

**THE TREND OF LANDUSE CONVERSION FROM RESIDENTIAL TO COMMERCIAL IN ILESA METROPOLIS****^{1,*}OYENIYI Samson Oluseyi ²IBITOYE Oyewole Amos and ³ADEJUWON, Stephen Adebambo**^{1,3}Department of Urban and Regional Planning, Faculty of Environmental Studies, Osun State College of Technology, Esa-Oke²Department of Geography and Planning Science, Faculty of the Social Sciences, Ekiti State University, Ado-Ekiti**Received 24th March 2020; Accepted 28th April 2020; Published online 31st May 2020**

Abstract

The Central Business Districts (CBDs) of African cities are undergoing transformation; the formerly residential land uses and buildings are being replaced not by new ones but by commercial ones. The trend of this development inspired the researchers to investigate and project into the future of the (CBDs). The primary data on the physical attributes of the three key- conversion types for this study were obtained based on three decadal variations in land use conversion from residential to commercial. Hand-held GPS equipment was used to obtain the coordinates for points of observation. The secondary data were sourced using remote sensing imageries acquired from Global Earth Geo-system (Landsat imageries). ArcGIS (Arcmap 10.1) was used to bring into view the three conversion types in the study area. The result revealed and projected rising number of fully converted buildings against declining number of partially converted ones within one kilometre radius of Ilesa CBD. With confirmed enforcement of planning regulations, the work radically recommended continued full conversion of blighted CBD residential neighbourhoods to commercial uses.

Keywords: Land use, Conversion, Residential, Commercial and Projection

INTRODUCTION

Rapid urbanization is a concomitant of sporadic population growth. It is a product of natural population growth and massive immigration into urban centres. Approximately 25 percent of Africa's population lived in towns and cities in 1975. By the year 2000, due to rural-urban migration and rapid rates of natural increase, 38 percent of the continent's population lived in urban areas. The proportion had increased to 47 percent by 2015 and hope to double by 2025. This normally contributes to the development of land for use in commercial properties, social and economic support institutions, transportation, and residential buildings (Aggrey, 2010). It is almost a truism that the planet's future is an urban one and the largest and fastest growing cities are in developing countries. This has translated to pressure on land resources and manifested in insatiable demand for urban land (Aguilar and Ward, 2003). Land use conversion is the change of a piece of land into other uses. It occurs when a particular land is changed from the original use to something else as a result of invasion and succession, economic rents, highest and best use or other factors. It is also used to describe change patterns as a result of the complex interaction between man and his physical environment. Residential land use involves the use of a large tract of land or plot as a dwelling place for a single family or aggregation of various dwellings of some kind (Adepoju and Adepoju 2016). Land value is a direct result of high propensity of commercial transaction based on availability of modern infrastructural facilities, density and popularity of the street, aesthetically pleasing environment and security (Gbadamosi and Ibrahim 2013). It is also dependent on the structural attributes like land rights, land use, land location and accessibility. Litclifield (1974) identified six factors of land value as social, cultural, economic, environmental,

infrastructural and institutional; while scarcity of land, demand, and nature of use are some of the economic factors affecting land value. Mehmet and Ayse (2009) added that the value of land is not only dependent on the physical characteristics of the building but also on the built-environment surrounding the buildings. The above attributes are common features of urban land uses especially in Central Business Districts of African rapidly growing cities. Unfortunately, the poor socio-economic developments and recession-ridden economy as opined by Benedict *et al* (2016) had unfortunately complicated the issue. The quests for urgent solution to the ravaging economic challenges have also resulted in the conversion of residential buildings to commercial uses. The conversion of land is sometimes partially done (partially conversion); if the frontages or other part(s) of residential buildings are converted to shops, offices, mini-factories and any other commercial uses. When the conversions of residential buildings are total; complete demolition, reconstruction and rehabilitation into shopping complexes, offices, factories, banks, filling stations, schools and places of worship (full conversion). These conversion types have pitched a stiff competition with residential dwelling spaces in cities, especially along the major roads in the CBDs, since the more accessible a place is, the positive element in the environment and the more valuable it will be. Buttressing this view, Gbadamosi *et al* (2013) observed that CBD in many Nigerian cities is a revelation of infiltration of commercial and other mixed land uses where trading activities have occurred in contrast to the original approval given to land use / allocation by respective owners and developers. Demolition of houses and reconstruction for commercial purposes is a common occurrence in the study area, hence the need for the study. Land and building will continue to witness conversion of use from lower order to higher one in order to attain optimal utilization Farinmade (2005). The utilization of land or landed properties is ultimately determined by the relative efficiencies of various uses that are measured by rent paying-ability

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Scholars such as Junjie (2008), Nwachukwu and Upabi (2009), Owoeye and Ibitoye (2016) and Adepoju *et al.*, (2016) have argued that, the conversion results in illegality in constructions, destruction of cultural heritage, housing shortages, uncontrolled development along the streets, transportation challenges. Hence, the researchers attempt to supply answers to these sailing questions: would this paradigm shift in our urban morphology ever stop? Do these conversions have any direct benefits? What contrary opinions spurred by the current realities exit? To what extent is government willing and able to control the trend of these conversions?

