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Effects of Information Technology Facilities on the Urban Environment: A Comparative Study of Lagos Island and Victoria Island, Lagos

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1 ABSTRACT

Information technology is the term used to refer collectively to all forms of communication related technology. An urban area is characterized by a high population density, professional personnel as well as cooperates firms with a high level of civilization and cultural diffusion. The prevailing trend in the purview of information technology, which is often referred to as a revolution, is most observable in the urban areas. In the light of the above, the study examines the effects of information technology on urban land use using Victoria Island and Lagos Island, Lagos as case studies. This study explores the present status of the information technology concept in Nigeria with specific emphasis on the field of urban and regional planning. Theories and models of urban spatial and land use structure were analyzed in the study. Data were also collected through primary source and analysed through the use of descriptive and inferential statistical techniques. Hypotheses result reveales that there is a comparative level of IT in both Lagos Island and Victoria Island. The study reveales the prevalence of informal economic activities, a distortedly congested urban skyline, a changing trend of physical development. It also identified two reasons why IT firms locate in area as some of the effects of IT on urban land use. It however concludes that there exist a variety of communication modes in Lagos Island and Victoria Island which include fax, telephone of various forms, internet services among others. The study recommends the need for IT consideration by urban planners and policy makers in future land use plans of the study areas. It also advocates for proper control of IT related advertisement to enhance their contributions to urban environmental quality in term of aesthetics as well as the provision of planned schemes for the informal sector due.

2 INTRODUCTION

The information technology revolution continues to spread like wild fire throughout the world and across all facets of human life. “Place, the community and globalization are a trilogy in the current policy discourse involving information technology (I.T.) and urban form” (Jungyul, Tschangho, Geoffrey, Hewings, 2003). The Nigerian urban centers, especially the Lagos metropolis is not left out of this phenomenon, with its consequential effects on the various land use types of the city. The spatial distribution of urban activities often results from various economic location decisions of an individuals or group of firms. In this sense, location and distribution are just two sides of the same coin. Many possible factors can affect the locational decision-making process of those agents in an urban area. Traditionally, the most popular factor or explanatory variable for urban economic activities is the economic imperative. Since most private firms consider increasing profits in the decision-making process, it is not therefore unusual to consider this as a primary moderating factor. In recent decades, one of the major breakthrough achievements in the world is the development of information technology (IT), especially with the rapid development of computer technology; information technology has had a great influence on society in general as well as on the personal lifestyles of individuals. This development is bound to generate peculiar relationship between information technology and the urban spatial structure.

Globalization has brought with it the revolution of information technology. The effects of this on the environment with particular focus on the urban land use structure are numerous. This became so paramount due to the new and unanticipated nature of the information era. In essence, cities where these technologies are mostly visible have yielded to the pressures by the new demands for economic functions. This becomes injurious to the urban system, as the trend was not anticipated in the planning of many cities. The Lagos Metropolis is not an exception.

Information technology is now a way life. This phenomenon has brought with it many consequences each having multiplier effects on virtually all aspects of the urban system. These effects are in varying ramifications hence, there appears to be no hiding place or an avenue for nonchalant attitudes on the parts of urban analysts and policy makers. It is therefore worthwhile to attempt an understanding of the problem with

a view to examining its spatial consequences and proffering solutions that could resolve emerging problems. This study is an effort to unravel the effects of information technology on urban land use through a comparative analysis of Lagos Island and Victoria Island, Lagos.

Effects of Information Technology Facilities on the Urban Environment: A Comparative Study of Lagos Island and Victoria Island

3 LITERATURE REVIEW AND THEORETICAL ISSUES

There has been a significant volume of research on information technology (IT) and urban environment, especially since the late 1980s. Most of the researches have been conducted using qualitative and descriptive methods, while there are relatively few studies that have adopted quantitative models. One major reason for this trend is the lack of adequate data to measure or depict the level of IT and the lack of adequate methodologies to measure the spatial impact of IT on distribution patterns. In addition, if such data are needed at a more disaggregated geographic scale, then the difficulty increases. For this reason, some of the empirically driven analysis related to this topic has focused on the Inter-metropolitan context. To some extent, the question whether IT has been important or not in explaining urban forms has been narrowed down to whether IT has an influence on the spatial distribution pattern of urban activities.

