OSUN GEOGRAPHICAL REVIEW
Published by the Department of Geography, Osun State University, State of Osun, Nigeria
ISSN: 2695 - 1959 Volume 3, 2020; 70 – 77

SPATIAL DISTRIBUTION OF CONTRACEPTIVE OUTLETS IN OSUN STATE, NIGERIA

M.O. Obidiya
Department of Geography, Osun State University Osogbo
E-mail: obidiyamobolaji@gmail.com

Abstract
Reproductive health entails that the public should be able to have access to safe and satisfying sex life and be at liberty to decide if, how and when to reproduce, (Venkatraman et, al 2015). Implicit in the first condition is the fact that access to and use of contraceptives among the citizen of a place depends on the spatial distribution of contraceptive outlets in the area. Therefore this study examines the spatial distribution of contraceptive outlets in Osun State. Six largest towns were selected from the three senatorial district of the state, i.e, Osogho and Ikirun (Osun Central), Ede and Iwo (Osun West) and Ile-Ife and Ilesa (Osun East).The inter and intra-city pattern of the outlets was examined. The primary data included the geographic coordinates of the contraceptive outlets in the selected towns. Secondary data included analogue map of Osun State, the names and address of the registered pharmacies in the selected town and their population figure. The spatial pattern of the contraceptive outlets in the area was analysed using Nearest Neighbour Analysis and Moran I index. Analysis of efficiency of service provision was also examined by town and residential density using inferential statistics. The result of analysis shows a higher concentration of the contraceptive outlets in the two largest town of the state, Osogbo and Ile-Ife with 45% and 26%. Likewise, the high density residential areas have the highest concentration of contraceptive outlets (72%) followed by the medium (17%) and low density areas (11%). There was high level of inadequacy of service provision as the average of the efficiency ratio was 1: 15,070 population. On profile of the town, level of inefficiency in the distribution of outlets was highest in Ede with a ratio of 1:45,682. The profile of the residential density areas shows that level of inefficiency in the distribution of outlets was highest in low residential density area with a ratio of 1:34,404 followed by medium and high with a ratio of 1:31,874 and 1:8,052 respectively. The pattern of the contraceptive outlets is in line with the general pattern of urban population distribution and the fact that contraceptive outlets are market-oriented services. It is only logical for the distribution to be concentrated in populated areas.

Keywords: Spatial distribution, contraceptives outlets, service provision, efficiency

Introduction

The provision and locations of health facilities (including contraceptives outlets) is a factor in accessing contraceptive information, quality and correct contraceptive application for prevention of sexually transmitted diseases and unwanted or unplanned pregnancies. The level of access to contraceptives is a function of the degree of fairness in spatial distribution of the contraceptive outlets (all things being equal). The locations of goods such as contraceptive outlets are not uniform in space. Several factors have been cited for this inequality of distribution. While need and population size are two key features in the location of health facilities, contraceptive outlets included (Fanan and Felix, 2014; Doma et al, 2015; Adewoyin, 2016), the location of some services by private entrepreneurs, however, are mostly profit motivated. This development therefore confers certain locational advantages (or disadvantages) on people based on where they live relative to the location of the contraceptive outlets. Nearest neighbour analysis and moran I index, were used to analyse the pattern and degrees of (inefficiency) inequality in the distribution of contraceptive outlets in the area.

Prior research have recognized helpful interactions between contraceptive source reliability or the falling influence of facility access with increasing distance

but have not been examined enough. The relationship between geographic nearness to family planning services and contraceptive use has not been really established (Martha, et.al, 2015). Access to services was an important predictor of contraceptive use. The probability of using family planning among rural women with the most access by both measures was 7–8 percentage points higher than among rural dwellers with the least access. The probability of wanting to space or limit births among urban women who had access to the most reliable supplies was 18% points higher than among their counterparts with the least access (Guttmacher, 2017). Product availability in the residential environment plays a critical role in demand women for and use of contraceptive methods (Guttmacher, 2017). Furthermore, the use of kernel density estimation in creating facility service environments provides a refined approach to linking women with services and accounts for both distance to facilities and supply reliability. This suggests that locational differences should be considered when seeking to improve contraceptive access (Diass and de Oliveira, 2015).