This work aims at appraising the trend of land use conversion from residential to commercial uses in Ilesa Metropolis; with the intention of identifying residential landed properties already converted to commercial uses; investigate the reasons for the conversion; re-examine the existing positions of scholars and assert unarticulated benefits of the ongoing conversions in the study area. The study focuses on the land use conversion from residential to commercial within one kilometer radius to the Central Business Districts CBD of Ilesa. It will span through fifty years in two segments; (1998-2008, 2008-2018), and the trend is expected to be used to project for thirty years (2018-2028, 2028-2038 and 2038-2048).

Literature review

The crisis of human settlement has become a topical issue; and debate on it has been on for many years now. There are both intellectual and professional viewpoints on the need for controlling human settlements to enhance their growth and sustainability (Atser, 2006). The study of settlements occupied an important position in the historical development of Geography. Geographers and sociologists have over the years tried to explain variations in spatial pattern and their consequences. Major land use conversions noticed by Adepoju and Ibrahim (2016) who worked on Ado- Ekiti were those of residential to commercial, which according to them were encouraged by the economic potentials derivable from the land use transformation and resulted in commercialization within the study area. The study carried out by Benedict *et al* (2016) in Calabar Metropolis found the significant conversion of residential units to commercial; these conversions concentrated in CBD and were motivated by economy. However, the tempo has increased from 1999. Leke (2013) confirmed that our cities are now dotted with uncomplimentary land uses in many areas, this is common with uses such as multi-storey office blocks within residential neighbourhoods. Owoeye and Ibitoye worked on Akure in (2016) and discovered that in urban core; most of the old buildings are being removed and replaced with new ones. Ogba and Okon (2012) and Adepoju *et al* (2016) mentioned overwhelming population concentration and concentration of vehicles as well as the problem of parking space. Gbadamosi *et al* (2013) sharing these same view worked on land use conversion in Lagos and concluded that heavy commercialization led to social and environmental bottleneck and that only a combination of efforts can resolve the issue. Jinadu (2005) worked on Mina and opined that gradual taking over of existing residential properties by commercial land uses have several implications on the survival of housing. Nwachukwu and Upabi (2009) ascertained that residential housing conversion has adversely affected housing provision in Enugu since adequate provisions were not made to

fill the vacuum created by conversion. Scholars are unanimous in their opinions on the conversion of residential land uses to commercial and direct negative effects of such conversion of residential dwelling to commercial were mentioned. This trend is in consonance with Alonso's Bid Rent Theory of (1964) that argues that urban land value decreases as the distance from CBD increases. Commerce and commercial activities; large departmental / chain stores are willing to pay the greatest rent to be located in the CBD. The amount they are willing to pay is called bid rent. It is also in tandem with 'highest and best uses' model of Irving Fisher (1857-1947). Since the value of a property and its use are closely linked, its highest and best use is that which results in the highest present value, and brings in the greatest net return over a given period or the foreseeable future - within the applicable constraints. The value of, and return on, a property are related to its surrounding environment so its use has to be in consonance with the neighbouring land use. This accounts for the struggle for land in the CBDs.

