An assessment of the impact of commercial land use on residential housing. A case study of Auchi, Edo State

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Abstract. *Auchi's strategic location as a commercial hub has led to a significant expansion of its economy, resulting in a complex interplay between residential living conditions and economic development. The goal of this study was to determine how commercial activity affects residential housing in Auchi in order to raise the standard of housing there. In order to raise Auchi's housing quality, this study aims to evaluate how commercial activity affects residential housing. In order to accomplish this goal, the following goals were taken into account: figuring out why residential housing in Auchi was converted to commercial use; figuring out what mixed-use housing Auchi has; figuring out what commercial activity is currently taking place on the city's stock of residential housing; figuring out how these commercial activities affect Auchi's residential housing; and figuring out the overall effects of commercial activity on Auchi's residential housing. 155 questionnaires were distributed to various study areas' quarters as part of a quantitative research methodology. The basic percentage method was employed to analyze the gathered data. The research findings indicate that although commercial activities have created job opportunities and drawn many individuals and families to Auchi, there are drawbacks as well. Firstly, there is an increasing demand for space, which results in the conversion of residential properties into commercial establishments. This reduces the supply of residential housing for locals, causing a shortage and an increase in housing prices. Based on the research's findings, the following recommendations were made: the government should enact laws regulating property prices and rentals to ensure that they stay within the reach of locals; collaborate with private developers to construct affordable housing units in Auchi in order to alleviate the city's housing scarcity; enforce laws governing noise pollution in order to reduce disturbances caused by commercial activity in residential areas; and promote mixed-use development in Auchi, which enables locals to live close to places of employment while preserving their ability to balance their personal and professional lives.*

Keywords: *Residential housing, Commercial, Activity, Private developer, Housing scarcity, Auchi.*

1. Introduction

Urban development is dynamic, with the intersection of residential and commercial activity influencing many facets of community life. The growing commercial activity in Auchi, a town in Nigeria's Edo State, has generated a lot of interest in terms of how it will affect residential housing. Auchi, which was formerly well-known for its importance in trade and agriculture, is currently undergoing fast urbanization and commercial growth, which has an impact on its residential landscapes [1]. This introduction aims to investigate the complex effects of these commercial operations on Auchi's residential housing market, with particular attention to property values, community dynamics, infrastructure, and socioeconomic conditions. Auchi's commercial activity has increased as a result of several factors, such as infrastructural development and population growth. Land use patterns are changing significantly as markets and businesses expand. Due to the large land requirements of commercial enterprises, residential areas may be relocated or the demand for housing may change [2]. The spread of commercial zones may raise the value of nearby properties, which could result in higher rent and property prices. These factors would then have an impact on the accessibility and affordability of housing for locals [3].

The transformation of neighborhood character is one of the main issues with commercial encroachment on residential areas. A neighborhood's peaceful residential character can be disrupted by the presence of commercial buildings like stores, eateries, and offices, which can lower the standard of living for those who live there. Common problems resulting from such changes include increased foot traffic, noise, and pollution [4]. These elements have the potential to lessen the residential allure of neighborhoods that are generally regarded as peaceful and suitable for residential use. Another important area that is impacted by the increase in commercial activity is infrastructure. The augmented need for roadways, parking areas, and communal facilities frequently puts pressure on the current infrastructure, resulting in gridlock and a reduction in the caliber of services [5]. For Auchi, the challenge lies in balancing commercial growth with the maintenance and enhancement of infrastructure to support both residential and commercial needs adequately [6].

Attention should also be paid to the effects on nearby companies and job prospects. Commercial operations frequently promote economic expansion and job creation, which helps residential communities by supplying employment opportunities and promoting stability in the economy [7]. However, there may be unevenness to this economic boost, which could result in income inequality and socioeconomic divisions within the community (Ifeanyichukwu, 2018). Furthermore, social dynamics in Auchi may be impacted by the interplay between the residential and commercial sectors. Social structures and community cohesion may change as a result of commercial activities drawing in a diverse range of people and businesses. Although the influx of new businesses and residents may enhance the local culture, it can also cause tensions and conflicts between long-term locals and recent arrivals [8]. Land use conflicts, in which businesses may invade or disturb existing residential areas, are a

major source of concern. Conflicts over land use and rights may result from this encroachment, which may have negative social and legal repercussions [9]. In order to resolve these conflicts and guarantee the peaceful coexistence of residential and commercial uses, effective urban planning and regulatory measures are needed.

