Impact of Land Administration on Private Housing Delivery in Lagos, Nigeria

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ABSTRACT

Previous studies on impact of land administration on housing delivery had only examined impact of some of the functions of land administration on housing delivery and not impact of the four functions of land administration on housing delivery. This study filed this gap by examining the impact of the four functions of land administration on private housing delivery in Lagos, Nigeria. The study population is members of Real Estate Developers Association of Nigeria (REDAN). The population size is 1400 and systematic random sampling technique was employed to have a sample size of 140. 120 questionnaires were retrieved and reliable for analysis. Data gathered were analyzed through descriptive statistics, tables, mean and multiple regressions. Findings from the study revealed that reduction in quantity produced is the most prominent impact of land tenure, delay in time of housing delivery is the impact of land use and land development and change in location of property is the most prominent impact of land taxation. Also, the most prominent problem of land administration is lack of computerized land administration system. The study established that land administration has significant impact on private housing delivery. It was recommended that bureaucracy that surrounds land administration should be reduced in order to reduce associated time and cost. Also, the land administration system should be computerized for easy land administration services.

INTRODUCTION

Previous studies on land administration in developing countries of the world have shown that land administration is a major factor affecting housing development (Rakodi, 2002, Sivam, 2002, Payne, Durand-lasserve and Rakodi, 2009). Sivam (2002) revealed that the land administration system in India is negatively affecting land accessibility. The scholar identified the following as the constraints of land administration: finance, government policies, land regulations, law and other instruments formulated to improve the efficiency of the land market. Also, in Nigeria, Kuma and Ighalo (2015) revealed that land administration is one of the major hindrances to housing delivery. The study established further that delay in the period of land titling registration and associated cost of registering land are hindrance to housing development in middle belt of Nigeria. The scholars concluded that lack of access to land contributed significantly to the growing need of urban housing. Therefore, it be inferred that all the aspects of land administration are characterized with bureaucracy that led to high associated cost. The land administration bureaucratic measure has an impact on the land delivery system.

Evidence of the impact of land administration bureaucratic measure can be found in the developing countries, particularly those of Sub-Saharan Africa land delivery system. In the developing countries, access to land has been through formal and informal institutions. While the formal institutions are by

statutes expected to provide cheaper, easy and secured access to land, the bureaucratic requirements have rather created myriad of problems (Rakodi, 2005). The study of Aribigbola (2008) revealed that the rather ineffectual performance of the formal land has led to several constraints on access to land. Some of these constraints led to speculation and inordinate rise in land prices as well as making the land allocation mechanism discriminative as a result of the socio-economic status of some prospective land owners.

Land inaccessibility has been established as the major cause of housing deficit in the developing countries (Rakodi, 2002). The scholar attributed land inaccessibility to the problems of land administration. Enemark (2005) defined land administration as an integration of the following functions: land value, land use, land development and land tenure for sustainable development. These four functions of land administration have impact on housing delivery. However, there is gap in study on research that evaluated the impact of the four functions of land administration on housing delivery. This study filled this gap by examining the impact of the four land administration functions on private housing delivery in Lagos, Nigeria. Also, this study will examine the problems of land administration in the study area. Also, the study tests the hypothesis that and administration has significant impact on private housing delivery in the study area.

LITERATURE REVIEW

Housing Delivery System

Housing production is an aspect of real estate development that concentrates on residential real estate development. Graaskamp, cited in Squirrel (1997) defined real estate development as the creation and management of *space-time-units* in a complex and collective process involving various stakeholders. Tomori (2014) established that housing production is part of a wider process of Housing Delivery System (HDS). The scholar buttressed further that Housing Delivery System is a combination of many interrelation processes which include: the production of new houses, the renovation and rehabilitation of existing units, and the distribution of both old and existing units to those in need of them. Also, the delivery system can be categorized into two which are: formal housing delivery and informal housing delivery.

Formal housing delivery involves activities of governmental agencies, corporate bodies and the government in providing housing. These activities can be in the following forms; direct housing construction by government at all levels, provision of service plots in government layouts, provision of mortgage finances, and the use of housing subsidies to encourage housing consumption. This position was substantiated by Aribigola (2008) who postulated that the housing corporation model has been used by the state governments as a formal housing delivery mechanism. However, the scholar established that the performance of the formal housing delivery system in Nigeria is not encouraging.

