

Assessment of Household Perceptions on Land Accessibility for Food Security: Evidence from Greater Port Harcourt Region in Rivers State, Nigeria.

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Abstract- *Land remains a key asset in smallholder agriculture, and is expected to play a critical role to food security. The objective of this study was to explore the household's perception on land accessibility mechanisms for food security in Greater Port Harcourt Region. A survey was conducted among 398 households selected randomly across the region. Data were collected on the household's perception on land access for food security and analysed using Version 22 of the Statistical Package for the Social Sciences. The results revealed that respondents generally perceived land for agricultural purposes as accessible since 65.6% rated agricultural land as accessible or very accessible, whereas 16.0% rated it as inaccessible or very inaccessible and 18.3% reported a neutral position. High land cost emerged as one of the most prominent limitations with a combined 57.3%, insecurity and land conflict were also another important, with a total of 46.7%. The land policy, land tenure, weak land administration, government acquisition and poor infrastructure were largely not perceived as major limitations by most of the respondents. Gender bias and poor infrastructure were not perceived as major limitation to land accessibility. The lack of access to credit facility was identified as a major limitation, demonstrating that financial access influences the ability of some households to acquire and utilize agricultural land. The overall results imply that enhancing household food security needs not only increasing land availability but also enhancing land affordability, household financial capacity, security of farming environments and productive use of accessible land.*

Keyword: *Land, access, Food Security, Household, Greater Port Harcourt*

I. INTRODUCTION

Land remains a very fundamental resource for socioeconomic development in the Global South, mostly in Sub-Saharan Africa, where more than 60%

of the population rest on agriculture for their livelihoods (Goedde et al., 2019; Feyertag et al., 2021). In spite of the importance of agriculture to the region's economy and livelihoods, Sub-Saharan Africa continues to experience a high level of chronic food insecurity and undernourishment (Shimeles et al., 2018). This continuous food insecurity has been linked with several interconnected factors which include the fairly low performance of the agricultural sector, climate change, civil and political instability, and rapid population growth in the region (Shimeles et al., 2018).

Land use refers to the different ways in which human populations utilize land resources to meet various social, economic, and livelihood needs. Agriculture is among the most important human activities influencing land-use patterns and changes across diverse regions. Changes in agricultural land use can have significant implications for household livelihoods, social wellbeing, and broader economic development (Ahmed et al., 2016). In recent years, substantial changes in land use have happened across Sub-Saharan Africa, caused mostly by rapid population growth and increasing urbanization. Population growth has deepened pressure on available land and results in the enlargement of cultivated areas and greater agricultural increase as households and communities respond to growing demand for food (Aleman et al., 2016). Also, rapid urbanization has gradually contributed to the conversion of agricultural land to residential, commercial, and industrial uses. This conversion is partly caused by the need to accommodate growing urban populations and partly by efforts to promote economic diversification and infrastructure development across African economies. Therefore, the increasing competition between

agricultural and non-agricultural uses of land has important implications for land accessibility, agricultural production, and food security (Kleemann et al., 2017).

land accessibility represents a critical factor of rural livelihoods and household food security, mainly in developing countries where a considerable proportion of the population depends directly or indirectly on agriculture. The access to land determines the ability of households to engage in crop production, expand cultivated areas, invest in agricultural improvements, and generate income from agrobusiness. Nevertheless, agricultural land accessibility stretches beyond the physical availability of land. It covers the ability of households to acquire, own, inherit, rent, control, and securely use land for agricultural purposes.

Food security and sustainable agriculture are vital to realising the Sustainable Development Goals (SDGs), particularly SDG 2, which emphasises on ending hunger, improving nutrition, ensuring food security, and encouraging sustainable agricultural systems (UN, 2018). Achieving Zero Hunger needs not only improved agricultural production but also dependable access to food, effective utilization, and stability of food availability over time (Ayinde et al., 2020; Otekunrin et al., 2020). Sustainable and robust agricultural practices are therefore critical for maintaining food production while responding to changes in environmental and socioeconomic situations (Blesh et al., 2019). Land is a serious foundation for agricultural production and plays an important role in improving food security worldwide (Viana et al., 2022). In Nigeria, land serves as a productive asset, a key agricultural input which are important source of livelihood and wealth, mainly among smallholder farmers (Obayelu et al., 2017). Smallholders, in spite of operating in moderately small and fragmented lands, contribute significantly to domestic food production and remain fundamental to the country's agricultural system (Iheke & Amaechi, 2015).

Nevertheless, limited access to land and insecure land rights continue to limit smallholder productivity and agricultural development. These challenges have turned out to be more pronounced as agricultural land

progressively competes with residential, commercial, and industrial uses due to population growth and urbanization. The improvement of both land availability and tenure security is critical for strengthening Nigeria's food system and achieving sustainable food security (Narh et al., 2016). This problem is particularly noticed in rural communities, where agriculture remains a major source of livelihood for a considerable percentage of the population (Oluwatayo et al., 2019). Notwithstanding the importance of land, access remains controlled by communal land allocation practices, inadequate documentation, and informal tenure arrangements. Families and community leaders continue to show significant influence over land allocation and use rights (Twene, 2016).

