

Ethnic Distribution Structure in Violence-Induced Segregated Urban Environments

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Abstract

Violence-induced segregation has its own peculiar characteristics and is often not mentioned in the discourse of the subject. Jos has been reported to be segregated along ethno-religious lines but how the current distribution of ethnic groups in the city is different from its previous state is not scientifically clear. This study therefore examines the distribution of ethnic groups in Jos city between two periods: before and after reported segregation. We employed thirty nine purposively selected stakeholders for estimation of the proportion of various ethnic groups across the fourteen wards in the city. The mean scores from descriptive statistics showed an almost uniformly spread structure in the distribution of the five main ethnic groups before segregation but homogenously concentrated groups in different parts of the city thereafter. The wards with high concentration of the Hausa ethnic group largely correspond to those of low concentrations of the natives. The result of Wilcoxon Signed Rank Test shows a statistically significant change and high level of difference in the distribution between the two periods. The residents are hence at the risk of experiencing socio-cultural consequences of residential segregation especially weak inter-ethnic social contacts and its probable consequences.

Keywords: segregated urban environment, ethnic distribution structure, violence-induced, ethnic groups, Jos.

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Highlights

- ❖ Jos was reportedly segregated as a result of recurring urban violence, yet no study had been conducted to examine the differences in the distribution of ethnic groups in the city pre and post segregation periods.

- ❖ The result shows that ethnic groups were almost uniformly distributed before the occurrence of segregation induced by violence from 2001 but not thereafter.
- ❖ The wards of large concentrations of Hausa ethnic group mostly correspond to the wards of low concentration of the natives and vice versa.

1.0 INTRODUCTION

One of the several challenges facing cities of the world is urban violence and inter-ethnic urban conflict (Bollens, 2008; Kasara, 2015). A major resultant consequence of the violence most especially in sub-Sahara African countries, is residential segregation of ethnic, religious or ethno-religious background (Gambo and Omirin, 2012) which often results from competition for land resources (Dung-Gwom and Rikko, 2009). When this happens, its effects on the entire cityscape, city elements, and the inhabitants of the cities continue to count; including restrictions to mobility and access to opportunities and services outside ethnic enclaves due to social distance (Kasara, 2015).

A large volume of research that had been conducted on the drivers and pattern of segregation, which mostly are from the west (K' Akumu and Olima 2007), explains the phenomenon from three main theoretical perspectives (Crowder and Krysan, 2016). While the first perspective views segregation as a resultant consequence of disparity in human capital among ethnic groups/races (Crowder, 2006), the second argues that varying preferences among racial groups develops into residential segregation (Krysan et al, 2009). The last however coalesce around the fact that segregation is the outcome of inequality of access to financial and housing markets (Rosignio et al., 2009). While virtually all studies on the subject from the west can quite fit into these theories and perspectives, they cannot adequately explain residential segregation that developed as a result of urban violence as currently experienced in many multi-ethnic cities in sub-Sahara African nations. We have therefore in this study, examined one of the consequences of segregation induced by violence in Jos city, Nigeria. The aim is to find out the structure of the distribution of ethnic groups along residential areas before and after the reported period of segregation. Previous studies have reportedly suggested that the residential areas of the city have been patterned along ethno-religious divides but no detailed explanation is given to that effect.

The remaining part of the paper is structured as follow: in the next section, we review the literature on residential segregation most especially in Nigeria and Jos in particular. In section 3, the methodology employed in collecting and analysing the data used in the study is described. Analysis and discussion of the findings are captured in section 4 while conclusion and areas of further studies on the topic are contained in section 5.

2.0 LITERATURE REVIEW

A search was made through peer-reviewed journals to gain an insight into the development of segregation in Nigeria at different periods and as well describe the process of the development of residential segregation in Jos, the study area.