Also, Agbola (1998) identified six main channels through which housing is delivered informally. These are through merchant builder; prefabricators, builder investors, on-site builder, land developers, and cooperatives. Al Shareem, Yusof, Roosli and Abdllah (2014) posited that the informal sector produced majority of houses produced in the developing nations. The study established the difference in housing delivery system in the developed and developing nations. This position corroborated Drakakis-Smith (2012) model on Housing Supply in Developing Countries.
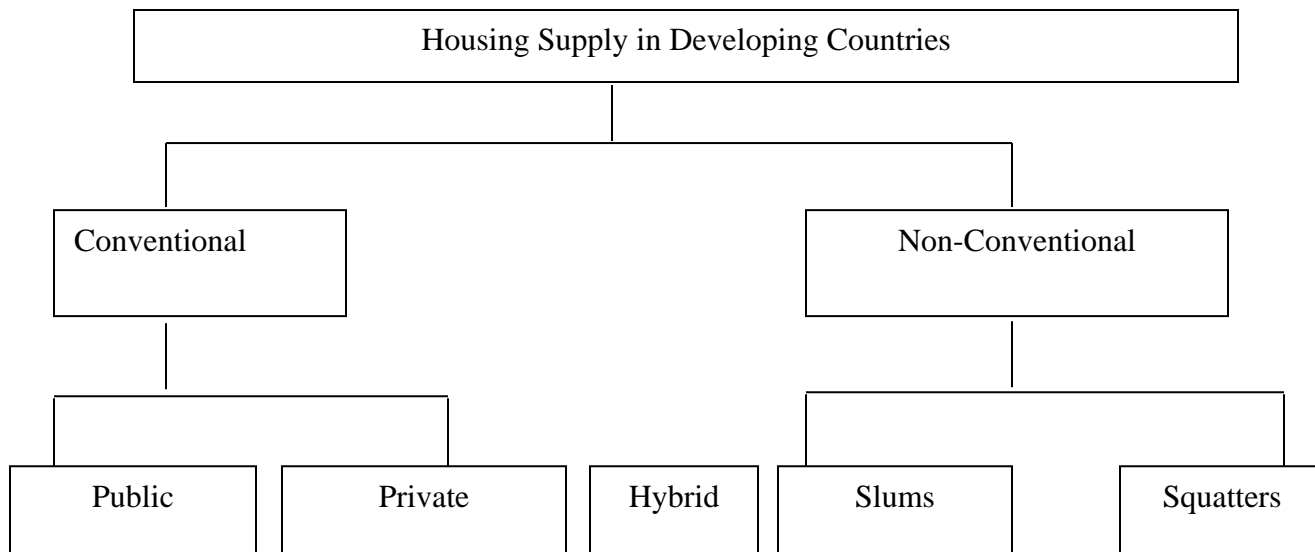
Figure 1: Housing Supply in Developing Countries
Source: (Drakakis-Smith, 2012)

From Figure 1, the difference in housing supply in developed and developing nations can be inferred. In the developing nations, the Non-Conventional categorization is feasible. In contrary, the Non-Conventional categorization is minimal or not existing in the developed countries. This position was substantiated by Green and Malpezzi (2003) and Olsen (2003) who established the following as the models for housing delivery in the United States of America; Public housing delivery system, public-private housing delivery system, private housing delivery. Also, Vanhuysse (2015) in a comparative study on housing delivery in United Kingdom, Netherlands and Germany, it was discovered by the scholar that the housing delivery system in the United Kingdom Skewed towards the market system, that of the Netherland is more of Public driven and that of Germany is more hybrid.

In contrary, Al Shareem et.al (2014) established consideration for slums and squatter settlement in the housing delivery system in Yemen. This position was reiterated by Makinde (2014) who recommended that recognition should be given to informal settlement which account for majority of land available for housing. The scholar also suggested an integrated housing delivery strategy that will adopt public-private housing delivery strategy.

