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Department of Geography, Sokoto State University, Sokoto P.M.B. 2134, Along Birnin Kebbi Road, Sokoto State-Nigeria

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ASSESSMENT OF THE EFFECTS OF RESIDENTIAL SEGREGATION ON HOUSING CONDITIONS, ENVIRONMENT, AND SOCIO-ECONOMIC STATUS OF HOUSEHOLDS IN KADUNA METROPOLIS, NIGERIA

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Abstract

This study is aimed at assessing the effects of residential segregation in Kaduna Metropolis. Residential segregation which is the process where two or more communities that formerly resided either together or separate into different neighbourhoods is an inevitable process in any society and has become part of our urban life. The survey research approach was adopted for the study. A total of 365 copies of the questionnaire were returned and used for analysis which represents 86% of the returned questionnaire. The data collected was analysed using Statistical Package of the Social Sciences (SPSS) version 23. The chi-square (χ^2), a non-parametric test was employed to examine the effects of residential segregation (independent variable) on housing, quality of the environment, economic and quality of life of respondents (dependent variable) in the study area. The study identified increase in demand for housing, decrease in income, poor access to jobs, concentration of poverty, economic hardship, long travel distances to work and decrease in income of households were the major effects of residential segregation in the study area. Also, the study observed that residential segregation has a significant impact on housing, economic outcomes, quality of life and quality of the environment of respondents in the study area. The study therefore recommends that to reduce the problem of increased housing demand in segregated neighbourhoods, the government and private developers are encouraged to provide affordable low-cost housing schemes for low-income residents.

Keywords: *Residential, Segregation, Neighbourhood, Environment, Socioeconomic and Metropolis.*

Introduction

In 2008, majority of the human population on Earth for the first time lived in urban areas, and by the year 2030, the urban population is expected to reach 4.9 billion, which is equivalent to 60% of the global population. Nearly all of this population growth will take place in the cities of developing nations (United Nations Population Fund [UNFPA], 2007) Kaduna metropolis inclusive. Challenges posed by growing urbanization are complex and difficult to handle (Louf and Barthelemy, 2016) some of which include threat of violence, insecurity and segregation.

A common feature of human society is the agglomeration or segregation of people into different neighbourhoods based on similar characteristics such as ethnicity, religion, occupation and income (Weeks, 1999). Massey and Denton (1988) views residential segregation as the physical separation of two or more groups into different neighbourhoods. It can also be seen as the process where two or more communities that formerly lived either together separate because of factors that could be for religious or ethnic reasons (Aliyu et al, 2012). While the concept has traditionally been associated with racial segregation, it generally refers to any kind of segregation based on some criteria of populations like religion, place of birth, ethnicity and income (Eric, 2000).

Residential segregation has a plurality of causes such as individual discrimination, historical, prevalent government policies, income differentials (De-Leeuw et al, 2007), as well as education, ethnicity, occupation (Albert, 1996; Shuttleworth and Lloyd, 2001; Anderson et al., 2003; Agrawal, 2008; Fong and Chan, 2008) and access to cultural resources through social connections (Yang et al., 2020). It may also arise due to religious intolerance as well as mistrust and misconceptions amongst the different people. In addition, ethno-religious groups have often created conflict situations, which explode into ethno-religious violence. These violent clashes have led to residential segregation among religious groups (K'Akumu and Olima, 2007; Dung-Gwom and Rikko, 2009; Laah and Mamman, 2011; Aliyu et al. 2012). Similarly, living in segregated neighborhoods may be partially driven by individuals' preference for living with co-ethnic neighbors, particularly for recent immigrants, as a potential coping mechanism to facilitate the adaptation to the receiving country (Yang et al., 2020).

Residential segregation has a number of important consequences for those living in segregated neighbourhoods which has been shown to have profound effects on socioeconomic status and can limit upward mobility (Anderson, 2005). One of these is the concentration of poverty within segregated neighbourhoods which then produces a variety of social problems including joblessness, low educational attainment, social and physical environment deterioration, (Massey and Denton 1993), family breakdown, crime, and drug or substance abuse (Wilson, 1996). These can lead to social breakdown and can reduce quality of life and social participation in the segregated neighbourhoods (Shihadeh and Flynn 1996). On the other hand, some studies have identified that living in ethnic enclaves may promote access to social, cultural, and health care resources (Misra et al., 2020; Yang et al., 2020), as well as reduce the risk of exposure to discrimination (Morey et al., 2020).