2.1 Development of residential segregation in Nigeria

Like most other African countries, residential segregation in Nigeria is generally traced back to the period of colonization (Muhammad et al., 2015). Some studies for instance observed that the outbreak of malaria led to racially segregated residential areas of the colonial masters from the natives as a protective health measure for the Europeans in various African countries (K'Akumu and Olima 2007; Muhammad et al., 2015). Edewor (2011) and Muhammad et al. (2015) noted that the Nigerian settlements especially in the north were generally heterogeneous with people of different ethnic affiliations mutually residing and co-existing, freely interacting and collaborating in their affairs prior the era of colonization. These studies provided that the British government put an end to the heterogeneity through the creation of 'Sabongari' literally meaning new settlement which eventually culminated into physical, legal, social and psychological segregation of groups. They further noted that the concept also developed in the southern section of the country with the northerners residing in areas separated from the southern hosts in areas referred to as 'Sabon' that translates as new.

Of significance to also note in this historical background of segregation in Nigeria is the role played by the colonial masters in rooting ethnic divides through the divide and rule strategy used in pitching different groups against themselves by reawakening their tribal consciousness for the former to achieve their economic interest under the umbrella of indirect rule. The agenda of the colonial state therefore appealed to the minds of different ethnic groups that Nigerians were not bound by a common destiny; hence, each group rather maintained its individual identity and nationality, decided on the system of government and sustained the political and social institutions that were believed to have emerged from the efforts, wisdom and experiences of its previous generations (Nnoli, 1978). According to Coleman (1958), the colonial state also implanted polarization in the country through their propaganda that the north and the south were naturally segregated by spatial distance, racial origins, culture, socio-political and religious barriers.

In terms of city planning, residential segregation was the key strategy of the British colonial town planning and policies. The crucial town planning policies of the colonial masters laid the foundation for residential segregation. In the early 19th century, there was an outbreak of epidemic bubonic plague and malaria in Lagos which resulted in recommendation of residential separation between the Europeans and the African natives by medical doctors. Promotion of functional spatial structure, hygienic and healthy environment for the Europeans in distances away from the Africans therefore became the basis for town planning in Lagos at the period. The concept was implemented in other cities of Nigeria in the form of trio-settlement planning where the colonial administrators and other Europeans, the natives and other Africans reside in different sections of the city. This policy made the colonial masters to leave behind cities that were physically and socially polarized at independence in 1960.

Although the colonial masters left a legacy of cities where tribes were residentially segregated, such separation was hardly again visible in some cities like Jos and Ile-Ife long time after independence due to intra and inter-city residential mobility. Aside the

history of colonization therefore, ethno-religious and politically induced urban violence were key factors most recently responsible for residential segregation in these cities. It is well documented that the cities of Jos, Kaduna, Kano and some parts of Bauchi had been physically polarized along ethnicity and religion (Aliyu et al., 2012; Dung-Gwom and Rikko 2009; Gambo and Omirin, 2012; Muhammad et al., 2015; Ostien 2009). Magaji (2008) also agrees with this submission noting that segregation in Kaduna was the outcome of repeated urban conflicts in the city. However, Muhammad et al. (2015) found that in addition to religion, individual preference and socioeconomic status play significant roles in the development of segregated residential pattern of Bauchi.

2.2 Jos city and its challenge of residential segregation

Jos popularly called the Tin City among the Tropical African nations, is the capital of Plateau, one of the thirty six states of the Federal Republic of Nigeria. A renowned cosmopolitan city and the foremost tourism hub of the country, is strategically located almost at the geographical centre of the country (Fig. 1) within the middle belt officially christened the North-central geo-political zone. The city which lies on $9^{\circ}55' \text{ N}$ and $8^{\circ}55' \text{ E}$, is located on a striking height of over 1,200 metres above sea level. This, combined with its unique climatic attributes with mean annual temperature below 20°C and annual precipitation of about 1,460 mm, making it cooler than other settlements on the same latitude, makes it very attractive to visitors from within and outside the country. Many people prefer to live and work in Jos than elsewhere within the zone. Infact, it is often said that all 'top citizens' Nigerians have homes in Jos and to many others, it is a miniature Nigeria (Nyam and Ayuba, 2016). It is tagged 'the home of peace and tourism.'

