PATTERNS AND DRIVERS OF LAND USE CONVERSION ALONG ADIGBE-PANSEKE ROAD, ABEOKUTA, OGUN STATE

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Abstract
The study examines the patterns and drivers of land use conversion along Adigbe-Panseke Road, Ogun State, Nigeria. The research employs a survey of 88 buildings out of 112 identified using Taro Yamane sample size calculator as being converted in the study area, to assess the nature of land use changes and identify the key factors driving conversion in the study area. Structured questionnaire was used to collect data out of which 89.8% of the research instrument was duly filled and returned. Findings reveal that the conversion of residential and agricultural land to commercial and industrial use is driven primarily by population growth (mean = 3.84, t-test = 2.928, $p < 0.05$), economic development (mean = 3.90, t-test = 3.391, $p < 0.05$), and inadequate urban planning (mean = 3.94, t-test = 2.351, $p < 0.05$). The other factors driving land use conversion within the study area was found to be cultural and social factors. Inadequate urban planning, zoning regulations, economic development and industrial growth were the key drivers. It was concluded that, patterns of land use were driven by rapid urbanization, growing of commercial activities, and changes in population density. While economic opportunities are expanding, it was found that, weak enforcement of zoning laws and planning regulations has allowed unplanned conversions to emerged causing physical and environmental challenges. Therefore, Government needs to involve in provision and management of the essential infrastructure to prevent congestion and deterioration of the study area.
Keywords: Conversion, Drivers, Land use, Patterns,

1. Introduction

In urban and regional planning, land use conversion the act of converting land from one use to another is a major concern. The future of ecological preservation, monetary growth, and social justice may hang in the balance as a result of this change. Land use change has far-reaching planning implications that include community involvement, new infrastructure, and regulatory frameworks. The effects on the environment are one of the main factors to think about when converting property. An imbalance in the natural system can occur as cities grow and natural or agricultural regions are developed for human habitation, business, or industry. As a result, biodiversity may decline, pollution levels may rise, and carbon emissions may rise (Brown *et al.*, 2022). To lessen these impacts, planners should think about green infrastructure and sustainable behaviours.

Land use conversion is also heavily influenced by economic issues. Jobs, higher property values, and more tax money for the local government are just a few of the many economic benefits that can result from a change in land use (Smith & Johnson, 2023). Nevertheless, it has the potential to cause population relocation and a decline in agricultural output, which can make it difficult to keep the economy stable and ensure enough food supplies (Jones *et al.*, 2022). When considering land use change, social justice is an additional important planning consideration. Displacement and diminished access to basic services are two negative consequences that disproportionately affect already-vulnerable populations (Williams & Garcia, 2023). Inclusive measures that promote fair development and eliminate socioeconomic inequities are essential components of effective planning. The conversion of land uses can only be guided by policies and regulatory frameworks. Zoning laws, land use policies, and environmental regulations provide the foundation for planning decisions (Thompson, 2023). These frameworks need to be adaptable to address the dynamic nature of urban growth and environmental challenges.
The association of land use planning includes three major components: (i) land (ii) the way land is used (iii) the rational organization of that use in the future. Land is the basis of our living. It provides food and shelter, filters and stores water, and supplies space for urban and industrial development, leisure and many other social activities. Land is a vital resource and an expression of power and wealth. In a predominantly rural society, people who own (productive) land are considered relatively rich and wealthy; landless people are poor, underfed, and often remain dependent on others for their livelihood (Nyaboke, 2020). Land use planning is used to support the orderly occupation and use of land and to avoid adverse developments. It primarily relies on an evaluation of the land potential and on the alternative patterns of its use - including the physical, social and economic conditions which affect that use - for the purpose of selecting the most appropriate use. Its main aim is to select and choose the options which meet best the needs, and to draw up a policy for its sustained use. Land use planning does not stand on its own, but constitutes an intermediate step between land evaluation and land management. While land evaluation primarily identifies and rates the land potential and recommends alternative use scenarios, land use

planning focuses more on effective choices, with the basic information at hand amongst the options provided by the land evaluation process. The selection of these options is not necessarily determined by rational criteria only, but takes into consideration as well human, economic and environmental aspects. Implementing these scenarios is mainly achieved by land use management techniques. Hence, while land evaluation and land use management operate mainly on technical criteria, land use planning deals with decision making, and this is mainly a political action. (Hersperger, 2018)