Ali, *et al* (2014) examined the extent of residential segregation and damages to lives and properties in Takum and Ussa Local Government Areas of Taraba State Nigeria. The study found that residential segregation had increased vandalism in Ussa Local Government Area by 40.04% and house breaking in Takum Local Government Area by 51.3%. The study also reported that the persistence and recurrent nature of crisis in the area has led to damages of lives and property, decrease in people's economic activities, a decline in the level of agricultural investment/yield, and income levels of the people of the area. Furthermore, Rikko et al. (2022) assessed the implication of residential segregation on urban planning and development within the Jos North Local Government Area. The outcomes of this investigation disclosed numerous repercussions of residential segregation in the region, with more than 81% of the respondents indicated that segregated neighbourhoods are directly related to the ripple effects of the ethno-religious violence, resulting in residential neighbourhoods that are now ethno-religious territories and enclaves, some of which have become beehives of terror and criminal hide outs and activities in the study area. Further implications included accelerated increase in demand and price of land, minimal infrastructure and service provision, increase housing demand, illegal and uncontrolled housing development leading to the emergence of new slums and informal settlements along the fringes of the city some of which are inaccessible to public officials, city managers and service providers.

Similarly, segregated neighbourhoods are associated with poorer quality of life (Guo et al., 2022), unaffordable housing and tenure security, inadequate provision of water, sanitation and waste management which have led to the spread of disease such as cholera, typhoid, diarrhea, and malaria among others (Nwaka, 1999). This according to Robinette et al., (2018) and Williams and Collins, (2001) has negatively impact residents' health outcomes, exacerbate health disparities, and limit economic opportunities. The study also noted that segregation can adversely affect health by creating a broad range of pathogenic residential conditions that can induce adverse effects on health status.

Kaduna metropolis which is a multi-ethnic society inhabited by more than 200 ethnic groups (Akpu, 2014) had in the past people of the different ethnic, religious and social background lived together in the different neighbourhoods of the city such as Rigasa, Tudan Wada, Hayin Banki, Sabon Tasha, Television and Narayi. However, in the late 1980's the metropolis began to witness incessant religious and ethno-political tensions which culminated to the infamous Sharia law riots in 2000 and Miss World riots in the year 2002 that resulted in massive destruction of lives and properties. Also, about a decade after, the metropolis witnessed another devastating political crisis which is the 2011 post-election violence. The resultant effect is a spatial differentiation of social groups a situation that has entrenched a divide in the metropolis along ethnic, religious and cultural lines in Kaduna metropolis. As those living as minorities in mixed settlements became easily susceptible to attacks by host majority making some to relocate to areas with a presence of their ''people'', therefore, contributing to the emergence of segregated neighbourhoods. This study seeks to assess the effects of residential segregation in Kaduna metropolis.

The Study Area

Kaduna Metropolis is the capital of Kaduna State. It is located between Latitudes 10° 39' 26" and 10° 23' 26" North of the Equator and Longitudes 7° 20' 58" and 7° 33' 48" East of the Greenwich Meridian. The distance between the Eastern and Western extents of the metropolis is approximately 23.627 km, between the North and South is approximately 29.25 km, and keeps increasing due to rapid development. The city formerly occupied a land area of $21.10km^2$ in 1960 but has increased significantly to $484.22km^2$ in 2010 due to spatial expansion (Isioye et al., 2010). This growth is attributed to natural increase and high rate of immigration. Kaduna metropolis consists of Kaduna South, Kaduna North and parts of Chikun and Igabi Local Government Areas (LGAs). River Kaduna from where the state derives its name divides the metropolis into two unequal parts (Akpu, 2012). See Figure 1.
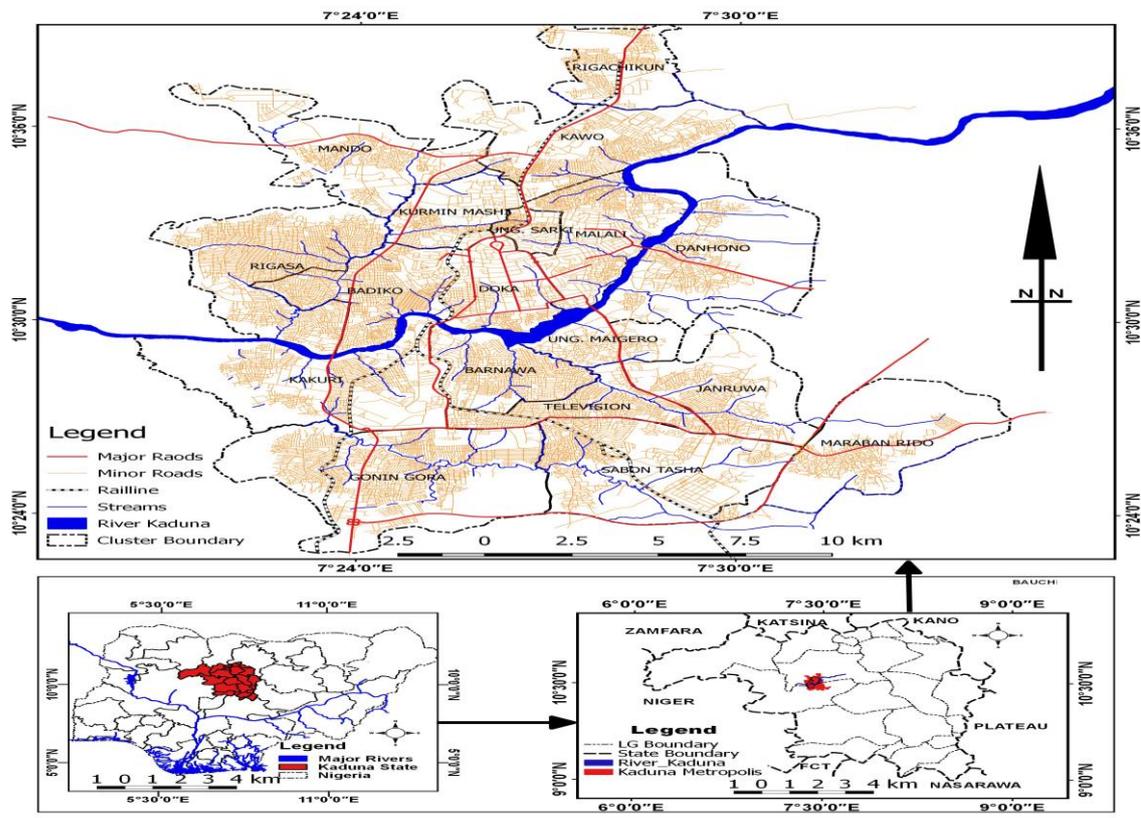