Yen and Mahmassani (1997) noted that the development of telecommunication technologies might affect land use patterns and play a role in the growth of economic activities and the spatial distribution of industry. The study suggested two specific aspects of office-location decisions by organizations in assessing the impact from the new technology; the need for certain organizations to locate where they can access telecommunication networks; and an increased opportunity for the organizations to locate their offices in the areas where infrastructure costs are generally lower than traditional office locations such as downtown areas are factors that could influence location decision.

Gaspar and Glaeser (1998) tried to uncover the relationship between IT and face-to-face interactions and the cities that facilitate these interactions. In an empirical analysis using telephone call data, the authors concluded that these are complements rather than substitutes. As a result, the centralizing forces in cities did not seem to vanish. However, as the authors noted, it is very hard to separate the exclusive effect of IT in their regression models.

Gordon and Richardson (1997) conjectured that IT technology may lead to a dispersion of economic activities and population, possibly up to the stage where geography is irrelevant. They noted that high-rise or concentrated settlement has been dominant when transport or communication costs were high but that such costs are likely to continue to fall in the future. It might be possible to summarize that office work, rather than office workers, will do the traveling (Drucker, 1989).

The critical issue here is whether transportation and communication are complementary or competitive. If the former is the case, geography still might matter even with the advent of the new communications technology. Arguing against the optimistic view of technology, Salomon (1996) mentioned that there have been excessive expectations of the information age, for instance, that telecommunications can eliminate the effects of distance and as a result can have profound effects on the spatial organization of society. He also identified four assumptions underlying the proposition that cities will disperse due to an improved IT:

- The substitutive relationship between transportation and telecommunications;
- The substitution of information for material goods;
- The ubiquity of telecommunications; and
- The recognition that dispersal has been constrained by congestion and travel costs.

Even though he claimed that a complete change of urban form could not be expected in the information age, he agreed that there are some changes that may result from these technological changes. One example of the telecommunications dispersal effect is an emergence of the back office activities located remotely from the core organization (Salomon, 1996).

Furthermore, the study of Capello (1994) revealed that there exist a gap between the introduction of new IT and the changes in the spatial pattern of firms. This is ascribed to an overestimation of technological potential and to an optimistic and superficial analysis on the relationship between the new technology and

spatial restructuring. The study further noted that in the long run, those technologies lead to a new production strategy such as the "just-in-time" (JIT) system and it will require a physical proximity (either in an inter-urban or intra-urban context) between firms and eventually a spatial clustering of economic activities are expected. However, as Fujita and Hamaguchi (2001) noted, firms specifically the buyers of intermediate goods can be more dispersed if they have a better-developed transportation/ communication infrastructure as in the examples of many developed countries.

Conceptually, the geography and distribution of economic activities can be redefined on the basis of information flows. Echeverri-Carroll (1996) noted that an effect of the geographical relationships between organizations cannot be conceptualized without understanding the intra-organizational and inter-organizational computer networks that bind particular locations together. Even though spatial decentralization continues to be relevant, the process is characterized by a much higher functional integration using the information network. It is implied that network connectivity can be a more important factor in deciding the geographical relationships than physical distance especially in the information age.

However, this writer did not agree that such technology leads to the demise of the concept of distance. The study concluded that these technologies impose higher investments on inter-firm linkages and more stringent restrictions on labor's skills and flexibility, thereby restrain the location of industry in space.