Land accessibility and secure land rights are generally known as important foundations for sustainable agricultural development and food security in Sub-Saharan Africa (Borras & Franco, 2010; Bennett & Alemie, 2016). In Nigeria, where agriculture remains a vital source of livelihood for rural households, access to productive land and the institutions governing its allocation and use directly affect farmers' capacity to increase agricultural production and improve their livelihoods (Odoemelam et al., 2013). Limited or insecure access to agricultural land often limits farming households to subsistence production, decreasing their capability to expand cultivated areas, invest in agricultural activities, and produce sufficient food and income. Farmers that have no formal land rights may also undergo complications in accessing agricultural credit, government support programmes, and extension services, further limiting their productive capacity (Reddy et al., 2020).

These challenges are becoming progressively important as population growth and competing land uses put more pressure on agricultural land. The resultant scarcity and fragmentation of farmland can reduce farm sizes and limit agricultural productivity, mostly among rural households with limited resources (FMARD, 2016). At the larger regional scale, addressing the gaps in land access and agricultural productivity is essential for meeting future food requirements, particularly given projections of a global population approaching 10 billion by 2050

(Mulusew & Mingyong, 2023). In thickly populated and economically deprived areas of Africa, declining farm sizes and limited opportunities for structural transformation could further increase household susceptibility to food insecurity (Jayne et al., 2014). Land rental markets can also provide an important process for households with inadequate farmland to gain additional land and improve their agricultural production capacity (Holden et al., 2009; Yamano et al., 2009; Jin & Jayne, 2013). Nevertheless, the efficiency of such markets rest on the accessibility, affordability, and security of land transactions. Smallholder agriculture remains mostly vital because they constitute the majority of agricultural holdings in Sub-Saharan Africa and employ a large percentage of the agricultural workforce (Gollin, 2014). Accordingly, improving smallholders' access to land, markets, credit, and other productive resources should be considered as a major policy priority (IFAD, 2013; HLPE, 2013). Land is not only a basic factor of agricultural production but also serves as a livelihood asset that can ease access to financial resources and support household food security and socioeconomic wellbeing. While previous studies have established a connection that exists between land tenure and food security (Maxwell & Wiebe, 1999), empirical evidence remains limited in many parts of Sub-Saharan region.

This study examines household perceptions of land accessibility for food security in the Greater Port Harcourt Area of Rivers State, Nigeria. The study is based on the background that reducing limitations to land access can enhance agricultural production, strengthen rural livelihoods, and contribute to improved household food security.

II. REVIEW ON LAND ACCESSIBILITY AND FOOD SECURITY

The review of literature will account how the synergies that exist between land use policy, gender, land tenure, high cost, government acquisition, poor infrastructure and food security is critical in understanding the phenomena and the influence on the achievement of development goals. Urbanization creates important social, economic, and environmental benefits through improved employment opportunities,

education and health services, infrastructure development, and livelihood diversification. But rapid population growth linked with urbanization also rises demand for food and places greater pressure on agricultural land. As urban areas expand, fertile agricultural land is gradually transformed to residential, commercial, and other urban uses, thereby limiting agricultural production and food availability (Nabavi-Pelesaraei et al., 2017; Mbuli et al., 2021). This challenge is predominantly significant in developing countries where alternative off-farm employment opportunities are limited and rural households rely heavily on agriculture for both food and income.

Access to land impacts household food security through two major pathways: income generation and food availability. In mainly agrarian economies, the size of land operated by a household and its ability to obtain additional land are mostly connected with higher income and improved household welfare (Jin & Jayne, 2013; Chamberlin & Ricker-Gilbert, 2016). Land also offers households with an opportunity to produce food directly, which can decrease their dependency on procured food, mostly where food markets are imperfect or inaccessible (Burgess, 2001). Pinstrup-Andersen (1993) likewise emphasizes the importance of connecting agricultural production with household consumption in strategies aimed at improving nutrition and food security. Indication from diverse developing-country contexts supports this relationship. For instance, households profiting from land acquisition programmes in Andhra Pradesh, India, testified better food security than non-beneficiary households (Hanstad & Nielsen, 2009). Likewise, household having large size has been identified as an important forecast of food and nutritional security in Myanmar (Rammohan & Pritchard, 2014), while access to productive land has been revealed as an important factor of food security in vulnerable areas of Kenya (Davies, 1996; Frankenberger & Coyle, 1993). Empirical evidence from Malawi further reveals that acquiring additional land can improve food availability among land-poor households (Simtowe et al., 2011).

Secure land tenure is similarly important because it controls the extent to which households can use,

manage, and also control land and its associated resources (Holden & Ghebru, 2016). Secure tenure can boost agricultural investment, improve productivity, and strengthen household food security (Deininger & Jin, 2006; Ghebru & Holden, 2013). On the contrary, the loss or restriction of access to agricultural land can undesirably affect household welfare. For example, evidence from Zambia shows that children in households that had lost access to agricultural land consumed lesser daily calories than those whose households retained secured farmland. Comparable findings from Malawi show that land redistribution can considerably improve food availability among earlier landless or near-landless households (Espinosa, 2020; Chirwa, 2008). These findings submit that the differences in access to productive land can contribute meaningfully to whether a household is food secure or food insecure (Tekwa, 2020).