Figure 1: Kaduna Metropolis
Source: Modified from Administrative Map of Kaduna State

The metropolis is a multi-etthnic society which is inhabited by more than 200 ethnic groups (Akpu, 2012). Major ethnic groups in the metropolis include, Gbagyi, Hausa, Igbo, Yoruba, Adara, Atyap, Baju, Ham, Oegworok, and Igala. Although Kaduna metropolis is highly diverse, with people from different ethnic and religious backgrounds, instead of retaining the usual numerous culturally and religiously being mixed neighbourhoods, in recent years many residential areas have become segregated.

Methodology of Study

This study adapted the survey research design where a representative sample was used in the collection of data of which inferences were made about the entire study population. Two main sources of data were used: primary and secondary sources. The primary sources were the administration of questionnaire, and non-participant observation, while the secondary source was from the National Population Census Report, 1999. The primary data include the socio-economic characteristics of respondents and data on the driving factors of residential segregation while the secondary data was the population of Kaduna metropolis.

The sample frame for this study was the total population of all the adults aged eighteen years and above residing in Kaduna metropolis. The 1991 National population and housing census figure that was disaggregated into localities were used and neighbourhood population figures were projected to 2022. This is because the 2006 population and housing census which is the most recent census was computed only at state and local government levels and not disaggregated into neighbourhoods. A total of fifty-four (54) residential neighbourhoods with a population of 1,131,826 were identified as documented by the 1991 census. The 2022 projected population of about 2,456,675 for Kaduna metropolis formed the study population from which the sample size for the study was obtained using Krejcie and Morgan (1970) table for determining sample size of a known population. Using this table gives a sample size of 384 for a population of 1,000,000 and above.

The cluster sampling technique was adopted where neighbourhoods were clustered using the principle of nearest neighbourhood. This technique has the advantage of reducing the time and cost of a sampling exercise by restricting a sample to a limited number of geographical areas (Robinson, 1998 in Akpu, 2012). To choose streets and houses from different clusters, a systematic sampling approach was implemented. The questionnaire was allocated directly proportional to the size of each neighbourhood cluster. Systematic random sampling approach was used in selecting heads of household along a given street and houses until the required sample from each ward was obtained. It is important to highlight that only 365 copies of the questionnaire were returned and used for analysis which represents 86% of the returned questionnaire as shown in Table 1.