The study of Mokhtarian (1998) focused more on the spatial residential pattern of commuting. The study noted that "the effect of the new technology is not to reduce travel but to increase the flexibility of travel and, as a result, the total number of trips may be higher with a substantial portion of travel shifted to off-peak periods. The ability to commute because of telecommuting often leads to a relocation of residences further away from work enough for total VMT (vehicle miles traveled) on a smaller number of commuting days to exceed the previous levels". On a system-wide level, this trend may result in a decentralizing effect on urban form.

White and Whitney (1992) while presenting policy design options for consideration stressed that dominant suburban centres of urban activities have evolved by default in low-income countries as eptomised by Lagos, Nigeria. This is a clear indication of the existence of some outlying business districts within the Lagos metropolis. George (1999) while explaining the modifications to the Alonso's model of land use pattern in Lagos metropolitan area hinged on the principle of accessibility to alternative locations. According to the study "urban location decisions are interdependent. This interdependence very often shows itself in agglomeration of similar establishments. This creates external economies – the ease of face-to-face contacts in the office zone or the fact that locating shops together minimizes commuting costs and attracts customer".

In a most recent comparative analysis of this trend in the Chicago and Seoul regions, it was concluded by some analysts that information technology has a very influential and positive effect on the agglomeration of firms. Despite the dispersion-inducing factors of the limited availability of information technology and accessibility to a well-equipped information network in many areas restrict the locational choices of firms, and as a result the distribution pattern is more concentrated. While this might change in the future as IT facilities disperse, for now the uneven distribution of IT infrastructure is a centripetal force. This tendency also occurs in an interurban context (Jungyul et al, 2003).

Studies on urban land use generally draws from three different descriptive models of urban land use. These models were developed to generalize the patterns of urban land use found in early industrial cities of the United States of America. Later the shapes and forms of American cities changed over time, new models of urban land were developed to describe the urban landscape that was becoming increasingly complex and differentiated. Further, because these are general models devised to understand the overall patterns of land use, none of them can accurately describe patterns of urban land use in all cities. These models have been criticized for being more applicable to cities in the United States than to cities of other nations. Other criticisms have focused on the fact that the models are static; they describe patterns of urban land use in a generic city, but do not describe the process by which land use changes. Despite these criticisms, these models continue to be useful generalizations of the way in which land is devoted to different uses within the city. These models are examined below

3.1 Concentric Zone Model

The concentric zone model was among the early descriptions of urban form. Originated by Burgess in the 1920s, the concentric zone model depicts the use of urban land as a set of concentric rings with each ring devoted to a different land use (Figure 1). The model was based on Burgess's observations of Chicago during the early years of the 20th century. Major routes of transportation emanated from the city's core, making the CBD the most accessible location in the city. Burgess identified five rings of land use that would form around the CBD. These rings were originally defined as the (1) central business district, (2) zone of transition, (3) zone of independent workers' homes, (4) zone of better residences and (5) zone of commuters. An important feature of this model is the positive correlation of socio-economic status of households with distance from the CBD -- more affluent households were observed to live at greater distances from the central city. Burgess described the changing spatial patterns of residential areas as a process of "invasion" and "succession". As the city grew and developed over time, the CBD would exert pressure on the zone immediately surrounding it (the zone of transition). Outward expansion of the CBD would invade nearby residential neighborhoods causing them to expand outward. The process was thought to continue with each successive neighborhood moving further from the CBD. He suggested that immigrants and households with low socio-economic status largely occupied inner-city housing. As the city grew and the CBD expanded outward, lower status residents moved to adjacent neighborhoods, and more affluent residents moved further from the CBD

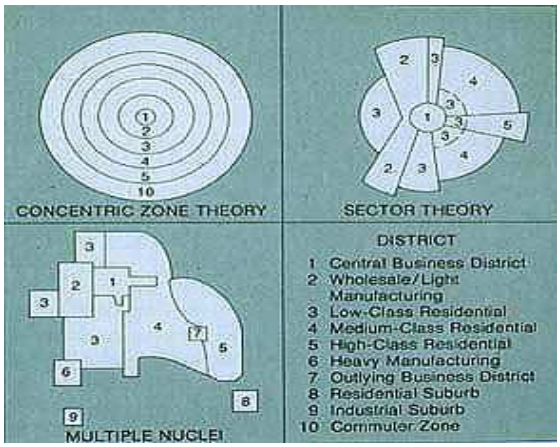

Fig 1: Three Generalizations of Urban Structure. Upper Left: Burgess' Concentric Zone Model; Upper Right: Hoyt's Sector Model; Bottom Left: Harris and Ullman Multiple Nuclei Model.

