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ASSESSING THE DETERMINANTS OF EFFECTIVE LAND MANAGEMENT IN REAL ESTATE PROJECT IMPLEMENTATION

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Abstract
This study focused on investigating the factors affecting effective land management in real estate project implementation in Asaba, Delta state. The objective was to identify and analyze the key land management factors that affect real estate implementation in order to determine the most critical and significant constraining factors to real estate projects implementation in Asaba, Delta state. Descriptive survey method was used in the study. In order to realize the aim of the study, a survey of 4 housing estates located in different parts of Asaba were used as sample base for the study. 120 questionnaires were designed and administered to professionals in real estate projects. Data collected were analyzed using Descriptive statistics, Multiple Regression analysis model and Relative Importance Index. The results revealed that the real estate projects surveyed recorded 55.69% performance level. Results of multiple regression analysis showed that the identified land management factors significantly affected real estate project implementation in Delta state. The RII and the t-test results revealed that factors relating to Land Registration, Uncoordinated Land Policies and Site Management have the highest-ranking effect on the performance of real estate projects in Asaba. The study recommends among others, the prompt and affordable land registration with favourable land policies and proper management of real estate sites in order to avoid conflict and court litigation which hampers the successful implementation of real estate projects in Delta state, Nigeria.

Keywords: *Land management, Real-Estate, Projects, Delta State, Land Policies, Project Implementation.*

Introduction

In Nigeria, several factors influence the success of real estate project implementation, with effective land management being a crucial element. Poor land management has significant implications on various aspects of project implementation, including project timelines, cost control, quality of work, materials management, and the allocation of human resources (Akinbode
& Osagie, 2022; Ojor, 2025). These factors directly affect the success or failure of real estate developments. The role of land management extends beyond site analysis to encompass legal and administrative processes, such as land registration, surveying, and project approval by certified professionals like architects, quantity surveyors, and land surveyors. Each of these steps has cost implications that affect the overall project budget and timeline (Olowu &Ajayi, 2023). Managing the involvement of stakeholders such

as land speculators and government agencies is also crucial to ensuring timely and cost-effective project execution.

The city of Asaba, the capital of Delta State, has experienced rapid urbanization due to its status as a political and administrative hub. This growth has spurred real estate development in satellite towns such as Agbor, Okpanam, and Ogwashi-Uku, as well as nearby cities like Kwale, Warri and Sapele (Ezeh & Nweke, 2023). However, the rising demand for land has created challenges related to land availability, speculation, and land use planning. These challenges underscore the need for robust land management practices to ensure the successful implementation of real estate projects in the region.

Effective land management, which includes regulating land speculation and ensuring proper documentation, plays a vital role in determining the success of real estate projects. The lack of these measures has been a contributing factor to the high rate of project failure and abandonment in Nigeria (Nwachukwu, 2016; Ojor, 2025). Therefore, this study seeks to investigate the factors affecting effective land management in real estate project implementation in Asaba, Delta State.

Problem statement

The rapid population growth in Asaba has led to the expansion of various satellite towns, including Agbor, Kwale, Ogwashi-Uku, Okpanam, Abraka, and several smaller settlements. This urban sprawl has placed significant pressure on real estate development within the region. A pre-survey of real estate projects indicates a performance level of only 45.69% in their implementation, which is insufficient to meet the city's growing developmental objectives.

Land management issues have become a major challenge in Asaba, with extortion of land development agencies causing mistrust among real estate developers and slowing economic growth in Delta State. Studies by Ojor (2025), identify poor land management as a key obstacle to successful real estate projects in Nigeria, and Asaba faces similar difficulties. Despite efforts from the Delta State Government and stakeholders, little progress has been made in addressing these issues, especially in the face of rapid population growth which gave rise to an urgent need to identify the factors effectively affecting property development growth rate in Asaba and seek for solution that could reduce or eliminate the challenging factors. Despite the considerable body of research on real estate development and land management issues in Nigeria, there has been limited focus on the specific factors affecting land management in real estate project implementation within the context of Asaba, Delta State. Consequently, this research is prompted by the need to fill this gap and investigate the land management factors that directly influence the success of real estate projects in Asaba. The aim of the study is to investigate the factors influencing effective land management in real-estate project implementation with the following objectives.

Literature review

Land management encompasses a wide array of processes, policies, and practices designed to ensure the effective and sustainable use of land resources. It integrates various activities; including land use planning, land tenure systems, land registration, and the enforcement of land-related policies. The primary goal of

effective land management is to optimize land use while promoting social equity and environmental sustainability (FAO, 2002).

In a real estate context, land management is crucial in determining how land can be acquired, developed, and utilized for various purposes, including residential, commercial, and industrial projects. Effective land management strategies can facilitate the seamless transition from land acquisition to project implementation, ensuring that developers can navigate the complexities of land use regulations and community needs.

Importance of land management

Sustainable land management practices are vital for balancing economic development with environmental conservation. By implementing sustainable practices, land managers can help prevent land degradation, loss of biodiversity, and pollution, thereby ensuring that land remains productive for future generations (Ojor, 2025; Reed et al., 2015).

Land management also plays a key role in promoting social equity by ensuring that all members of society have access to land resources. This includes the fair distribution of land, protection of land rights, and engagement of local communities in land use decisions (Ribot & Peluso, 2003). Well-managed land resources contribute to economic growth by enhancing the productivity of agricultural lands, promoting real estate development, and attracting investments. Effective land management can increase property values and stimulate local economies by creating jobs and supporting infrastructure development (World Bank, 2009).