The Study Area

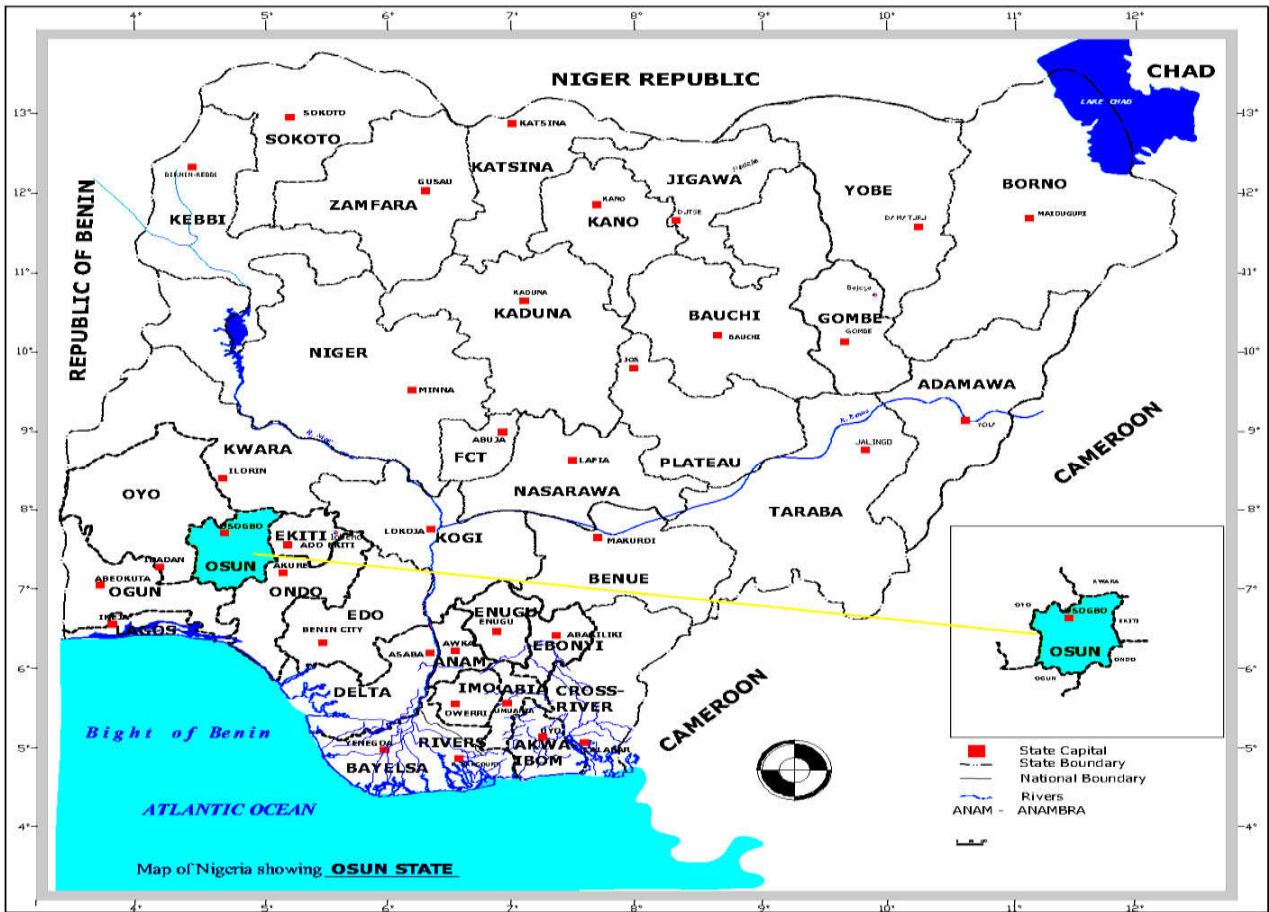
Ilesa is one of the major towns in Osun State, South Western Nigeria. It lies within latitude 7°35' and 7°40'N and longitude 4°13' and 4°38'E. The climate is humid tropical type with the temperature of about 29°C, while the mean annual rainfall is about 1700cm. The population is projected from 212,225 by (National Population and Housing Census, 2006) to be approximately 292,225 people in (2018). The city serves as the headquarters of two local government areas; Ilesa East and West. The cosmopolitan city is mainly peopled by the Yoruba ethnic group who are predominantly farmers, traders, artisans and civil servants cohabiting peacefully with other tribes and nationalities. Many banking interests are represented in Ilesa, she also houses prestigious and foremost College of Education, a College of Health Technology, A Teaching Hospital and a General Hospital among many other privately owned health and educational institutions. Ilesa is the administrative headquarters of the six Local Government Areas of Ijesa Land as well as four newly created Local Council Development Authorities (LCDAs). As an emerging city, economic viability of the city is limitless. This might have contributed to increasing land value and the massive conversion of residential buildings to commercial ones especially along the major roads and in the CBD.

Data Collection

Both primary and secondary data were employed for this study. The primary data were collected on the physical attributes of three key conversion types. The sample sites were determined from the remotely sensed imageries that were used for the study. The secondary data sources were Landsat 5 TM, Landsat 7 ETM+ and Landsat 8 Data from the United States geographical survey. The primary dataset was summarized for eventual integration with the spatial datasets.