Table 1: Clusters, Populations and Sample Size

CLUSTER	Neighbourhood	Population, 1991	Projected Population, 2022	Sample Size
KNK$_{cl}$	Kakuri, Nasarawa and Kudendan	139955	303778	47
TTBS$_{cl}$	T/Wada, T/Nupawa Badiko, Sabon Gari and Ung. Sanusi	195434	424197	66
KAKN$_{cl}$	K/Mashi, Abakpa, Kotoko, Old NDA	9659	20965	3
KGH$_{cl}$	Kawo, Ung. Gwari, and Hayin Banki	64426	139839	21
MA$_{cl}$	Mando, and Afaka	22183	48149	7
RB$_{cl}$	Rigachikun and Barakallahu	181793	394589	61
KKD$_{cl}$	Kabala Doki,Kabala Costain and Doka	90659	196779	30
MBDR$_{cl}$	Malali, Badarawa, Ung. Dosa and Ung. Rimi	127398	276522	43
KMR$_{cl}$	Kabala West, Ung. Muazu and Rigasa	116391	252631	39
JBK$_{cl}$	Janruwa, Bagodo and Kamazo	1707	3705	3
SBT$_{cl}$	Ung. Sunday, Ung. Boro and Television	33916	73616	11
BN$_{cl}$	Barnawa, Narayi and High Cost	56358	122327	19
GR$_{cl}$	Gnin Gora and Ung. Romi	12311	26722	4
KS$_{cl}$	Ung. Kanawa, Ung. Sarki and Ung Shanu	34683	75281	11
SR$_{cl}$	Sabon Tasha and Refinery Qrts	29907	64914	10
DBK$_{cl}$	Danbushiya/Danhono, Baban Saura and Kakura and Karuga	5406	11734	3
MD$_{cl}$	Maraban Rido and Damishi	7937	17228	3
MK$_{cl}$	Maigero, Karji and Bayan Dutse	1703	3696	3
TOTAL		**1,131,826**	**2,456,675**	**384**

Source: Author's Computation from NPC (1991)

Non-participant observation method of data gathering was also used in this research. This was done throughout the period of field survey and information noted down in a diary such as nature of the neighbourhood, relics of burnt houses in neighbourhoods, presence of traffic congestion during morning and evening rush hours, the composition of residents in neighbourhood, the level of development in the neighbourhood, if there is any new settlement extension, new primary/secondary schools in the neighbourhood etc.

The data was subjected to analysis by sorting out, categorizing and coding the completed and returned copies of questionnaire to identify the existing spatial pattern of residential segregation in the study area. Both descriptive and inferential statistics were used. The descriptive statistics employed the use of tables in the interpretation of data from the field, while the chi-square (χ^2), a non-parametric test was employed to examine the effects of residential segregation on housing, quality of the environment, economic and quality of life of respondents in the study area.

Result and Discussions

Ethnicity of Respondents

The distribution of the respondents on Table 2 shows that the Hausa/Fulani both of which have historical relations, together constitute the dominant ethnic group with 38.9% of the total households in the study area, while the least ethnic group were Baju with about 2.7%. The other ethnic groups represented in relatively small numbers include Atyap, Igala, Ham, Oegworog,

Kagoma, Takad, Idoma, Sholio, and Ikulu. The influx of people from different cultures to the metropolis gives the study area its cosmopolitan appearance and has had a great influence on residential segregation

Table 2: Ethnicity of Respondents

Ethnicity	Frequency	Percentage
Gbagyi	39	10.7
Adara	23	6.3
Hausa/Fulani	142	38.9
Igbo	18	4.9
Yoruba	38	10.4
Baju	19	5.2
Others	86	23.6
Total	**365**	**100.0**

Source: **Author's Computation**

Religious Status of Respondents

The distribution by religious affiliation in Table 3 reveals that there are slightly more Muslims (49.0%) than Christians (47.9%) while the practitioners of other forms of religion (such as animist) make up only 0.8%. This can be explained by the fact that the study area is a core northern town which used to be the administrative headquarters of Northern Nigeria where Islam is widely practiced.

Table 3: Religious Status of Respondents

Religion	Frequency	Percentage
Christianity	175	47.9
Islam	179	49.0
Traditional	8	2.2
Others	3	0.8
Total	**365**	**100.0**

Source: Author's Computation

Household Size of Respondents

The results in Table 4 show the distribution of respondents by household sizes. The result reveals that 53.7% of the respondents have between one to four persons per household while the smallest household size is that of 13 and above persons with 4.7%. In traditional Nigerian society, the reason for marriage and polygamy in particular is to raise as many children as possible as both the cultural and religious beliefs discourage limiting the number of children one should have. This is because large household size is a traditional strategy to cope with labour intensive livelihoods activities.