The growth of commercial activity can have indirect effects on real estate development trends in addition to direct ones. It is possible that developers will prioritize investing in properties with commercial potential over residential needs, thereby contributing to a real estate priorities shift [10]. The area's supply and caliber of residential housing may be impacted by this change. A thorough analysis of how Auchi's commercial activities influence residential housing is necessary to comprehend these effects. For a comprehensive understanding of the community's challenges and changes, this analysis needs to take into account both quantitative and qualitative data. The research will provide insightful information about urban development and planning tactics designed to successfully strike a balance between residential and commercial demands [11]. In conclusion, Auchi's residential housing is affected by commercial activity in a way that is consistent with global urban trends. This study attempts to provide useful suggestions for controlling urban growth while maintaining the standard and stability of residential environments by analyzing these effects. To promote sustainable and peaceful urban living, commercial development and residential needs must be balanced.

2. Research methodology

2.1. Research design

According to [12], research design is defined as a framework that shows how problems under investigation will be solved. [13] stated that the research design is a way to accomplish the research objectives through empirical evidence that is obtained economically. The considerations that determine the research design to be used include: research purpose, categories of data required, data sources, and the cost implications. According to [14], descriptive research is a process of collecting data in order to answer questions concerning the current status of the subjects in the study. They point out that the purpose of descriptive research is to determine and report the way things are done. Descriptive research is used to obtain information concerning the current status of the phenomena to describe what exists with respect to variables or conditions in a situation. The methods involve a range of activities, from the survey, which describes the status quo, to the regression study, which investigates the relationship between variables. The primary use of descriptive statistics is to describe information or data through the use of numbers (create a number of pictures of the information). The characteristics of groups of numbers representing information or data are called descriptive statistics. According to [13], this type of research attempts to describe such things as possible behavior, attitudes, values, and characteristics.

The description of this research design matches with the objective of this study, as the study sought to investigate the impact of commercial activities on residential housing in the Auchi community.

2.2. Data required and sources

The task of data collection begins after a research problem has been identified and a research design plan has been checked out. The method of data collection used for this study was both primary and secondary data, which was obtained through the use of a questionnaire, personal observation, and an oral interview.

2.2.1. Primary data

The primary data are those that are collected afresh and for the first time and thus happen to be original in character. Primary data was collected during the course of the study. It was obtained through observation, which is one of the major instruments for primary data collection in research generally. It is one of the earliest instruments used for scientific research in the process of carrying out reconnaissance surveys on the study area. Observation that was beneficial to this work was employed on the motorcycle transport conditions. Also, the researcher used a standard set of questionnaires and personal interviews as an instrument for data collection, which represent personal contact between the researcher and the respondent with the aim of getting reliable and valid information from the respondent on the situation of motorcycles and institutions that are related to transportation issues in the area under study.

2.2.2. Secondary data

These data were obtained second-hand from publishers or record sources and used for a purpose different from that of the agency that initially collected them from the field. It could be gotten quickly and cheaply compared with data collected specially for the problem at hand. The secondary source of data collected for this study will include books such as journals, research reports, maps, and publications of various scholars in related fields regarding the subject matter of the study. Also, dissertations, seminar papers, and internet materials were sourced for the study.

2.3. Research population

The population of the study consists of Eight Thousand, Two Hundred and Sixty (8,260) residential buildings in the five major quarters in Auchi; this was obtained from the record of Benin Electricity Distribution Company (BEDC) Auchi Branch (2023). A breakdown of the population is shown in Figure 1.

Table 1. Sample Size and sampling

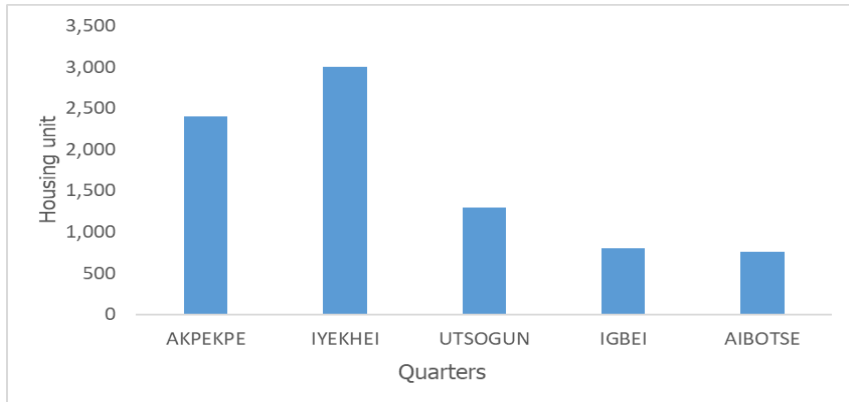| S/N	QUARTER	Housing unit
1	AKPEKPE	2,400
2	IYEKHEI	3,000
3	UTSOGUN	1,300
4	IGBEI	800
5	AIBOTSE	760
	TOTAL	**8,260**