In Sub-Saharan Africa, food insecurity is still a major development challenge, caused by inadequate agricultural production, climate-related pressures, conflict, and increasing food prices (Day & Caus, 2020; Xie et al., 2021). Increased access to land has usually been connected with improved household food security (Jayne et al., 2003; Rammohan & Pritchard, 2014; Muraoka et al., 2018). However, the benefits of land access may differ according to the type of tenure, size and productivity of land, and the ability of different household members, including men and women, to exercise effective land rights. In Nigeria, significant research has studied the prevalence, dimensions, and socioeconomic factors of household food insecurity (Ogundari, 2017; Ahmed et al., 2015; Akerele et al., 2013; Obayelu, 2012). However, more attention is needed to comprehend how households' perceptions and experiences of land accessibility influence their food security, mostly within rapidly urbanizing areas where agricultural land is under increasing pressure.

In summary, while the roles of various socio-economic and locational factors in Nigeria seem to be well established, there remains a scarcity of studies examining the nexus between household perception on land accessibility and household food security in the study area. This study addressed these gaps and focused on the promotion of sustainable land management to enhance food security.

III. STUDY AREA

The study area is within the Greater Port Harcourt region which extends across eight (8) Local Government Areas (LGAs) of Rivers State (Port Harcourt, Obio/Akpor, Oyigbo, Eleme, Ikwerre, Okrika, Etche and Ogu/Bolo). The Greater Port Harcourt City is bounded by Port Harcourt Local Government Area, the most southern LGA, by the East and South of the Central Business District (CBD) Oyigbo, Eleme, Okrika and Ogu-Bolo Local Government Areas, to the North Obio-Akpor, to the North-west Ikwerre LGA and to the North-East Etche LGA and includes the Otamiri-Etche River (GPHCDP, 2013), covering a total land area of approximately 1,900 square kilometres. Geographically, the Greater Port Harcourt Area lies between latitudes 4°40'00"N and 5°05'00"N and longitudes 6°50'00"E and 7°15'00"E (see Figure.1). The study area assumes an octopus-like spatial form, with its core originating from the traditional city centre of Port Harcourt and, through the forces of rapid urbanization, extending its "tentacles" outward into the peripheral communities of adjoining LGAs. This expansion pattern illustrates the city's dynamic urban sprawl and its influence on surrounding rural landscapes (GPHCDP, 2013).

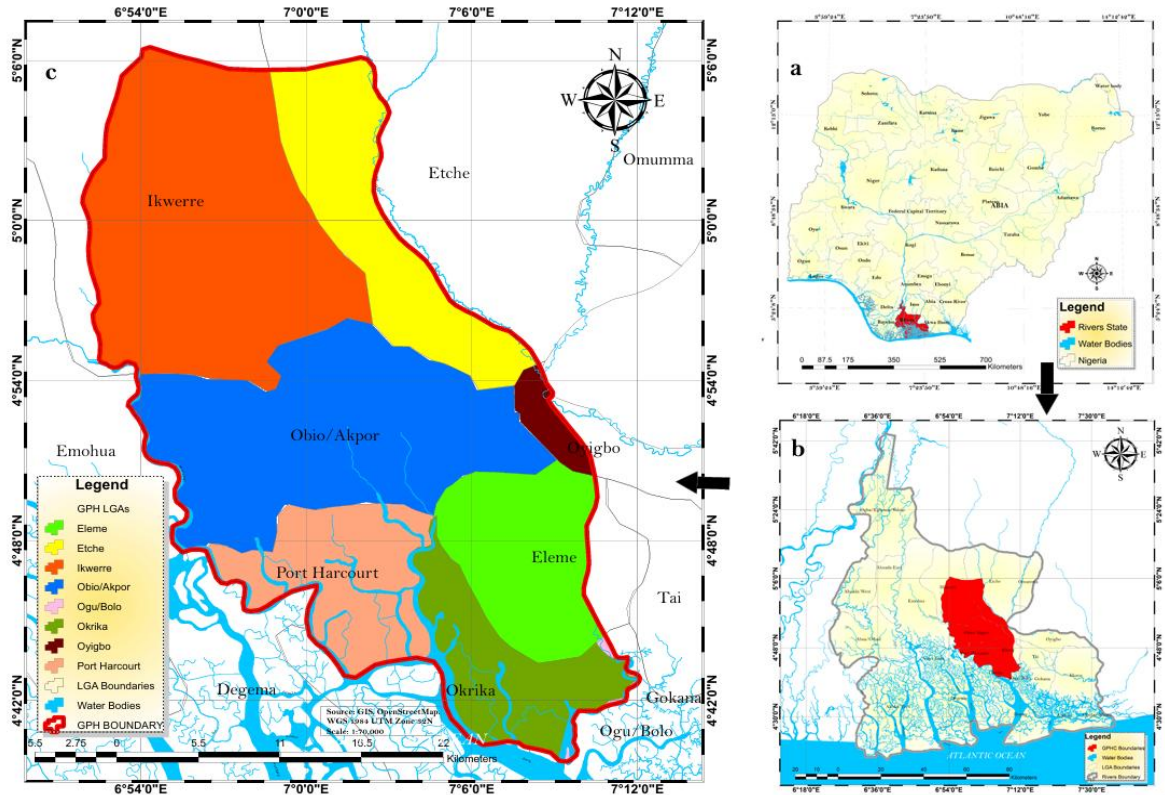


Figure 1: Map of Greater Port Harcourt City

Source: GIS Lab, Department of Urban and Regional Planning, RSU, Port Harcourt, 2025