The World Bank has indicated that on a on daily basis, almost 800 women around the world give up the ghost due to problems during pregnancy and childbirth; 99% of these deaths happens in developing countries. One of the best rudimentary means of escaping maternal deaths is by preventing unwanted or unplanned pregnancies. For decades, family planning programs have controlled the number of such pregnancies. Despite increased use of contraceptive methods, it is estimated that up to 26% of married women in Sub-Saharan Africa have an unmet need for contraception (WHO, 2010). Improvement of the geographic proximity of contraceptive outlets, therefore, is an important factor for increasing access to family planning services. In rural environments, inconvenient distance is more salient in limiting use than lack of reliable supplies. (Lindsay, 2015). Therefore, if the SDG goal of reducing high maternal mortality will be achieved, there is need to examine the significance of the distribution of contraceptive outlets on the use of contraceptive.

Study area

Osun State was created in Nigeria on August 27, 1991 along with eight other states. The State is located in the South Western part of Nigeria. It covers an area of approximately 14,875 square kilometers. It lies between latitudes 7º00N and 8º10´N and longitudes 4º03´E and 5º05´E. It is bounded by Ogun, Kwara, Oyo, Ondo and Ekiti States in the South, North, West and East respectively. The State lies within the Tropical Rain Forest vegetation zone.

The 2006 National Population Census puts the population of the State at 3,416,959. The indigenes of the States are Yorubas comprising of the Ifes, Ijesas, Igbominas and Oyos. Politically, Osun State is made up of 30 LGAs and an Area Office, the State is divided into three senatorial districts namely: Osun Central, Osun West, and Osun East Senatorial Districts. Each Senatorial district is made up of 10 LGAs as shown in Figure 1.

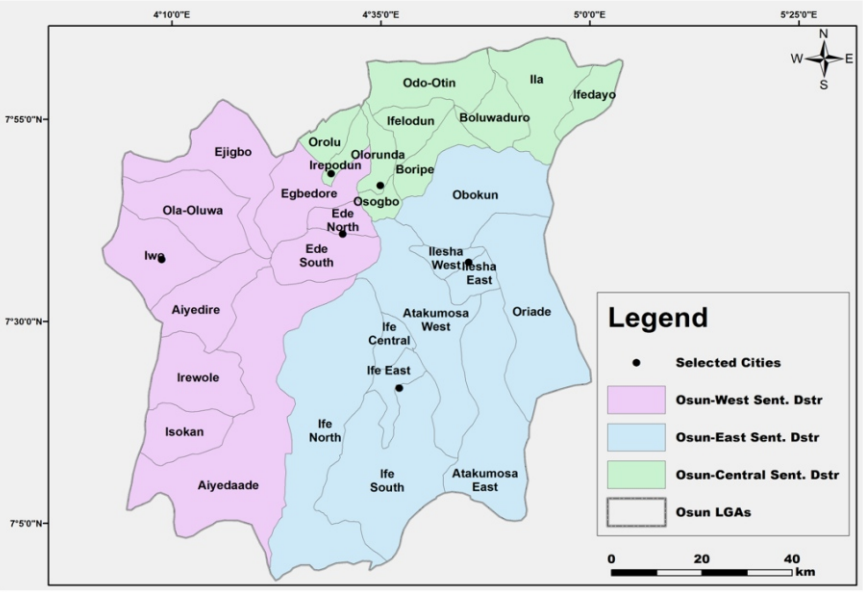

Figure 1: Selected Towns from the three Senatorial Districts of the State

Table 1: List of Licensed Premises in Selected Town as at Monday, December 31, 2018

