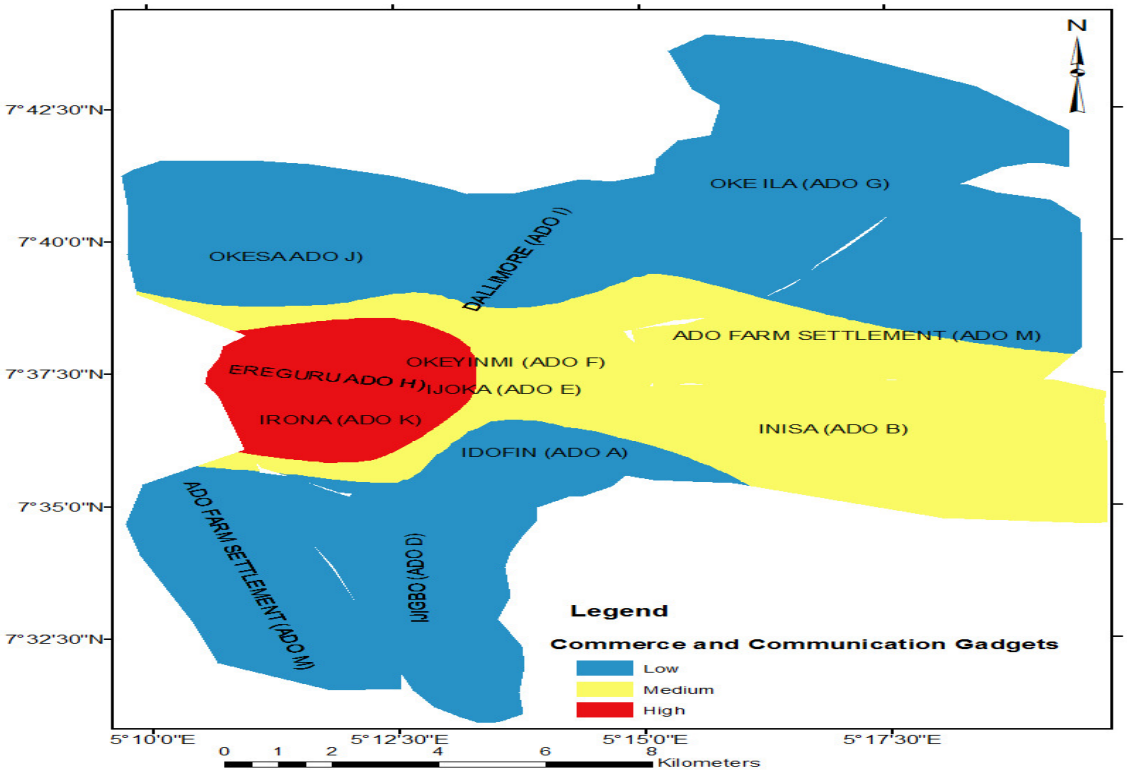

Figure III: Commerce and Communication Gadgets in Ado- Ekiti

Source: Field Work, 2014.

