LAND USE MIX IN THE CLASSIFIED RESIDENTIAL AREAS OF LAGOS METROPOLIS, NIGERIA

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Abstract

The struggle for space in Lagos has resulted in the overlapping of the various land uses. The pressure on the existing buildings has resulted in regular change of use in major corridor, especially in the study area. This paper presents the mix of informal commercial activities with the residential building in residential areas of the Lagos metropolis, Nigeria. The study relied largely on primary survey to elicit information from 975 residents in the classified residential areas of the Lagos metropolis, using disproportionate sampling technique. Data from existing literature were adopted in appropriate instances to enrich the study. Analysis of data was carried out with the use of both descriptive and inferential statistics. Logistic regression analysis was employed to investigate the degree of mix of commercial activities with residential building of the study area. The study found out that land use mix characterized the entire landscape of Lagos Metropolis though in varied proportion. Minor, medium and major conversions characterized the low, medium and high residential density areas respectively. The study recommends that at regular interval of residential plots, provision should be made for informal commercial activities to cater for the minor needs of the community in a way to enhance the cityscape.

Keywords**: Cityscape, Classified Residential Areas, Informal commercial activities. Land Use Mix**

Introduction

City planning aims at the development of desirable environments which offer human values, greater living satisfaction at less investment costs and lower operating costs. However, these noble objectives are always challenged by scarce and heterogeneous nature of land. Land is required for all forms of human activities- formal and informal. This often results in intense competition for the use of land (Agbola, 2004). This array of competition between different

lands uses always result in a dramatic change in land uses. The person who is prepared to pay the highest sum for a site is likely to eventually occupy it. Consequently, site in an urban area tends to be used for that purpose from which the user makes the highest net gain from alternative uses of the site. This scenario has made changes in land use, which has become part of an urban growth, inevitable. Land and buildings have continued to witness conversion of use, from lower to a higher rank, in order to attain optimal use. Commercial land use is becoming one of the notable features of urban centers. Commercial activities have been predominant in the economic sector of the Lagos metropolis, especially in residential areas which INEC (1998), Lagos State Master Plan (1980-2000), Oduwaye (2002), Lawanson (2011), Alade (2011) and Agunloye (2013) classified into low, medium and high residential densities. These commercial activities occupy 51.9% of the total Lagos built-up area (Ogunleye and Alo, 2010). The importance of the informal commercial activities in the urban economy is widely recognised by researchers. Abumere, Arimah, and Jerome (2008) stated that informal workers contribute more to global trade than other sectors of the urban economy. Folawemo (2009) noted that the informal sector provides ten (10) jobs for every one provided by formal sector employment in Africa. Evidently therefore, there is a large urban workforce in the informal sector. A good percentage of this based in residential areas. However, the fact that the sector has the prospect to engage the large size of the unemployed in the labour force has constituted a great challenge to urban land use planning in Nigeria and many developing nations (Adeyinka, Omisore, Olawuni & Abegunde, 2006). This challenge is occasioned by the fact that the sector most often generates land use problems, such as urban sprawl, incompatible land uses, building alteration and alteration of land use functions and values. This paper investigates the degree of mix of residential building use with commercial use in the classified residential areas of the Lagos metropolis.

Changes in Land Use and Informal Commercial Activities

Adjustment to the demand for space within the limited area of most cities has been through land uses readjustment. This has been of great concern to most scholars and policy makers (Farinmade, Oduwaye & Aluko, 2015).Specifically, land use conversion occurs when a particular land is changed from the use it was originally allocated as a result of economic rents, highest and best use and other factors of urbanization as a whole (Farinmade, 2010). Sada (1979) attempted a study of land use classification of cities in developing countries. He identified four major physical divisions of the cities. First of these is the Government Reservation Areas (GRAs), which in most cities generate positive effects because they are always well planned. The second is the private layouts which often generate both positive and negative effects as the quality of life in the area depends upon the monitoring system by the planners. The third is the old or traditional residential areas and the fourth the uncontrolled and unplanned fringe residential areas. The last two types, he stated, are notorious for their negative effects on development due to overcrowding and urban sprawl.

Fawehinmi (2002) researched into property conversion in Nigeria with Akure as the case study. He concluded that property conversion is essentially economic to the extent that it is predominantly done for profit maximization. Adejumo (2006) examined land-use mix particularly the behavioral effects of environmental pollution and sustainable development in Nigeria. The study noted that mis-use of land is now a threat to human survival because of its implication on the environment. The result indicated that most public and private land owners tamper with land resources without due consideration of the implication of their action on the environment. Behavioral implication of environmental pollution and implementation of sustainable development plan as means of evolving solutions to problems that may arise from land mis-use were highlighted.