3.2 Sector Model

Soon after Burgess generalized about the concentric zone form of the city, Hoyt re-cast the concentric ring model. While recognizing the value of the concentric ring model, Hoyt also observed some consistent patterns in many American cities. He observed, for example, that it was common for low-income households to be found in close proximity to railroad lines, and commercial establishments to be found along business thoroughfares. In 1939, Hoyt modified the concentric zone model to account for major transportation routes. Recall that most major cities evolved around the nexus/ routes of several important transport facilities such as railroads, seaports, and trolley lines that emanated from the city's center. Recognizing that these routes (and later metropolitan expressways and interstate highways) represented lines of greater access, Hoyt theorized that cities would tend to grow in wedge-shaped patterns, or sectors, emanating from the CBD and centered on major transportation routes. Higher levels of access translate to higher land values. Thus, many commercial functions would remain in the CBD, but manufacturing activity would develop in a wedge surrounding transport routes. Residential land use patterns also would grow in wedge-shaped patterns with a sector of lower-income households bordering the manufacturing/warehousing sector (traffic, noise and pollution making these less desirable locations to live) and sectors of middle- and higher-income households located away from industrial sites. In many respects, Hoyt's sector model is simply a concentric zone model modified to account for the impact of transportation systems on accessibility.

3.3 Multiple Nuclei Model

By 1945, it was clear to Harris and E Ullman that many cities did not fit the traditional concentric zone or sector model. Cities of greater size were developing substantial suburban areas and some suburbs, having reached significant size, were functioning like smaller business districts. These smaller business districts acted as satellite nodes, or nuclei, of activity around which land use patterns formed.

While Harris and Ullman still saw the CBD as the major center of commerce, they suggested that specialized cells of activity would develop according to specific requirements of certain activities, different rent-paying abilities, and the tendency for some kinds of economic activity to cluster together. At the center of their model is the CBD, with light manufacturing and wholesaling located along transport routes. Heavy industry was thought to locate near the outer edge of city, perhaps surrounded by lower-income households, and suburbs of commuters and smaller service centers would occupy the urban fringe.

4 STUDY AREA AND METHODOLOGY

4.1 Study Area

The study covers Lagos Island and Victoria Island both withn Lagos metropolis. Lagos Island Local Government is bounded in the south by the Atlantic Ocean in the North by the Lagos Lagoon and the Mainland Local Government area, in the east by the Majidun Creeks and in West by Apapa Local Government Area. Geographically, the area is an outlet into the sea and bounded by creeks and lagoons (See figure 3.3). Lagos Island is generally at a low altitude with the highest part less than 15 meters above sea level and slopes towards the direction of the surrounding lagoons and creeks. Lagos Island traditionally known as Eko a name derived from Oko a Yoruba word-meaning farm was established as a small fishing settlement around 1450 by the Aworis, a Yoruba sub-ethnic group. The Local Government originally and still called Eko is the Island from where Lagos State began to spread. Its administrative role as the capital of the federal and Lagos state at different periods and its natural setting have provided impetus to its present level of economic and physical infrastructure and service for population within and far beyond the area.