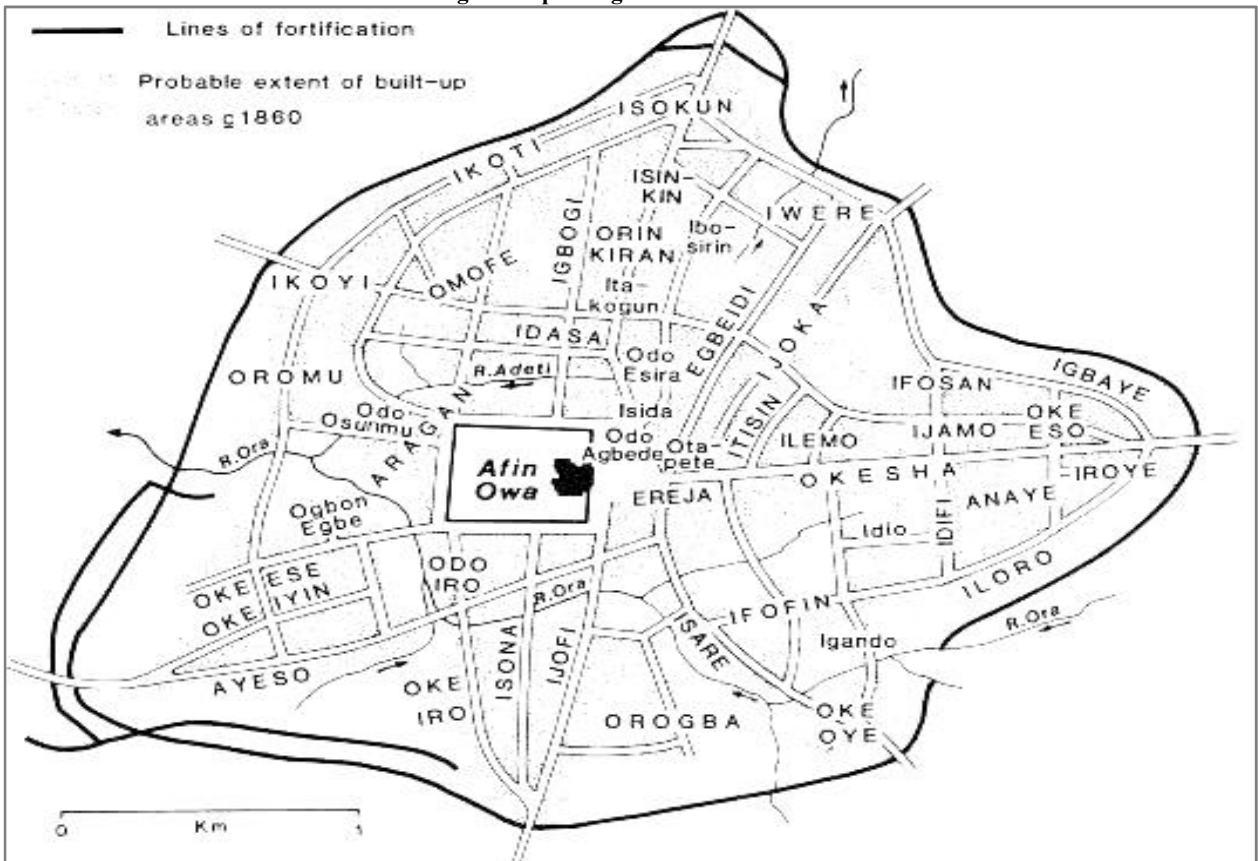
Data Analysis

The processing and analysis of secondary data include image enhancement, geometric correction, variable combination of spectral bands for land use mapping and a creation of a database for handling the various data types. These operations were performed using ArcGIS (Arcmap 10.1) to bring out the three conversion types currently dominant to view in the study area.



Source: Google Earth, (2018)

Fig. 1. Map of Nigeria and Osun State



Source: Ilesa West Local Government Planning Unit, (2018)

Fig. 2. Map of Ilesa Build-Up Area

The visual interpretation was done by means of the interpretation keys such as size, shape, pattern, texture, tone, colour and association of the features. After this, the images were classified using the supervised classification techniques. The maximum likelihood algorithm was used in order to compare the various land use features and assess them before drawing meaningful inferences. The data used for the extraction of the land cover information in the study area include; Landsat; 1998, 2008 and 2018 and GPS observations of points of interest such as fully converted area to commercial, partially converted area to workshop and partially converted area to shops. All these images were acquired from Global Earth Geo-system (see Table1).

RESULTS AND DISCUSSION

Table 2 reveals the trend of conversion of residential land use to commercial over the last 20 years, 31.1% of the total number of residential land use were serving commercial purposes: there were only three commercial bank branches; First Bank, Union Bank and Co-operative (now Sky Bank) within one kilometer radius of the Central Business District (CBD) of the study area. Apart from bank branches, the few houses that were serving the same purposes were mainly along Adeti, Imo and back of Atakumosa Market (Fig.3). In 2008, the number of residential dwellings that were fully converted to commercial uses had increased to (33.3%); four banks branches, two filling stations, Banuso shopping complex and number of chain and departmental stores, along Idasa, Otapete and Imo axis have been added (Fig.4). Today, the rate of conversion of residential land use to commercial in the study area is increasing steadily; it has increased to 35.7%. Many residential dwellings especially along the major roads see (Fig 5) have been removed and replaced with new structures for commercial uses. Some are converted to institutional uses like banks; for instance, ten banks of various interests are located within one kilometer radius to Ereja Square, the CBD of Ilesa,

a fast food joint, two schools, four filling stations and many office complexes, three private health facilities, six worship centers. Others are residential area converted to shopping complexes of various types and sizes, storey buildings; twelve shopping complexes were located within one kilometer radius. Some office complexes have also joined. Some conversions done are into lock-up / chain of shops and workshops/mini-factories at every available space within the study area. Many permanent structures are now being erected for commercial purposes. The use of part of residential dwellings for commercial purpose is categorized as a form of partial conversion. These are used as workshops by artisans like iron bender, fashion designers, carpenters/furniture makers, barbers, shoe cobblers, automobile mechanics especially motorcycle repairer, food vendors and others. It was 23.9% in 1998; 14.1% in 2008 and 12.6% in 2018. The trend of this category of commercial land uses conversion is declining. This is also in consonance with (Highest and Best Uses Model of Irvins, 1857) and (Bid Rent Model of Alonso 1964). The most valuable land is being taken over by highest bidders such as banks and shopping complexes. The final category is residential land-uses converted to retail shops, kiosks attached to houses for petty trading for food items, patient-medicine-stores, used clothing materials, stationeries, and many more. (Table 2) shows decreasing conversion of residential buildings to retail commercial uses; it was 52.5% in 1998, 51.6% in 2008 and 44.9% and in 2018. This decreasing trend is bound to continue as the full conversion increases because land is continuously been put to highest and best uses. The reason for this is not far-fetched; full conversion increased between the period and other forms of conversion decreased.