Figure 1. Population of housing unit

2.4. Sample size

The use of stratified sampling technique was used to divide the population into five (5) quarters (strata), and 155 questionnaires were distributed as represented in Table 1. The sample size was calculated using equation 1 and as shown in Table 2.

$$n_o = \frac{Z^2 P(1-P)}{e^2}$$ (1)

where,

e: desired level of precision, the margin of error

p: the fraction of the population (as percentage) that displays the attribute

z: the z-value, extracted from a z-table

Table 2. Sample Size and sampling

S/N	QUARTER	Housing unit	Sample size	Percentage (%)
1	AKPEKPE	2,400	45	29
2	IYEKHEI	3,000	56	36
3	UTSOGUN	1,300	24	15
4	IGBEI	800	15	10
5	AIBOTSE	760	15	10
	TOTAL	**8,260**	**155**	**100**

3. Results and Discussion

3.1. Data presentation

Based on the data presented in Table 3 and Figure 2, it can be observed that of the 150 respondents, 54 (or 36%) are female and 96 (or 64%) male. Most of the respondents from the study area are male, according to the distribution. 59 respondents, or 39% of the population, are single, 76 respondents, or 51% of the population, are married, and 15 respondents, or 10% of the population, are divorced, according to Table 4. As can be seen, married people make up the majority of the respondents. According to Table 5, 30 respondents, or 20% of the population, are between the ages of 20 and 29; 80 respondents, or 53% of the population, are between the ages of 30-39; and 40 respondents, or 27% of the population, are between the ages of 40 and above. Figure 3 shows the educational status of the respondents. 32 of them, representing 21%) of the population, attained primary education. 42 of the respondents, representing 28% 28% of the population, attained secondary education. 55 of them, representing (37%) of the population, attained tertiary education, while 18 of the respondents, the respondents, representing (12%) of the population, did not get any formal education. The above indicates that the greater percentages of the respondents are well educated. The good academic background of most respondents gave them the good disposition to respond objectively to the questions regarding the subject of the research. Figure 4 shows the number of years the respondents have spent in the study area. 30 of them representing (20%) of the population have spent 1-5 years, 44 of the respondents representing (29%) of 40 have spent 6-10 years, 59 of them representing (37%) of the population have spent 11-20 years, and 17 of the respondents the respondents representing (11%) of the population have spent 20 and above years in the study area.
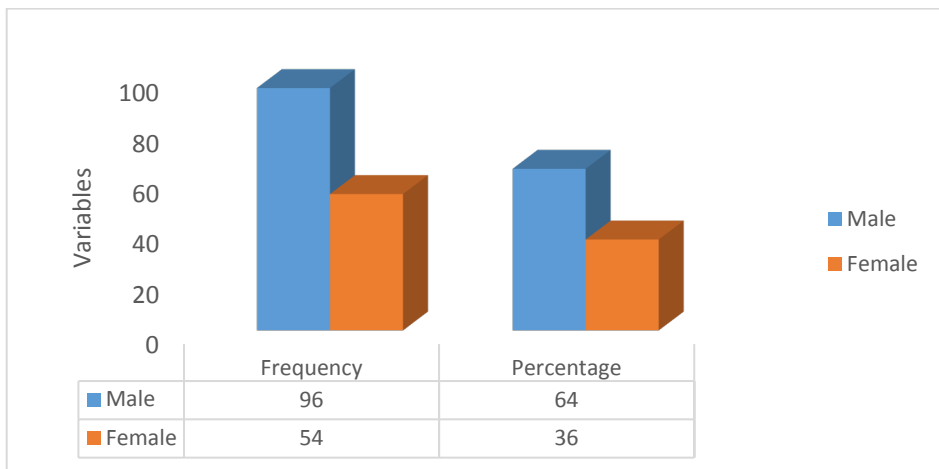

	Frequency	Percentage
■ Male	96	64
■ Female	54	36

Figure 2. Sex distribution

Table 3. Respondent demograph

Option	Frequency	Percentage
Male	96	64
Female	54	36
Total	150	100

Table 4. Sex Distribution of Respondents

Option	Frequency	Percentage
Single	59	39
Married	76	51
Divorced	15	10
Total	150	100