Lagos Island is the commercial and business nerve centre of Nigeria. This is made possible by its endowed physical and human resources. Presently, the area exerts the highest degree of commercial, financial and social influence on other parts of Nigeria. The significance and growth of Lagos Island is due partly to its historical and cultural background. The area also owes it growth and development to European influence that settled around neighbouring islands of Ikoyi and Victoria Islands while using Lagos Island as a trading location

While Victoria Island is located in the south central part of Lagos state within Eti-Osa Local Government Area. Victoria Island is bounded to the North by the Five Cowries Creek. In the South by the Atlantic Ocean, Westwards by the Lagos Island Local Government Area while Eastwards by Lekki. Eti-Osa Local Government Area extends northwards where Agbakin bounds it. And the South by the Atlantic Ocean, Westwards by Mc Gregor Canal as well as Lagos Island local Government and Eastwards by Sangotedo.

Victoria- Island was historically called “Iru-land” with its own traditional ruler even till date. The old section of the area was actually planned by the L.S.D.P.C. in 1973, while the extension (annex) was planned and sub divided by the N.T.D.A. after the demolition and evacuation of Maroko in the mid 1980’s. Eti-Osa local government area is one of the old generations local councils created by the Lagos state government in 1989. As the name implies “Eti-Osa” is located along a stretch of water bodies at three of its edges. Apart from serving as the study area also contains Victoria Island, which is the largest out lying business district from Lagos Island. It covers a total of about 772 Hectares or 7.72 sq. km.\

Victoria Island is perhaps the fastest growing business district outlying Lagos Island within the Metropolis. Land uses sited here attract quite a magnitude of traffic with its attendant problems. It is fast becoming the refuge point for most businesses that wish to compete for the numerous benefits of agglomeration. There exist a great relationship between Lagos Island and Victoria Island in many regards. Major streets within this area include; Ozumba Mbadiwe Way, Ahmadu Bello Way, Akin Adesola Street, Adeola Odeku Street and Ajose Adeogun Street.

4.2 Methodology

In line with the aim of the research, which is on the impact of information technology on urban land use and spatial pattern, this research design was basically exploratory, descriptive and analytical in approach. It therefore essentially depends on field study complimented by comprehensive desk research. The approach to the study was therefore through survey, interview and analysis of data. The study area was delineated based on building density per hectare of land in the study area. The two study areas are geographically separated by water bodies namely the Five Cowries Creek and the Lagos Lagoon. The focus of this study was on the nature and pattern of land use and the influence of information technology revolution on the study areas. Hence, the study population was made up of the buildings and land use activities in Lagos Island and Victoria Island, Lagos. Much emphasis was based on the Central Business Area (CBD) part of Lagos Island.

Pilot survey revealed that the CBD of Lagos spanning the lengths of Broad Street, Marina Street, Kakawa Street, Nnamdi Azikwe Street, Apongbon Street and the structures bounded therein constitute the core of the first study area. While Victoria Island though initially planned as a residential area has become predominantly commercial in virtually all its sectors with obvious degree of prominence in certain areas. These areas include Ahmadu Bello Way, Adeola Odeku Street, Adetokunbo Ademola Street, Akin Adesola Street, Sanusi Fafunwa and Ajose Adeogun Street. Hence, each study area was stratified into zones or clusters of common building density.

A further analysis of Lagos Island revealed the trend of irregular densities within the study areas. In all, six (6) zones of common average building densities were identified and used as the population strata. The zones include: CBD Marina Axis, Olowogbowo/ Tinubu, Isale-Eko/Idumagbo, Epetedo/Oko-Faji, Lafiaji/Araromi-Odo and TBS/Institutional axis for Lagos Island. Victoria Island also exhibited a distinct spread of building densities from one part to the other. The study also identified six (6) zones. These include: The Diplomatic zone (Eleke Crescent/ Bonny Camp), Mixed zone I (Kofo Abayomi Axis); Commercial zone I (Adeola Odeku/ Ahmadu Bello Axis); Professional zone (Law School/Sanusi Fafunwa); Commercial zone II (Ajose Adeogun/ Akin Adesola, Adetokunboh Ademola Axis); and the Mixed zone II (1004/ Muri Okunola Axis). A breakdown of these zones and their corresponding average building density ratio as a rationale for the sampling is indicated in table 1.