The Institute of land use planning in the cities of Nigeria significantly affects development. It is responsible for delay in securing land and development rights, affects Plot Sizes and imposes unrealistic standards on housing development. No approach appears to have been developed so far to quantify these impacts systemically. While noting the differences in the planning regimes between developed and developing economies. This develops a multiple regression model to quantify the impact of land use planning on cites in Nigeria. The aim is to provoke more research in this area to generate measures to improve the system of land use planning in African cities. (Odiwe, *et .al.,* 2012). In the urban environment in Nigeria, most housing developments are carried out by individual private developers, taking the form of flats and rooming accommodation. (Obiadi & Onochie, 2018). Abeokuta, the capital city of Ogun State in southwestern Nigeria, has experienced significant changes in land use patterns over the past few decades. This transformation is driven by various factors, including rapid urbanization, population growth, and economic development. Land use conversion presents both opportunities and challenges for Abeokuta, a city rich in history and renowned for its traditional industries and cultural legacy.

Because of both intrinsic growth in the population and migration from the countryside to the city, Abeokuta's population has been rising at a steady rate in recent years. More people need homes, businesses, and roads because of this demographic upheaval. The result is a growing trend of developing residential estates, commercial centers, and industrial zones on top of former agricultural lands and green spaces (Adeyemi *et al.,* 2021). Planning for sufficient infrastructure, sustainable development techniques, and the protection of cultural and historical landmarks are all made more difficult by the current rate of urbanization. According to Adebayo *et. al.,* (2024) the land use of Abeokuta had substantial changes between 1984 and 2015. It is crucial to closely monitor these changes and ensure that land use regulations are strictly followed. Therefore different laud use conversion that have taken place along Adigbe-Panseke Road in Abeokuta in particular needs to be identified. Zangina *et. al.,* (2019) also carried out a study that noted that the study area has undergone high level of land use conversion mainly from residential land use to commercial land use with attended problems of indiscriminate disposal of waste and traffic congestion amongst others. He also added that the study discovered that respondents also faulted their failure to obtain conversion approval on difficulties in the process involved, while majority of the respondents considered the processes to be demanding and time consuming.

The motivations behind this paper are to: identify the socio-demographic/economic characteristics of the beneficiaries of the converted land use (ii) identify different types of land use conversion along Adige-Panseke Road; (iii) investigate the causes of land use conversion in Adigbe, Abeokuta. The need to provide and maintain needs for sustainability and wellbeing of people has made it important to examine the changes in land use for the purpose of strategic and quantitative monitoring of natural resources and developments in the environments. (Brandt & Townsend, 2006), thereby justifying the essence of this paper.

2.0 Literature Review

2.1 Conceptual Reviews

2.1.1 Types of Land Use Conversion

Agricultural to residential, residential to commercial, and green space to industrial zones are all examples of land use conversion. Changes in land use patterns, especially those affecting agriculture and natural landscapes, are common results of urban expansion. Agricultural fields are being turned into residential estates at an alarming rate in several urban locations, including Abeokuta, according to studies (Adeyemi *et al*., 2021). Economic incentives and infrastructure developments have also led to commercial and industrial projects encroaching upon residential areas (Ogunleye *et al*., 2022).

2.1.2 Causes of Land Use Conversion

Land use conversion has many causes that include demographics, economics, and policies. As cities grow to house more and more people, rapid urbanization plays a significant role. As a result of population growth, cities are under increasing pressure to develop new infrastructure, build more homes, and expand existing businesses (Jones et al., 2022). Land repurposing for industrial and commercial use is an important part of economic development because these sectors are considered as the motors of economic progress (Smith & Johnson, 2023). Unplanned and frequently disorganized shifts in land use are also caused by weak zoning law enforcement and poor urban planning (Thompson, 2023).

It was observed that land and building may not cease to be converted into needed usage due to the presence of several human activities competing for scarce land. The problem of solving additional land requirements would have been easier if each land use could be expanded without encroaching upon that land meant specifically for other purposes (Alabi *et. al*., 2024).The main land use Conversion in der study area that has high level of land use conversion is from residential to commercial with attended problem of discrimination disposal. Such as offices, shops and restaurants. Other Land conversions are stated as follows from agricultural land use to residential land use conversion such as housing estate and apartments. Open land to mixed use development such as retail-residential to office space. Also, industrial land use to commercial conversion such as shopping centers and hotels (Akinbiola *et al.*2016).