Nwokoro (2008) studied the health consequences of land use changes in Victoria Island, Lagos and noted that the change in land use from a predominantly peaceful residential area of Victoria Island to a chaotic mix of commercial and residential buildings had negatively altered the health pattern of the area. Oduwaye (2008) in his work 'spatial-temporal planning implications of changing land use structure of metropolitan Lagos' noted that the changing land use structure of metropolitan Lagos had many implications on land use prospect of the city. The nature of the implications manifested in various socio-economic, physical and environmental dimensions. With the application of factor analysis and principal components analytical technique, the study revealed that infrastructure and economic factors are the major factors influencing land use in Lagos.

Bid-Rent Theory

The relationship between locations of land uses advocated by Ratcliffe (1949) & Losch (1945) has been developed further in the work of Alonso (1964), using the concept of Bid-Rent function. The Bid-Rent function, according to Alonso's thesis, is a hypothetical space profit function showing how land users willingness to pay urban site rents varied with distance from the central business district in order to guarantee the same level of profit anywhere in the city. The utilization of land is ultimately determined by the relative efficiency of the various uses in various locations. Efficiency is used to measure the rent paying ability, that is, ability of a use to extract economic utility from a site. The use that can extract the greatest return from a given site will be the successful bidder. Consequently, there emerges an orderly pattern of land use, spatially organized to perform most efficiently the economic function that characterizes urban life. Therefore, the city spatial structure depicts functions' ability to pay rent against distance from a single most accessible core. Away from the city centre, this quality falls off rapidly as does the willingness to pay high rents. Offices such as those of legal, insurance firms or of

doctors, all require accessibility and central locations, but the very nature of their business means that the very high rents of the Centre can be avoided by marginal location.

Material and Methods

This study focuses on low, medium and high residential areas of the Lagos metropolis. The area comprise the 16 local government areas of the Lagos Metropolis. The Independent National Electoral Commission recorded 210 geopolitical wards in Lagos Metropolis segregated on the basis of predominant residential densities. The choice of wards was based on information rich cases. Information rich cases are those from which one can learn a great deal about issues of central importance. As such, during the reconnaissance survey, wards with a preponderance of informal activities were identified and selected for the study. Out of the 210 wards in the 16 LGA of Lagos Metropolis, 52 wards were selected consisting of 5, 17 and 30 wards from the low, medium and high density residential density areas respectively (see table 1). To determine the sample size, a multi-stage sampling principle was adopted that allowed the use of more than one approach. Moreover, Fox, Hunu and Mathers (2009) opined that to compare the survey results of the minority with those of the larger group, it is necessary to use a disproportionate sampling method. With disproportionate sampling, the strata selected are not selected pro-rata to their size in the wider population. Consequently, at first level, Agbola and Olatubara (2004) and Ezejulue and Ogwo (1990) who corroborated the general principle of the sample being at least 10% of the sample frame was followed which informed the choice of 10% of sample frame for low density that is 75 and medium density that is 595. At the second level, the large size of sample frame of high density coupled with the need to reduce the volume of information obtained to manageable size informed the application of disproportionate sampling for selection of 3% of the sample frame, which is 675.

Table 1: Analysis for Determining Sample Size

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Residential Density	Selected wards	Sample Frame	Percentage for sampling	Total Sample Size
Low	5	480	10	48
Medium	17	5950	10	595
High	30	22500	3	675
Total	52	28930		1318

Author's field work (2012).

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Results and Discussions

This section is on the nature of land use conversion in the different residential areas of Lagos

metropolis. The other variables considered are related to land use conversion in the classified

residential areas. These include location of business, formal and present use of buildings where

informal activities are carried out, degree of mix of commercial activities with residential usage

of the building of operation and other relevant information. The chi-square was used to analyse

the significant relationships that exist between the variables that are categorical in nature and

residential density areas while the one-way ANOVA was used to analyse the significant

variations between the variables that are continuous in nature and respondents'residential

density areas.

Degree of mix of other activities with residential usage

Table 2 reveals the degree of mix of commercial activities with residential usage of buildings

where the informal activities are cited in Lagos metropolis. The degree of mix of informal

commercial activities with residential usage of the buildings reflects the degree of conversion

of designated residential buildings for commercial use. It is observed that there is a sharp

difference in the degree of mix of uses across the contrasting residential densities. Ratio 3:1

which represents (75%) residential and (25%) commercial occurs across the three contrasting

residential densities but with more intensity at low residential density area (80%). This implies

that the degree of mix in low density area is very low. There are informal commercial activities

which did not seriously alter the residential use of the building space where they are found.

The second level is ratio 2:2 that represents (50%) residential and (50%) commercial (even

conversion). This level of mix is also found in all the contrasting density but at different

proportion. The case of the third category is 1:3, that is, (25%) residential and (75%)

commercial. This reflects the same order but occurs most in high density area (40%). The last

order of mix is complete conversion. Only 5% of this level of mix is discovered in low density,

10% in medium density and 11% in high density.