SN	Registered Names	Address
1	Ultimate Pharmacy& Gent	Adewayi Shopping Complex, Ede Road, Osogbo.
2	Zoroth Pharmacy	Beside Roklad Limited.
3	Therit Pharmacy LTD	38 Old Ikirun Road, Osogbo.
4.	Zadet Chemist	13 Odiolowo Street, Osogbo.
5	Solaris Pharmacy LTD	Olaiya Junction, Osogbo.
6	Vangard Pharmacy	Opposite Technical College, Osogbo
7	TRUMAX Pharmacy	KM 4 Gbongan Road Ogo-Oluwa, Osogbo
8	U.I MADONNA Pharmacy	1, Shuaibu Gomina Estate, Ayetoro, Osogbo
9	ZEENFAD Pharmacy &Store LTD	55, Oke-onitea, Osogbo.
10	FABDAV Pharmacy	10, Modd's Place Ilobu Road, Agubelewo, Osogbo
11	Emilagba Pharmacy& Sup/MKT	Agunbelewo, Osogbo
12	Akinola Pharmacy& Chemist	58, Okefia,Osogbo
13	Damileye Pharmacy	43, Old Ede Road, Ofatedo, Osogbo
14	AKOL Pharmacy & Store LTD	9C Dada Lane, Osogbo
15	Dafemor Pharmacy& Store	Ilobu Road, Okinni, Osogbo
16	E-presence Pharmacy LTD	6, Fagbewesa Street, Osogbo
17	Agbajelola Pharmacy & Chemist	19, Cemetery Street, Osogbo
18	AIM & MEDICS Pharmacy	Omo West Area, Osogbo
19	Adetola paharmacy	7, Alafia Street, Osogbo
20	Felfam Healthcare LTD	15, Fagbewesa Street, Osogbo
21	Famacare Pharmacy & SUP/MKT	KM2 Gbongan/Ibadan Road 1, Baruwa Juntion, Osogbo
22	AKOL Pharmacy	Igbonna, Osogbo
23	Aranse Olu Chemist LTD	43, Old Ikirun Road, Osogbo
24	Bisamed Pharmacy	Opposite FRSC Office, Biket Area Koju Foam, Osogbo
25	Boorepo Pharmacy & Sup/ Mkt	13, Ayetoro Street, Osogbo
26	Asala Pharmacy	24, Latona Street, Osogbo
27	Groupharma Investment LTD	KM 3,Gbongan Road, Opposite Ogo-Oluwa Filling Station
28	BUCOM Pharmacy	Opposite Total Filling Station, Ota Efun, Osogbo
29	Carevilla Pharmacy LTD	28, LASAB Shopping Complex, Oke Ayepe, Osogbo
30	Arolabo Community Pharmacy	Ojuolape House, Opposite Technical College, Osogbo
31	Real Havila Pharmacy LTD	Beside Tantalizer, Ogo-Oluwa, Osogbo
32	Pharmalynk Integrated Services Nig LTD	Block B8, Farida Adeleke Complex, Dada Estate 33 Ifeolu Chemis
		20, Alekunwodo Road, Oke Fia, Osogbo
34	Raphabalm Pharmacy and Store	52, Alekunwodo Street, Osogbo
35	INVESCO- Pharma NIG LTD	2 A Oyedokun Street, Osogbo
36	Novatem Pharmacy& Sup/Mkt LTD	43B Asubiaro Street, Osogbo
37	Iyanunioluwa Pharmacy	1, Odekale Street, Osogbo
38	Maribigbe Pharm & Sup/Mkt	10, Adetoro Street, Opposite Dada Estate, Osogbo
39	Ore-Ofe Oluwa Pharm& sup/mkt	346, Opposite Church Salvatioon Army
40	Royal City Life Care Pharmacy	1A, Aderin Street, Osogbo
41	D-Sharmah's Help Pharmacy	Service Junction Ilobu, Road
42	Olorunwa Pharmaceuticals	65, Testing Ground Junction
43	OLBEE Pharmacy	32, Asubiaro Road
44	Owolabi Pharm Chemist & Sup/mkt	Block 1 11&12 Olorunsogo Shopping Complex
45	Life Check Pharmacy	Beside Buketti Canteen, Oke Onitea Junction, Ring Road.
46	SATA Pharmacy LTD	48, Ibadan Road, Ile-Ife
47	Salamulahi Pharmaceutical Stire	70, Obalufon Street, Sabo, Ile –Ife
48	Tower Pharmacy LTD	6, Obalufon Road along Post Office, Ile-Ife
49	SKY MAX Pharmacy	176 Fajuyi Road, Ile-Ife
50	Royal Medical & Pharma Services LTD	7, Hezekiah Oluwasanmi Road, Ile-Ife
51	De Moon Pharmacy	194, Ilesa Road, Ile-Ife
52	AJT Pharmacy	8, Ibadan Road, Ile-Ife
53	Alphaben Bros Pharmacy	5, Ehindi Street, Ile-Ife
54	Falade Chemist and Supper Market	14, Fajuyi Road, Ile-Ife
55	Ebi Ayoni Resources Concept Pharm LTD	15, Oranfe Street, Ile-Ife
56	Alafialoju Chemist and Mini Market	Opposite Phase I OAUTCH, Ile- Ife
57	Goshen Care Pharmacy	2, Ondo Road, Modakeke
58	Boluwatife Pharmacy	119, Road 7, Ile-Ife
59	Carophilips Heritage Pharm& Sup/MKT	Fire HAN Memorial Shopping Complex, Ile-Ife
60	Campus Pharm & coop Health care INV LTD	OAU Ile-Ife