Table 4: Household Size of Respondents

Household Size	Frequency	Percentage
1-4	196	30.7
5-8	112	11.0
9-12	40	4.7
≥ 13	17	53.7
Total	**365**	**100.0**

Source: Author's Computation

Occupational Status of Respondents

Table 5 shows the occupational status of respondents with about 38.4% being Civil or Public servants while those in the informal sector were about 10.1%. The proportion of respondents who are civil servants were high because the study area is located within the State capital which is the administrative headquarters of the State and houses many ministries and departments of government that employs many people. Occupation can have significant influence on residential segregation patterns within a society in different ways. For instance, lower-paying occupations can limit the housing options of individuals and contribute to their concentration in economically disadvantaged neighbourhoods similarly certain occupations may be concentrated in specific geographic areas in the urban space. For instance, administrative and financial services are usually concentrated in urban business districts, while the military jobs are clustered in barracks. This concentration of occupations can contribute to residential segregation by creating distinct residential patterns based on the availability and proximity of job opportunities.

Table 5: Occupational Status of Respondents

Occupational Status	Frequency	Percentage
Unemployed	50	13.7
Self-employed	140	37.8
Civil/ Public servant	138	38.4
Informal sector	30	10.1
Total	**365**	**100.0**

Source: Author's Computation

Monthly Income of Respondents

On the income per month of the respondents, Table 6 shows that respondents who earned ≤₦20,000 had the highest proportion of 28.5% while the least income earners were those who earned ₦40,001-₦50,000 constituting 10.1%. The high proportion of earners below ₦20,000 could probably be as a result of noncompliance to payment of the national minimum wage by those employed in the private sector, and low-income generation by those self-employed and in the informal sector. Income plays an important role in influencing the patterns of residential segregation and mobility.

Table 6: Monthly Income of Respondents

Monthly Income	Frequency	Percentage
≤20,000	104	28.5
N20,001-N30,000	75	20.5
N30,001-N40,000	44	12.1
N40,001-N50,000	37	10.1
N50,001-N80,000	44	12.1
≥80,000	61	16.7
Total	**365**	**100.0**

Source: Author's Computation

Effects of Residential Segregation in the Study Area

Table 7 presents the analysis of the effects of residential segregation on housing in the different neighbourhoods in the study area.

Table 7: Effects of Residential Segregation on Housing

Perceived Effects	Frequency	Percentage
Poor urban housing quality	101	27.7
Increase in demand for housing	168	46.0
Decrease in demand for housing	14	3.8
Unaffordable housing	36	9.9
Lower housing ownership rate	41	11.2
No response	5	1.4
Total	**365**	**100%**
Chi-Square=217.750^a Df=4	p-Value=.000	Remark= Significant

Note: The result is significant when the p-Value is <0.05 and insignificant when the p-Value is >0.05.
Source: Author's Computation

The result reveals that 46.0% of the respondents indicated that they experienced an increase in demand for residential housing as one of the main effects of residential segregation in the study area. However, only 3.3% of the respondents reported a decrease in demand for residential housing as a consequence of residential segregation. The various ethno-religious and political riots witnessed in the metropolis had set in motion residential relocation and this has resulted in an increase in demand for residential housing being experienced. The result from the Chi-square analysis also indicates that residential segregation significantly effects housing condition in the study area, as evidenced by a large chi-square statistic of 217.750 with 4 degrees of freedom (df). The p-value associated with this statistic is below .001, suggesting a highly significant result. These findings suggest that residential segregation have a substantial impact on housing which is evident in the continuous increase experience in the demand for residential housing, poor urban housing quality and unaffordable housing particularly in KMR_{cl} (Kabala West, Ung. Muazu and Rigasa), MK_{cl} (Maigero, Karji and Bayan Dutse), BN_{cl} (Barnawa, Narayi and High Cost) and $MBDR_{cl}$ (Malali, Badarawa, Ung. Dosa and Ung. Rimi).

Effect of residential segregation on quality of environment

Table 8 presents the perceived effects of residential segregation on quality of environment in the different neighbourhoods in the study area.

Table 8: Effects of Residential Segregation on Quality of Environment

Perceived Effects	Frequency	Percentage
Poor waste disposal	124	34.0
Noise pollution	44	12.1
Air pollution	14	3.8
Infrastructural decay	57	15.6
Development of urban slumps	41	11.2
Poor urban design and planning	30	8.2
Uncontrolled urban sprawl	48	13.2
No response	7	1.9
Total	**365**	**100.0**
Chi-Square=143.380^a Df=6	p-Value=.000	Remark= Significant

Note: The result is significant when the p-Value is <0.05 and insignificant when the p-Value is >0.05.
Source: Author's Computation

The result showed that a 34.0% of the residents identified poor waste disposal as the major factor effect of residential segregation on the quality of their environment in the study area, however air pollution (3.8%) emerged as a comparatively less prevalent issue. Poor waste disposal being identified as a major effect of residential segregation on environmental quality in the study area can be attributed to the fact that such communities are often marginalized and are characterised by inadequate waste management infrastructure and waste disposal facilities.