Zones	**Lagos Island**		**Victoria Island**	
	Area	**Ave. Density/ Hect.**	**Area**	**Ave. Density/ Hect.**
A	CBD Marina Axis	16 buildings	Diplomatic zone	16 buildings
B	Tinubu/Olowogbowo	36 buildings	Mixed zone I	36 buildings
C	Isale-Eko/Idumagbo	144 buildings	Commercial zone I	9 buildings
D	Epetedo/Oko-Faji	100 buildings	Professional zone	16 buildings
E	Lafiaji Araromi-Odo	81 buildings	Commercial zone II	12 buildings
F	TBS/Inst. Axis	9 buildings	Mixed zone II	25 buildings

Table 1: Zones Identified Via Building Density

The sample size based on the above facts is explained thus; 200 questionnaires were administered with 23% (46 questionnaires) administered in Victoria Island as dictated by the density ratio. 77% (154 questionnaires) were administered in Lagos Island due to the higher density ratio and land area involved.

Zone	**Lagos Island**			**Victoria Island**		
	Description	Sample	**App. Area**	**Description**	**Sample**	**Area**
A	CBD Marina Axis	6	1280 Hectares	Diplomatic zone	6	66.4Hect.
B	Tinubu/Olowogbowo	16	1280 Hectares	Mixed zone I	15	148.5Hect.
C	Isale-Eko/Idumagbo	58	1360 Hectares	Commercial zone I	4	281.9Hect.
D	Epetedo/Oko-Faji	40	1600 Hectares	Professional zone	6	61.4Hect.
E	Lafiaji Araromi-Odo	32	1200 Hectares	Commercial zone II	5	88.1Hect.
F	TBS/Inst. Axis	2	1280 Hectares	Mixed zone II	10	125.7Hect.
Total	**Total Land Area**	**154**	**8000Ht/80sq.kms**	**Total Land Area**	**46**	**772Hect.**

Table 2: Sampling Size By Zoning Method

Sampling procedure for the study was done based on the density in each zone compared with the land area in each specific case. As a result, the above spread between zones was made to avoid bias and achieve objectivity in the representation of the population. The sampling procedure within each zone was determined by a further division of the area by the sample size allocated above as appropriate. This resulted in a new set of clusters with their respective radii. These distinct radii were randomly employed in administering questionnaires.

5 DATA PRESENTATION AND INTERPRETATION

5.1 Modes of Information Technology

Table 3 shows that 87 buildings (56.5%) have access to land phone in Lagos Island while, by comparison 42 buildings (91.3%) were identified in Victoria Island. Also, 150 buildings (97%) have mobile telephone (GSM) lines in Lagos Island while, 46 buildings (100%) in Victoria Island have mobile telephone lines. 12 buildings (7.8%) have fax machine in Lagos Island while, 32 buildings (70%) have the same in Victoria Island. 100% in both study areas have both television and radio sets. Also, 24 buildings (15.6%) in Lagos Island and 41 buildings (89%) in Victoria Island have intercom facilities. Further more, 98 buildings (63.6%) in Lagos Island and 100% in Victoria Island have personal computer. Also, 10 buildings (6.5%) in Lagos Island while 25 buildings (54.4%) in Victoria Island have satellite. In Lagos Island, 12 buildings (7.8%) have intranet facilities. And lastly, 96 (62.3%) in Lagos Island as well as 36 buildings (78.3%) in Victoria Island have Internet access. From all indications, it is evident that there is an unequal spread in the use of information technology within and between study areas. However, it is obvious that there exist a relative use of information and communication technology in both study areas. But, the analysis shows a trend whereby some modes of these technologies are more prevalent in one than the other study area. Land phone, fax machine, intercom, satellite/ world phone, intranet facilities are more prevalent in Victoria Island than it is in Lagos Island. While, mobile phone, television, radio, P.C, and access to Internet services are relatively proportional in their spread within both Lagos Island and Victoria Island.