Land acquisition

Land acquisition is a fundamental component of real estate development that involves obtaining the legal rights to use land for designated purposes, such as residential, commercial, or industrial projects. The process of land acquisition can vary considerably based on the legal frameworks, policies, and practices established within a particular region or jurisdiction (Deininger et al., 2010). Understanding the intricacies of land acquisition is essential for stakeholders in the real estate sector, as the success of their projects often depends on their ability to navigate this complex process.

Importance of Land acquisition Legal Rights and Security

Acquiring land legally ensures that developers have secure rights to the property, allowing them to plan and execute projects without the fear of potential legal disputes. This security is crucial for attracting investment, as investors are more likely to commit resources when they are assured of their rights (World Bank, 2010).

Economic Development

Effective land acquisition contributes to economic growth by facilitating the development of infrastructure and housing. By ensuring that land is available for development, communities can benefit from increased job opportunities, enhanced services, and improved living conditions (Ojor, 2025).

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Urban Planning

Land acquisition is integral to urban planning efforts, enabling the implementation of zoning regulations and development plans. Proper acquisition processes help to ensure that land is used efficiently and in accordance with community needs and aspirations (Cohen & McGreal, 2011).

Best Practices for Effective Land Acquisition

To mitigate challenges associated with land acquisition and foster successful real estate development, several best practices can be employed:

Transparency: Implementing transparent processes for land acquisition can help build trust among stakeholders. Clear communication regarding procedures, compensation policies, and land use plans can alleviate concerns and reduce disputes (FAO, 2002).

Community Engagement: Engaging with local communities during the land acquisition process can foster cooperation and understanding. Involving stakeholders in decision-making can lead to better outcomes and enhance the social acceptability of development projects (Adeleke et al., 2017).

Efficient Processes: Streamlining bureaucratic procedures can significantly reduce delays in land acquisition. Simplifying approval processes and leveraging technology can enhance efficiency, ensuring timely project implementation (Kumar, 2017).

Fair Compensation Policies: Establishing fair and adequate compensation policies for landowners can minimize resistance and conflicts. Ensuring that compensation is transparent and reflective of market values can foster goodwill and facilitate smoother acquisitions (Zevenbergen et al., 2016). Thus, land acquisition is a critical factor in the success of real estate development, influencing how projects are planned and executed. Understanding the challenges associated with the acquisition process and implementing best practices can enhance the efficiency and effectiveness of land acquisition efforts. By fostering transparency, community engagement, and fair compensation, stakeholders can navigate the complexities of land acquisition, ultimately contributing to the successful implementation of real estate projects.

Land registration

Land registration refers to the formal recording of land rights and ownership with the relevant governmental authority, establishing a legal framework that recognizes and protects property right. This process is a critical element of effective land management, as it provides security of tenure and facilitates property transactions, thereby reducing the risk of disputes between landowners, developers, and other stakeholders (Khalifa, 2013). A robust land registration system is essential for fostering real estate development, as it creates a clear and transparent framework for land ownership, eases access to financing for developers, and ultimately contributes to sustainable economic growth.

Importance of land registration

Legal Recognition and Security: Land registration provides legal recognition of land ownership, which is essential for establishing secure property rights. This security is vital for encouraging investment in real

estate, as investors and developers are more likely to commit resources when they can verify ownership and tenure (Burgess et al., 2011).

Facilitation of Transactions: A well-functioning land registration system simplifies property transactions by providing reliable and up-to-date information on land ownership and boundaries. This transparency helps to expedite sales, leases, and other transactions, fostering a more dynamic real estate market (Adams et al., 2002).

Access to Financing: Land registration enhances access to financing for developers by enabling them to use their registered land as collateral for loans. Financial institutions are more willing to lend to developers who can demonstrate clear ownership of the land, reducing the risks associated with lending (Deininger, 2003).

Conflict Reduction: By clearly defining property boundaries and ownership rights, land registration helps to reduce disputes and conflicts over land. This stability is crucial for fostering an environment conducive to real estate development and investment (Hassan et al., 2016).

Best practices for effective land registration

To enhance the effectiveness of land registration systems and address existing challenges, several best practices can be implemented:

Modernization of Systems: Governments should invest in modernizing land registration systems by adopting digital technologies that streamline processes and improve record-keeping. Implementing Geographic Information Systems (GIS) can enhance the accuracy and efficiency of land management (Deininger et al., 2010).

Public Awareness Campaigns: Initiating public awareness campaigns to educate landowners about the importance of land registration and the benefits of securing their property rights can increase registration rates. These campaigns should be tailored to the specific needs and circumstances of local communities (Hassan et al., 2016).

Anti-Corruption Measures: Implementing anti-corruption measures within land registration agencies is essential for restoring public trust and ensuring fair practices. Transparency initiatives, such as open data platforms and public reporting of registration processes, can help reduce corruption (Mayo & Ramesh, 2013).