The chi-square analysis of the perceived effects of residential segregation on quality of environment with a value of 143.380 and 6 degrees of freedom indicates a statistically significant effect of residential segregation on the quality of the environment. This suggests that there are notable influences impacting the environmental quality being investigated. Reasons for this result as noted during field observation particularly in KNK_{cl} (Kakuri, Nasarawa and Kudendan) may include factors such as industrial pollution, urban development practices, socioeconomic disparities, and inadequate environmental regulations. Industrial activities and urbanization contribute to pollution and habitat degradation, disproportionately affecting these communities.

Economic Effects of Residential Segregation

Table 9 present the economic effects of residential segregation in the different neighbourhoods.

Table 9: Economic Effects of Residential Segregation

Perceived Effects	Frequency	Percentage
No response	4	1.1
Unemployment	86	23.6
Decrease in income	144	39.5
Poor access to jobs	56	15.3
Inequality in the distribution of wealth	25	6.8
Concentration of poverty/ economic hardship	50	13.7
Long travel distances to work/ business	86	23.6
Total	**365**	**100.0**
Chi-Square=115.357[a] Df=4	p-Value=.000	Remark= Significant

**Note: The result is significant when the p-Value is <0.05 and insignificant when the p-Value is >0.05.
Source: Author's Computation**

The result shows that decrease in income, unemployment and long travel distances to work/ business were the major economic effects of residential segregation with 39.5%, 23.6% and 23.6% respectively. The spatial mismatch between affordable housing and employment opportunities can perpetuate cycles of poverty and economic disadvantage, particularly for marginalized groups who face systemic barriers to accessing housing and employment in more affluent areas. The observed chi-square in table 9 revealed a value of 115.36 with 4 degrees of freedom and a p-value of 0.000. These findings suggest that residential segregation strongly impacts on economic outcomes of respondents in the study area. Socioeconomic inequalities stemming from disparities in employment opportunities, income levels, access to education and financial services, and ethno-religious discrimination likely contribute to these observed effects in the study area.

Effects of Residential Segregation on Quality of Life

Table 10 shows the perceived effects of residential segregation on quality of life in the different neighbourhoods in the study area.

Table 10 Effects of Residential Segregation on Quality of Life

Perceived Effects	Frequency	Percent
No response	7	1.9
Poor access to quality education	107	29.3
Higher crime rate	52	14.2
Distrust and insecurity	80	21.9
Illiteracy	24	6.6
Ethnic-religious intolerance	64	17.5
Political intolerance	31	8.5
Total	**365**	**100.0**
Chi-Square=80.872^a Df=5	p-Value=.000	Remark= Significant

Note: The result is significant when the p-Value is <0.05 and insignificant when the p-Value is >0.05.
Source: Author's Computation

The result reveals that poor access to quality education is the most frequently cited issue, reported by 29.3% of respondents in RB_{cl} (Rigachikun and Barkallahu), $TTBS_{cl}$ (T/Wada, T/Nupawa Badiko, Sabon Gari and Ung. Sanusi), KNK_{cl} (Kakuri, Nasarawa and Kudendan), and $MBDR_{cl}$ (Malali, Badarawa, Ung. Dosa and Ung. Rimi) clusters. Others were in KKD_{cl} (Kabala Doki,Kabala Costain and Doka), KGH_{cl} (Kawo, Ung. Gwari and Hayin Banki), $KAKN_{cl}$ (K/Mashi, Abakpa, Kotoko, NDA) and MA_{cl} (Mando and Afaka). The disparities in resource allocation and unequal access to opportunities in these clusters explain largely the poor access to quality education perceived by the respondents. This aligns with the findings in the literature review (Williams and Colins, 2001) that residential segregation can limit residential choices and educational opportunities by reducing people's access to good schools and jobs.

The findings also indicate that within TTBScl (T/Wada, T/Nupawa Badiko, Sabon Gari, and Ung. Sanusi), MBDRcl (Malali, Badarawa, Ung. Dosa, and Ung. Rimi), KGHcl (Kawo, Ung. Gwari, and Hayin Banki), KMRcl (Kabala West, Ung. Muazu, and Rigasa), SBTcl (Ung. Sunday, Ung. Boro, and Television), GRcl (Gnin Gora, and Ung. Romi), KScl (Ung. Kanawa, Ung. Sarki, and Ung Shanu), and SRcl (Sabon Tasha and Refinery Qrts.) clusters, distrust/insecurity (21.9%) and ethnic-religious intolerance (17.5%) stand out as significant indications of how residential segregation impacts residents' quality of life. The chi-square analysis indicates that residential segregation significantly impacts the quality of life of respondents, as evidenced by a chi-square value of 80.872 with 5 degrees of freedom and a p-value of 0.000.