Table 5. Age distribution of respondents

Option	Frequency	Percentage
20-29	30	20
30-39	80	53
40 and above	40	27
Total	150	100
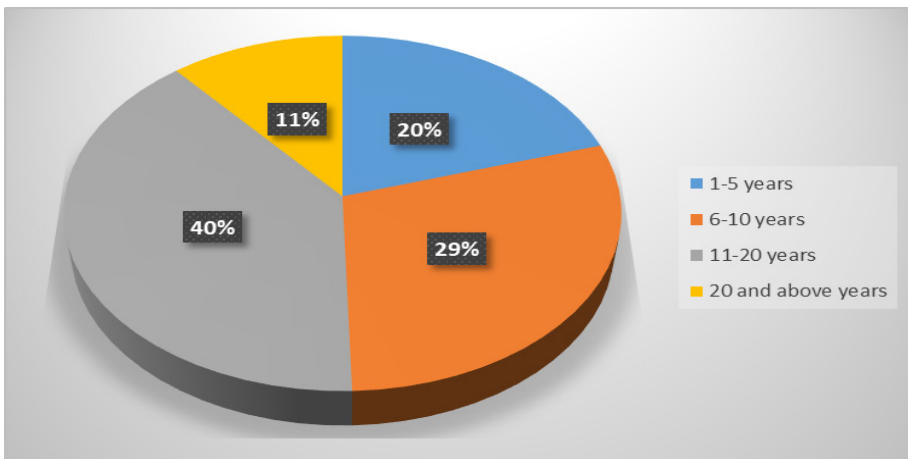
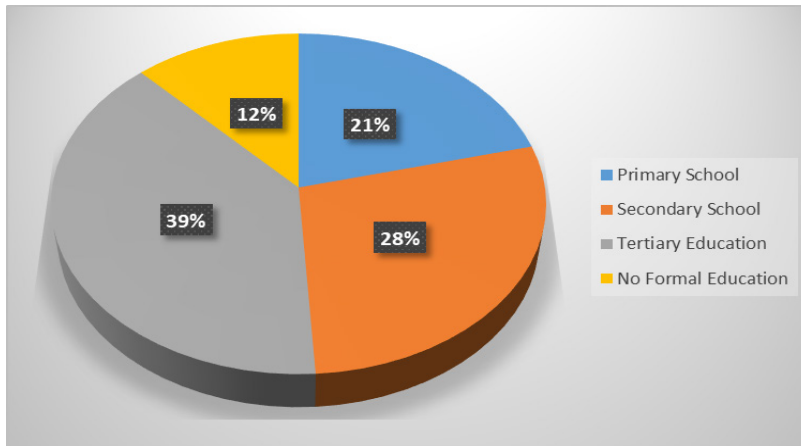**Figure 3.** Sex distribution

Figure 4. Number of years spent in Auchi

3.2. Evaluation of commercial activities and residential properties

According to Figure 5, 115 respondents, or 80% of the population, concur that Auchi's commercial activity has caused residential properties to be converted into commercial ones, while 33 respondents, or 20% of the population, disagree for the same reason. According to Figure 6, 116 respondents, or 77 percent of the population, concur that Auchi's commercial activity contributed to the rise in traffic congestion in residential areas, while 34 respondents, or 23 percent of the population, disagree. Table 4.2.8 shows that, of the respondents, 117 (or 80%) agree that commercial activities in Auchi have raised the levels of noise and pollution in residential areas of Auchi, while 33 (or 20%) disagree. Table 4.2.8 shows that, of the respondents, 100 (or 66%) agree that Auchi's commercial activities have reduced the availability of amenities for residential areas, while 50 (or 34%) disagree.

The finding revealed that the respondents, 98 (or 65%) agree that the actions taken by the local authorities to address the impact of commercial activities on residential housing have been successful, while 52 (or 35%) disagree. The result indicates that 115 respondents, or 79% of the population, concur that there has been an increase in commercial activity on study area residential property, while 32 respondents, or 21% of the population, concur. This suggests that the rise in commercial activity on residential buildings within the study area is driving up demand for housing. In addition, among the respondents, 30 respondents (20%) agree that commercial activities have had a very positive impact on the residential housing in the study area; 33 respondents (22%) agree that commercial activities have somehow positively impacted the residential housing in the study area; 25 respondents (22%) agree that commercial activities have had a neutral impact on the residential housing in the study area; and 62 respondents (41%) agree that commercial activities have negatively impacted the residential housing in the study area. This suggests that the rise in commercial activity on residential buildings