2.2 Theoretical Review

This paper is hinged on both environmental impact theory and Bid-Rent Theory

The Environmental Impact theory as developed by **Barrow (1999)**, explains the relationship between human activities and environmental changes. The theory builds on earlier works by **Turner et al. (1990)** and **Odum (1983)**, which highlight how land use conversion affects ecological balance. It suggests that uncontrolled land use changes, such as urbanization and deforestation, can lead to environmental degradation, pollution, and biodiversity loss. The theory assumes that human activities directly influence environmental conditions, and there is a threshold beyond which ecological damage becomes irreversible. It also emphasizes the need for sustainable development and proper environmental planning to mitigate negative impacts (Barrow, 1999). As land use changes occur, feedback mechanisms can trigger socio-economic consequences, such as declining agricultural productivity and increased health risks. Taking the study area into consideration the Environmental Impact Theory is relevant as it explains the ecological consequences of rapid urbanization and land conversion. Factors such as loss of green spaces, increased flooding risks, and pollution due to commercial and residential expansion align with the principles of this theory. Understanding these environmental changes can help in formulating policies for sustainable urban development. Applying this theory to the study will provide a scientific basis for assessing environmental degradation resulting from land use conversion. It will also inform policymakers on the need for effective land management strategies to balance urban growth with environmental sustainability. The findings will contribute to planning efforts aimed at reducing the negative impacts of land use conversion in the study area.

The **Bid-Rent Theory,** proposed by **Alonso (1964)** and refined by **Mills (1967)** and **Muth (1969)**, explains how land use and land value are determined by economic factors. The theory suggests that different land users (commercial, residential, industrial) compete for land based on its accessibility and economic potential. According to this model, land value decreases as distance from the city centre increases, with businesses willing to pay higher rents for prime locations. The theory is based on key assumptions, including the idea that commercial activities prefer locations closer to the central business district (CBD) due to high customer traffic and accessibility. Residential and industrial users, on the other hand, settle in less central areas where land is cheaper. Additionally, transport costs play a crucial role in determining land use patterns businesses and residents relocate based on trade-offs between land cost and accessibility (Alonso, 1964). In **the study area**, the Bid-Rent Theory is relevant in explaining why commercial developments are replacing residential buildings. As land values increase due to urban expansion, businesses outbid residential users, leading to significant land use conversion. The economic potential of the corridor, driven by high foot traffic and demand for commercial spaces, aligns with the principles of bid-rent dynamics. Applying this theory to the study will help analyze the economic drivers of land use conversion along Adigbe-Panseke Road. It will also provide insights into future land use trends and guide urban planning policies aimed at ensuring balanced development. Understanding bid-rent dynamics can assist in creating zoning regulations that accommodate both commercial growth and residential needs.

2.3 Empirical Review

Communities may be uprooted and social dynamics may shift as a result of social consequences. According to Williams and Garcia (2023), who looked at the societal effects of land use conversion, fast urbanization changes social structures and frequently forces low-income populations to leave their homes. A worse quality of life and more social inequality may be the outcomes for those impacted. The effects on the economy can be diverse, although they are often good. First, research by Smith and Johnson (2023) and Ogunleye *et al.* (2022) shows that changing land use can increase economic growth and create new jobs. Aluko (2023) pointed out that it can put a pressure on public services and current infrastructure. Urban planners and legislators may not be able to keep up with the rising demand for essential infrastructure like roads, water supply, and sanitation systems, which can cause gridlock and inadequate services.

In order to house the expanding human population, Adeyemi *et al*. (2021) noted that more and more land that was once used for agriculture is being transformed into housing estates. Commercial real estate has been on the rise, according to Ogunleye *et al.* (2022), which is indicative of the area's thriving economy and the increasing need for office space. It is crucial to conduct empirical research on how effective planning policies are at managing