The Projection

As implied by table 2 as well as Fig. 3, 4 and 5, the rate of full conversion from residential to commercial land maintained a systematic increase from 31.1% in 1998 to 33.3% in 2008 and 35.7 in 2018.

Table 1. Summary of Landsat Images Acquired for the Research

Date	Satellite Number	Band	Sensor type	UTM Zone	Datum	Scale/ Resolution	Sources and Year
1998	Landsat 5	4,3,2	TM	31N	WGS84	28.5m	USGS, 1998
2008	Landsat 7	4,3,2	ETM+	31N	WGS84	28.5m	USGS, 2008
2018	Landsat 8	4,3,2	OLI TIRS	31N	WGS84	28.5m	USGS, 2018

Source: Authors' Compilation (2018)

Table 2. No of converted Building Based on number of buildings in the years (1998 to 2008)

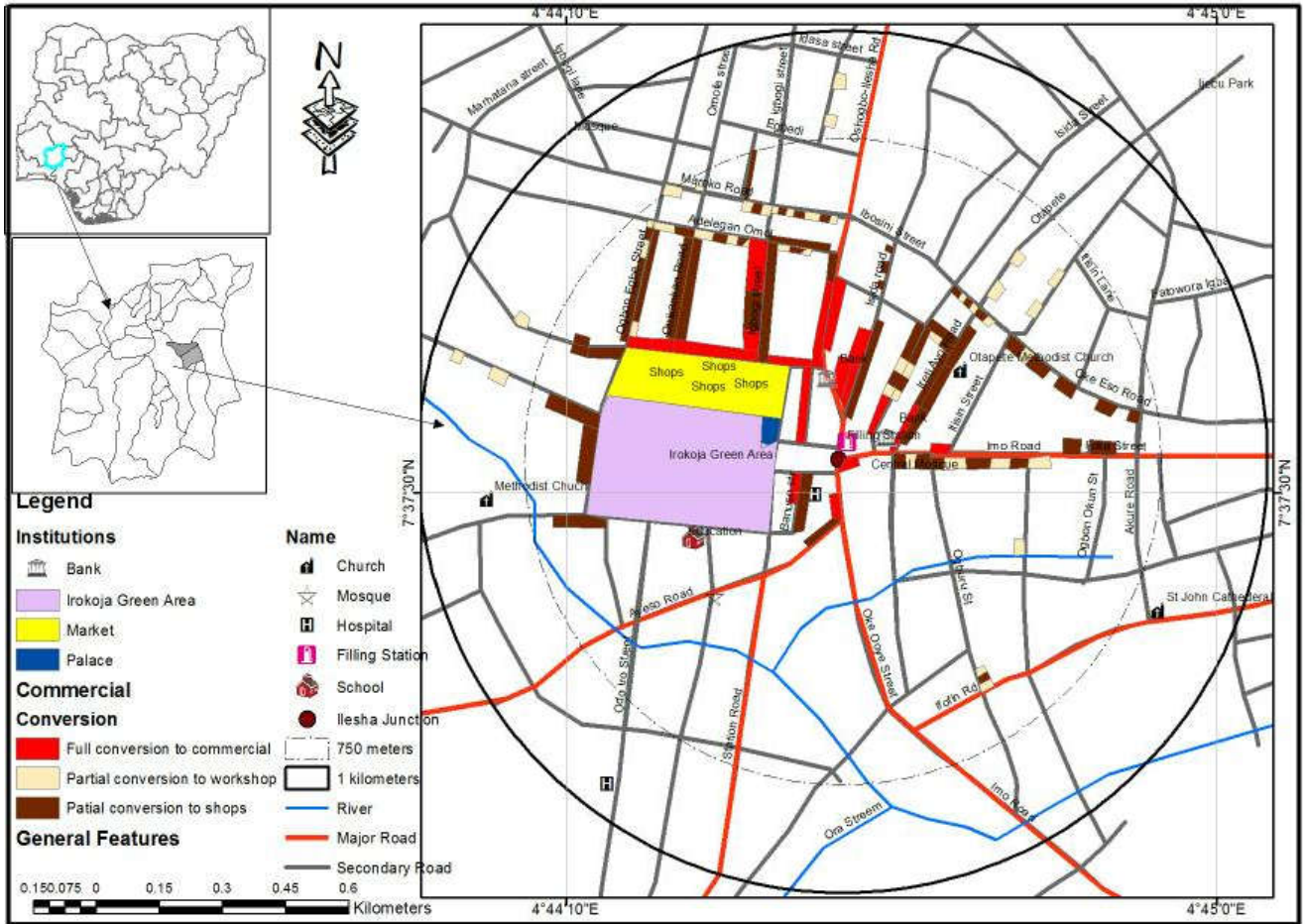
Conversion types	1998		2008		2018	
	No of buildings	Percentage	No of Buildings	Percentage	No of buildings	Percentage
Full conversion to commercial	122	31.122449	302	33.3333333	502	35.7041252
Partial conversion to workshop	178	23.979592	128	14.1280353	94	12.6600284
Partial conversion to shops	726	52.6358464	476	51.5386313	176	49.897959
Total	392	100	906	100	1406	100