Table 1: List of Licensed Premises in Selected Town as at Monday, December 31, 2018

SN	Registered Names	Address
61	Ayomide Pharmaceutical LTD	77, Omi-Okun, Ondo Road, Ile-Ife
62	POB ZION Heritage Pharmacy	46, Omitoto Line 2, Ile-Ife
63	Pharmcoop Healthcare Investment LTD	OAU, Ile -Ife
64	Medi-Safe Pharmaceutical Co LTD	82, Moore Street, Ile-Ife
65	Irawo Chemist LTD	Opposite OAUTCH Phase II, Ilesa Road, Ile -Ife
66	Mohas Pharmacy NIG LTD	32, Obaufon Street, Ile-Ife
67	Phaim Pharmacy	53 Chief (Dr) Raymond Adedoyin Way, Parakin Ile -Ife
68	Phaim Pharmacy	J&J Plaza Mayfair, Ile -Ife
69	Medisa Discount Pharmacy	4, Hezekiah Oluwasanmi Road, Ile -Ife
70	Oroki Pharmaceutical CO LTD	Opposite OAUTCH, Ile -Ife
71	Darasamgid Pharmacy	Opposite Ife City Bus Stop, Ilesa Road, Ile -Ife
72	Akewusola Pharmacy Chemist &S/mkt	B202 Okesa Street, Ilesa
73	De-Shalom Pharmacy (NIG) LTD	G11 Oke-Omiru Isare, Ilesa.
74	Fola Safeway Pharmcy& Chemist	B191 Okesa Street, Ilesa
75	De-Shalom Pharmacy LTD	A45 Isinkin Street, Ilesa
76	Adolas Pharmacy & Stores	Isokan opposite Nikky Choice Energy, Ilesa
77	De- Shalom Pharmacy LAB NIG LTD	KM4 Koko, Ilesa
78	Folakemi Pharmacy NIG LTD	Z 10 Ifofin Street, Ilesa
79	Abe-Adejam Pharmacy	A 71 Itakogun Street, Ilesa
80	Jostade Pharmacy & Stores	A 25 Adeti Street, Ilesa
81	Jostade Chemist & Supper Market	A 2 Ereja Street, Ilesa
82	Kike Pharmaceutical Company LTD	F 58 Odo-Iro Street, Ilesa
83	Kenlad Pharmacy	Z 11 Ita Balogun Street, Ilesa
84	Deen's Pharmacy	30 Hospital Road, Iwo
85	Alan Pharmacy NIG LTD	4 Ibadan Road, Off Iwo City Hall, Iwo
86	Muttex Pharmacy & Stores	29A Oloya Street, Iwo
87	Niniola Pharmacy & Stores	Bowen University, Iwo
88	Oyero Pharmacy LTD	Opposite State Hospital, Iwo
89	M2 Glory LTD	Opposite Edunro House, Oke-Ola, Iwo
90	Eyiowuawi Pharmaceuticals	227 Station Road, Ode Oke Area, Ede
91	De-GidIeon Pharmacy	Along Olowobida Street, Ajegunle, Ede
92	Real Zion Health B&T Pharmaceutical LTD	7 Opposite Ayotide Filling Station, Owode Ede
93	INKAZ Pharmacy & Stores	State Hospital Junction, Ede
94	Niyi Success Pharmacy LTD	8 Babasanya Street Off Station Road Ede
95	Tomlad Teekay Pharmacy & Stores	Opposite Union Bank, Ikirun
96	SAMTAD Pharmacy & Stores	25 Eko Ehinde Road, Ikirun
97	Dejimola Pharmacy	8 Oyedokun Street, Ikirun
98	Rimaadegoke Hassan Pharmaceutical LTD	Consumer House, Oja Oba Road, Ikirun
99	Lekmar Pharmacy NIG LTD	32 Emiloju Street, Ikirun