in the study area is driving up housing demand. The research also showed that the presence of commercial buildings among residential properties has resulted in a housing scarcity and a migration of residents from the area's center to its outskirts in pursuit of more hospitable and suitable housing.
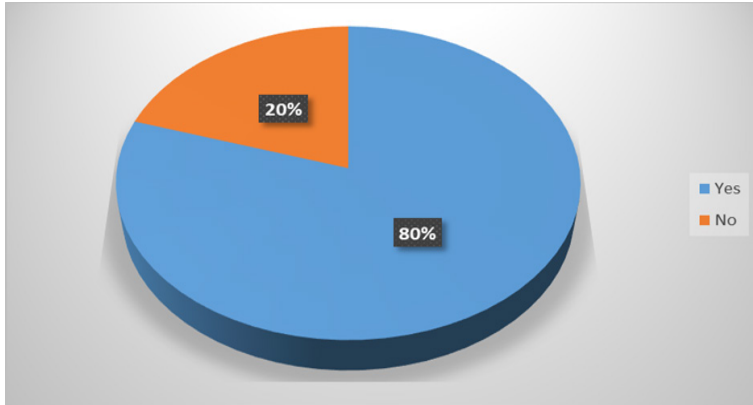

Figure 5. Response of respondents to commercial activities on residential properties
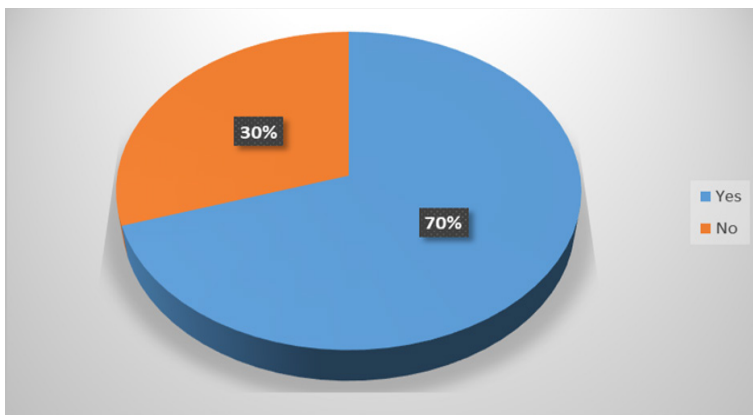

Figure 6. Response of respondents to commercial activities on traffic congestion

The assessment of the impact of commercial land use on residential housing in Auchi, Edo State reveals a complex interplay between commercial activities and residential living conditions. The findings indicate that the expansion of commercial land use significantly influences various aspects of residential housing, including property values, accessibility to amenities, and overall quality of life for residents. Commercial land use often leads to an increase in property values in adjacent residential areas. This phenomenon can be attributed to improved infrastructure and enhanced accessibility that commercial

establishments bring. However, this increase can also lead to gentrification, where long-term residents may find themselves priced out of their neighborhoods due to rising costs associated with increased demand for housing. The proximity of commercial establishments provides residents with easier access to goods and services. This convenience can enhance the quality of life by reducing travel time and costs associated with accessing essential services such as grocery stores, healthcare facilities, and recreational areas. However, it is crucial to balance this accessibility with potential drawbacks such as noise pollution and traffic congestion that may arise from increased commercial activity. While commercial land use can improve certain aspects of living conditions through better amenities and services, it can also detract from the quality of life if not managed properly. Issues such as overcrowding, environmental degradation, and loss of green spaces are significant concerns that need addressing. Effective urban planning strategies must be employed to mitigate these negative impacts while maximizing the benefits derived from commercial developments. In conclusion, the relationship between commercial land use and residential housing in Auchi is multifaceted. It necessitates careful consideration by policymakers to ensure sustainable development that benefits both commercial interests and residential communities. Future research should focus on long-term impacts and explore strategies for harmonizing these two critical aspects of urban development.

4. Conclusions

In assessing the impact of commercial land use on residential housing in Auchi, Edo State, it becomes evident that the interplay between these two types of land use significantly shapes the socio-economic landscape of the area. commercial land use has the potential to stimulate economic growth and improve living standards in Auchi, it also poses challenges that require careful management through strategic planning and community engagement. Balancing these factors will be essential for ensuring that both commercial enterprises and residential neighborhoods thrive harmoniously.

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