Conclusion and Recommendations

This study concluded that residential segregation significantly affects housing conditions, quality of the environment, economic status of households and their quality of lives in the study area. The study therefore recommends that to reduce the problem of increased housing demand in segregated neighbourhoods, the state government and private developers are encouraged to provide affordable low-cost housing schemes for low-income residents. Also, the issue of poor waste disposal can be solved by educating the public about the environmental and health impacts of poor waste disposal and exploring waste-to-energy technologies that convert waste into usable energy.

References

Agrawal, S. K. (2008). Faith-based ethnic residential communities and neighborliness in Canada. *Planning Practice and Research*, 23(1), 41-56. Accessed from:http://dx.doi.org/10.1080/02697450802076431.

Akpu, B. (2012). *An analysis of the spatio-temporal growth of Kaduna Metropolis and its environmental consequences in Kaduna, Nigeria.* Unpublished PhD. Thesis, Department of Geography, Bayero University, Kano.

Albert, I. O. (1996). Ethnic residential segregation in Kano, Nigeria and its antecedents: African Study Monographs, 17(2):85-100. Accessed from: https://www.academia.edu/30723442/Ethnic_residential_segregation_in_Kano_Nigeria_and_its_antecedents_African_Study_Monographs_vol.17_no._2_October_1996_pp.27-42.

Ali, A. Y.—, Joshua, S. and Zainab, B. P., Danjuma, A. K., Iwalaiye, E. M. (2014). An examination of the extent of residential segregation and damages to lives and properties in Takum and Ussa Local Government Areas of Taraba State Nigeria. *International Journal of Scientific and Engineering Research*, Volume 5, Issue 8, ISSN 2229-5518. Accessed from: http://www.ijser.org.

Aliyu, A. A., Kasim, B. R, Martin, D, Mohd, L. M. D., and Ali, M. A. (2012). Implication of intangible location attributes on residential segregation in Jos, Nigeria. *Journal of Sustainable Development*; Vol. 5, No. 11.

Anderson K. F., (2005). *Racial residential segregation and access to health-care coverage: A multilevel analysis* (Unpublished M.Sc. dissertation Oklahoma State University.

Anderson, L.M., St. Charles, J., Fullilove, M.T., Scrimshaw, S.C., Fielding, J.E., and Normand, J., (2003). Providing affordable family housing and reducing residential segregation by income: A systematic review. *American Journal of Preventive Medicine*. Accessed from: http://www.thecommunityguide.orgsocialsoc-AJPM-evrev-housing.pdf.

Ahmed, A., Mohammed, S.A., and Williams, D.R. (2007). Racial discrimination and health: Pathways and evidence. Indian J Med Res 126, pp 318-327. Accessed from https://scholar.harvard.edu/files/davidrwilliams/files/2007racial_discrimination_and-williams.pdf.

De Leeuw, M. B., Whyte, M. K., Ho, D., Meza, C., and Karteron, A. (2007). Residential segregation and housing discrimination in the United States: Violations of the International Convention on the Elimination of All Forms of Racial Discrimination. A Response to the 2007 Periodic Report of the United States of America. Accessed from: http://www2.ohchr.orgenglishbodiescerddoc sngosusaUSHRN27.pdf.

Dung-Gwom, J. Y. and Rikko, L. S. (2009). Urban violence and emerging land and housing markets in Jos, Nigeria: Proceedings of the ISA Housing Conference, Glasgow, 1-4 September 2009. Accessed from: http://www.cppr.ac.ukmediamedia_129777_en.pdf.

Eric M. U. (2000). Producing and consuming trust. Political Science Quarterly, 115(4) 569-590.

Fong, E. and Chan, E. (2008). Residential patterns among religious groups (Extended Abstract). Accessed from: http://paa2009.princeton.edupapers90428.

Guo, M., Wang, Y., Liu, J., and Dong, X. (2022). Ethnic enclaves, social capital, and psychological well-being of immigrants: The case of Chinese older immigrants in Chicago. *Aging and Mental Health*, 27, 1077–1085. 10.1080/13607863.2022.2084506. Accessed from: https://pmc.ncbi.nlm.nih.gov/articles/PMC9789212/.

Isioye, O. A., Youngu, T.T., Abdullahi, H.S., and Salihu, Y. (2010). Assessment of the adequacy of the facilities of Nigerian Police Force in Kaduna Metropolis for effective planning and

monitoring of electoral procedures using GIS. Nigerian Cartographic Association. Pp. 56-   63.