Source: Author's Fieldwork, 2019

Methodology

The primary data included the geographic coordinates of the contraceptive outlets in the six purposively selected towns (Osogbo, Ife, Ede, Iwo, Ikirun, Ilesa). Secondary data included analogue map of Osun State, the list of names and addresses of the Licenced pharmacy in the selected towns (from the Pharmacist Council of Nigeria, Osun State, Branch) and the population figure of the selected towns. The geographic coordinates of contraceptive outlets were obtained with a handheld GPS Garmin Map 76CSX. The analogue map of the State was obtained from the State's Ministry of Lands and Physical Planning, Osogbo. The spatial pattern of the contraceptive outlets in the area was analysed using Nearest Neighbour Analysis and Moran I Index. In order to evaluate the distribution of outlets, the study employed high order nearest Neighbour Analysis (Rnl…n) where values ranged from 0 for a perfectly clustered distribution to 2.15 for a perfect distribution. Analysis of efficiency of service provision was also examined by town and residential density using inferential statistics. This research analyzes the locational distribution of the contraceptive's outlets in the study area. The population factor is given preeminence and forms the basis for the analysis of the spatial pattern of the outlets. The descriptions here proceed from an explanation of where the facilities are located and followed by a description of the population in the study area. Table 1 shows

the list and address of the Licensed Pharmacies in the selected towns.

Result of Findings

Point-Pattern Analysis of Contraceptive Outlets

From table 2, first order Rn value of 0.86 reveals that contraceptive sales point were clustered in the study area, especially in high density residential areas. This is to be expected since a locational factor of outlet is market orientation or population concentration where threshold population is required to sustain sales.

Similarly, the locational analysis of the pattern of contraceptive outlets in the study area was examined and found to be clustered. In figure 2, the result of Moran I Index, with the z-score of 2.64 and p-value of 0.008369. There is less than 1% likelihood that this clustered pattern could be the result of random chance. The implication is that the outlets are not evenly distributed and that in essence will make their coverage limited as those afar off will not be able to access the facilities provided by these contraceptive outlets. This means that most sexual intercourse may be casual and unprotected.

Inter and Intra Urban Variation in Contraceptive Outlets

As illustrated in Figures 3 and 4, the State Capital, Osogbo, has the greatest percentage of contraceptive outlets (45.4%) followed by Ile-Ife the host of the only Federal University in the State with 26.2%, Ilesa 12.1%, Iwo 6.1%, Ede5.1% and Ikirun 5.1% respectively. Likewise, the high-density residential areas have the highest concentration of contraceptive outlets (72%), followed by the medium (17%) and low-density areas (11%). This is in line with the general pattern of urban population and the fact that contraceptive outlets are market-oriented services, it is only logical for the distribution to be concentrated in highly populated areas, where products distributors maximize sales.

Table 2: Nearest Neighbour Aanalysis of Distribution of Contraceptive Outlets

Observations	R values
Mean Nearest Neighbour Index of Contraceptive Sales Points	1.5km
Mean Random Distance of Contraceptive Sales Points	1.74km
First Order Nearest Neighbour Index of Contraceptive Sales Points	0.86
Second Order Nearest Neighbour Index of Contraceptive Sales Points	1.5

Source: Author's Survey, 2018.