Summarily, housing production models depend on the nature of imbalance in the housing market. Olsen (2003) buttressed the need for subsidy in the housing production model in United State of America. Vanhuysse (2015) buttressed the need for reconstructing the existing housing stocks in Europe. Housing production is a function of the relationship between housing demand and housing supply. Housing supply respond to the attribute and nature of housing demand in the property market.

Housing delivery in the study area conform with the assertion of Drakakis-Smith (2012) who posited that housing delivery in developing nations are through the public sector, private sector which are categorized as conventional housing delivery system and hybrid which is combination of private and public sector. Also, in comprises of the non-conventional housing delivery system which are predominantly common in slums and squatter settlements. Houses are being delivered by the government, private developers, and combination of the two through public private partnership and through the informal sector.

Elements of Land Administration

The three major evolution sources (taxation, ownership and use) of land administration metamorphosed into the modern-day land administration system that focused on broader land administration infrastructures that has capacity to support economic development, environmental management and social stability (Williamson, 2001). One of the major earliest thought on modern land administration system was the viewpoint of Dale and McLaughlin (1999) that defined land administration as the process of regulating land and property development and the use of and conversion of land; the gathering of revenues from the land through the sales, leasing and taxation; and the resolving of conflicts concerning the ownership (interest in land) and use of land'. Three key attributes of land administration were identified in the definition, these are: ownership, value and use.

The earliest viewpoint builds upon the position of Williamson et. al (2010) who defined land administration as the process run by the government using the public and private agencies to administer or manage land tenure, land value, land use and land development. The study described the components of land administration as functions. The study defined these functions further as follows; land tenure (land right, registration of title), land value (the collection of revenue on land by government through sales, leasing and taxation, ground rent, stamp duty, and compensation in the event of compulsory acquisition), land use (regulations, zoning and control), land development (implementing land use through the development of infrastructure). In the study area, land taxes, charges and duties have been unified. Also, land tenure in the study area is leasehold interest and land use has to do with physical planning while land development has to do with development control.

Land administration can be defined as government coordinated effort in executing the following functions; land tenure, land value, land use and land development. The execution of these functions can also include the input of private sector or consultants. The ultimate aim of land administration is to increase land accessibility in order to foster sustainable development. These roles have different influence on development including housing. It is imperative to discuss the impact of each of the roles on housing delivery.

Enemark (2005) depicted a modern land administration framework using a Land Management Paradigm. The scholar established the four functions of land administration as land value, land use, land tenure and land development. The study also depicted land policy and land information management as necessary input for the execution of the land administration functions. Execution of these land administration functions varies from one jurisdiction to another due to country context.
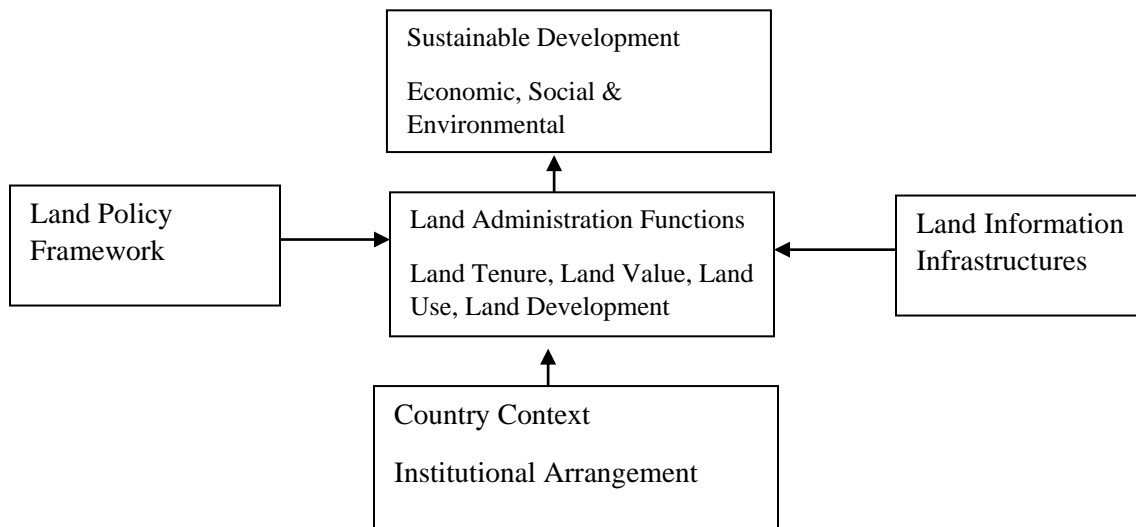
Figure 2: Land Management Paradigm
Source: Enemark (2005)