Source: Authors' Compilation (2018)

Table 3. Projected Number of and Percentages of residential dwellings to be converted over 30yrs

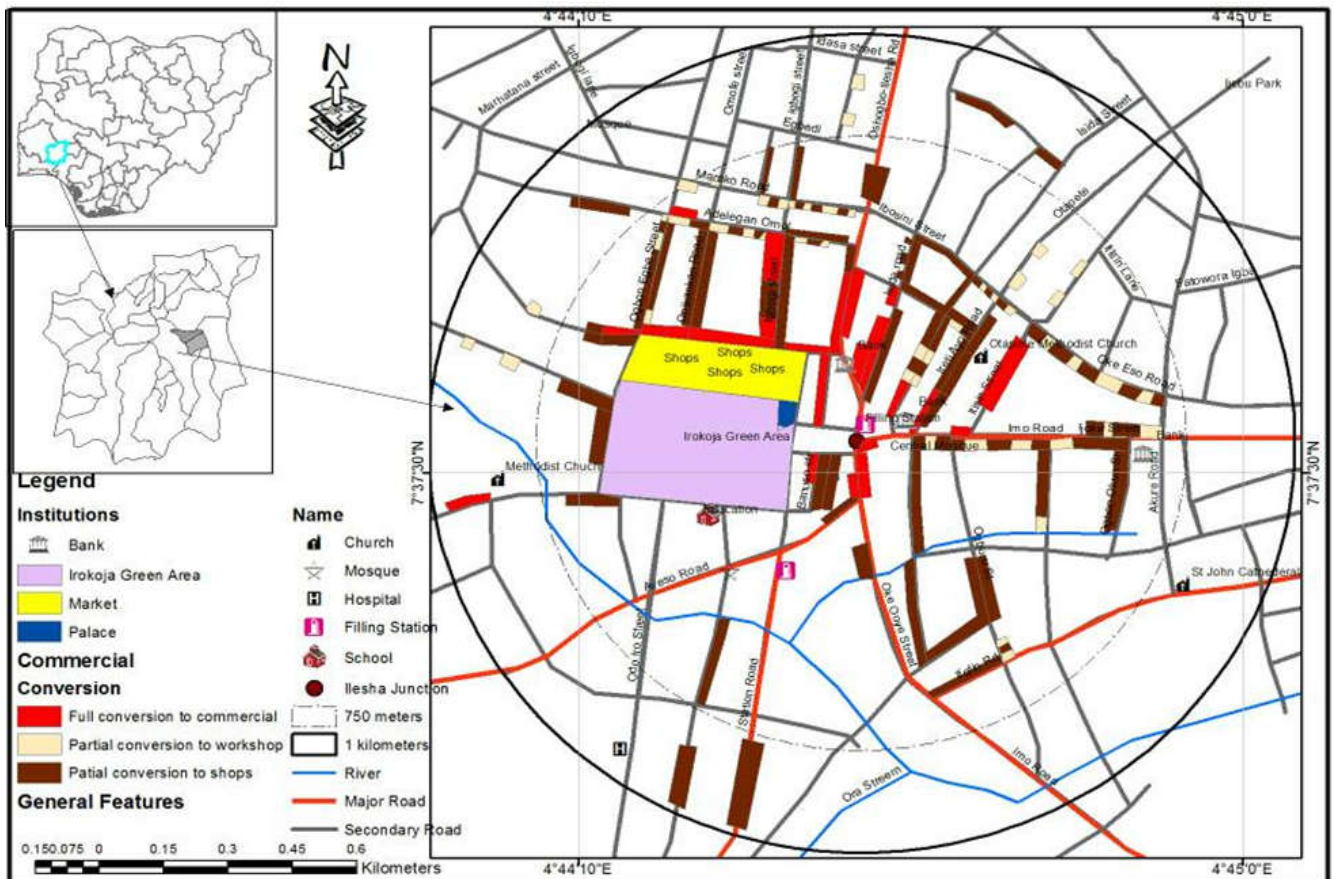
Conversion Types	2028		2038		2048	
	Projected number to be converted.	Percentages to be converted	Projected number to be converted	Percentage to converted	No of buildings to be converted	Percentages to be converted
Full conversion to commercial	692	37.96581402	812	40.266121552	1012	42.545661702
Partial conversion to workshop	139	11.1960215	107	9.7320146%	89	8.2640077
Partial conversion to shops	621	52.5386489	599	53.441338	421	54.3691875
Total	392	100	1518	100	1522	100