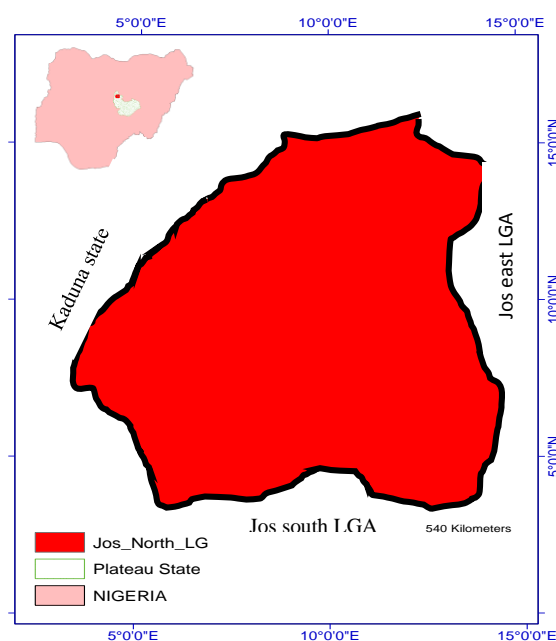


Figure 1. Jos city indicating its locational centrality in Nigeria

The combination of its locational centrality, unique physical and climatic characteristics, prime history of tin mining and outstanding fame as a consistent administrative centre, was responsible for its rapid population expansion from a mere 14,817 in 1930 (Yusuf, 2009) to 584,169 inhabitants in 2016 as projected from its population of 437,217 in 2006 census (National Population Commission). This gives it the rich cosmopolitan status with vast cultural diversity which however was later instrumental to its challenges of ethno-religious crises and eventual residential segregation at the turn of the century through its first decade.

Jos city experienced a long period of peaceful co-existence among all groups but was sadly engulfed in series of deadly urban conflicts all through the first decade in the 21st century (Higazi, 2011; Human Right Watch, 2001), the first of which occurred from 7th - 12th September, 2001 which became popular because of its coincidence with the September 11 attack in the US. There was a re-occurrence of the crisis in 2002, 2008, and 2010 apart from the silent killing spree and intermittent uprising all along in between the periods. Although the segregation has continued to build up over almost the last two decades but the recent initial obvious segregation in Jos was as a result of the erupted conflict in the city within six days in September, 2001 (Higazi, 2011; Krause, 2011; Magaji, 2008).

The settlement was drifted into segments with ethnicity aligned with religion standing at the centre of residential choice decision. Aliyu, et al, (2015), while describing the events in the city noted that as a result of the ongoing chaos that had been witnessed for more than a decade in the study area, there had been a process of residential relocation and change of ownership (of landed properties) in line with religion or ethnic background which eventually culminated in splitting the study area into like two distinct towns in one city, having an area that is solely for Muslims (mostly Hausa) and Christian (mostly natives) areas. In other words, the city was segregated into native-Hausa neighbourhoods with each group dominated by a particular religion making the whole arrangement a complex one (Ostien 2009).

Previous researches conducted in the city, noted that segregation is already distinctively pronounced (Aliyu et al., 2015; Dung-Gwom and Rikko, 2009; Muhammad, et al., 2015), and the main determinants of residential location's choice in the city today, is ethnicity that goes along with religious identity (Aliyu et al., 2012; 2015). Some of the authors reported thus: "The 2001 crisis resulted in segregation within the city centre of Jos ..." (Danfulani and Fwatshak, 2002, p253, cited in Higazi, 2011). "Today, voluntary and forced displacement have reshaped the city of Jos" (Higazi, 2011, p45). Although these investigations have reported segregation, the relationship between distribution structure of ethnic groups within the city in the pre and post segregation period is yet to be well examined.

3.0 METHODOLOGY OF THE RESEARCH

The type of data required to calculate residential segregation in Jos along any of the five widely accepted global dimensions of Massey and Denton (1988) or local indices developed by many authors, are not available in Nigeria. Infact, ethnicity had not

always been included on the list of items in census enumeration forms. Nonetheless, due the significance of this study, we wholly explored primary source of data. Wu (2002a) adopted a similar strategy to prevent the challenge of data from hindering him from his study in Shanghai China, when he rather demonstrated the trend of residential stratification at the urban district level using housing prices than studying socio-spatial differentiation at a finer geographic scale.