IV. MATERIALS AND METHODS

A Theory of Access (Ribot and Peluso 2003): Access arises within power structures and has to do with the capabilities of actors to profit from 'things. Ribot and Peluso positioned differential relations among actors, and the 'things' they want to benefit from and control, at the centre of their theory. A Theory of Access acquired the literature based on MacPherson (1978) in which property is linked with enforceable claims to some use or benefit sanctioned by politico-legal authority, but expanded it to involve a wider range of actors, structural and social relations, including the illicit. As Ribot and Peluso (2003, 157) stated, "our move from concepts of property and tenure to access locates property as one set of factors (nuanced in many ways) in a larger array of institutions, social and political economic relations, and discursive strategies that shape benefit flows". Ribot and Peluso (2003, 154) concentrated on access as an "ability, rather than rights as in property theory, this formulation carries attention to a broader range of social relationships that

can limit or enable people to benefit from resources without concentrating on property relations alone." Access in relation to other frameworks with similar concerns: (1) entitlements framework, (2) sustainable livelihoods approach, (3) powers of exclusion; and then move to a review of how it has been applied in wider theoretical and conceptual debates in the social sciences: (4) gender, (5) materiality, (6) property and authority, and (7) power.

The Theory of Access recognises the changing nature of the 'bundles of powers' which are the result of historical changes in social relations in different places; as the authors put it, is clearly concerned with environmental entitlements, illicit actions, relations of production, common property, environmental change, cultural and political ecology, and the histories of all these and others. Tenure insecurity, high incidence of landlessness, high rents, and rural indebtedness are perceived to be the global challenges. Therefore, the agricultural system is essential to the value of land distribution. The concept of land distribution makes a

great contribution to academic research for the reason that the social objectives of land distribution are as vital as its economic and political ones. Land distribution is observed as an instrument of social justice, as it seeks to eliminate the exploitative relationships between rich landowning classes and poor farmers with low land use protection (Jürgenson, 2016). Fair and equitable access to land can promote the effect of growth on poverty by guaranteeing that incomes are shared more broadly (Azad et al., 2020). Land distribution is an important step towards building viable, sustainable agriculture, which can offer a satisfactory source of rural living (Bennett et al., 2018).

4.1. Research design

A cross-sectional survey research design was adopted for this study to evaluate respondents' perceptions of household on land accessibility for food security within the study area. This design was considered to be proper for the study because data were collected from the respondents at a single point in time, thereby providing information of their prevailing socioeconomic conditions, food. The survey design is mostly suitable for studies that seek to assess the characteristics and conditions of a population, examine existing patterns, and establish associations between selected variables. It allows researchers to methodically collect information on respondents' behaviours, perceptions, attitudes, values, and socioeconomic characteristics without changing the study environment. Moreover, the cross-sectional approach enabled the collection of quantitative data

that can be statistically analysed to identify the factors associated with household perception on land accessibility for food security in the study area.

4.2. Target population and unit of analysis

The population refers to the group on which the results of research can be applied or for which the findings can be generalised and is clarified by the objectives of the study (Ahmad, Alias & Abdul Razak, 2023). This section involves the identification of the target population and sampling techniques that will be used for the study. The target population of this study are the residents of the communities in the study area and key informants, for whom qualitative and quantitative data are collected for the study (Ahmad et al., 2023). The study population comprises of the entire eight (8) LGAs of Greater Port Harcourt City in Rivers State. Namely, Port Harcourt City, Obio/Akpor, Ikwerre, Eleme, Etche, Oyiibo, Okrika and Ogu/Bolo). Out of the eight LGA, four (4) Local Government Areas were purposively selected based on the peculiarity of the study. The selected areas were identified and listed in all the fourteen communities identified in the four Local Government Areas were chosen to represent the sampled LGAs as shown in Table 3.1. The sample LGAs have a population of 63,789 persons in 1991 in the National Population Census figure, (NPC), 1991) and a projected population of 542,788 persons in 2025 using a linear exponential growth projection model; given as $P_n = P_0(1+r)^n$ Equation 3.1 with a growth rate of 6.5% (NPC, 2016).

Table 1: Population of the Study Areas

S/No.	LGAs	Names of Communities in the LGAs	No. of Communities
1	Ikwerre	Igwuruta, Igwuruta- Ali, Omagwa, Ipo, Ozuaha, Omademe, Omuchi, Omunwei, Omuodukwu, Mbodo, Omuahunwo, Omuike, Omuoda, Omuigwe, Omuchiolu, Omuokiri, Omuoko and Omuhuechi	18
2	Etche	Igbo-Etche, Abara, Elele-Etche, Umuebulu, Chokocho, Edegelem, Odagwa, Umuosukpo, Ikwerrengwo	9
3	Eleme	Nchia, Ebube, Esama, Eteo, Onne, Ogale, Alode, Aleto, Akpajo and Alesa	10
4	Obio/Akpor	Eneka, Rumuodomaya, Elelenwo, Rukpokwu, Rumuosi, Iriebe, Rumuagholu, Ogbogoro, Eliozu and Rumukwursi	10
	Total		47

4.3. Sample size and sampling technique

The study strategically selected four (4) sample areas making a 30% sample unit and use the Taro Yamane formula, which is widely used to determine the ideal sample size for surveys involving large populations (Yamane 1967).