Empirical Studies on Impact of Land Administration and Land Accessibility on Housing Delivery

Different studies have been conducted on the impact of land administration on housing delivery. These studies focused on impact of different functions of land administration on housing delivery. However, there is an empirical study that examined all the functions of land administration and housing delivery.

Kwame and Antwi (2004) examined the impact of land delivery and finance on the supply of residential properties in three Ghanaian cities of Accra, Tema and Kumasi. The study populations for the study are the property developers, mortgage banks and the department of government in charge of land delivery. Questionnaires and interview were adopted in data gathering and the data gathered were analyzed using descriptive statistics, graphs and charts. Findings from the study revealed that the land delivery system is a hindrance to housing delivery in the study area. These hindrances are associated with problems of land market which are the following: double sales by customary owners, problem of registration and documentation, non-existence of reliable database, general lack of registered documents, delay in settling land disputes, government intrusion, lack of clarity of title, unresolved titles disputes. The study revealed that there is growth in the informal land delivery sector despite the land nationalization policy in Ghana. The study focused on the impact of the land delivery system through the land market without considering the land administration system which has an impact on the land market (Sivam, 2002).

Rakoodi (2005) examined land accessibility for housing development in six African cities in different countries; the study traced the history of land accessibility for housing production in those countries and it was revealed that those countries implemented land policies and administration in the 70's and the policies are ill-informed and ineffective because the citizens were not carried along in implementing those policies. The study concluded that the established land administration institutions are ineffective, therefore, leading to growth in the informal land delivery sector.

Cheshire (2006) examined the impact of land use planning on housing supply and housing price. The scholar was able to establish through the use of graphs and economical models that land use planning restrict land supply in China and land supply consequently reduce lands available for housing development which will consequently increase land price and housing rent. The study was corroborated by Hin Li, Wong and Cheung (2015) who conducted similar study in Hong Kong. The scholars examined the impact of a land use policy on housing market. The study revealed that the government of Hong Kong changed the model of housing supply from a supply-oriented model to a demand-oriented model which created a restriction in land supply and the restriction consequently increase the land price and the rent.

Faizah Ahmad and Wan Noraziyati (2009) examined the land use planning factors affecting property development in Malaysia. The scholars examined the impact of development control and planning approval on property development. Data for the study were gathered through questionnaires administered to private property developers and interviewing of planning officers in both the national and local government offices in Kuala Lumpur, Malaysia. Statistical tools like factor analysis, bar chart and frequency tables were employed for analysis. Findings from the study revealed that land use planning affect property development in the following ways: location, quantity, intensity and production cost. The study concluded that the findings support existing theory that town planning system affects property development in terms of housing location, quantity, house types and price as highlighted by Evans (2004) and Cheshire and Sheppard (2005). The study examined two aspects of land administration which are; land use and land development.

Bichi (2010) examined land accessibility and implications for housing development in Kano Metropolis, Nigeria. The study examined the various sources individual access land for housing development in the study area. Data for the study was gathered through structured questionnaires and semi-structured interview. Findings from the study revealed that over 50% of the respondents acquired land from the land market and 31% acquired land through government land allocation. The remaining acquired land through inheritance and family. The study was able to establish that majority of those that acquired lands through the land markets are not aware of the government land allocation or avoiding the problem of the formal land allocation. The study did not examine the land administration system in the study area.