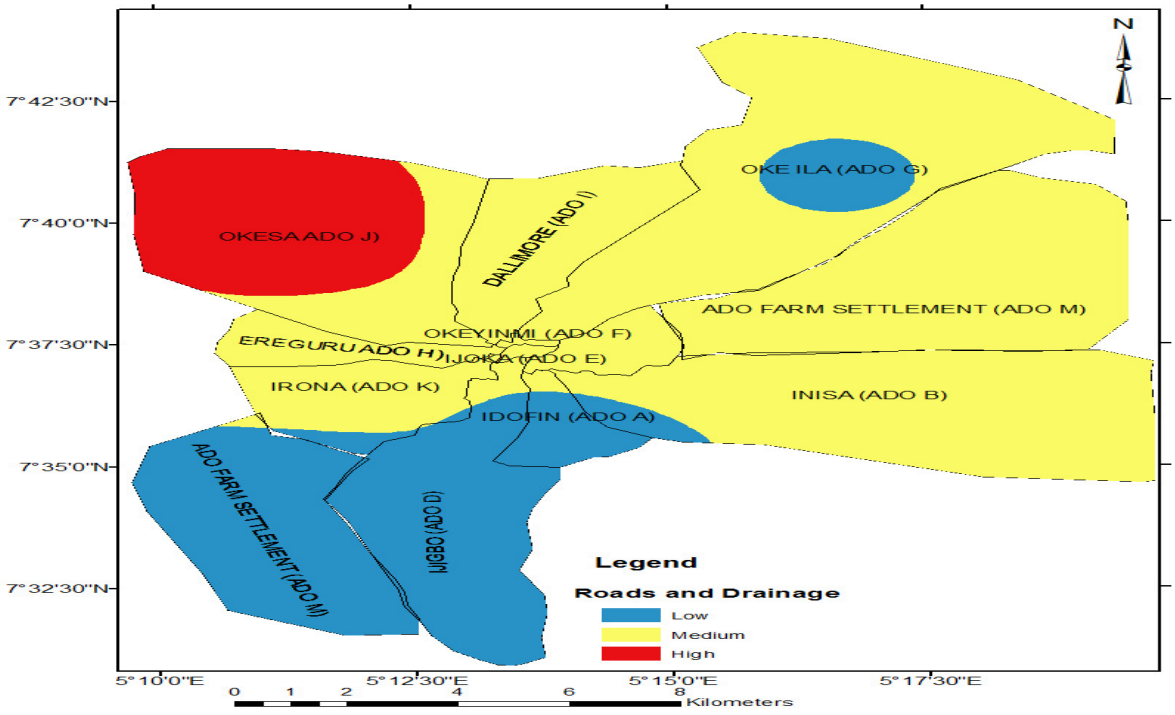

Figure IV: Roads and Drainages in Ado- Ekiti

Source: Field work, 2014.

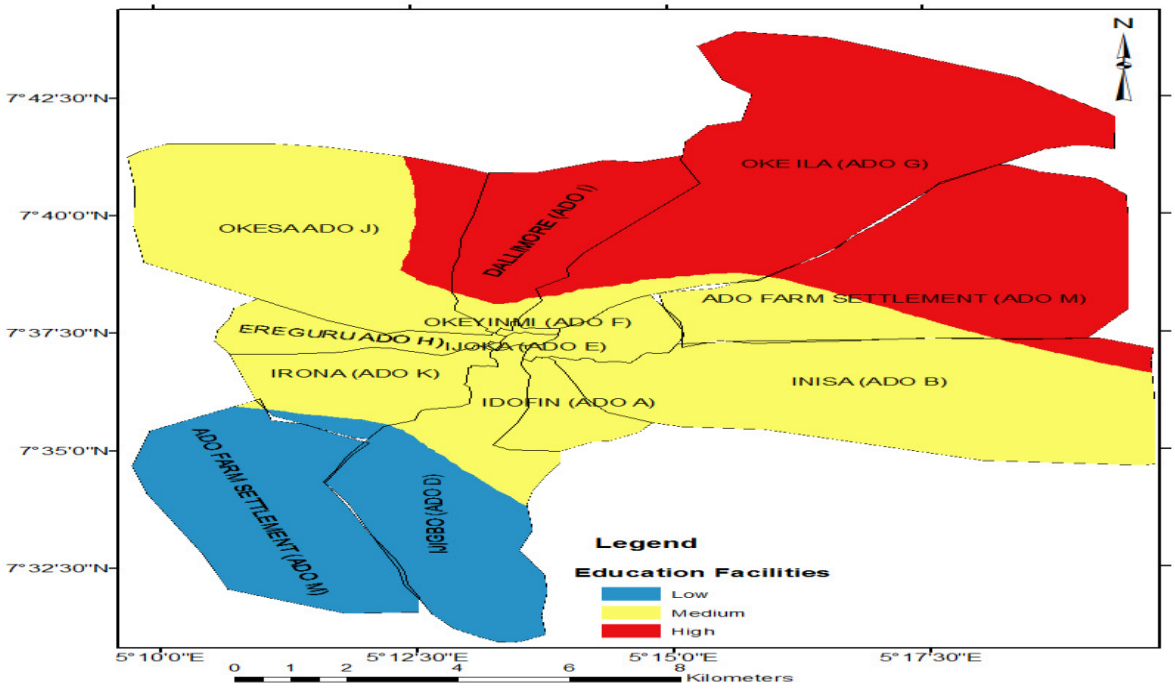

Figure V: Educational Facilities in Ado- Ekiti

Source: Field Work, 2014.