MODES OF INFORMATION TECHNOLOGY	**NUMBER AVAILABLE**				**TOTAL**
	Lagos Island		**Victoria Island**		
Land telephone line	87	56.5%	42	91.3%	129
Mobile telephone (GSM) line	150	97%	46	100%	196
Fax machine	12	7.8%	32	70%	44
Television	154	100%	46	100%	200
Radio	154	100%	46	100%	200
Intercom Facilities	24	15.6%	41	89%	65
Personal computer	98	63.6%	46	100%	144
Satellite/ world Telephone	10	6.5%	25	54.4%	35
Intranet (Data base) system	12	7.8%	42	91.3%	54
Internet service	96	62.3%	36	78.3%	132
TOTAL	**797**	**Total**	**402**	**Total**	**1199**

Table 3: Modes of Information Technology

5.2 Effects of Information Technology on Trend of Physical Development

5.2.1 Trends of Physical Development

Table 4 revealed that the increase in height as an emerging trend within both study areas ranges between 0% and 80% with an average rate of 34%. Also, conversion of use in both study areas as indicated by the zonal analysis above, reveals a range of 10% and 90% with an average of 57%. On the issue of mast or antenna erection, the table shows that this trend ranges between 33% and 90% of the zones. Also, the emergence of billboards ranges between 20% and 100% with a zonal average of 57%. The table shows the range of sub surface cables as 20% and average as 81%.

The range of the trend of high-rise buildings among the zones falls between 0% and 90% with an average of 19% in both study areas. The use of rooftop mast was shown by the above table to have a range between 0% and 80% with an average of 36% among the zones. However, the trend of rooftop advert billboards has a range between 0% and 75% with an average of 26%.

And lastly, the prevalence of kiosks used as telephone call centres has a range between 10% and 90% with an average of 58%. This whole indicates a wide range of physical development trends emerging within both study areas in varying magnitudes between and within the zones.

Physical Trends of development.	Lagos Island						Victoria Island					
	A (%)	B (%)	C (%)	D (%)	E (%)	F (%)	A (%)	B (%)	C (%)	D (%)	E (%)	F (%)
Increased height. Of building	33%	56%	41%	25%	38%	0%	17%	7%	75%	17%	80%	20%
Conversion of Use	67%	88%	59%	65%	75%	10%	10%	20%	90%	50%	80%	90%
Erect masts	83%	40%	45%	35%	65%	50%	50%	33%	90%	83%	80%	60%
Billboards	75%	20%	32%	50%	70%	100%	33%	45%	75%	50%	80%	50%
Sub-Cables	80%	70%	75%	90%	85%	95%	75%	80%	75%	90%	75%	85%
High-rise Advertisement	90%	0%	0%	0%	10%	50%	0%	0%	50%	70%	25%	0%
Roof top Mast	70%	20%	0%	0%	25%	50%	25%	40%	75%	75%	80%	10%
Rooftop board	25%	0%	0%	10%	0%	45%	0%	25%	45%	55%	75%	30%
Call Kiosks	85%	75%	80%	75%	90%	50%	10%	50%	85%	15%	45%	60%

Table 4: Trends of Physical Development

5.3 Land Use Analysis

Table 5 indicates that 53 buildings (34.4%) are of residential use in Lagos Island while similarly, 14 buildings (30.43%) are of the same use in Victoria Island. Also, 45 buildings (29.2%) represent commercial land use in Lagos Island while 10 buildings (21.74%) are of the same use in Victoria Island. Furthermore, 12 buildings (7.79%) represent industrial land use in Lagos Island while 1 building (2.17%) are of the same use in Victoria Island. Also, 42 buildings (27.27%) represent mixed land use in Lagos Island while 12 buildings (26.09%) are of the same use in Victoria Island. Lastly, 2 buildings (1.34%) represent institutional land use in Lagos Island while 9 buildings (19.57%) are of the same use in Victoria Island. In all, both purely commercial and mixed uses represent over half of the land use in both study areas.