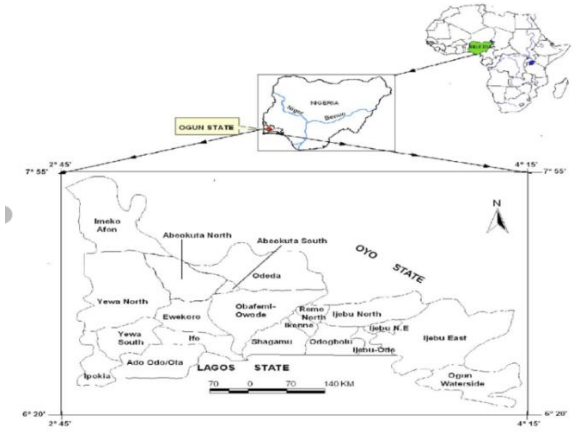
land use conversion. The function of Ogun State's regulatory frameworks in limiting land use changes was investigated by Babalola (2022). While policies do exist, the study indicated that enforcement is frequently lacking, leading to unanticipated developments and environmental damage. More strong and coordinated planning efforts are required, according to Thompson (2023), who also stressed the significance of enforcement measures and the participation of various stakeholders. To make sure development satisfies the interests of locals and reduces negative repercussions, community involvement is essential. It is crucial to incorporate environmental sustainability into planning policies, according to empirical research. In order to mitigate the negative ecological effects of land use conversion, Aluko (2023) argued for more environmental restrictions and improved enforcement of current rules. Environmental impact studies and the protection of urban parks are examples of such actions.

Land use conversion in Abeokuta-like metropolitan regions is examined in depth in a number of case studies. For example, Li, *et. al.*, (2022) research on Beijing's land use changes emphasized the significance of government policies in controlling and guiding urbanization. This research has important implications for Abeokuta because it shows that sustainable land use planning must take into account both economic growth and environmental protection. Community engagement and open government are crucial in controlling urban expansion, according to another case study on land use conversion in Karachi (2021) by Ahmad, Hussain and Mahmood. More sustainable and equitable development results can be achieved through inclusive planning methods that incorporate local communities and stakeholders, according to the study. According to research by Ogunleye *et al.* (2022), land use changes are largely driven by economic development activities, such as the construction of commercial hubs and industrial parks. Policies implemented by governments to encourage economic growth and investment frequently lend their support to such endeavours. According to Smith and Johnson (2023), land use patterns can be influenced by economic incentives. They pointed out that places with greater economic potential are more prone to being converted.

Another reason for land use conversion is the lack of proper urban planning and the lax implementation of zoning restrictions. Inadequate regulatory frameworks and a lack of enforcement frequently lead to unplanned and haphazard development, which Thompson (2023) listed as a challenge. This is especially true in places like Abeokuta, where the population is growing at a faster rate than the planning authorities can keep up with. Consequences of Alterations to Land Use Land use conversion has far-reaching consequences that influence many areas, including the economy, society, and the environment. Both good and bad results can be gleaned from empirical research on these impacts. The effects on the environment are very worrisome. Brown *et al.* (2022) provided evidence that habitat loss, increased pollution, and biodiversity loss are some of the negative consequences of land use modification on natural ecosystems. These environmental problems are made worse by the development of cities on formerly used farmland and open areas, which increases global warming and depletes natural resource supplies.

The Study Area

Adigbe-Panseke Road is a major urban corridor in **Abeokuta, Ogun State, Nigeria,** located between **latitude 7.15°N and longitude 3.35°E**. It serves as a strategic link connecting residential, commercial, and institutional areas within the city. The road has witnessed rapid urbanization in recent years, driven by population growth and increased economic activities. Its proximity to key landmarks such as **Moshood Abiola Polytechnic, commercial hubs, and residential estates** has contributed to significant land use conversions.



Figue 1: Location map of Abeokuta and its environs

The economic activities along the area are diverse, with a growing presence of **retail stores, banks, supermarkets, hotels, and restaurants**, replacing formerly residential and undeveloped spaces. The **expansion of commercial establishments** has led to rising property values, making it an attractive location for investors and business owners. Additionally, transportation services, including taxis and motorcycles, play a crucial role in supporting mobility and accessibility in the area.