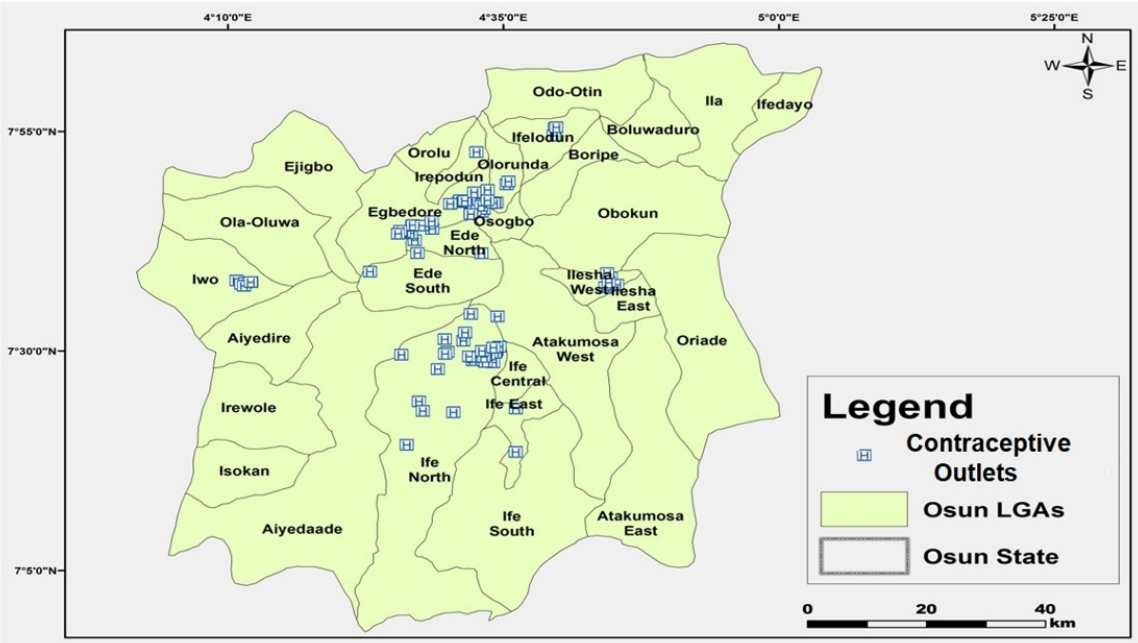

Figure 2: Point Pattern Distribution of Contraceptive Outlets in the Study Area.