Oni and Ajayi (2011) examined the effect of the land use charge law introduced in Lagos state, Nigeria on housing delivery in the study area. Questionnaires were administered to Estate Surveyors and Valuers practicing in the study area on the impact of the law on housing delivery. Also, inference method was adopted in deducing the effect of the policy. The study revealed that the formular for calculating the new property tax is in appropriate and the basis of the calculation which is capital value is not ideal. The study revealed further that the new property law will lead to high property tax rate which will discourage investment in new housing and maintenance of existing stock. The study recommended that the property law should be reviewed and in addition suggested an appropriate basis of fair and equitable tax.

Agunbiade (2012) conducted a study on the level of integration of the various agencies of the government charges with land administration functions for housing production. The study was a comparative study conducted in Lagos, Nigeria and Victoria, Australia. Data were gathered through questionnaires and interview. Social network analysis was adopted for assessment of the level of integration of land administration for easy housing delivery. The study revealed that the level of integration of land administration functions for housing delivery is low. It was revealed that land administration functions are a bit integrated in Victoria, Australia. However, the various agencies of government charged with land administration execute their functions in isolation, thereby, affecting housing delivery negatively. The study recommended an integrated framework for all the agencies of government involved in land administration.

Kuma and Ighalo (2015) the study accessed the effect of adequate access to land and development control on urban housing delivery in the middle belt of Nigeria. The study used both primary and secondary data obtained through questionnaire and certified secondary sources. The analysis was made by correlation coefficient, descriptive methods, Pearson's chi-square test and ANOVA. Findings reveal that the government has not been able to deliver adequate land for housing development as only 47.43% of the total demand was supplied. The study revealed further that a larger percentage of urban populace rely on informal land for housing. It also revealed that most of the developments do not conform to planning regulations. The study examined land accessibility and development approval in the study area. The study recommended trimmed bureaucracy in land administrative mechanism for ease of land distribution, accessibility and development.

Gbadegesin, Heijden and Boelhouwer (2016) examined the impact of land accessibility on housing delivery in Lagos, Nigeria. The study established that literatures on housing delivery identified land accessibility as a major hindrance to housing delivery. The study posited further that all the studies on impact of land accessibility on housing delivery are not empirical. Four factors of land accessibility were adopted for examination of housing delivery in the study area. Data were gathered through a validated survey questionnaires and interview in the study area. Data gathered were analyzed using descriptive and inferential statistics (t-test, relative importance index RII and correlation statistics). The four adopted factors are; land affordability, land availability, ease of transaction, and security of tenure. Findings from the study reveal that tenure security is the major land accessibility factor in the study area and the least factor is land availability. Also, it was revealed that each identified factor influences one another in a different dimension in providing for urban housing. The study recommended efficient land administration or governance that will improve land accessibility. The gap in the study is that it did not examine the land administration system that determines the influence of the land accessibility factors on housing delivery.

METHODOLOGY

Quantitative method of research was adopted due to the nature of data gathered, nature of the study and the respondents. The study population for this study is the members of the Real Estate Developers Association of Nigeria (REDAN) in Lagos. There are 1400 members of this association in Lagos according to the online directory of the association. Systematic random sampling technique which was a probability sampling technique was employed.

Sampling Technique and Sample Size

Primary data for the study were collected through field survey using systematic sampling technique. This technique involves selection of private property developers from the study population. It is a probability sampling method that gives all members of a sample population chance of participating in the study. In the sampling technique, progression through the list is treated circularly, with return to the top once the end of the list is passed. The sampling starts by selection of an element from the list at random and then every K^{th} element in the frame is selected, where K is the sample interval. The justification for the adoption of systematic sampling technique is based on the premise that all the members of the study population shared the same characteristics of being a private real estate developer. The sample size is calculated as follows;

$$K = \frac{N}{n}$$

Where N is the population size and n is the sample size

According to the directory of REDAN, the population size of all members of REDAN in Nigeria is 2000. 70% of these population sizes are members of the association have presence in Lagos. Population size of REDAN members in Lagos is 1,400. Sample size for Lagos will be determined quantitatively using Frankfort-Nachmias (1996) as Cited by Iroham (2012) as model for sample size determination as follows:

$$n = \frac{Z^2pqN}{e^2(N-1) + Z^2pq}$$

Where N = population size

p = sample population estimated to have characteristics being measured (In this study, 95% confidence level of target population)

q = 1 – p

e = Acceptable error

Z = 1.96 (The standard normal deviation at 95% confidence level)

N = 1400

p = 70% or 0.7 that each sample have characteristics being measured

q = 1 – 0.7 (0.3)

e = 0.05

$$n = \frac{1.96 * 0.7 * 0.3 * 1400}{0.05^2 * (1400 - 1) + 1.96(0.7 * 0.3)}$$

$$n = 147$$

Substitute n in $K = \dfrac{N}{n}$

$K = \dfrac{1400}{147}$

K = 9.5 approximately 10

Based on the calculation above, every 10th sample on the list of the study population in Lagos was considered.