A Likert scale questionnaire was developed for administration on stakeholders using purposive sampling technique (Table 1). The designed scale consisted of two sections. The first section consisted of ten socio-economic and demographic profile of the stakeholders relevant to the context of the study (organization/institution where working, age, gender, marital status, educational qualification, position at work, religion, ethnic group, duration of stay in Jos, and years spent in the organization) while the second section was a 5-point Likert scale ranging from 1-5 corresponding to extremely low (0-20%) to extremely high (80-100%) requiring the respondents to estimate the percentage proportion of the five ethnic groups as adopted in this research, in the fourteen wards of the city before commencement of segregation in 2001 and from 2001- 2016 when segregation had been reported.

However, in agreement with Tongco (2007), participants in the ranking must possess the following features: i) the respondent must have resided in Jos for a minimum of 20 years. This is adopted for the fact that the challenge of the current residential segregation in the city, as noted in the literature, commenced in 2001 (Aliyu et al., 2015; HRW, 2010; Krause, 2011; Ostien 2009) which is about seventeen years ago, and the person must have sufficient knowledge of the period; ii) the respondent must be from an institution that has direct contact with Jos residents and is familiar with the landuse terrain of the city. He should equally work in a relevant section of his organization (where this exists); iii) he must be at least 18 years, the official age in the country, as at 2001; IV) he must not be a junior staff. This was decided on the basis of the responses provided for the question on position in the questionnaire. 46 representing 76.7% of the sixty administered questionnaires on the selected stakeholders, was appropriately completed and collected.

Table 1. Sample details of the study data

Institution	Number of questionnaires		
	administered	duly completed	employed for further study
Jos Metropolitan Development Board (JMDB)	10	10	10
Local Government Area (LGC)	10	7	7
Ministry of Land, Survey and Town Planning (MLSTP)	10	5	3

Non-Governmental Organizations (NGO)	6	4	4
Plateau State Traditional Council (PSTC)	14	14	10
Religious Institutions (RI)	10	6	5
Total	60	46	39

The face and content validity of the instrument was initially tested using experts (staff) of the department of Urban and Regional Planning and Educational Foundation respectively, of the environmental science and education faculties of University of Jos. The profile of the 46 adequately completed questionnaires were subjected to reliability test using cross tabulations on six pair of variables: age versus duration of stay in Jos, religion versus ethnic group, duration of stay in Jos versus number of years worked in organization, organization versus position in organization, year worked in organization versus position in organization, and qualification versus position. On this basis, inconsistencies were detected between some of the set criteria for participation from the information provided by 7 of the stakeholders leaving only 39 reliable respondents, representing 65% of the initial total questionnaires, which was used for further analysis.

Apart from the initial cross tabulations, two main analysis were conducted employing the Statistical Package for Social Sciences (SPSS) software. The first was descriptive statistics which generated frequencies and percentage scores of the ten variables on the socio-demographic profile of the respondents (Table 2). The second which also first employed descriptive statistics, examined the mean population of each of the five ethnic groups before segregation (Table 3) and after segregation (Table 4) and then examined the level of significance of the change in the distribution between the two periods using Wilcoxon Signed Rank Test. The conduct of non-parametric test was due to skewness of the data when examined on normality test.

4.0 RESULTS AND DISCUSSION

The result obtained from the data obtained through the stakeholders are provided in tables to compare the two periods. The characteristics of the stakeholders were however first examined in the next section.

4.1 The participant stakeholders

The results of the socio-economic and demographic profile of the respondents as contained in Table 2 show that the majority of the stakeholders were from JMDB and PSTC with each making up 25.6 %. This was a good reflection of one of the participation's set criteria of employing people who were very close to the residents and understood the landuse structure of the city. While the ward heads (members of PSTC) resided right within the inhabitants, the JMDB controlled the landuse. The LGC