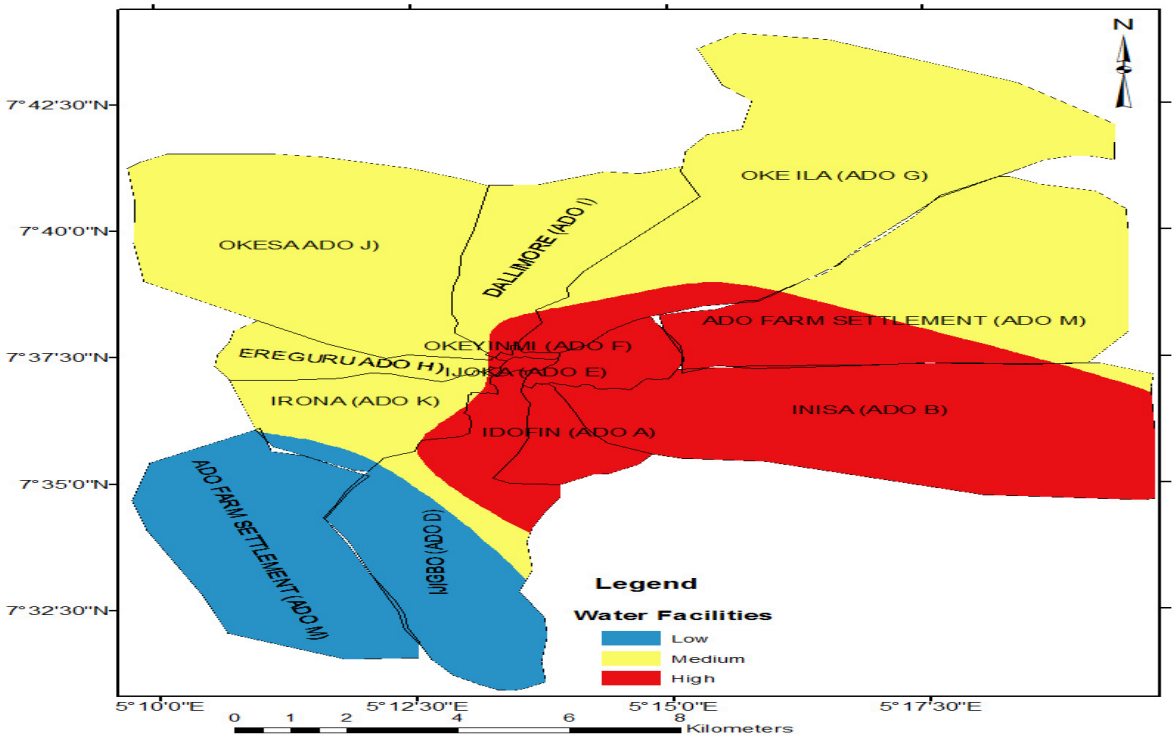

Figure VI: Water Facilities in Ado- Ekiti

Source: Field work, 2014.