Source: Authors' Compilation (2018)



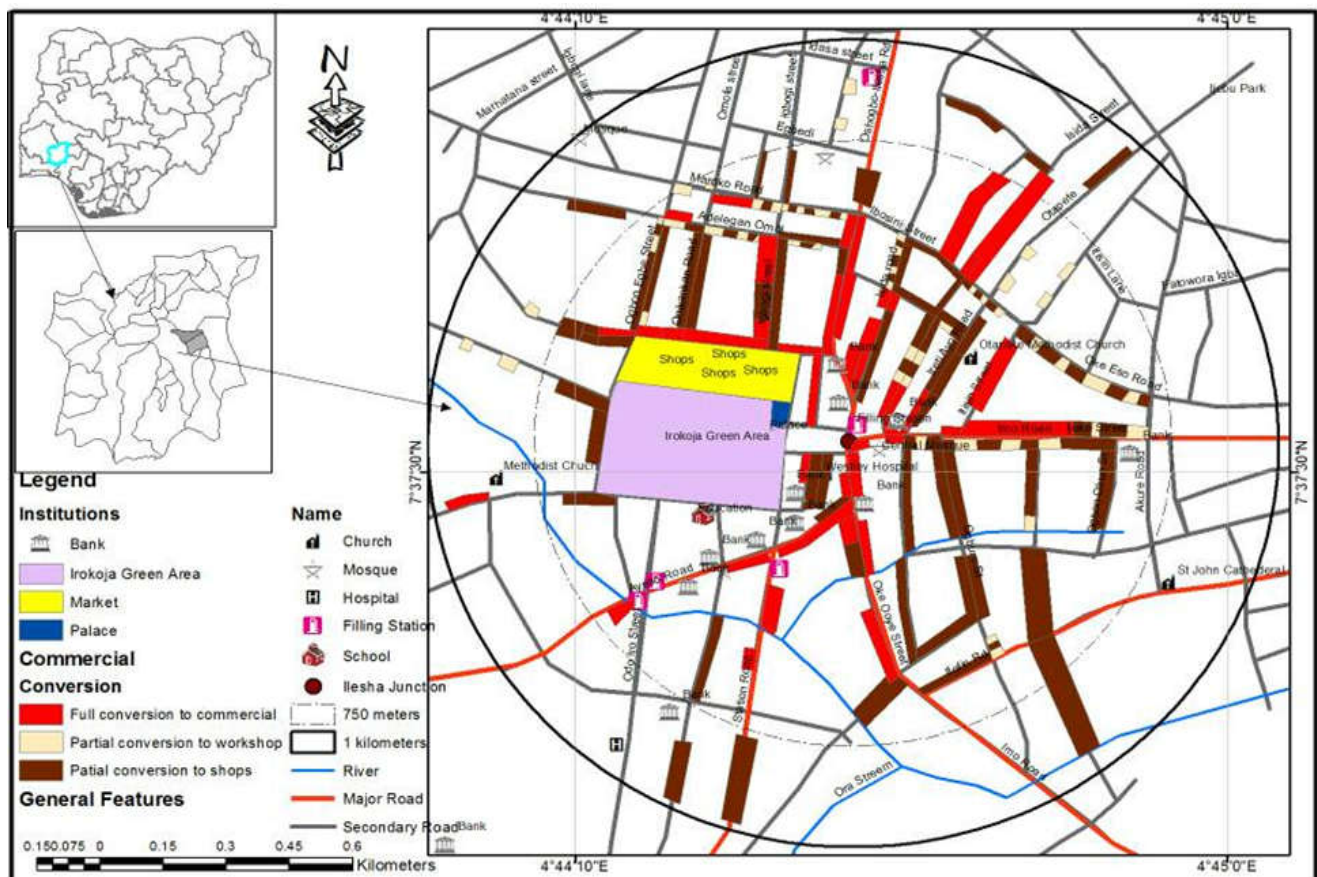
Source: Authors' Compilation (2018)

Fig.3 Map of Ilesa in (1998)



Source: Authors' Compilation (2018)

Fig.4 Map of Ilesa in (1998)



Source: Authors' Compilation (2018)

Fig. 5. Map of Ilesa in (1998)