The Taro Yamane formula used to determine the sample size is expressed as:

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

Where:

n = Sample Size,

1 = Constant,

N= Population Size,

e = Sampling error (5%) = 0.05

Therefore:

$$n = 90,466/1 + 90,466(0.05)^2$$

$$= 90,466/1 + 90466(0.0025)$$

$$= 90,466/1 + 226.1$$

$$= 90,466/227.1$$

$$n = 398.3$$

$$n = 398$$

However, the number of questionnaires to be obtained for administration in the sampled area will be proportionally derived from the households (see Table 2).

Table 2: Determination of Sample Size for the Study

S/N	Sampled Communities	1991 Population	Projected 2025 at 6.5% Growth Rate	No. of HH (6 person per HH)	No. of HH to Sample
1	Igwuruta	7104	60,449	10,075	44
2	Ipo	2125	18,082	3,014	13
3	Omuike	1109	9,437	1,573	7
4	Omunwei	3554	30,241	5,040	22
5	Omuokiri	303	2,578	430	2
6	Igbo-Etche	8261	70,294	11,716	52
7	Umuebulu	5069	43,133	7,189	32
8	Elele-Etche	2397	20,396	3,399	15
9	Ebube	8727	74,259	12,377	54
10	Eteo	3828	32,573	5,429	24
11	Aleto	6376	54,254	9,042	40
12	Iriebe	3549	30,199	5,033	22
13	Rumuosi	2037	17,333	2,889	13
14	Ogbogoro	9350	79,560	13,260	58
	Total	63,789	542,788	90,466	398

Source. NPC, 1991; NBS, 2016; Researcher's Fieldwork, 2025

4.4. Data sources

This study employed both primary and secondary sources of data to gain the information required for the study. The primary data were collected directly from households through structured questionnaires and interviews. Secondary data, on the other hand, were

gotten from related published and unpublished materials, including academic articles, institutional reports, government publications, and other documents connected to the study. The household survey constituted the key instrument for collecting quantitative primary data. A structured questionnaire containing both open- and closed-ended questions was directed to households to gain information on their demographic characteristics, socioeconomic

conditions, institutional experiences, land accessibility and household food security situation. The integration of open- and closed-ended questions allowed the researcher to obtain standardized responses while also giving the respondents with opportunities to explain their experiences and perceptions where necessary. To ease the collection of primary data, enumerators with education and proficiency in the relevant local languages were employed. Their ability to communicate effectively in the languages usually spoken within the study communities assisted to reduce communication barriers and improve respondents' understanding of the questions. Prior to fieldwork commencement, the enumerators were trained on the objectives of the study, questionnaire administration, interviewing techniques, ethical considerations, and procedures for recording responses accurately.

4.5. Methods

The study adopted a mixed method using a qualitative and quantitative data. Four LGAs were sampled of the eight LGAs that make up the study area. A sample size of 398 households was ascertained using the Taro

Yamene formula with 5% confidence level out of a total household head of 90,466. A Face-to- Face questionnaire administration was carried-out to a stratified random sampling to the household respondents and key informants. Data collected was analysed using Version 22 of the Statistical Package for the Social Sciences.

4.6. Statistical Analysis OF Perceived Accessibility of Land for Agricultural Purposes

Accessibility was measured using one five-point Likert item coded 1 = very inaccessible, 2 = inaccessible, 3 = neutral, 4 = accessible, and 5 = very accessible. Of the 398 cases, 393 provided valid responses and five (1.3%) were missing. Frequencies, percentages, the mean, standard deviation, median, and mode were used to summarize responses (Table 3). Because the outcome was a single ordinal item, a one-sample Wilcoxon signed-rank test against the neutral midpoint (3.00) was treated as the principal inferential analysis. A one-sample t test against 3.00 was also calculated as a supplementary robustness analysis.

Table 3. Distribution of Perceived Accessibility of Agricultural Land

Response category	Score	Frequency	Valid %	Cumulative %
Very inaccessible	1	12	3.1	3.1
Inaccessible	2	51	13.0	16.0
Neutral	3	72	18.3	34.4
Accessible	4	190	48.3	82.7
Very accessible	5	68	17.3	100.0
Total valid		393	100.0	

Note. Five cases were missing. Percentages are based on the 393 valid responses.

V. RESULTS OF DESCRIPTIVE STATISTICS

This section presents the results obtained from analysis of data collated from the study. While doing the field-based household research to understand people perception on land accessibility for food security and responses to them. To obtain data from the respondents 398 questionnaires were administered on the households from the four local government areas in the study locations. However, the researchers were able to retrieve the same the number of

questionnaires which were correctly filled by the respondents.

5.1.1. Land Policy as a Constraint to Agricultural Land Accessibility and Household Food Security:

The result of household's perception on land policy as a major limitation to agricultural land accessibility in the study area are presented in Figure 2. Clearly, 30.9% of respondents disagreed and 26.6% strongly disagreed that land policy constrained their access to agricultural land, giving a combined 57.5%. In

contrast, only 4.5% agreed and 1.0% strongly agreed, representing just 5.5% of respondents.