(17%) was next while the MLSTP and NGO each had a share of 10.3 %. Most of the stakeholders (48.7%) held first degree, 25.6%, mostly ward heads possessed O'Level certificates with only 10.3% having higher degrees. 48.7% were senior staff in their respective organizations, 25% were ward heads while religious leaders made up 10.3% of the respondents. All the stakeholders (100.0%) were above 35 years suggesting they were all more than 18 years at the commencement of the residential segregation challenge in 2001. All the stakeholders had equally resided in Jos for more than 20 years and were therefore qualified to speak about the ethnic spread in Jos. Similar to the findings of many studies in Nigeria (Ibem and Aduwo, 2013; Ibem et al., 2012) the respondents were predominantly males and married; with only 1 (2.6%) that was a widow. While 59% were Christians, 41% practiced Islam. This seems to rest on the fact that the staff of most of the organizations were predominantly Christians from the native groups. This reflected in the next attribute, ethnic group with the natives (43.6%) as the dominant respondents followed by the Hausa (28.2%) who was the main rival group in the city. The Yoruba, Igbo and others groups respectively constituted 12.8%, 10.3% and 5.1%. This findings in respect of ethnicity and religion of the stakeholders supports the submissions of the earlier studies (Aliyu et al., 2015; Krause, 2011 and Ostien, 2009) that the domination of the natives and Hausa by Christians and Muslims respectively created complexities in the violence that led to the city's segregation.

4.2 Ethnic distribution analysis before and after segregation

The characteristics of the stakeholders is important in this study since the information provided by them was the main source of data for the study. It was therefore analysed in this section. As discussed in section 2.3 above, the once known home of peace and tourism and highly cosmopolitan city of Jos was bedevilled in the early part of the 21st century and got polarized along the residential areas. The pattern of distribution of the different ethnic groups (Table 3) shows that all the ethnic groups in the city were moderately residing in most of the wards across the city before 2001. The natives were only

Table 2. Socio-economic and demographic characteristics of respondents

Attribute	Sub-category	Frequency (n = 39)	Percentage
Organization	JMDB	10	25.6
	LGC	7	17.9
	MLSTP	3	7.7
	NGO	4	10.3
	PSTC	10	25.6
	RI	5	12.9
Position	Executive officer	3	7.7

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	Senior staff	19	48.7
	Junior staff	3	7.7
	Ward head	10	25.6
	Religious leader	4	10.3
Qualification	Postgraduate	4	10.3
	First degree/HND	24	61.5
	NCE/Diploma	1	2.6
	O'Level & below	10	25.6
Age	35-44 years	3	7.6
	45-54 years	15	38.4
	55-64 years	13	33.3
	65+ years	8	20.5
Marital status	Married	38	97.4
	Widow	1	2.6
Gender	Male	34	87.2
	Female	5	12.8
Religion	Islam	16	41.0
	Christianity	23	59.0
Ethnic group	Natives	17	43.6
	Hausa	11	28.2
	Yoruba	5	12.8
	Igbo	4	10.3
	Others	2	5.1
Years of stay in Jos	< 20	0	0.0
	20-30	1	2.6
	31-40	9	23.1
	41-50	15	38.5
	51-60	10	25.6
	61-70	3	7.6
	70 +	1	2.6
Years worked in organization	0-10	11	28.2
	11-20	22	56.4

21-30	4	10.3
31+	1	5.4

found to be of high concentration at Vanderpuye and Kabong wards and low at Gangare, Ibrahim Katsina and Sarkin Arab wards. The mean score of 2.44 and 2.46 respectively at Gangare and Sarkin Arab equally implied that their degree of lowness even in these areas was not high. Similarly, the zones of high residential occupation by the Hausa ethnic group was found only in two wards, Naraguta B (mean = 3.72) and Gangare (mean = 3.77). They were found to be low at Vanderpuye. The third ethnic group, Yoruba only had higher mean population at Naraguta B (mean = 3.62) and low at Vanderpuye, Jenta Apata and Kabong; even though the mean score of 2.41 in each of Jenta Apata and Kabong indicated that the group was not too low in the areas. Igbo had a higher residential concentration at Jenta Apata (mean = 3.51) and low occupation at Naraguta B and Gangare before segregation. Other minority groups were also found moderately residing in the various wards across the city with only a degree of lowness at Vanderpuye.