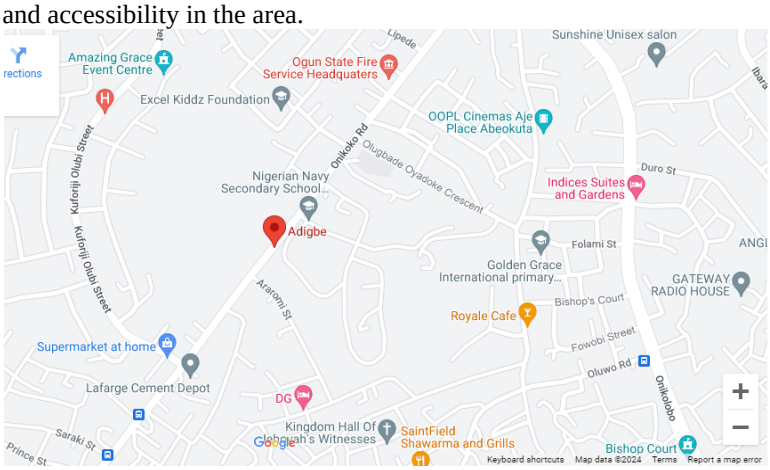


Figure 2: Lcoation Map of Adigbe and Its environmens

Socially, Adigbe-Panseke Road is a vibrant hub with **educational institutions, religious centres, and recreational facilities**. The influx of students and workers has contributed to a high demand for housing, leading to the conversion of residential properties into **hostels, guesthouses, and mixed-use developments**. This urban transformation has implications for infrastructure, traffic congestion, and environmental sustainability, as green spaces and open lands continue to decline.

3. Materials and Methods

This paper utilizes quantitative method to comprehensively address the research objectives. Quantitative methods provide empirical data on land use conversion types and the effectiveness of planning policies. The population for the study is targeted at all the buildings situated along Adigbe Panseke Road corridor in Obafemi Owode Local Government Area, Abeokuta, Ogun State. This area has been chosen due to its rapid urbanization and significant land use conversion, making it an ideal location to investigate planning implications. As a result of this, a total of 112 buildings were identified in the study area using Google Earth (2024), which serves as the population of the study. To determine the sample size of this study, Taro Yamane's formula was used with a population size of 112, with a 5% level of precision, 95% confidence level. The formula is:

$$\text{Sample size} = \frac{N}{\left(1 + N(e^2)\right)}$$

Where N = population size, e = level of precision (expressed as a decimal), confidence level, and estimated proportion.

Substituting the values, we have:

$$\text{Sample size} = \frac{112}{\left(1 + 112(0.05^2)\right)}$$

n = 112 / (1 + 0.28)

n = 112 / 1.28

n = 88 (rounded up)

Therefore, using Taro Yamane's formula, the recommended sample size for a population size of 112 with a 5% level of precision, 95% confidence level, and estimated proportion of 50% is 88. Hence, 88 land-use converted properties were selected in the study area. In addition, structured questionnaire was used to collect data from the target respondents. From the randomly selected land use converted units, about 89.8% representing 79 research instruments was returned for statistical analysis. Descriptive and inferential methods of data analysis was employed in the analysis of the data collected from field. The descriptive part consists of frequency, percentage, mean response score and ranking methodology while one sample t-test was used as an inferential method to make inference about the types of land use methods adopted and drivers of land use in the study area.

4. Results and Discussion

4.1 Results and Interpretation

4.1.1 Socio-Demographic Analysis of the Participants'

Table 1: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	33	41.8	41.8	41.8
Female	46	58.2	58.2	100.0
Total	79	100.0	100.0	

Source: *Field Survey, 2024*

Table 1 depicts the socio-demographic analysis of the participants on land use conversion. The result suggests that there are more female participants (58.2%) than male participants (41.8%) in the study. This indicates a slight predominance of females in the sample population.

Table 2: Age range

	Frequency	Percent	Valid Percent	Cumulative Percent
18-29 years	9	11.4	11.4	11.4
30-39 years	26	32.9	32.9	44.3
40-49 years	20	25.3	25.3	69.6
50-59 years	16	20.3	20.3	89.9
60 and above	8	10.1	10.1	100.0
Total	79	100.0	100.0	

Source: *Field Survey, 2024*

Table 2 shows the age distribution of the participants in the study. Result indicated that the 30-39 age group forms the largest portion of the participants, making up 32.9% of the sample. This suggests that this age group is the most represented in the study, which may imply that this age group is the most engaged or affected by the land use conversion along Adigbe Panseke road. The 40-49 years age group also has significant representation at 25.3%, followed by the 50-59 years group at 20.3%. Together, these groups account for over 78% of the participants, indicating that middle-aged individuals form the bulk of the study's sample. The younger (18-29 years) and older (60+ years) groups are less represented, accounting for 11.4% and 10.1% of the sample, respectively. This implies that these age groups may be less involved or affected by the ongoing land use conversion, or they may have different levels of interest or awareness.