Streamlining Administrative Processes: Simplifying and streamlining administrative processes related to land registration can significantly reduce delays. Establishing clear guidelines and timelines for processing applications can improve efficiency and make the system more userfriendly for landowners and developers (Rana, 2015). Land registration is a crucial component of effective land management, providing legal recognition and security of land tenure that facilitates real estate development. Despite challenges such as outdated systems, public awareness deficits, and corruption, implementing best practices can significantly enhance the efficiency and effectiveness of land registration processes. By modernizing

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systems, increasing public awareness, and addressing corruption, stakeholders can foster a more conducive environment for real estate investment and development.

Methodology

Data were gathered from both primary and secondary sources. Questionnaire and personal interviews were the sources of primary data. Secondary data were obtained from documented project files, library and the internet. The data collected include: location of real estate projects, types of building project, proposed number of housing units, completed number of housing units and number of housing units not completed. The secondary data obtained is presented in table 1. The objective is to determine the effect of the identified land management factors in real estate project implementation that have hindered the realization of the project objectives.

Descriptive survey design and case study were used for this research work. This was considered necessary because the method helped the researcher to determine and measure the key land management challenges in real estate project implementation so that project stakeholders can carry out effective decisions in managing them for an enhanced project performance. In addition to this, responses were solicited from the stakeholders in real estate projects whose contributions also helped to quantitatively determine the implications of the key challenges. This was achieved with the help of a well-structured questionnaire designed using Likert's five-point scale.

The totality of elements under study is called the population (Francis, 1988). Hence, the population for this study covers all real estate stakeholders in Asaba, Delta State. However, a targeted 171 participants were considered as the population for this study. In addition to this, four development estates that have suffered several delayed and poor performance were examined to evaluate the possible causes of their performance. Real estate project stakeholders (Architects, Building Engineers, Estate Valuers, Quantity Surveyors, Project Managers and Contractors) formed the respondents to this study. The regulatory agency who participated in the monitoring and evaluation of building projects were also surveyed.

A non-probability sampling method was used to select the sample for the study. For the purpose of this study, the type of the non-probability sampling used is judgment sampling. According to Oyeka (1996), a judgment sample is a sample whose elementary units are chosen according to discretion of an expert who is familiar with the relevant characteristics of the population. The sample size for this study was determined using the Yaro Yemane method (Slovin's Formula) as expressed below:

$$n = \frac{N}{1+N(e)^2} \quad (1)$$

Where:

N: is the population size, taken as 171 **e:** margin on error, taken as 5% or 0.05

Applying the above formula in determining the sample size for this study, the result came to a sample size of 120 participants' estimates.

Validity refers to how well a test measures what it is purported to measure. It examines whether the researcher has collected correct data and used correct methods in the study with the ambition to reflect what happened in the reality. Construct validity was employed in this research. Construct validity refers to establishing correct operational measures for the concept being studied, and this was done in two ways: First, this study utilized multiple sources of evidence to increase construct validity. Secondly, the research instrument was sent to a panel of experts familiar with the constructs to be measured to independently examine and validate the questionnaire constructs. Their response confirms the validity of the instrument both in content and framing.

This research study used a test-retest reliability technique to determine the reliability of the data sources. Using this reliability technique, the same test was administered to twenty (30) respondents comprising Civil-engineers, Estate-valuers, Quantity-surveyors and Contractors drawn from Asaba and its environs, who have participated in real estate projects on two different occasions on an interval of one month, to ensure that there was no substantial change in the construct being measured on the two occasions. The correlation between the two measurement occasions is the estimate of reliability. The estimated correlation coefficient of the constructs between the two occasions was determined as 0.861 represents a positive reliability index.

The study made use of both primary and secondary data. The main primary instrument used for the study is a structured questionnaire on land management challenges in real estate projects in Asaba which was designed by the researcher and approved by the supervisor. The questionnaires were structured to solicit responses from respondents about their perceptions of the existence and impact of the land management challenges in real estate project implementation. The questionnaire was designed using Likerts' five-point scale in order to allow the respondents to express their level of agreement or disagreement to the statements made regarding each land management factors in Asaba, Delta state.

In the analysis of the data collected from the survey, Multiple Regression Analysis (MRA) including, descriptive analysis, correlation analysis of MRA, coefficient of determination, t-test and F-test were used. The descriptive analysis provided us with the platform to express the outcome of the performance of the real estate projects surveyed in Delta State for the purpose of realizing the objective of this study. The multiple correlation analysis (r) measures the level of association between the identified land management factors and real estate project implementation in Asaba, Delta State. The coefficient of determination (r^2) determines the level of variation as explained by the identified land management factors in relation to real estate project implementation. The t-test was adopted in testing the individual effect of the land management factors (independent variables) on the real estate project implementation (dependent variable) while the f-test was used in ascertaining the collective effect of the identified land management factors on the performance level of real estate project implementation.

On the other hand, respondents were asked to indicate the extent to which each of the identified land management factors influenced real estate project implementation in Asaba, based on a fivepoint scale

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where: 1-highly insignificant, 2-Insignificant, 3-Neither, 4-Significant and 5-highly significant. In order to empirically ascertain the land management factors in real estate project implementation, an understanding as to the extent to which each factor contribute to poor performance, both by itself and in combination of the other factors, the Relative Importance Index (RII) was employed. According to Johnson and LeBreton (2004), RII aids in finding the contribution a particular variable makes to the prediction of a criterion variable both by itself and in combination with other predictor variables. In the calculation of the Relative Importance Index (RII), the formula below was used:

$$RII = \frac{\sum W}{A \times N} \quad (2)$$

Where:

∑W; Represents summation of the weights given to each statement by the respondents and ranges from 1 to 5; A: Represents the highest integer response from the scale of responses. Here, the value of A equals 5, N; represents the total number of respondents.