Laah, J. G., and Mamman, M. (2011). Religious residential Segregation and Urban Mobility in Kaduna Metropolis. *The Nigerian Geographical Journal*, Vol. Pp. 43-60.

Louf, R., Barthelemy, M., (2016). Patterns of residential segregation. Plos One 11(6): e0157476. Accessed from: https://doi.org/10.1371/journal.pone.0157476.

Massey, D. S., and Denton, N. A. (1988). The Dimensions of Residential Segregation. Social Forces, 67, 281-315. Accessed from: https://doi.org/10.1093/sf/67.2.281.

Misra, S., Wyatt, L. C., Wong, J. A., Huang, C. Y., Ali, S. H., Trinh-Shevrin, C., Islam, N. S., Stella, S. Y., and Kwon, S. C. (2020). Determinants of depression risk among three Asian American subgroups in New York City. *Ethnicity and Disease*, 30(4), 553. 10.18865/ed.30.4.553. Accessed from: pubmed.ncbi.nlm.nih.gov/32989355/.

Morey, B. N., Gee, G. C., Shariff-Marco, S., Yang, J., Allen, L., and Gomez, S. L. (2020). Ethnic enclaves, discrimination, and stress among Asian American women: Differences by nativity and time in the United States. Cultural Diversity and Ethnic Minority Psychology, 26(4), 460–471. 10.1037/cdp0000322 Accessed from: https://pubmed.ncbi.nlm.nih.gov/32091229/.

Muhammad S.M., (2015). *Framework of the existing patterns of residential segregation and housing quality in Nigeria*. A thesis submitted in fulfillment of the requirement for the award of the Doctor of Philosophy in Real Estate and Facilities Management, Universiti Tun Hussein Onn Malaysia.

Nwaka, G. I. (1999). The urban poor, the informal city and environmental health policy in Nigeria. Accessed from: http://www.engagingcommunities2005.orgabstractsNwaka-Geoffrey-final.pdf.

Obafemi, A. A., Omiunu, P. (2014). Analysis of immigrants" residential preference and ethnic segregation in Yenagoa Metropolis. *Research on Humanities and Social Sciences* Vol.4, No.19 ISSN 2225-0484. Accessed from: www.iiste.org.

O'Regan, K. M. and Quigley, J. M. (1998). Spatial effects upon employment outcomes: The Case of New Jersey teenagers. UC Berkeley Working Paper IBER-CalBerk E96- 247. Accessed from: http://ssrn.com/abstract=97788.

Rikko, L., Laka, I.S., Pam, H.M., Namo, J. A. and Tupkop, N. N. (2022) Assessed residential segregation and implications on physical planning and development in Jos North Local Government Area. *African Journal of Geographical Sciences* Vol. 3 No. 1, (ISSN: 2786-9741) DOI: 10.6084/m9.figshare.2076861. Accessed from: (PDF) Residential Segregation and Implications in Jos North Local Government Area, Nigeria (researchgate.net).

Robinette, J. W., Charles, S. T., and Gruenewald, T. L. (2018). Neighborhood cohesion, neighborhood disorder, and cardiometabolic risk. Social Science and Medicine, 198, 70–76. 10.1016/j.socscimed.2017.12.025. Accessed from: https://pmc.ncbi.nlm.nih.gov/articles/PMC5866758/.

Shihadeh ES, Flynn N. (1996). Segregation and crime: the effect of black social isolation on the rates of black urban violence. *Soc Forces*; 74:1325-52.

Shuttleworth, I. and Lloyd, C. (2001). Mapping segregation in Northern Ireland. Northern Ireland Housing Executive Estates outside Belfast. Accessed from: http://www.nihe.gov.ukmapping_segregation_in_northern_ireland_northern_ireland housing_executive_estates_outside_belfas.

UNFPA (2007). State of World population 2007: Unleashing the potential of urban growth. United Nations Population Fund, UNFPA, New York.

Weeks, J. R. (1999). Population: An introduction to concepts and issues, 7th Edition, Wadsworth Publishing Company.

Williams, D., and Collins, C. (2001). Racial residential segregation: A fundamental cause of racial disparities in health. *Public Health Report* / Volume 116: 404-15. Accessed from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1497358/pdf/12042604.pdf.

Yang, T. C., Park, K., and Matthews, S. A. (2020). Racial/ethnic segregation and health disparities: Future directions and opportunities. *Sociology Compass,* 14(6), e12794.10.1111/soc4.12794. Accessed from: pmc.ncbi.nlm.nih.gov/articles/PMC10699736/.