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Appendix I

COMMUNALITIES		
	Initial	Extraction
V5a - Age	1	0.763629467
V5b - Gender	1	0.685102491
V6 - Marital Status	1	0.766737448
V7 - Level of Education	1	0.756215885
V8 - Religion	1	0.684533737
V9 - Occupation	1	0.776034286
V10 - Household Size	1	0.642613981
V11 - Average Monthly Income (in Naira)	1	0.78422159
V12 - Is the retail market in the area adequate	1	0.690102492
V13 - Estimated distance of the nearest retail shops to house	1	0.716718831
V14 - Distance to place of work	1	0.719599468
V15 - Mode of Travel	1	0.76321906
V16a - Type of Accommodation Building	1	0.894061434
V16b - No of People Living in the Building	1	0.727058568
V16c - No of Floor	1	0.880704779
V16d - No of Rooms	1	0.793608567
V17 - Nature of Occupancy	1	0.760105058
V18 - if rented, How much is paid as rent monthly(in Naira)	1	0.658703529
V19 - Age of Building (in Years)	1	0.718352435
V20 - Materials used for wall construction	1	0.756807321
V21 - If storey building, materials used for decking	1	0.850500769
V22 - Roofing Materials	1	0.669832684
V23 - Wall Finishing	1	0.627539454
V24 - Condition of Wall	1	0.72293327
V25 - Structural Condition of Building	1	0.771054462
V26 - Is the Building Accessible by Road	1	0.67230294
V27 - Source of Drinking Water	1	0.83889667
V28 - Source of Cooking and Washing water	1	0.869402708
V29 - If Pipe-borne water, how regular is the supply?	1	0.836028419
V30 - Do you pay for pipe borne water?	1	0.754239124
V31 - if yes, how much do you pay per month?	1	0.668461229
V32 - Agency Responsible for Water Supply	1	0.700433355
V33 - Distance of Water Source to the HH	1	0.780173284
V34 - Water Resources Location	1	0.766781682
V35 - Location of Bathroom	1	0.862654874
V36 - Number of Households using a bathroom	1	0.924484013
V37 - Location of Toilets	1	0.872307997
V38 - Number of Households using a toilet	1	0.927727731
V39 - Type of Toilet	1	0.749684953
V40 - Location of Kitchen	1	0.90146237

V41 - Number of Households using a Kitchen	1	0.930128632
V42 - Types of Energy used in Kitchen	1	0.59540823
V43 - Distance of Nearest Market	1	0.772502208
V44 - Range of Goods sold in the market	1	0.720121806
V45 - Description of Market Environment	1	0.786658499
V46 - Are there shopping malls and/or supermarkets around?	1	0.724994478
V47 - Type of Market wanted	1	0.704529422
V49 - What types of goods would you want them to sell	1	0.716589
V50a - Types of Waste generated	1	0.701423801
V50b - Method of waste storage	1	0.635378228
V51 - Methods of Waste Disposal	1	0.680965189
V52 - Frequency of Collection	1	0.739327274
V53 - Condition of Drainage System	1	0.671113034
V54 - Type or Class of Road in Locality	1	0.788554336
V55 - Condition of Road	1	0.717649158
V56 - Is the road provided with drainage?	1	0.822422126
V57 - If yes, kind of drainage available	1	0.727914807
V58 - Do you have difficulty in accessing your house?	1	0.8113596
V59 - If yes, what is responsible for inaccessibility?	1	0.814248506
V60 - Means of Access to your house	1	0.725437291
V61 - Source of Electricity Supply	1	0.640613689
V62 - If PHCN, what is the distance of the Nearest Transformer to the House?	1	0.798908758
V63 - Average Monthly Bill Paid by the Household	1	0.799381057
V64a - Category of Health Facilities	1	0.724545391
V64b - Ownership of Health Facility	1	0.745374314
V65 - Condition of Health Facility	1	0.636822639
V66 - Do you have a Police Post in the Neighbourhood?	1	0.822447674
V67 - If available, State type	1	0.790109023
V68 - Distance of Nearest Police Station to House	1	0.845472275
V69 - Distance of Nearest Fire Station to House	1	0.818285227
V70 - Do you have Postal Agency in your Neighbourhood?	1	0.667820593
V71 - Is there neighbourhood Vigilante in this Area?	1	0.811977898
V72 - How Effective are they?	1	0.827974178
V73 - Who Pays for Security Services?	1	0.844076102
V74 - Type of Communication Gadget owned	1	0.674406246
V75a - Educational Facilities Available	1	0.774549391
V75b - Ownership of Educational Facilities	1	0.654701247
V75c - Distance to HH	1	0.644238708
V76 - Rating of the Level of Service Delivery provided in Locality	1	0.704814872
V77 - Priority Projects in Community	1	0.703957741
V78 - Before Facilities were provided, were the people consulted ?	1	0.925775675
V79 - If yes, At what Stages were they involved?	1	0.927121413
V80a - Type of Religious Centers	1	0.771675214
V80b - Numbers of Religious Centers	1	0.71309901