Results and discussions

The data were collated from some of the real estate projects surveyed. This is shown in table 1 below.

Table 1: Performance Data of Real Estate Projects

S/N	Location of real estate projects	Type of building projects	Proposed number of housing units	Completed number housing units	Number of housing units not completed
1	Agbor	Residential	171	95	76
2	Ogwashiukwu	Residential	156	79	77
3	Abraka	Residential	306	203	103
4	Obiaroko	Residential	239	120	119

Source: Delta State Ministry of Works, Housing and Urban Development

Table 1 above showed that the numbers of housing units in each of the locations proposed to be completed by the developers were not successfully completed. This situation is not unconnected with the identified land management challenges that have hindered effective real estate project implementation in Asaba. However, further survey proved that part of the remaining land areas for proposed development were under legal issues while others have been sold out to private individuals who carried out private development of the sites, thereby defeating the original plan for establishment of real estates in those areas. The performances of the estates examined are represented in Figure 1 below.

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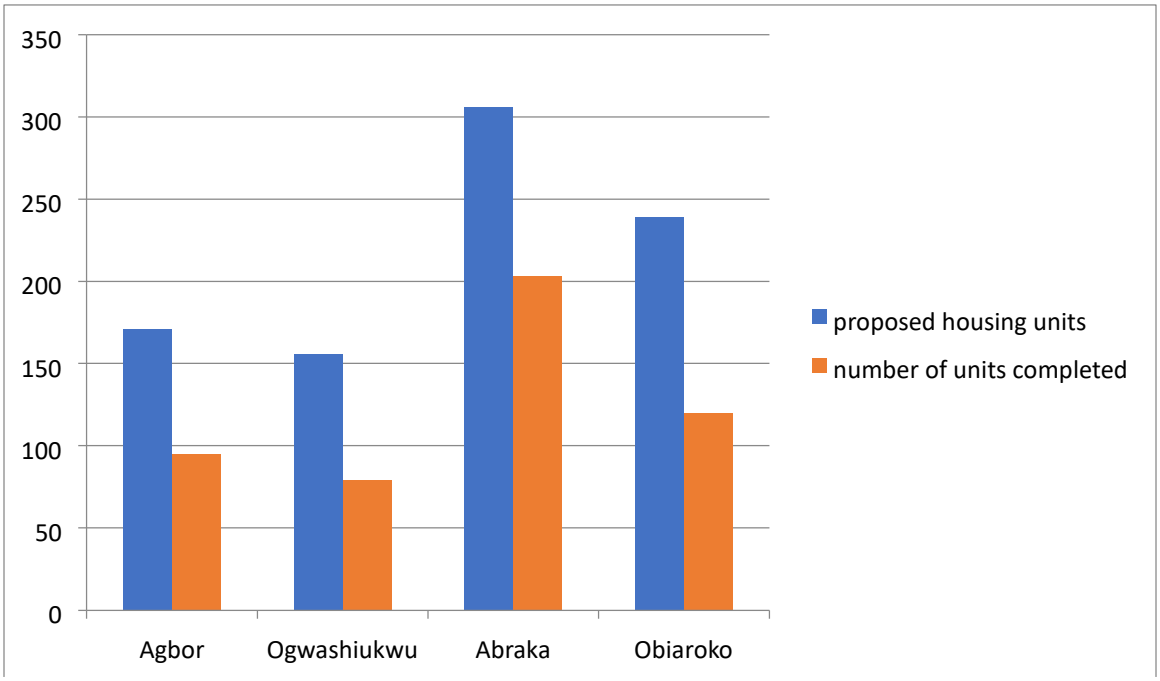

Figure 1: Histogram showing performance of the real estate projects examined

Again, analysis was carried out to show the impact of the performance of the real estate projects examined on the overall project delivery and the results are shown in Table 2 below.

Table 2: Descriptive Analysis of the performance of the real estate projects examined on overall project delivery.

S/N	Location of project	Proposed no of housing units	Completed no of housing units	Percentage completion of the real estate projects
1	Agbor	171	95	55.56%
2	Ogwashiukwu	156	79	50.64%
3	Abraka	306	203	66.34%
4	Obiaroko	239	120	50.21%
	Average Completion Performance			55.69%

The analysis in table 2 above showed that real estate project in Agbor recorded 55.56% completion; Ogwashiukwu had 50.64% completion; Abraka recorded 66.34% completion while the real estate project

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in Obiaroko had 50.21% completion. The overall performance of the projects indicated that the entire projects had an average completion of 55.69% and this does not support the needed developmental objectives.

Investigation through literature review and field study revealed that the factors that contributed to this 55.69% level of performance include: Site Management, Land Registration, Determination of tax payable, Project Appraisal, Determination of funding option, Town and country planning, Uncoordinated policies and implementation, and Corruption level. In other to really ascertain the existence as well as the effects of the identified key land management challenges in real estate project implementation, responses from the distributed questionnaire to real estate project stakeholders were solicited and analyzed.

The demographic data of the respondents were examined. The data evaluated include; the category of respondents, the respondents' level of education and the experience level of the respondents. The aim of this section was to prove that the respondents were professionals, therefore, their responses are reliable and conclusions made represent true and actual facts in the field.