Land Use Type	**No. Of buildings**		**Percentage (%)**		**TOTAL**	
	L/Island	**V/Island**	**L/Island**	**V/Island**	**Buildings**	**Percentage**
Residential	53	14	34.4%	30.43%	67	33.5%
Commercial	45	10	29.2%	21.74%	55	27.5%
Industrial	12	1	7.79%	2.17%	13	6.5%
Mixed use	42	12	27.27%	26.09%	54	27%
Institutional	2	9	1.34%	19.57%	11	5.5%
Total	154	46	77%	23%	200	100%

Table 5: Land Use Analysis

5.4 Socio-Economic and Environmental Problems From Information Technology

Table 6 depicts that 125 respondents (81.2%) accepted that there has been an increased rate of street hawking of recharge cards in Lagos Island while 44 respondents (95.65%) believes the same in Victoria Island. Also, 142 respondents (92.21%) confirmed unaesthetic state of IT related adverts in Lagos Island while 46 respondents (100%) censored the same view in Victoria Island. Further, 150 respondents (97.4%) accepted that there has been an increased rate in crimes involving IT goods in Lagos Island while 40 respondents (86.96%) perceived the same in Victoria Island. Moreover, 98 respondents (63.64%) IT related adverts cause sight or visual intrusion in Lagos Island while 36 respondents (78.26%) believe the same in Victoria Island. Also, 127 respondents (82.46%) concur to the congestion of the skyline by antenna and masts in Lagos Island while 42 respondents (91.3%) said the same in Victoria Island. And finally, 153 respondents (99.35%) confirmed the neglect of the few public phone booths hitherto in existence in Lagos Island while 46 respondents (100%) believe the same in Victoria Island. In all, this could be interpreted as an array in existence.

	Lagos Island	**Victoria Island**

Perceived Problems	Frequency	Percentage	Frequency	Percentage
High rate of card hawking on streets	125	81. 2%	44	95. 65%
Defacing with IT related adverts	142	92. 21%	46	100%
High crime rate of IT goods	150	97. 4%	40	86.96%
Sight intrusion by giant advert media	98	63. 64%	36	78. 26%
Congested skyline	127	82. 46%	42	91. 3%
Abandoned public phone booths	153	99. 35%	46	100%

Table 6: Socio-Economic & Environmental Problems from Information Technology

6 CONCLUSION

The implication of these findings is that the planner in the next few years would not be bordered with the provision of certain communication facilities such as public telephone booths and its allied infrastructures as easier alternative means abound in a fast privatizing economy; a fallout of the globalization phenomenon. Ironically, there are more to be done in urban aesthetic management due to incessant road cuttings; indiscriminate adverts; emergence of an exploding informal economy and a distortedly congested urban skyline by masts.

This means that urban analysts and planners should as a matter of urgency include information technology as a factor to be considered in the decision-making process pertaining to urban land uses. This will act as a proactive measure to guide against extreme pressures already being exerted on the urban environment by information technology related activities.

On a more specific scale, adequate control should be put in place to tackle the defacing of the urban environment by posters, billboards, and hawkers just to mention but a few. This will ensure that the cities wear an aesthetically pleasing look at all times devoid of sight and visual intrusions.

Efforts should be made to determine the degree of economic contribution to the entire urban economy for example using the *"input and output analysis"* for explaining industrial economic facts. Spaces should be allotted within the study areas for certain IT related land uses (e.g. commercial phone booths) with consideration to location, distance and market factors as earlier pointed out.

Finally the study has examined the influence of information technology on location factors of urban economic activities as well as on the growth pattern of IT related land uses in both Lagos and Victoria Island districts of Lagos metropolis. Some analyses have confirmed certain guesses while others have been replaced after rejection by statistical procedures. Findings have revealed certain peculiarities of IT related land uses in the study areas. For a better understanding and understudying of the changing urban land use pattern and its consequential effects on the economic activities, recommendations herein suggested should be considered while rooms for further academic quests into this phenomenon abound.

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