V81a - Type of Recreational/Cultural Facilities Available	1	0.881144519
V81b - Number of Recreational/Cultural Facilities	1	0.870790246
V82 - Are you a Member of any Voluntary Organization?	1	0.657494297
V83a - Area of Intervention	1	0.712217342
V83b -	1	0.713502642
V84 - How Accessible is Land to Womenfolk for Housing/Property Development	1	0.81459562
V85 - Commonest Gender Related Vices/Crimes	1	0.804524896
V86 - Cultural Heritage Facilities Available in Neighbourhood	1	0.668249626
V87 - Condition of Drainage System	1	0.724760688
V88 - Environmental Condition in Neighbourhood	1	0.620230878
V89 - As there been an incident of Outbreak of Communicable Diseases before?	1	0.864967759
V90 - If yes, What are the likely Cause?	1	0.820019501
V91 - Usual Health Problem caused by Environmental Conditions	1	0.662070957
V92 - What Attracted you to Area?	1	0.640374695
V93 - Would you Relocate from Area if Other Options are Available?	1	0.877091176
V94 - If No, why?	1	0.903025073
V95 - If yes, where else in the town?	1	0.844749575
V96 - Planning Agency Responsible for Development Control	1	0.652571956
V97 - Sources of Noise in Neighbourhood	1	0.758758619
V98 - Observed Effects of Noise on Individuals and Families	1	0.77393564
Extraction Method: Principal Component Analysis.		

Appendix II

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.23548041	14.6495004	14.6495004	15.23548041	14.6495004	14.6495004
2	9.337435396	8.978303265	23.62780366	9.337435396	8.978303265	23.62780366
3	5.953564515	5.724581265	29.35238493	5.953564515	5.724581265	29.35238493
4	5.18236709	4.983045279	34.33543021	5.18236709	4.983045279	34.33543021
5	4.247202074	4.083848148	38.41927836	4.247202074	4.083848148	38.41927836
6	3.484381415	3.350366745	41.7696451	3.484381415	3.350366745	41.7696451
7	3.310389974	3.183067283	44.95271238	3.310389974	3.183067283	44.95271238
8	2.910712274	2.798761802	47.75147418	2.910712274	2.798761802	47.75147418
9	2.549870181	2.451798251	50.20327244	2.549870181	2.451798251	50.20327244
10	2.478736902	2.383400867	52.5866733	2.478736902	2.383400867	52.5866733
11	2.412097282	2.319324309	54.90599761	2.412097282	2.319324309	54.90599761
12	2.297837449	2.209459086	57.1154567	2.297837449	2.209459086	57.1154567
13	2.067802476	1.988271612	59.10372831	2.067802476	1.988271612	59.10372831
14	1.939926322	1.865313771	60.96904208	1.939926322	1.865313771	60.96904208
15	1.855093505	1.783743755	62.75278584	1.855093505	1.783743755	62.75278584
16	1.72714951	1.660720683	64.41350652	1.72714951	1.660720683	64.41350652
17	1.619953195	1.557647303	65.97115382	1.619953195	1.557647303	65.97115382
18	1.584256549	1.523323605	67.49447743	1.584256549	1.523323605	67.49447743
19	1.532218034	1.473286572	68.967764	1.532218034	1.473286572	68.967764
20	1.391207637	1.337699651	70.30546365	1.391207637	1.337699651	70.30546365
21	1.270559606	1.221691929	71.52715558	1.270559606	1.221691929	71.52715558
22	1.204015646	1.157707352	72.68486293	1.204015646	1.157707352	72.68486293
23	1.170767997	1.125738459	73.81060139	1.170767997	1.125738459	73.81060139
24	1.151717116	1.107420304	74.91802169	1.151717116	1.107420304	74.91802169
25	1.110239518	1.067537998	75.98555969	1.110239518	1.067537998	75.98555969
26	0.992169147	0.954008795	76.93956849			
27	0.978713459	0.941070633	77.88063912			
28	0.957454542	0.920629367	78.80126849			
29	0.939289366	0.903162852	79.70443134			
30	0.904522724	0.869733389	80.57416473			
31	0.878363261	0.844580059	81.41874479			
32	0.839057556	0.806786111	82.2255309			
33	0.817375257	0.785937747	83.01146864			