The distribution shown in the table made a critical revelation of almost a uniformly spread of all the ethnic groups in the city before the challenge of segregation that commenced in 2001, consistent with what was reported in the previous studies. It equally affirmed its true cosmopolitan status attested to by some of the studies (Higazi, 2011; Krause, 2011). It was interestingly noted that none of the ethnic groups was found to be extremely high or extremely low, symbolising hyper-segregation in any of the fourteen wards in the city before 2001.

The information contained in Table 4 on the distribution of ethnic groups in Jos city after the reported segregation from 2001 on the other hand shows a clear divergence from the pattern of segregation in Table 3 described above. The native ethnic group was found in three wards of maximum concentration peaked at Vanderpuye (mean = 4.97). The other two were Tudunwada (mean = 4.62) and Kabong (mean = 4.67). The group was also found to be extremely low at Naraguta A, Gangare, Ibrahim Katsina, Abba Na Shehu, Ali Kazaure and Garba Daho wards. The group was according to Table 4, now found to be mostly restricted to three and six wards of extremely high and extremely low population concentrations respectively. They were of average population at Tafawa Balewa and Jenta Adamu and low in Naraguta B, Sarkin Arab and Jenta Apata wards.

There was also a high degree of change in the concentration of Hausa ethnic group between the two periods examined. The group was found to be extremely high in population in the residential areas of four wards (Naraguta A, Gangare, Abba Na Shehu and Ali Kazaure) and high in Naraguta B, Ibrahim Katsina, Sarkin Arab and Garba Daho but extremely low in Vanderpuye. It was low in all the other wards except Jenta Adamu where it moderately resided. A clear line of spatial residential segregation was observed between the natives and Hausa from 2001-2016 noting that wards of extremely low residential occupation by the natives corresponded to either wards of extremely high or high occupation by the Hausa ethnic group and vice versa although

the two groups were found to be of moderate population at Jenta Adamu. This seems to confirm the earlier submissions in the previous studies (Dung-Gwom and Rikko, 2009; Krause, 2011; Ostien, 2009) that the two main rival ethnic groups in Jos were the natives and Hausa.

The Yoruba group was found extremely concentrated at Naraguta B (mean = 4.74), remained moderate at Naraguta A, Ibrahim Katsina, Abba Na Shehu and Garba Daho and low in all the other wards. The more evenly spread of the group was perhaps the result of its mixture in terms of religion which according to Aliyu et al. (2012, 2015); Gambo and Omirin (2012) and Muhammad et al. (2015) played a significant role in the residential decision making in the city from 2001. This equally reflected in the distribution of Igbo group (mostly Christians) with higher concentration at Vanderpuye and Kabong wards where natives who were also mostly Christians extremely occupied. The Igbo was extremely concentrated at Jenta Apata (mean = 4.64) and extremely low at Naraguta A, Naraguta B, Gangare, Ibrahim Katsina, Abba Na Shehu, Ali Kazaure, and Garba Daho; the wards mostly occupied by the Hausa who were predominantly Muslims. The minority groups were found either moderate or low in all the wards within the period.

Table 3: Ethnic distribution in Jos (Pre segregation period).

Ethnic groups/ Wards' names	Naraguta A	Naraguta B	Gangare	Ibrahim Katsina	Abba Nashehu	Sarkin Arab	Ali Kazaure	Garba Daho	Vander- puye	Tafawa Balewa	Jenta Apata	Jenta Adamu	Tudunwada	Kabong
Natives	3.18	2.79	2.44	2.46	2.85	2.15	2.82	2.87	3.87	3.00	2.72	2.95	3.46	3.72
Hausa	3.38	3.72	3.77	3.46	3.49	3.21	3.49	3.38	2.46	3.13	2.51	3.21	3.03	2.77
Yoruba	3.62	2.85	2.67	3.08	2.95	2.74	2.82	3.15	2.18	2.56	2.41	2.77	2.59	2.41
Igbo	3.23	2.38	2.54	3.10	2.97	3.15	2.82	3.26	2.79	3.18	3.51	3.08	2.69	2.97
Others	3.03	2.62	2.59	2.82	2.82	2.85	2.74	2.90	2.41	2.64	2.54	2.82	2.64	2.72

0-1.49 = Extremely low, 1.5-2.49 = Low, 2.5-3.49 = Moderate, 3.5-4.49 = High, 4.50-5.0 = Extremely high