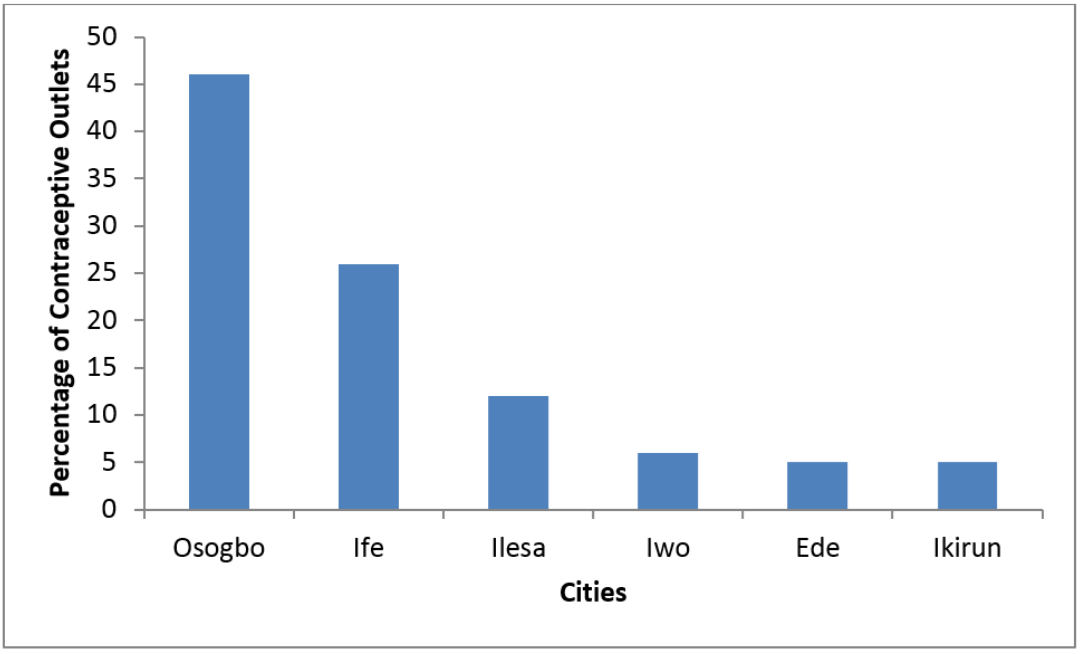

Figure 3: Distribution of contraceptive outlets by city

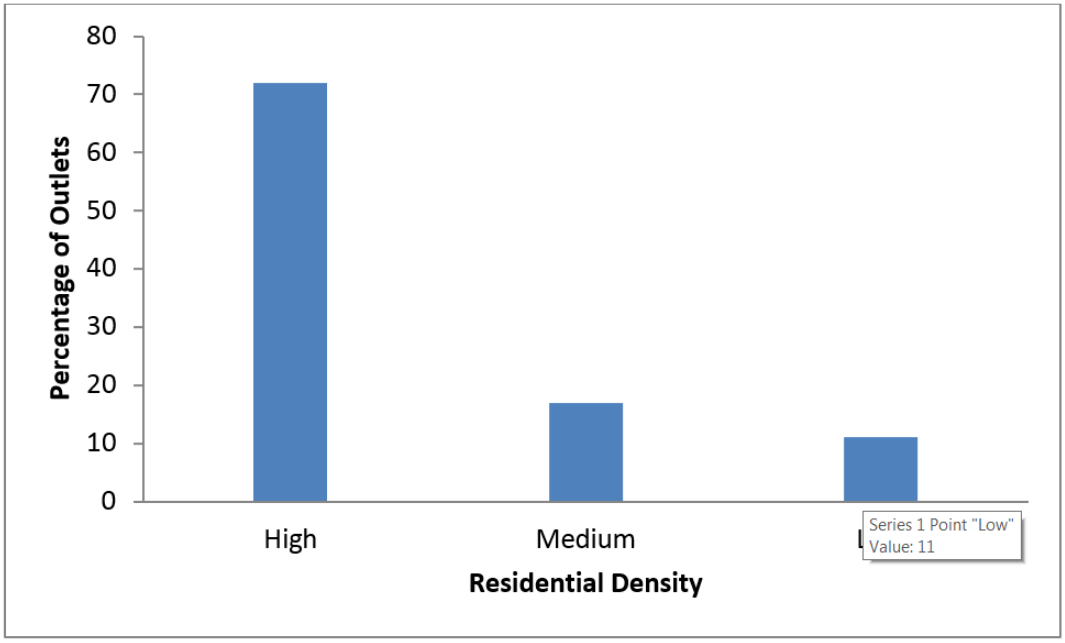

Figure 4: Distribution of contraceptive outlets by residential density

Analysis of Service Provision Efficiency by Residential Area

Further investigation of distribution pattern of contraceptive outlets was done by computing efficiency of service provision and relates the total number of outlets to the total population to be served. This is because the outlets cater for the entire city population under the assumption that clients would patronize nearest outlets to their residents or work places.

The result of analysis as summarized in Table 3 shows high level of inadequacy of service provision. On the average, the efficiency ratio was 1: 15,070 populations. This implies one outlet serves about 15000 populations. The profile of the cities on the relationship between population size and number of outlets shows that the level of inefficiency in the distribution of outlets was highest in Ede with a ratio 1:45,682, followed by Iwo, Ikirun and Ilesa with 1:34,389, 1:34,422 and 1:36,121 respectively.

Table 3: Efficiency of Service Provision in the Study Area.

SN	Cities	Projected Population 2018	No of Outlets	% of Outlets	Pop| Outlet	Efficiency Rate by Density
1	Ile Ife	332,551	26	26.2	12,790	High
2	Osogbo	239,146	45	45.4	5,314	8,052
3	Ilesa	313,459	12	12.1	26,121	Medium
4	Ede	228,410	05	5.1	45,682	31,874
5	Iwo	206,338	06	6.1	34,389	Low
6	Ikirun	172,111	05	5.1	34,422	34,404
	Total	1,492,015	99	100	158718 Av:15,070	

The implication of low level of service availability may be as a result of the religious belief of the residents of the towns coupled with the availability and the ease of the traditional method of fertility control.

The profile of the residential density areas on the relationship between population size and number of outlets shows that level of inefficiency in the distribution of outlets was highest in low residential density area with a ratio of 1:34,404, followed by medium and high with a ratio of 1:31,874 and 1:8,052 respectively. This is in line with the general pattern of urban population distribution and the fact that contraceptive outlets are market-oriented services, it is only logical for the distribution to be concentrated in populated areas.

The presence of high level of inadequacy in the low residential density area may be as a result of the fact that provision of the services is basically market oriented. The implication of low level of service availability is possible high cost of service and resort to non-conventional sources or methods of fertility control. There is high likelihood of exposure of the inhabitants to unexpected pregnancy and sexually transmitted diseases.