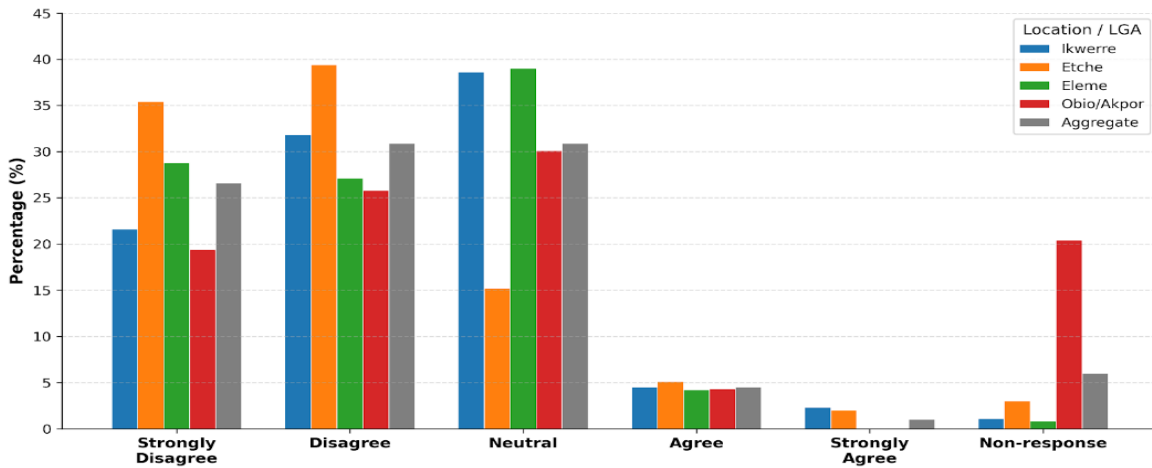


Figure 2. Perception of land use policy on agricultural land accessibility.
Source: Researcher's Field Survey, 2026

5.1.2. High Land Cost as a Constraint to Agricultural Land Accessibility

The perception of the respondents on high land cost as a major limitation to agricultural land accessibility in the study area are shown in Figure 3. A combined 57.3% of respondents agreed (39.7%) and strongly

agreed (17.6%) that the cost of agricultural land restricts their ability to access land for agriculture. On the other side, only 18.8% disagreed (13.3%) or strongly disagreed (5.5%).

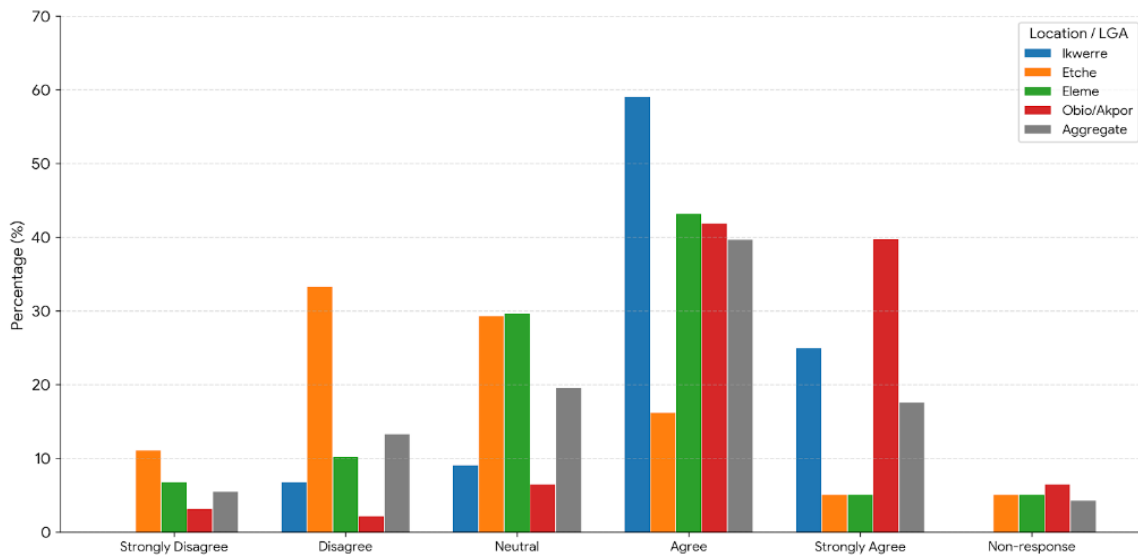


Figure 3. Perception of High land cost on agricultural land accessibility
Source: Researcher's Field Survey, 2026

5.1.3. Land Tenure System as a Constraint to Agricultural Land Accessibility

The result of households' perceptions on the land tenure system as a limitation to agricultural land accessibility in the study area are presented in Figure 4. This show that 36.7% of respondents were neutral, while 34.7% of the respondents disagreed and 14.8%

strongly disagreed that the land tenure system creates a limitation to accessing agricultural land. In contrast, about 8.3% of the respondents agreed that land tenure system is a limitation to agricultural land accessibility in the study area.