Table 3: Occupation

	Frequency	Percent	Valid Percent	Cumulative Percent
Employed	10	12.7	12.7	12.7
Self-employed	35	44.3	44.3	57.0
Unemployed	11	13.9	13.9	70.9
Retired	23	29.1	29.1	100.0
Total	79	100.0	100.0	

Source: *Field Survey, 2024*

The majority of participants are self-employed (44.3%), which suggests that entrepreneurial or informal economic activities are prevalent along the Adigbe Panseke road. This could indicate that land use conversions in the area may be linked to commercial or small-scale business expansions. A significant percentage of participants are retired (29.1%), suggesting that a notable percentage of the population is no longer in active employment, which may have implications for the types of services and infrastructure needed in the area. Employed individuals represent only 12.7% of the participants, indicating that formal employment is less common among the respondents. The unemployed group makes up 13.9%, which may reflect economic challenges in the area or indicate that land use conversion could create new job opportunities. This occupational distribution is significant for understanding how land use conversion impacts livelihoods and economic activities in the area, especially for self-employed individuals who may rely on flexible land use policies for business opportunities.

Table 4: Length of Stay in Adigbe area

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than a year	15	19.0	19.0	19.0
1-5 years	29	36.7	36.7	55.7
6-10 years	22	27.8	27.8	83.5
More than 10 years	13	16.5	16.5	100.0
Total	79	100.0	100.0	

Source: *Field Survey, 2024*

Table 4 depicts the participants' length of the stay in the study area. It can be seen that the largest group of participants has lived in the Adigbe area for 1-5 years (36.7%), indicating that many people in the sample are

relatively recent residents. This suggests that the area may have experienced population growth in recent years, possibly influenced by land use changes or development along the Adigbe Panseke road. A significant percentage of participants representing 27.8% have lived in the area for 6-10 years, indicating a stable presence of mid-term residents who might have witnessed changes in land use over time. 19.0% of the participants have lived in the area for less than a year, reflecting a transient or newly settled population, which might be tied to recent developments or land use conversions attracting newcomers. 16.5% have lived in the area for more than 10 years, making them the longest-term residents, and likely to provide valuable insights into the historical land use and its changes over time. This distribution generally implies that the study sample captures a mix of newer and longer-term residents, providing a balanced perspective on how land use conversions and urban development in the Adigbe area have affected different groups over time. Residents with varying lengths of stay may have different experiences and perspectives on the planning implications of land use conversion.

Table 5: Analysis of Participants Opinion on Types of Land Use Conversion

		SD	D	N	A	SA	Total	Mean	t-test	p-value
Residential areas have been converted into commercial spaces.	f	6	11	14	24	24	79	3.62	0.846	0.400
	%	7.6%	13.9%	17.7%	30.4%	30.4%	100.0%			
Agricultural lands have been converted into residential estates.	f	3	5	9	22	40	79	4.15	5.273	0.000
	%	3.8%	6.3%	11.4%	27.8%	50.6%	100.0%			
Industrial areas have been developed where there were previously vacant lands.	f	2	14	18	16	29	79	3.71	1.534	0.129
	%	2.5%	17.7%	22.8%	20.3%	36.7%	100.0%			
Recreational areas and green spaces have been reduced due to urban development.	f	1	9	17	25	27	79	3.86	3.028	0.003
	%	1.3%	11.4%	21.5%	31.6%	34.2%	100.0%			
Historic sites have been re-purposed for commercial or residential use.	f	4	6	14	27	28	79	3.87	2.921	0.005
	%	5.1%	7.6%	17.7%	34.2%	35.4%	100.0%			
Natural habitats have been affected by urban expansion.	f	3	11	17	20	28	79	3.75	1.840	0.070
	%	3.8%	13.9%	21.5%	25.3%	35.4%	100.0%			
Public spaces have been converted into private developments.	f	2	6	16	27	28	79	3.92	3.599	0.001
	%	2.5%	7.6%	20.3%	34.2%	35.4%	100.0%			

t-test value = 3.5; SA = Strongly Agree; A = Agree; D=Disagree; SD = Strongly Disagree
Means: Strongly Agree (SA) = 4.5-5.0; Agree (A) = 3.50-4.4; Not Sure (N) = 2.5-3.4; Disagree (D) = 1.5-2.4; Strongly Disagree (SD) = <1.5
Source: *Researcher's Self Computation as extracted from SPSS, Version 25*

Table 5 presents the participants' opinions on various types of land use conversions along the study area, using a Likert scale from Strongly Disagree (SD) to Strongly Agree (SA). The mean values, t-test statistics, and p-values provide insight into the significance of these perceptions. From item 1 of the table, the mean of 3.62 indicates that participants generally agree that residential areas have been converted into commercial spaces, with a combined **60.8% (**24 + 24) either agreeing or strongly agreeing. However, the p-value (0.400) suggests that this finding is not statistically significant, indicating that there might be some uncertainty in this trend.