The difference between 1998 and 2008 is 2.2 and that of 2008 and 2018 is 2.3707919, there is a slight increase in the rate of full conversion of residential to commercial dwellings between the ten year intervals 0.15. Furthermore, the average increase over ten years is 2.3%, is the average increase of full conversion of residential dwellings over ten year interval. It can therefore be projected that, from 35.7% of 2018, 2.28% of the total number of dwellings will be fully converted over ten years (i.e. 38% in 2028, 40.3% in 2038 and 42.5% in 2048). For the partial conversion to workshops, 24.% of the total number of dwellings in the study area were partially converted to workshops in 1998, but reduced to 14.1 in 2008 and dropped further to 12.7% in 2018. Since the rate of conversion dropped sharply between 2008 to 2018 to as low as 14.7%, the ten year interval projection will be based on that figure. It therefore projected that by 2028, the number of buildings that would remain partially converted into workshops would be 11.2%, and by 2038, it would have further reduced to (9.7%) and in 2048 it would have come down to (8.3%) this is also in consonance with Highest and Best Uses Model of Bid Rent Model of Alonso 1964. Land is being put to Highest and Best Uses as professed by Irvin, (1857). Not unlike the partially converted residential buildings to workshops, dwelling places within the study area converted to small shops trading for daily utilities are decreasing. In 1998, it was 52.5% by 2008, it has reduced to 51.6%, and by 2018 it came down to 49.6%. Just like the partial conversion to workshops, there was a marked decrease in the number of residential buildings converted to commercial ones from 1998 52.5% to 51.6% 2008. Also, it came down to 49.9% in year 2018. The projection is taken from 2018 using the percentage of reduction between 2008 and 2018 which is 1.7%.

Hence, by year 2028, 48.1% would have been converted. In 2038, it would have decreased to 48.1% and 46.4% in 2048. The number of shops, kiosks and display of wares in residential premises will continue to be replaced by full conversion. Presence of Atakumosa Market and its incursion into residential places especially in the northern area of the market is the main reason for the gradual increase (See Fig. 5).

The Findings

Residential land uses are being rapidly and incessantly converted to commercial uses in the study area. The conversions of dwellings along the main roads in the CBD are more than other places. The conversions concentrate within 750 meters radius to the CBD more than other places in the study area. These conversions are of different types; full conversion of residential dwellings to commercial; involving total removal of old and sometimes dilapidated dwellings in the study area and thereby replacing them by new constructions for commercial purposes such as banks, shopping complexes, filling stations and lock-up shops. Partial conversions do not involve total removal of buildings, most time, the frontage is converted to shops, and some are illegally constructed and attached to the main buildings.

There are two categories of such (i) Conversion to workshops by artisans of various vocations: iron benders, fashion designers, food vendors, painters, milling machining operators, motorcycle repairers and many others. (ii) Conversions to shops where all forms of daily needs and food stuff. Full conversion is taking place at an increasing rate, replacing all other forms of land uses and conversions. The fully converted dwellings are now used as banks, filling stations, shopping

complexes wholesale outlets for big multinational and telecommunication companies. Such partial conversions are decreasing while full conversions are increasing; it is an indication of land use change from lower to higher order in the study area. The conversions will continue and alter urban form, replace the old buildings with newer ones and residential neighbourhood with commercial ones

Conclusion and recommendation

Rapid urbanization, recessed economy, location, accessibility and concentration of commercial activities have resulted to high land value in the CBD. These have combined to translate to and manifest in insatiable demand for land in our city centres. Therefore, residential buildings within the CBD of our cities in developing countries will continue to be converted from lower to higher order uses. Full conversion of residential buildings to commercial is progressing, unhindered and it will continue. By the next fifty years, Ilesa CBD would have been renewed; old dilapidated residential buildings would have been replaced massively by the new but commercial ones, urban form of Ilesa would have witnessed the much expected change. Though, it is coming in a disguise form, this paradigm shift and a form of systemic gentrification should not be discouraged. After examining the merits and demerit of the said full conversion and apply them to environmental sustainability, it is rational although radical to support this wind of transformation blowing across our urban areas. Most of the CBD are characterised by urban blight, decay, sprawl and slum. The much expected and awaited help has just arrived in disguise form; the unsafe, dilapidated dwellings are being replaced by new and safer ones with needed modern facilities. The dirty and unhygienic environment turns neater, better, aesthetically enticing and lively. Economic benefits of the conversion include exchange of money for dilapidated dwellings; these cash are always much; the houses in the CBD are sold for between 30-50 million naira. A family member can get a few millions and this can transform home owners' economic lives. Most newly converted buildings follow planning regulations; setbacks, parking space, airspace and so on are always included in the building plan and construction. Essential facilities like water and toilets are also in place; this facilitates much needed personal hygiene and sanitation in the neighbourhood. It is no more realistic to continue the advocacy of slum clearance/redevelopment/site and services because it is obvious that government that has failed in her basic responsibility of paying her staff and therefore cannot engage in any form of urban renewal. Businesses are created in decent environment. Jobs are also created for shop keepers, security men, cleaners and construction workers. Funds do flow into the settlements for the benefits of all. Government revenue has also increased because building plans must be approved. After the construction, local council continues to generate income from the business premises. Commerce and industry are encouraged; goods not available before the conversion are now being made available because of the outlets of the companies situated somewhere else. Examples include bank branches, Haier Thermo cool, MTN and Techno phone outlets. Urban morphology is also transformed; high rising building are replacing roomy houses, the process is gradual although selective. The CBD is the target, because of the land and economic values. It is concluded that once planning rules are followed, the full conversion should continue so as to bring in many more social, economic and environmental benefits.

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