This result reveals that land use mix characterises the entire landscape of residential areas of

Lagos metropolis but with varied intensity. Low degree of mix (minor conversion) is

predominant at low residential density. Medium level of mix (even conversion) is predominant

in medium residential density. High level of mix (major conversion) is predominant in high

density. Complete conversion is also highest at high density. The environmental effects of mix

land use could be cumulative and multiplicative in the long run. Such could inflict a heavy

damage on the environmental image of the city because it violates the objectives of physical

planning and results in misuse of land, thereby creating disorderly arrangement of the urban

landscape. The policy implication of the finding is that while it may be easy for government to

formulate policy that could successfully get rid of informal commercial activities in low density

area, such policy may be vehemently resisted in both medium and high density areas because of the nature and level of mix that characterise such areas.

Table 2: Degree of mix of other activities with residential use

Degree of mix of other activities with residential usage of the building.	Low density		Medium density		High density		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
3/1	39	80	73	20	62	14	174	20
2/2	4	8	146	40	156	35	306	36
1/3	3	7.0	110	30	178	40	291	34
0/4	2	5.0	36	10	50	11	88	10
Total	48	100	365	100	446	100	859	100

Note: Degree of mix; 3/1 implies that by placing score 4 on level of building space usage by residential and commercial uses (residential/commercial), residential attracts 3 while commercial attracts 1. This is termed minor conversion. 2/2 implies even/average conversion, 1/3 implies major conversion while 0/4 implies total or complete conversion from residential to commercial use. Freq. implies frequency

In Table 3, the mean score of land use mix of different contrasting densities are given. The table gave mean scores 2.50 which is the benchmark for determining high or low degree of mix, a high score (> 2.50) represents high degree of land use mix while low score (< 2.50) represents otherwise. Following this, medium and high densities both recorded high degree of land use mix, 2.88 and 2.71 respectively, as compared to 2.39 from low densities. This lends credence to the fact that the level of conversion of residential buildings to commercial uses is prevalent in both high and medium residential densities than what obtained in low density.

Table 3: Land use change in the study area

Density Type	Mean	SD	N
Low density	2.39	0.737	41

Medium density	2.88	1.380	393
High density	2.71	1.715	413
Total	2.77	1.494	847

Model	Sum of square	Df	Mean square	F	p-value
Between	12.122	2	6.061	2.728	0.046
Within Group	1875.443	844	2.222		
Total	1887.566	846			

The study also conducted analysis of variance test to determine if the variation in land use mix is statistically significantly different. Table 4 shows the outcome of the finding. The F-statistic value is statistically significant; (2.844) =2.728; P< 0.05.This result reveals that land use mix characterizes the entire landscape of residential areas of Lagos metropolis but with varied intensities.

Table 4: Analysis of variance test for significant difference in land use mix across the residential densities

The study reveals the degree of mix of commercial activities with residential usage of buildings in Lagos metropolis. Minor conversion occurs across the three contrasting residential densities but with more intensity at low residential density area. This implies that the degree of mix in low density area is very low. There are informal commercial activities which do not seriously alter the residential use of the building space where they are found. Conversion is also found in all the contrasting densities but at different proportions. This level of conversion is prominent in medium residential density. Major conversion is predominant at high density while complete conversion is equally high in this density. This implies that land use mix characterises the entire landscape of residential areas of Lagos metropolis but in varied degree. The analysis of variance test conducted shows that land use mix across the study area is statistically significant.

Conclusions

The study examined land use mix in the residential area of the Lagos metropolis. The study brings to fore the current pattern of land use change occasioned by informal commercial activities in the residential areas in Lagos metropolis. It reveals that the spatial pattern of the residential area of Lagos metropolis has been altered. The situation is worst in high residential area where highest level of change of use is witnessed. Conclusively, for the achievement and attainment of balanced integration of business opportunities in high, medium and low residential densities, while circumventing the associated land use conversion and environmental malady, government agencies, urban planners and other professionals involved in urban management must face the fact of incorporating informal commercial activities in residential land use proposals. Also change in approach need to be accompanied by concerted efforts aimed at positive collaboration between the government agencies and informal commercial activities entrepreneurs in reaching consensus and to find solutions that will facilitate harmonious incorporation of informal commercial activities in residential land use areas in Lagos metropolis.

Recommendations

The conversions from residential to commercial use and mix of these uses is a pointer to stakeholders in urban planning and management that residential areas are essentially multifunctional areas. This fact must be accepted while efforts aim at complete separation of residential from commercial uses should be jettisoned. Residential areas should be seen as habitation that harbors petty trading, petty commodity production and services. However, there is need to plan for these activities to prevent the damage of the environmental image of the city.

It is therefore recommended that at regular interval of residential plots, provision should be made for informal commercial activities to cater for the petty needs of the community in a way to enhance the cityscape. Planned and well integrated informal commercial activities in residential area will serve the people, make life easier and produce an outlook that enhances the cityscapes.

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