Category of Respondents

The target respondents of 120 professionals included 25 Architects, 20 Building Engineers, 25 Estate Valuers, 20 Quantity Surveyors, 10 Project Managers and 20 Contractors. The figure below shows the percentage of each category to the overall respondents.

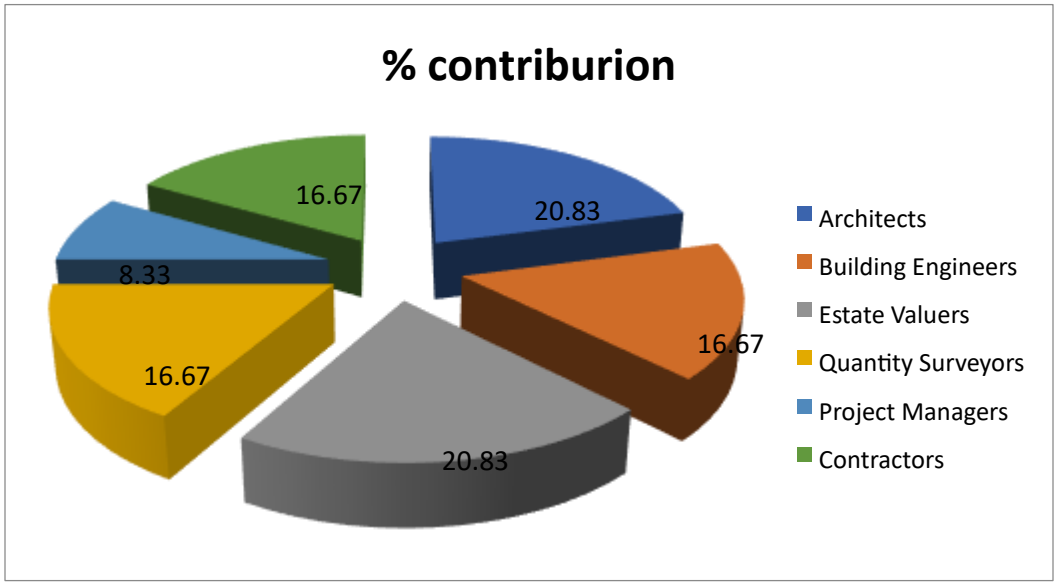

Figure 2: Category of Respondents

Figure 2 above shows that 20.83% of the respondents were Architects, 16.67% represented Building Engineers, Estate Surveyors had 20.83% representation, 16.67% were Quantity Surveyor; 8.33% were Project Manager while 16.67% were Contractors. This means that the respondents have the necessary knowledge in topic of this study to respond to the questionnaire.

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Level of Education

In this section, the highest qualification obtained by the respondents was analyzed to enable us determine the reliability of their responses. The information on this is shown in table 3 below:

Table 3: Level of education of the respondents

Educational Qualification	**Holders of Qualification**
PhD	20
Msc	35
B.Eng/B.Tech	50
HND	10
OND	5
Total	**120**

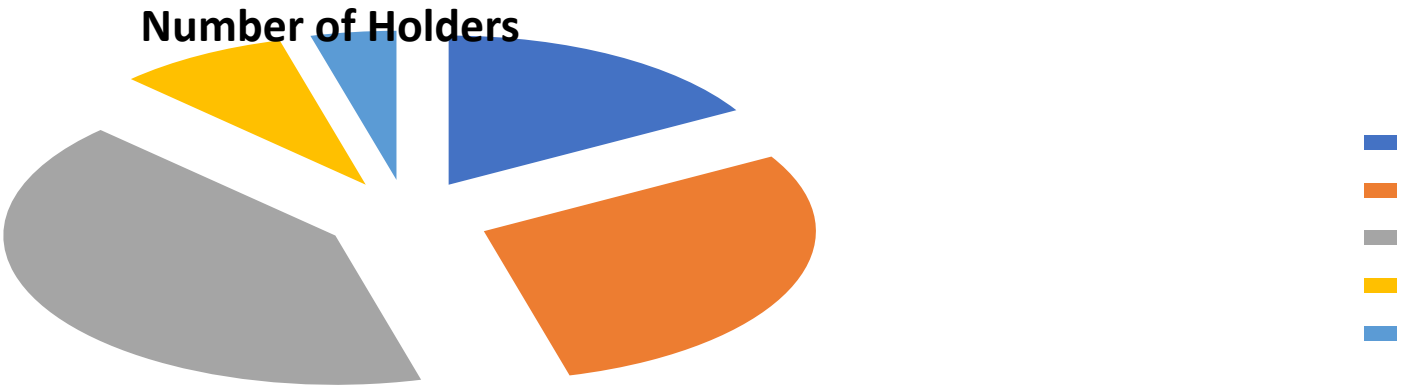

Table 3 above showed that among the academic qualifications, holders of B.Eng/B.Tech have the highest number (50) followed by holders of M.Sc (35), PhD (20), HND (10) and holders of OND were 5 in number. The figure below shows the percentage of each of the categories of qualification obtained by each of the respondents.