Every 10th member of the REDAN was considered which give a sample size of 140. Data were gathered through structured questionnaires administered to the REDAN members. Out of the 140 questionnaires administered to the respondents, 120 questionnaires were returned are good for analysis. The return rate of the administered questionnaires is 85.7%. Data gathered were analyzed using descriptive statistics, tables, chart and Mean.

Study Area

Lagos is the former capital of Nigeria till 1991 and it is described as the commercial capital of Nigeria due to the high enterprising nature of the mega metropolis. Lagos is situated between coordinates 6˚21'N and 3˚01'E, 3˚ 27'E with a population of 13, 23,000 according to the record of Nigeria Bureau of Statistics (2017). Lagos is in the Southwestern part of Nigeria, and on the Northern and Eastern side is Ogun State. On the Southern and Western side is Cotonu, Benin Republic. Lagos land mass is made up of four major islands and dry land which is adjacent part of Nigerian mainland. Lagos is highly enterprising with the presence of major business ventures. Also, presence of Sea port and airport also contribute to the

vast commercial nature of the city. 70% of the Real Estate Developers in Nigeria have their presence in Lagos due to high demand for housing units and the enterprising nature of the city.

RESULTS AND DISCUSSION

Table 1: Relative Impact of Land Title Registration (Land Tenure) on Private Housing Delivery

Impact	Mean	Rank
Reduction in Quantity Produced	3.85	1st
Delay in time of housing production	3.50	2nd
Increase rental value	3.20	3rd
Increase Cost of Housing production	3.15	4th
Influence property location	2.81	5th
Increase Sale Value	2.45	6th
Intensity of development	2.35	7th
Change in property design	2.10	8th

Source: Field Survey, 2018

From table 1 above, reduction in quantity produced ranked first as the impact of land tenure on private housing delivery in Lagos with a mean of 3.85, delay in time of housing production ranked second with a mean of 3.50, increase in rental value ranked third with a mean of 3.20, increase in cost of housing production ranked fourth with a mean of 3.15, influencing location ranked fifth with a mean of 2.81, increase housing sale value ranked sixth with a mean of 2.45, affect intensity of development ranked seventh with a mean of 2.35, and change in property design ranked eight with a mean of 2.10. It can be inferred from table 1 above that land title registration reduces the quantity of private houses delivered into the property market, which consequently lead to low private housing supply which can also translate into high housing price due to low housing supply. This is as a result of the fact that reduction in quantity of private houses produced is the most prominent impact of land title registration on private housing delivery.

Table 2: Relative Impact of Land Use Planning on Private Housing Delivery

Impact	Mean	Rank
Delay in time of housing production	4.05	1st
Change in property design	3.85	2nd
Influence location	3.50	3rd
Increase rental value	2.90	4th
Affect intensity of development	2.67	5th
Increase cost of production	2.55	6th
Increase sale value	2.47	7th
Reduction in quantity produced	2.25	8th

Source: Field survey, 2018

From table 2 above, delay in time of housing production ranked first as the impact of land use planning on private housing delivery in Lagos with a mean of 4.05, change in property design ranked second with a mean of 3.85, influencing property location ranked third with a mean of 3.50, increase in rental value ranked fourth with a mean of 2.90, affect intensity of development ranked fifth with a mean of 2.67, increase in cost of production ranked sixth with a mean of 2.55, increase in sale value ranked seventh with a mean of 2.47 and reduction in quantity produced ranked eight with a mean of 2.25. It can be inferred from table 2 above that land use planning delay housing production and the delay will consequently affect housing supply to the property market. This is due to the fact that delay in housing production is the most prominent impact of land use planning on private housing delivery.