The mean response score of of 4.15 in item 2 suggests strong agreement among participants that agricultural lands have been converted into residential estates. An impressive **78.4%** (22 + 40) agree or strongly agree, and the significant p-value (0.000< 0.05) supports the conclusion that this conversion is a prevalent trend in the area. On item 3, the mean response score of 3.71 indicates agreement, with a combined **56.9%** (16 + 29) of participants agreeing or strongly agreeing that industrial areas have developed on previously vacant lands. However, the p-value (0.129<0.05 level of significance) indicated that this result is not statistically significant.

Taking item 4 into consideration, the mean responses score of 3.86 reflects a strong agreement with **65.8%** (25 + 27) of participants agreeing or strongly agreeing that recreational areas and green spaces have been reduced. The statistically significant p-value (0.003< 0.05 level of significance) indicates that this trend is well-supported by participants' perceptions. From item 5, the mean of 3.87 indicates strong agreement, with a total of **69.6%** (27 + 28) of participants agreeing or strongly agreeing. The p-value (0.005 < 0.05 level of significance) indicates a statistically significant perception of the re-purposing of historic sites. More so, the mean response score of 3.75 in item 6 suggests agreement, with 55.7% (20 + 28) of participants agreeing or strongly agreeing that natural

habitats have been affected. However, the p-value (0.070 < 0.05 level of significance) indicates that this finding is not statistically significant.

On the responses of item 7, the mean of 3.92 reflects agreement, with a total of **69.6%** (27 + 28) of participants agreeing or strongly agreeing that public spaces have been converted into private developments. The statistically significant p-value (0.001 < 0.05 level of significance) indicates strong support for this trend.

Table 6: Analysis of the Factors (Causes) influencing Land Use Conversion

Items		SD	D	N	A	SA	Total	Mean	t-test	p-value	Rank
Population growth is a major cause of land use conversion.	f	2	7	15	33	22	79	3.84	2.928	0.004	4th
	%	2.5%	8.9%	19.0%	41.8%	27.8%	100.0%				
Economic development and industrial growth drive land use changes.	f	2	6	17	27	27	79	3.90	3.391	0.001	3rd
	%	2.5%	7.6%	21.5%	34.2%	34.2%	100.0%				
Inadequate urban planning and zoning laws contribute to unplanned land use conversion.	f	4	6	13	24	32	79	3.94	3.351	0.001	2nd
	%	5.1%	7.6%	16.5%	30.4%	40.5%	100.0%				
The demand for commercial properties leads to conversion of residential areas.	f	3	7	17	26	26	79	3.82	2.593	0.011	5th
	%	3.8%	8.9%	21.5%	32.9%	32.9%	100.0%				
Changes in government policies have influenced land use patterns.	f	5	9	20	20	25	79	3.65	1.061	0.292	6th
	%	6.3%	11.4%	25.3%	25.3%	31.6%	100.0%				
Investor interests have driven changes in land use.	f	5	25	25	14	10	79	2.99	4.045	0.000	7th
	%	6.3%	31.6%	31.6%	17.7%	12.7%	100.0%				
Cultural and social factors have influenced land use decisions.	f	0	0	20	35	24	79	4.09	6.531	0.000	1st
	%	0.0%	0.0%	25.3%	44.3%	30.4%	100.0%				

t-test value = 3.5; SA = Strongly Agree; A = Agree; D=Disagree; SD = Strongly Disagree
Means: Strongly Agree (SA) = 4.5-5.0; Agree (A) = 3.50-4.4; Not Sure (N) = 2.5-3.4; Disagree (D) = 1.5-2.4; Strongly Disagree (SD) = <1.5

Source: *Researcher's Self Computation as extracted from SPSS, Version 25*Table 6 presents the factors driving land use conversion along Adigbe-Panseke Road, with participant responses categorized by frequency and percentage across five response options. Each item is also associated with a mean score, t-test value, p-value, and rank based on the mean scores. Interpretation of this table was done using the mean response score and p-value of the t-test statistics. From item 1 showing population growth as a major cause of land use conversion, the mean response score of 3.84 indicated strong agreement that population growth is a significant factor driving land use conversion in the study area. The p-value (0.004 <0.05) indicates that this is a well-supported finding among participants.