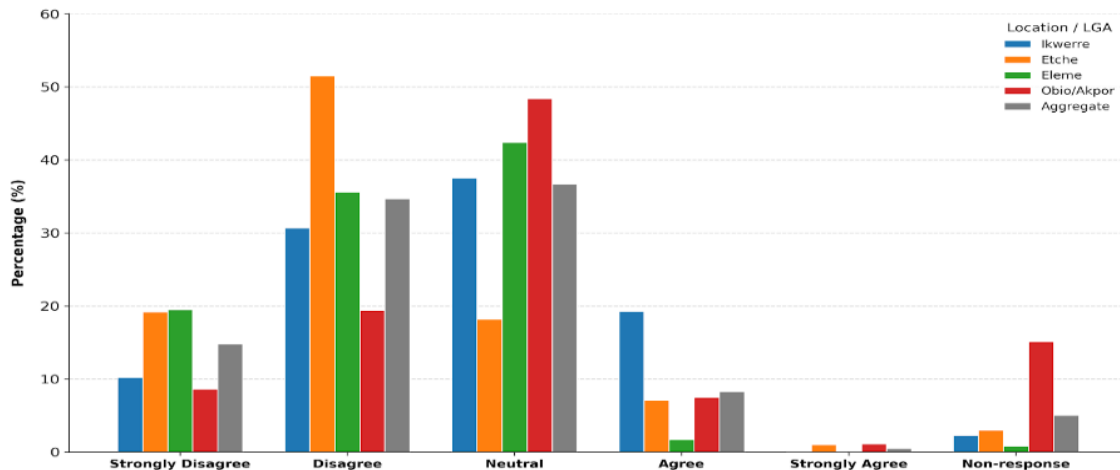


Figure 4. Perception of land tenure system on agricultural land accessibility
Source: Researcher's Field Survey, 2026.

5.1.4. Gender Bias as a Constraint to Agricultural Land Accessibility

The outcome of surveys on household perceptions on gender bias as a constraint to agricultural land accessibility is presented in Figure 5. The results show that 27.6% of respondents disagreed and 25.9%

strongly disagreed that gender bias constitutes a limitation, giving a combined 53.5%. In contrast, 17.6% agreed that gender bias limits access to agricultural land in the study area.

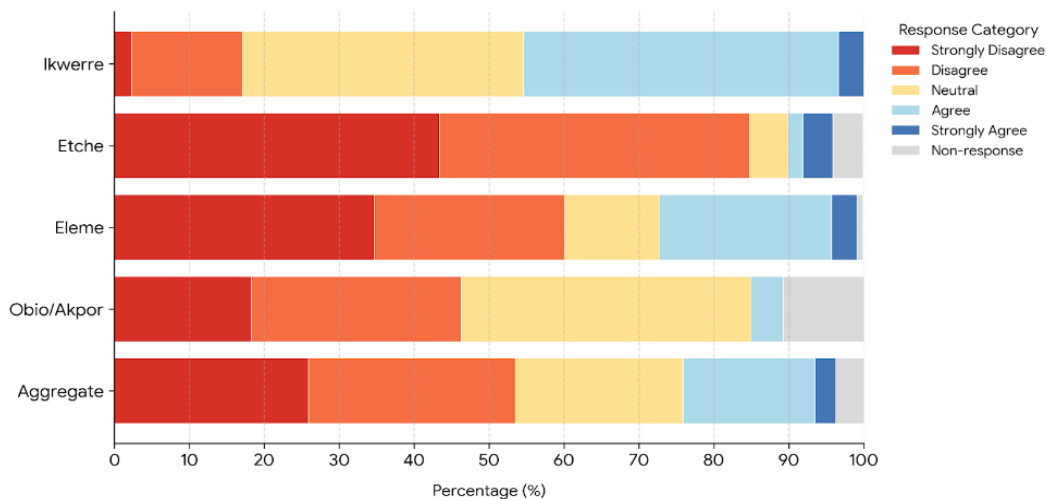


Figure 5. Perception of Gender bias on agricultural land accessibility.
Source: Researcher's Field Survey, 2026

5.1.5. Insecurity/Land Conflict as a Constraint to Agricultural Land Accessibility

Figure 6 represents the outcome of the survey on household perceptions on insecurity and land conflict as constraints to agricultural land accessibility in the study area. The results specify that 40.2% of respondents agreed that insecurity or land conflict increases the difficulties in accessing agricultural land,

while 6.5% strongly agreed. Thus, a collective of 46.7% of respondents perceived insecurity and land conflict as a limitation. On the other hand, 15.3% disagreed and 16.3% strongly disagreed, representing a total of 31.6% who did not perceive insecurity or land conflict as a limitation.

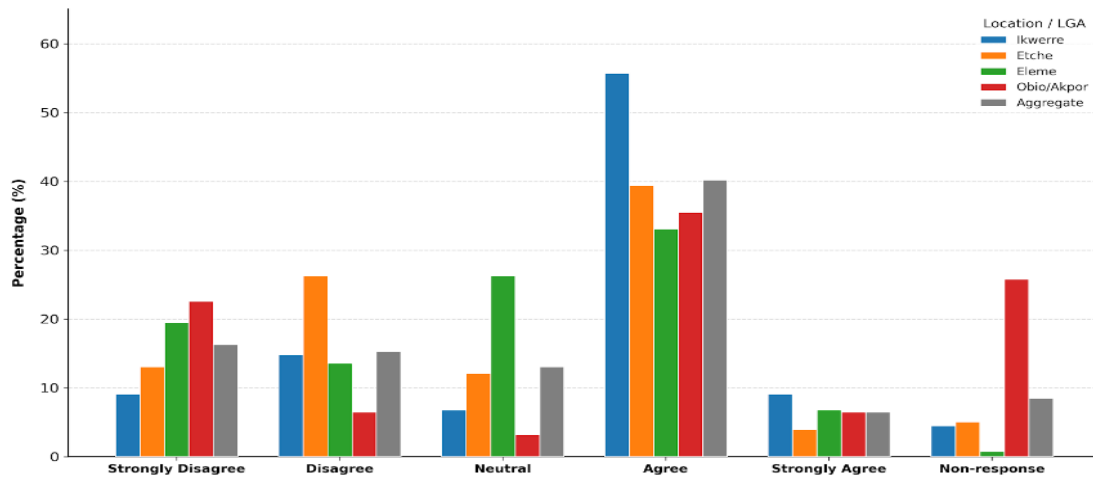


Figure 6. Perception of insecurity and land conflict on agricultural land accessibility

Source: Researcher's Field Survey, 2026.