34	0.789725628	0.759351565	83.77082021			
35	0.761819063	0.73251833	84.50333854			
36	0.727532313	0.699550301	85.20288884			
37	0.692482624	0.665848677	85.86873752			
38	0.666526409	0.640890778	86.5096283			
39	0.629435201	0.605226155	87.11485445			
40	0.579254363	0.556975349	87.6718298			
41	0.574900558	0.552788998	88.2246188			
42	0.568286256	0.546429092	88.77104789			
43	0.532846192	0.512352108	89.2834			
44	0.522462641	0.502367924	89.78576792			
45	0.499446864	0.48023737	90.26600529			
46	0.464729949	0.44685572	90.71286101			
47	0.446924734	0.429735321	91.14259633			
48	0.441157274	0.424189687	91.56678602			
49	0.429482304	0.412963754	91.97974977			
50	0.411812384	0.395973446	92.37572322			
51	0.405473026	0.38987791	92.76560113			
52	0.383261449	0.368520624	93.13412175			
53	0.36517989	0.35113451	93.48525626			
54	0.346961441	0.33361677	93.81887303			
55	0.339023832	0.325984454	94.14485749			
56	0.327240997	0.314654805	94.45951229			
57	0.319574256	0.307282939	94.76679523			
58	0.30723336	0.295416692	95.06221192			
59	0.29569732	0.284324346	95.34653627			
60	0.28521122	0.274241558	95.62077783			
61	0.263567042	0.253429848	95.87420767			
62	0.259326379	0.249352288	96.12355996			
63	0.239194325	0.229994543	96.35355451			
64	0.229943259	0.221099288	96.57465379			
65	0.220475758	0.211995921	96.78664971			
66	0.214754073	0.206494301	96.99314401			
67	0.202307593	0.194526532	97.18767055			
68	0.192684671	0.185273722	97.37294427			
69	0.187037393	0.179843647	97.55278792			
70	0.176748006	0.169950005	97.72273792			
71	0.166532835	0.160127726	97.88286565			
72	0.160697008	0.154516354	98.037382			
73	0.155097952	0.149132646	98.18651465			
74	0.144282094	0.138732782	98.32524743			
75	0.132654508	0.127552411	98.45279984			
76	0.131375655	0.126322745	98.57912259			
77	0.127957353	0.123035916	98.7021585			

78	0.118293704	0.113743946	98.81590245			
79	0.107055582	0.10293806	98.91884051			
80	0.10430173	0.100290125	99.01913063			
81	0.099353782	0.095532482	99.11466312			
82	0.095235268	0.091572373	99.20623549			
83	0.091835039	0.088302922	99.29453841			
84	0.080388885	0.077297005	99.37183541			
85	0.075206497	0.07231394	99.44414935			
86	0.071630315	0.068875303	99.51302466			
87	0.061542827	0.059175796	99.57220045			
88	0.056901097	0.054712593	99.62691305			
89	0.053612091	0.051550088	99.67846313			
90	0.047521966	0.045694198	99.72415733			
91	0.042586931	0.040948972	99.7651063			
92	0.039323046	0.037810621	99.80291693			
93	0.039032132	0.037530896	99.84044782			
94	0.035011159	0.033664576	99.8741124			
95	0.025936379	0.024938826	99.89905122			
96	0.023824978	0.022908633	99.92195986			
97	0.019558888	0.018806623	99.94076648			
98	0.017332712	0.016666069	99.95743255			
99	0.01444024	0.013884846	99.97131739			
100	0.012287176	0.011814593	99.98313199			
101	0.008557175	0.008228053	99.99136004			
102	0.005858356	0.005633035	99.99699308			
103	0.002733126	0.002628006	99.99962108			
104	0.000394075	0.000378919	100			
Extraction Method: Principal Component Analysis.						