PhD
MSc
B.Eng/B.Tech
HND
OND

Figure 3: Respondents' Level of Education

The figure 3 above shows that the respondents are highly qualified as they all have high level of education. 16.67% of the respondents had doctorate degrees, 29.17% of them had Master's Degree; 41.66% of them were Bachelor Degrees (B.Tech/B.Eng) holders; 8.33% had OND while 4.17% of the respondents were

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National Diploma holders. This implies that most of the respondents are well educated to read and understand the content of the questionnaire for proper response.

Experience Level of Respondents

This section examined the professionals' useful life in the job in terms of their years of experience. Their years of experience also indicated the extent of their knowledge in real estate project implementation. The figure below explained further.

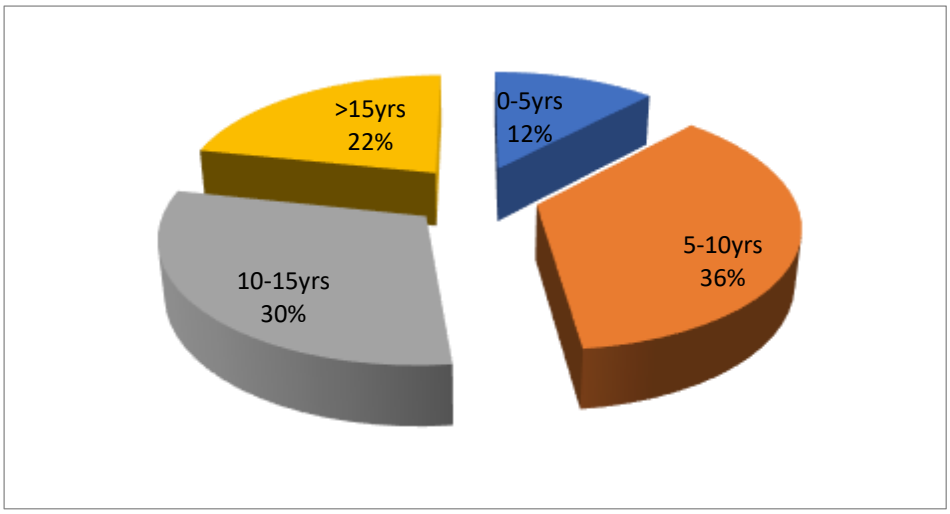

Figure 4: Respondents' Experience Level

Figure 4 above shows the respondents' experience level. The data revealed that the respondents to this research study were highly experienced and their responses to issues on the land management challenges on real estate project can be trusted for reasonable conclusions.

Analysis of Questionnaire's Part B

This section of the study presented the summary of the weighted scores based on the field responses on land management challenges in real estate project implementation. The data were used in testing the hypotheses earlier stated in the course of this study. Meanwhile, the scores were based on the weighting of the ranking of each of the variables and the summation of the weighted scores for each of the respondent. However, Multiple Regression Analysis model was used in analyzing the data collected.

Analysis of Multiple Correlation (r) and Coefficient of Determination (r^2)

The multiple correlation analysis (r) measures the level of association between the identified variable while the coefficient of determination (r^2) measures the level of variation explained by the analysis. Table 4 shows the result of r and r^2 as follows;

Table 4: Multiple Regression Result for Multiple Correlation and Coefficient of Determination

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Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.802[a]	.743	.617	2.67518

a. Predictors: (Constant), X8, X2, X6, X4, X7, X1, X5, X3

The Table 4 above show that the level of multiple correlation (r) is 80.2%, implying that there is a high level of association or correlation existing and among the identified factors. While the level of variations explained by this study is 74.3% and only 25.7% remain unexplained, given the coefficient of determination (r^2). This Imply that a greater percentage of the variations were explained by this study.

Model Formulation of the Seven Identified Factors/Challenges of Land Management in Real Estate Project Implementation

The predictive model for effective land management that will guaranty successful implementation of real estate projects in Delta State and its environs were formulated using the Unstandardized B Coefficient of Multiple Regression as shown in Table 5 below.

Table 5: Coefficients of Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	40.746	2.698		15.104	.000
	X1	.337	.253	.203	4.335	.002
	X2	.577	.359	.345	8.363	.000
	X3	.304	.149	.192	3.634	.027
	X4	.015	.140	.015	2.104	.041
	X5	.407	.283	.269	6.386	.001
	X6	.202	.179	.155	2.336	.037
	X7	.486	.294	.286	6.975	.000

a Dependent Variable: Y

From Table 5 above, the following model or equation was derived;

$$\mathbf{Y = 40.7 + 0.337X_1 + 0.577X_2 + 0.304X_3 + 0.015X_4 + 0.407X_5 + 0.202X_6 + 0.486X_7} \quad \text{.....} \quad 3$$

Based on the developed model, all the identified land management factors show positive effects on the implementation of real estate projects with land registration challenges (X^2) having the most positive effect while project

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appraisal problems have the least positive effect. It means that all the identified factors are predictors of real estate projects in Delta State and its environs.

Analysis of Variance (ANOVA)

The ANOVA was used in the testing the collective effect of the seven identified factors on the implementation of real estate projects in the study area. That is the significance of the inclusion of all the factors in the model (Equation 3) developed.

Table 6: Analysis of Variance (ANOVA (b))

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2702.425	7	337.803	25.010	.000(a)
	Residual	1499.275	112	13.507		
	Total	4201.700	119			

a Predictors: (Constant), X7, X2, X4, X6, X1, X5, X3

b Dependent Variable: Y

From Table 6, a mean square regression (MSR) of 337.803 with a mean square residual of 13.507 which gives an F-value of 25.010 is significant at 0.000 level of significance. It implies that at 0.05 level of significance, the model is significant in predicting the effect of the land management factors in the implementation of real estate projects in Delta State, Nigeria.