Taking item 2 into consideration, depicting the responses on whether or not economic development and industrial growth drive land use changes, with a mean of 3.90, participants largely agree that economic development and industrial growth are significant drivers of land use changes. The statistically significant p-value (0.001< 0.06) further emphasizes the role of economic factors in land use dynamics. From item 3, indicating whether or not inadequate urban planning and zoning laws contribute to unplanned land use conversion**,** the mean response score of 3.94 indicates a strong belief that inadequate urban planning and zoning laws contribute to unplanned land use conversion. The significant p-value (0.001 < 0.05) reinforces the importance of effective planning in managing land use changes.

Result of item 4 of the Table indicated that the demand for commercial properties leads to conversion of residential areas as the mean response score of 3.82 indicates agreement. The p-value (0.011<0.05) confirms the statistical significance of this factor. On the result of item 5, the mean response score of 3.65 implies a moderate agreement that changes in government policies have influenced land use patterns. However, the p-value (0.292 > 0.05) indicates that this finding is not statistically significant. Taking item 6 into consideration, result shows that the mean of 2.99 reflects a neutral response to investor interests driving changes in land use, with a significant p-value (0.000). However, the relatively low agreement suggests that participants do not view investor interests as a major driving force in land use conversion. On item 7 depicting the Cultural and social factors influencing land use conversion, this factor received the highest mean score of 4.09, indicating strong agreement among participants that cultural and social factors significantly influence land use decisions. The statistically significant p-value (0.000 < 0.05 level of significance) implies that this perception is robust, marking it as the most crucial driving force for land use conversion.

4.1 Discussion of Findings

This study is based on "planning implications of land use conversion along Adigbe-Panseke Road, Ogun state". Findings from objective 1 **(**See Table 4.5**)** indicated that land use conversion in the Adigbe-Panseke area is primarily characterized by the conversion of agricultural lands into residential estates, the reduction of recreational spaces, and the re-purposing of historic sites. Significant changes in land use are acknowledged by participants, especially with regard to residential and commercial conversions, as well as the loss of public spaces to private developments. The statistical significance of certain trends, particularly those with p-values below 0.05, highlights important areas of concern for urban planners and policymakers regarding sustainable development and land use management.

On the factors driving land use conversion within the study area, the most significant factor driving land use conversion is cultural and social factors, followed closely by inadequate urban planning and zoning laws and economic development and industrial growth (see Table 4.6). This indicates that land use decisions are influenced not only by economic motives but also by the sociocultural context. Population growth and demand for commercial properties are also notable drivers, highlighting the pressing need for effective urban planning to accommodate growth and prevent unplanned conversions. Although government policies are perceived to have some influence, the significance is weak compared to other factors. The low agreement on the role of investor interests suggests that while they may play a role, they are not viewed as a primary driver in land use conversion.

5. Conclusion and Recommendations

Based on the empirical results, the study revealed that, the dominant land use conversions along Adigbe-Panseke Road are from residential and agricultural to commercial and industrial uses. This shift was driven by rapid urbanization, high commercial activities, and changes in population density of the study area. These conversions reflect a transition towards higher economic utilization of land but come with adverse impacts on existing infrastructure and immediate environment. More so, it was evident that the primary drivers of land use conversion include **population growth, economic development, inadequate urban planning, demand for commercial properties,** and **investor interests.** Cultural and social factors also play a significant role, particularly in shaping land use decisions along the corridor. The acquire data reveals that, while economic opportunities are expanding, weak enforcement of zoning laws and planning regulations has allowed unplanned conversions to proliferate, intensifying physical and environmental challenges. As the demand for changes in land use intensifies, it is critical to upgrade the existing infrastructure, includes motorable roads, water supply, and public services, to meet the demand. Government should investment in expanding and maintaining urban infrastructure which is essential for preventing further congestion and deterioration of public utilities in the study area.

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