Region of extremely high ethnic concentration Region of high ethnic concentration Region of low ethnic concentration
Region of extremely low ethnic concentration Region of moderate concentration

Table 4: Ethnic distribution in Jos (Post segregation period)

Ethnic groups/ Wards' names	Naraguta A	Naraguta B	Gangare	Ibrahim Katsina	Abba Nashehu	Sarkin Arab	Ali Kazaure	Garba Daho	Vander- puye	Tafawa Balewa	Jenta Apata	Jenta Adamu	Tudunwada	Kabong
Natives	1.90	1.41	1.15	1.13	1.03	1.62	1.15	1.38	4.97	3.00	2.26	3.26	4.62	4.67
Hausa	3.85	4.67	4.92	4.44	4.90	3.77	4.79	4.26	1.28	2.03	2.49	2.51	1.67	1.67
Yoruba	4.74	2.74	2.18	3.03	2.82	2.44	2.31	3.36	1.77	2.08	1.72	2.08	2.00	1.95
Igbo	1.10	1.23	1.18	1.28	1.31	2.38	1.46	1.15	3.72	3.77	4.64	3.64	3.49	3.64
Others	2.44	2.23	2.10	2.36	2.62	2.69	2.36	2.28	2.26	2.36	2.18	2.82	2.54	2.46

0-1.49 = Extremely low, 1.5-2.49 = Low, 2.5-3.49 = Moderate, 3.5-4.49 = High, 4.50-5.0 = Extremely high

Region of extremely high ethnic concentration Region of high ethnic concentration Region of low ethnic concentration
Region of extremely low ethnic concentration Region of moderate concentration

4.3 Change in ethnic distribution before and after segregation

The mean scores recorded for each of the ethnic groups over the 14 wards (Table 3 and 4) were collapsed to obtain the overall means for the various groups for each of the two periods, before and after segregation (Table 5). This was used to examine the level of change in the distribution between the periods employing a non-parametric test

using SPSS Version 22. The conduct of a non-parametric test was due to skewness of the data when checked for normality. The result of Wilcoxon Signed Rank Test that was conducted showed a significant level of change between the two periods. The test revealed that a statistically significant change occurred in the distribution after segregation, $z = 2.803$, $p = 0.05$, with a large effect size ($r = .63$), consistent with Cohen (1988). The median score on the change in ethnic distribution increased from before segregation ($Md = 1.5$) to after segregation ($Md = 2.75$).

Table 5. Change in the ethnic distribution in Jos.

Ethnic Groups	Overall Mean Scores			
	Pre Segregation	Post segregation	Difference	Rank
Natives	2.86	2.40	0.46	4
Hausa	3.22	3.38	- 0.16	1
Yoruba	2.77	2.52	0.25	2
Igbo	2.98	2.43	0.55	5
Others	2.72	2.41	0.31	3

5.0 CONCLUSION

Having examined the structure of the distribution of the various ethnic groups in Jos city to ascertain the reported segregation in the previous researches, this study has shown that there is a significant difference between the distribution structure before segregation and after segregation. It further reveals a high degree of spatial segregation between the two main ethnic rivals, natives and Hausa in the city as the two groups are almost entirely residing in different sections of the city. These groups are therefore at the risk of experiencing the socio-cultural consequences of residential segregation reported in previous studies such as restrictions to mobility and access to opportunities and services outside ethnic enclaves due to social distance.

Hence, the policy implication of this findings is that the level of social contact between the various ethnic groups can be enhanced through the development of desegregation programmes and projects. It is therefore important to emphasize that further research is required to examine the ensuing developments that go with segregation such as satisfaction level of the city's residents in their respective segregated neighbourhoods and occupation of ethnically homogenous communities within the city as this will guide policy makers in deciding on the right policy required to deal with the current situation.

Novelty

This research has contributed to the literature of segregation by providing explanations

to the structure of ethnic distribution in a violence-induced segregated city. This has further proved that beyond claims, assumptions and qualitative reports which are devoid of empirical statistical analysis, Jos city is segregated along ethnic lines in a pattern that prove the rivalry between two major ethnic groups.

Conflict of interest

None

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