Test of Hypothesis

The formulated hypotheses were tested in this section t-test statistical methodology. In order to ascertain the influence of land management challenges on real estate project implementation/performance in Delta State, t-test analysis was carried out between each of the land management challenges and performance of real estate project. The t-test results in Table 5 which was moderated to Table 7 were used for the analyses as shown below:

Table 7: t-test Result of Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	40.746	2.698		15.104	.000
	X1	.337	.253	.203	4.335	.002
	X2	.577	.359	.345	8.363	.000
	X3	.304	.149	.192	3.634	.027

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X4	.015	.140	.015	2.104	.041
X5	.407	.283	.269	6.386	.001
X6	.202	.179	.155	2.336	.037
X7	.486	.294	.286	6.975	.000

a Dependent Variable: Y

H_1: Factors affecting effective land management in Asaba are shadows in nature.

H_2: The identified factors affecting effective land management in Asaba are correlated and cannot be examined individually.

H_3: The identified factors affecting effective land management in Asaba cannot be significantly evaluated and ranked.

From the t-test result in table 7, the identified land management factors were tested.

Factor One: Site management (X_1)

Analysis from table 7 above shows that t statistical value of 4.335 is significant at 0.004 level of significance, implying that at a 0.05 level of significance, site management is a significant predictor of real estate project implementation. Hence, we conclude that Land management challenges such as disputes over land ownership and inadequate infrastructure significantly hinder the successful implementation of real estate projects.

Factor Two: Land registration (X_2)

The t-value of 8.363 is significant at 0.000 level of significance; hence at 0.05 level of significance, land registration challenge is a critical factor in an effort to implement real estate projects in Delta State.

Factor Three: Determination of appropriate tax (X_3)

The t statistical value of 3.634 is significant at 0.027 indexes. At 0.05 level of performance level, the challenge of determining the appropriate tax (X_3) is a significant predictor of real estate project implementation. Hence, we conclude that determination of appropriate tax can significantly affect real estate project implementation performance.

Factor Four: Project appraisal (X_4)

Analysis from table 7 above shows that t statistical value of 2.104 is significant at 0.041 performance level of. This therefore implies that at 5% level of significance, project appraisal challenge poses a great influence on the implementation of real estate projects. Hence, project appraisal (X_4) has a significant effect on real estate project performance in Delta State.

Factor Five: Town and Country Planning (X_5)

The t-value of 6.386 is significant at 0.001 level of performance; hence at 0.05 index level, town and country planning (X_5) is a challenge to the realization of real estate projects in Delta State, Nigeria.

Factor Six: Funding options (X_6)

The t statistical value of 2.336 is significant at a 0.037 level of significance, implying that at 0.05 index level, funding options (X_6) is a significant predictor of real estate project implementation. Hence, we conclude

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that the effect of determination of funding options can significantly affect real estate project implementation performance.

Factor Seven: Land management policies (X_7)

The t-value of 6.975 is significant at 0.000 level of significance, hence at 0.05 level of significance, the challenges posed by land management policies (X_7) is a critical factor in an effort to implement real estate projects in Delta State.

Since all the seven identified factors show significant effect on real estate project implementation, the study therefore, rejects the null hypothesis (H_{01}) with a conclusion that the identified land management challenges can significantly affect real estate project implementation in Delta State.

Analysis of the Relative Importance Index

In a bid to determine the level of importance of each the land management challenges in real estate project implementation analyzed using the relative importance index technique. This is as shown in Table 8 below.

Table 8: Relative importance index ranking of the land management factors/challenges that affect real estate project implementation

S/N	Identified Factors/ Challenges to real estate project implementation	Weighted Score	Average Weighted Score	Relative Importance Index Coefficient	Rank	Level of importance (0.7705)
1	Site management	2790	465.00	0.7750	4	√
2	Land registration	2825	470.83	0.7847	1	√
3	Determination of Acceptable tax payable	2745	457.50	0.7625	5	*
4	Project appraisal	2705	450.83	0.7514	7	*
5	Town and country planning	2800	466.67	0.7778	3	√
6	Determination of funding option	2740	456.67	0.7611	6	*
7	Uncoordinated Land policies	2815	469.17	0.7820	2	√
	TOTAL	**22190**		**6.1639**		

Source: Research Data, 2019

The data that justified the level of significance of each of the land management factors or challenges were taken from column 6 of table 8 above where it was observed that the land management challenge with the

highest level of significance is "land registration" and ranked first. This is followed by "uncoordinated policies and implementation" with 0.7820; "town and country plan" with 0.7778 and "site management" with 0.7750 etc.

Columns 5, 6 and 7 of Table 8 above showed the relative importance index coefficients, the ranks of each of the land management challenges in real estate project implementation and their base score to measure their level of effect. Result of the analysis in the table showed that the land management challenges with the most critical effect on real estate project implementation (based on their comparison with the base coefficient of 0.7705 are "land registration" with RII coefficient of 0.7847; "uncoordinated policies and implementation" with RII of 0.7820; "town and country plan" with RII of 0.7778; and "site management" with RII of 0.7750.