Table 3: Relative Impact of Land Taxation/charges (Land Use Charge) on private housing delivery

Impact	Mean	Rank
Influence location of property	4.05	1st
Increase cost of production	3.60	2nd
Increase rental value	3.50	3rd
Increase sale value	2.67	4th
Affect intensity of development	2.63	5th
Change in property design	2.25	6th
Reduction in quantity produced	2.20	7th
Delay in time of housing delivery	2.10	8th

Source: Field survey, 2018

From table 3 above, influence on location of property ranked first as the impact of land taxation/charges on private housing delivery in Lagos with a mean of 4.05, increase cost of production ranked second with a mean of 3.60, increase rental value ranked third with a mean of 3.50, increase sale value ranked fourth with a mean of 2.67, effect on intensity of development ranked fifth with a mean of 2.63, change in property design ranked sixth with a mean of 2.25, reduction in quantity produced ranked seventh with a mean of 2.20 and delay in time of housing delivery ranked eight with a mean of 2.10. It can be inferred from table 3 above that land taxation influence property location. Land tax evasion can be attributed to this because; developers will prefer to develop in locations with low land tax. This is due to the fact that influencing of property location is the most prominent impact of land taxation on private housing delivery.

Table 4: Relative Impact of Development Control on private housing delivery

Impact	Mean	Rank
Delay in time of housing delivery	3.85	1st
Affect intensity of development	3.20	2nd
Increase sale value	3.20	2rd
Increase cost of production	2.93	3rd
Change property design	2.47	4th
Reduction in quantity produced	2.27	5th
Influence location of property	2.10	6th
Increase rental value	2.10	6th

Source: Field survey, 2018

From table 4 above, delay in time of housing delivery ranked first as the impact of development control on private housing delivery in Lagos with a mean of 3.85, effect on intensity of development and increase in sale value ranked second respectively with a mean of 3.20. Increase cost of production ranked third with a mean of 2.93, change in property design ranked fourth with a mean of 2.47, reduction in quantity produced ranked fifth with a mean of 2.27, influence of location of property ranked sixth with a mean of 2.10. Also, increase in rental value ranked sixth with a mean of 2.10. It can be inferred from table 4 above that development control delay housing delivery which will consequently have a negative effect on housing supply and consequently lead to high housing price.

Table 5: Relative Impact of Land administration on Private Housing Delivery in Lagos

Impact	Mean	Rank
Delay in time of housing production	3.38	1st
Influence property location	3.12	2nd
Increase cost of housing production	3.06	3rd
Increase in rental value	2.93	4th
Affect intensity of housing development	2.71	5th
Increase Sale Value	2.70	6th
Change in property design	2.67	7th
Reduction in quantity produced	2.64	8th

Source: Field survey, 2018

Table 5 above indicated the relative impact of land administration that is land tenure, land use, land development and land value on private housing delivery. In Lagos, delaying in time of housing delivery is the most prominent impact of development control on private housing delivery with a mean of 3.38. Influence property location ranked second with a mean of 3.12, increase cost of housing production ranked third with a mean of 3.06. Increase in rental value ranked fourth with a mean of 2.93, affect intensity of housing development ranked fifth with a mean of 2.71, increase sale value ranked sixth with a mean of 2.70, change in property design ranked seventh with a mean of 2.67 and reduction in quantity produced ranked eighth with a mean of 2.64. It can be inferred from table 5 that the overall impact of land administration on private housing delivery is delay in housing production. This will consequently reduce private housing supply, and consequently lead to high housing price.