Conclusion

The distribution pattern of the outlets favours the towns with highest population, Ile-Ife and Osogbo, the State capital, while only about one quarter of the total outlets was distributed among the four other towns. Similarly, the high-density residential areas have the highest concentration of contraceptive outlets, while only 28% of the outlets were shared by the medium and low-density areas. Contraceptive outlets are market-oriented services, it is reasonable for the distribution to be concentrated in highly populated areas, where product distributors can maximize sales. There was high level of inadequacy of service provision as on the average, the efficiency ratio was 1: 15,070 populations. This is also confirmed by Adewoyin, (2015) that there was high level of inefficiency in the distribution of health facilities compared with the population in Nigeria. The profile of the residential density areas on the relationship between population size and number of outlets shows that level of inefficiency in the distribution of outlets was highest in low residential density area, followed by medium and high respectively.

The distribution pattern of contraceptive outlets in the area was clustered using both Nearest Neighbour Analysis. The first order Rn value of 0.86 in Nearest Neighbour Analysis and Moran I Index, with the z-score of 2.64 and p-value: 0.008369 shows that there is less than 1% likelihood that this clustered pattern could be the result of random chance. The implication is that the outlets are not evenly distributed and that in essence this will make their coverage limited and stalled people that are far off from assessing the facilities provided by these contraceptive outlets, this means that most sexual intercourse will be casual and unprotected. Government at all levels should pay greater attention and commit more resources to the sexual-health needs of the Nigeria citizens, particularly for the less privileged in the density areas where access to information and contraceptive usage is limited.

References

Donna M Denno, Andrea J Hoopes, Venkatraman Chandra- Mouli (2015); Effective Strategies to Provide Adolescent Sexual and Reproductive Health Services and to Increase Demand and Community Support, Journal of Adolescent Health 56(1), S22- S41.

Dynes M, Stephenson R, Rubardt M, Bartel D. (2012) The Influence of Perceptions of Community Norms on Current Contraceptive Use among Men and Women in Ethiopia and Kenya. *Health Place*.;18: 766–773. pmid:22579117

Dias JG, de Oliveira IT. (2015) Multilevel effects of wealth on women's contraceptive use in Mozambique. PLoS One.;10: e0121758. pmid:25786228

Fanan Ujoh, Felix Kwaghsende,(2014) Analysis of the Spatial Distribution of Health Facilities in Benue State, Nigeria, *Public Health Research*, Vol. 4 No. 5, 2014, pp. 210-218. doi:10.5923/j.phr.0405.09.

Janevic T, Sarah PW, Leyla I, Elizabeth BH (2012) Individual and Community Level Socioeconomic inequalities in contraceptive use in 10 newly independent states: A multilevel cross-sectional analysis. *Int J Equity Health*. 2012;11: 69. pmid:23158261

Lindsay Edouard, Stan Bernstein (2015); Sexual and Reproductive Health at 2015 and Beyond: A Global Perspective International Perspectives on Sexual and Reproductive Health A journal of Obstetrics and Gynaecology Canada Volume 37, Issue 10 October 2015 Pages 872-879.

Martha P.S, Marc Cunningham A, Inglis B. W, Ben H.A and Bock J. B (2015); The Effect of Access to Contraceptive Services on Injectable Use and Demand for Family Planning `in Malawi, Journal of Perspective on Sexual and Repropductive Health-JSTOR

Mberu BU, Holly E R (2014) Understanding subgroup fertility differentials in Nigeria. Population Review 53 (2), 23. Pmid: 25684828 2014;53: 23–46. pmid:25684828.

National Population Commission. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International. Available: https://dhsprogram.com/pubs/pdf/FR293/FR293.pdf. Accessed 9 April 2015.

OlaOlorun FM, Hindin MJ. (2014) Having a say matters: Influence of decision-making power on contraceptive use among Nigerian women ages 35–49 years. PloS One.;9: e98702. pmid:24897300.

United Nations Development Programme (UNDP, 2014), The Millennium Development Goals Report 2014, New York.

Venkatraman Chandra-Mouli, Marleen Temmerman; (2015) Twenty Years After International Conference on Population Development: Where Are We With Adolescent Sexual and Reproductive Health and Right, Journal of Adolescent Health volume 56, Issue 1, Supplement, January 2015, S1-S6.

World Bank, Millennium Development Goals (2015)—Goal 5: improve maternal health by

Washington, DC: World Bank, <http://www.worldbank.org/mdgs/maternal_health.html>, accessed Oct. 21, 2013.

World Bank, (2010) Public Health at a Glance—Unmet Need for Contraception, World Bank,

Washington D. C, <http://web.worldbank.org/archive/website01213/WEB/0__CO-17.HTM>, accessed Oct. 21, 2013.