Priority Ranking Based on the t-calculated Values

The calculated t-values of the factors of land management on real estate project delivery were used to determine the priority ranking of the factors in order to determine the most critical factor.

Table 9: Priority Ranking of the Seven Identified Land Management Factors

S/No.	Land Management Factors	t-values	Ranks
1	Site management	4.335	4th
2	Land registration	8.382	1st
3	Determination of acceptable tax payable	3.364	5th
4	Project appraisal	2.104	7th
5	Town and country planning	6.386	3rd
6	Funding options	2.336	6th
7	Land management policies	6.975	2nd

The priority ranking show that land registration factor is the most critical land management challenge to effective implementation of real estate projects in Delta state. This is followed by uncoordinated land management policies, town and country planning issues, etc while project appraisal is the least critical factor in an effort to properly manage land for successful delivery of real estate projects in Delta state and its environs.

Table 10: Comparison of the two Ranks (RII & t-values)

S/No.	Land Management Factors	t-values	Ranks	RII	Ranks
1	Site management	4.335	4th	0.7750	4th
2	Land registration	8.382	1st	0.7847	1st
3	Determination of acceptable tax payable	3.364	5th	0.7625	5th

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4	Project appraisal	2.104	7th	0.7514	7th
5	Town and country planning	6.386	3rd	0.7778	3rd
6	Funding options	2.336	6th	0.7611	6th
7	Land management policies	6.975	2nd	0.7820	2nd

The correlation analysis of the RII (Table 8) and t-calculated values (Table 9) show an r-value of 0.8714implying that the two ranks have significant relationship (consistency in the data analysis and ranking). However, the most critical land management factors that affect effective delivery of real estate projects in Delta State is the problem of land registration. This is followed by uncoordinated land management policies od Delta State Government, while the least factor is lack of project appraisal for most real estate projects in the State.

4.2 Discussion

The analysis in Table 2 shows that the four (4) real estate project in selected in Delta State did not perform well given their percentage or level of completion. The average level of performance of the 4 real estate projects is 55.69%. The study believes that this level is low and did not aid in achieving the needed objective for those estate projects. This low performance according to the finding was as a result of the existence of the land management challenges which affected the implementation of the real estate projects. Similarly, survey revealed that land management challenges in real estate project implementation that have constrained their successful implementation are related to site management; land registration; determination of tax payable; project appraisal; determination of funding option; town and country planning; uncoordinated policies and implementation and all these identified factors are product of corruption and indiscipline witnessed in the State.

The predictive model (Eqn. 3) developed show that all the identified factors are positively related to real estate project implementation (see Table 5). The implication is that efforts are made to improve any of them; real estate project implementation is also improved. Hence, efforts should be made to earnestly control these seven major land management challenges in order to enhance the performance of real estate project delivery in Delta State and other States in Nigeria. The t-test and Relative Importance Index (RII) results show that all the identified land management challenges significantly influence real estate project performance in Delta State is significant (see Tables 5 to 8). The analyses also revealed that land registration is the most significant factor that affected real estate project delivery in Delta State. This is followed by Site management, Land management policies, and Town and country planning while project appraisal is the least influential factor. This result corroborates with the findings of Mansfield et al (1994). In their paper, they identified litigation issues due to no registration of land as the most critical factor that delay the smooth realization of construction projects. They cautioned that land owners should endeavor to associate with the necessary legal authorities to obtain the necessary registration and ownership of their site to avoid the high level of court cases that might delay project delivery. From the analysis, it is obvious that the nature

of land ownership and traditional practices of the people naturally delegate land to an individual on the basis of inheritance. This may not allow the owner (beneficiary) to officially register the land since it was not purchased.

Conclusions and recommendations

This study was conducted to investigate the factors influencing effective land management in realestate project implementation. From the analysis of the data, several key land management factors were identified as critical to the success of real estate projects in Asaba. These include site management, land registration, determination of appropriate tax, project appraisal, town and country planning, and funding options. Each of these factors plays a pivotal role in determining the success or failure of real estate projects. Upon examining these factors individually, land registration was found to be the most significant issue, presenting a major challenge for developers in terms of delays and legal disputes. Other factors, such as site management, were also significant in ensuring that projects stay on schedule and avoid encroachments, while funding options and project appraisal were crucial in determining the financial viability and proper execution of projects. Town and country planning and appropriate tax determination, though secondary, still have an important role in ensuring compliance with regulations and avoiding financial pitfalls. The following recommendations are made to address the factors influencing effective land management in real-estate project implementation in Asaba, Delta State:

1. **Prioritizing Key Land Management Factors:** Government agencies, private developers, and stakeholders should focus on addressing the identified key land management factors, such as land registration, funding options, and site management, which have the greatest impact on real estate project implementation. Special attention should be given to these factors during project planning and execution to ensure project success.
2. **Enhancing Land Registration Processes:** Since land registration emerged as the most significant challenge, the government should streamline the land registration process by reducing bureaucratic hurdles and shortening processing times. A transparent and efficient system is essential to ensure timely and legal acquisition of land for real estate projects, preventing delays and disputes.
3. **Improving Funding Options for Developers:** Developers should be provided with better access to funding options, including government-backed loans and private-sector financing, to ensure the financial viability of their projects. This will allow developers to secure adequate financing, reducing the likelihood of project delays or abandonment due to a lack of funds.

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