Table 6: Relative Prevalence of Land administration Problems in Lagos

Problems	Mean	Rank
Absence of computerized land administration system	4.25	1st
Duplication of roles	4.10	2nd
Absence of land administration data base	4.05	3rd
Corruption	4.05	3rd
Inability to share data	3.90	4th
Involvement of many departments	3.70	5th
High Cost of executing land administration	3.50	6th
Bureaucracy	3.15	7th
Lack of equipment	2.80	8th
Incompetence of land administration staff	2.45	9th
Delay in execution of land administration functions	2.25	10th
Involvement of many levels of government	2.15	11th

Source: Field Survey, 2018

From table 6 above, absence of computerized land administration ranked first in Lagos, duplication of roles among land administration agencies ranked second, absence of land administration data base and corruption ranked third, inability to share data ranked fourth, involvement of many departments ranked fifth, high cost of executing land administration ranked sixth, bureaucracy ranked seventh, lack of equipment ranked eight, incompetence of land administration staff ranked ninth, delay in execution of land administration functions ranked tenth and involvement of many levels of government ranked eleventh. Absence of computerized land administration system can be attributed to the cause of delay in private housing production in the study area.

Hypothesis

Null Hypothesis: There is no significant impact of land administration on private housing delivery in the study area

Alternative Hypothesis: There is significant impact of land administration on private housing delivery in the study area

In arriving at the hypothesis testing, the multiple regression model on private housing delivery has been developed as follows;

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon$$

where;

y	$=$	Dependent Variable (Private Housing Delivery)
β_0	$=$	Intercept/Constant
$\beta_1...\beta_5$	$=$	Slope Parameters
x_1	$=$	Predictor 1 (Skill and Capacity Building)
x_2	$=$	Predictor 2 (Funding)
x_3	$=$	Predictor 3 (Legal and Regulatory Framework)
x_4	$=$	Predictor 4 (Land Administration)
x_5	$=$	Predictor 5 (Building Material and Construction Technology)
ε	$=$	Error Term

Table 7: Multiple Regression Showing Impact of Housing Delivery Variables on Private Housing Delivery

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.257	.204		-1.264	.208
	Skill and Capacity Building	.019	.047	.020	.413	.006
	Funding	.374	.088	.308	4.250	.000
	Legal and regulatory framework	.169	.081	.173	2.082	.039
	Land administration	.201	.060	.169	-3.338	.001
	Building material and construction technology	.505	.074	.548	6.822	.000

Table 7 reveal impact of independent variables (skill and capacity building, funding, legal and regulatory framework, land administration and building material and construction technology) on dependent variable (private housing delivery). The multiple regressions reveal that land administration has significant impact on private housing delivery in the study area. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted. The study revealed that 20.1% of changes in private housing delivery can be attributed to land administration. The table also reveals the impact of other housing delivery variables.

Table 8: Test of statistical significance

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	165.979	5	33.196	148.170	.000[b]
	Residual	30.021	134	.224		
	Total	196.000	139			

The sum of squares regression (165.979) is greater than sums of squares residual (30.021) which implied that the model explained more of the variation in MS. F statistic value of 0.000 is less than 0.05, which implied that the explanation of the variation is not as a result of probability.

CONCLUSION

This study is the first study that examined the impact of the four functions of land administration on housing delivery and the four land administration functions have different impact on housing delivery. The study also established that land administration has a significant impact on private housing delivery in the study. The summary of the impact of these land administration functions on private housing delivery is that it reduces quantity of houses delivered and cause delay in housing production in the study area. The study also revealed that land administration in the study area is characterized with some challenges. It was established that these problems affect the execution of the land administration functions. It is imperative to address the problem of land administration so as to facilitate increase in housing delivery.

RECCOMENDATIONS

From the study it can be deduced that the most prominent impact of land title registration is reduction in quantity of housing delivery. It is imperative for government to make the land title registration process easy, less bureaucratic and automated. From the study, it was revealed that the impact of land use planning on private housing delivery in the study area is delay in time of housing delivery. The land use planning process should be quickened and the bureaucracy that surrounds it should be removed. Also, land tax should be progressive and not regressive. The appropriate basis of land taxation should also be adopted when assessing property for tax. The development control like the land use planning should be made less bureaucratic, spontaneous and fair. Development control should not be used as a political tool.

All the land administration system in the study area should be computerized. This will give room for data sharing among the departments of government in charge of the land tenure, land use, land development and land value. It will also provide an avenue for land administration data storage. Duplication of roles which eventually creates high bureaucracy among the land administration agencies should be streamlined. Also, measures should be put in place to reduce corruption in the land administration system in the study area.

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