5.1.6. Weak Land Administration as a Constraint to Agricultural Land Accessibility

Figure 7 represents the household perceptions of weak land administration as a limitation to agricultural land accessibility in the study area. The results show that 25.1% disagreed and 24.4% strongly disagreed that

weak land administration limits access to agricultural land and this represent a combined 49.5% of respondents. In contrast, only 11.8% agreed and 0.3% strongly agreed, giving a combined 12.1%.

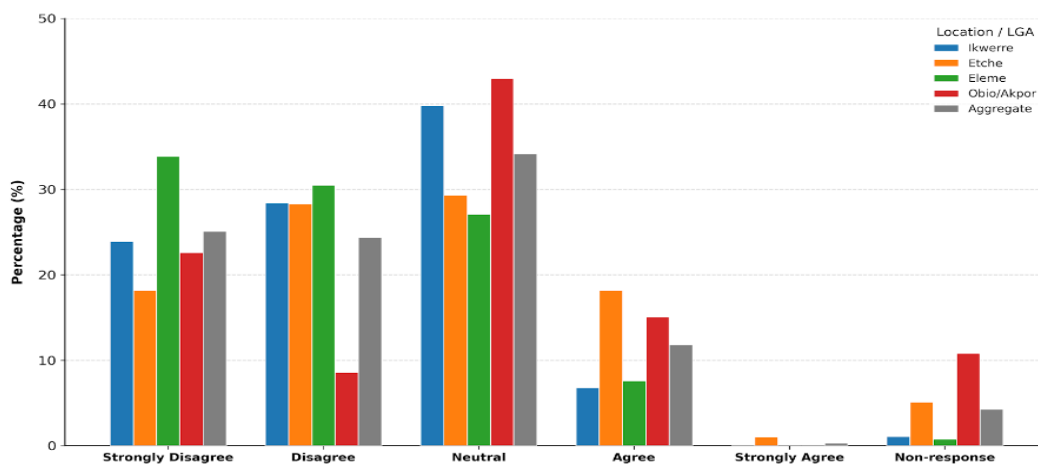


Figure 7. Perception of weak land administration on agricultural land accessibility

Source: Researcher's Field Survey, 2026

5.1.7. Government Acquisition as a Constraint to Agricultural Land Accessibility

The result of the survey on household perceptions of government acquisition as a constraint to agricultural land accessibility in the study area is presented in Figure 8. The results indicate that 34.9% of respondents disagreed while 21.6% strongly disagreed that government acquisition contributes to agricultural land inaccessibility. Together, these responses account

for 56.5% of the respondents, suggesting that more than half of the respondents did not regard government acquisition as a major limitation to accessing agricultural land. On the contrary, 14.6% agreed and only 0.5% strongly agreed, giving a combined proportion of 15.1% who perceived government acquisition as a constraint.

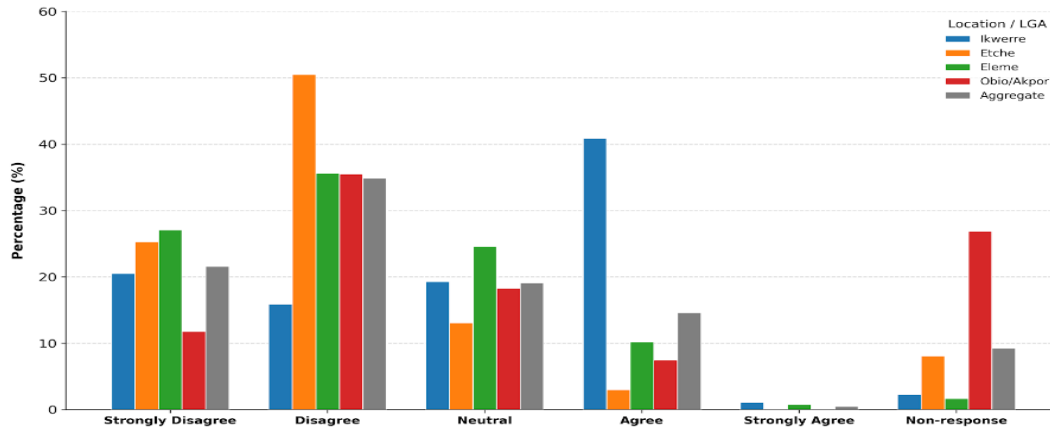


Figure 8. Perception of government acquisition on agricultural land accessibility

Source: Researcher's Field Survey, 2026

5.1.8. Lack of Access to Credit as a Constraint to Agricultural Land Accessibility

Figure 9 represents respondents' perceptions of lack of access to credit as a limitation to agricultural land accessibility. The results indicate that 30.7% of respondents agreed that inadequate access to credit limits their ability to obtain agricultural land, while

1.3% strongly agreed, giving a combined 32.0% who perceived credit limitations as an important obstacle. In contrast, 21.6% strongly disagreed with the lack of access to credit as a limitation to agricultural land accessibility.

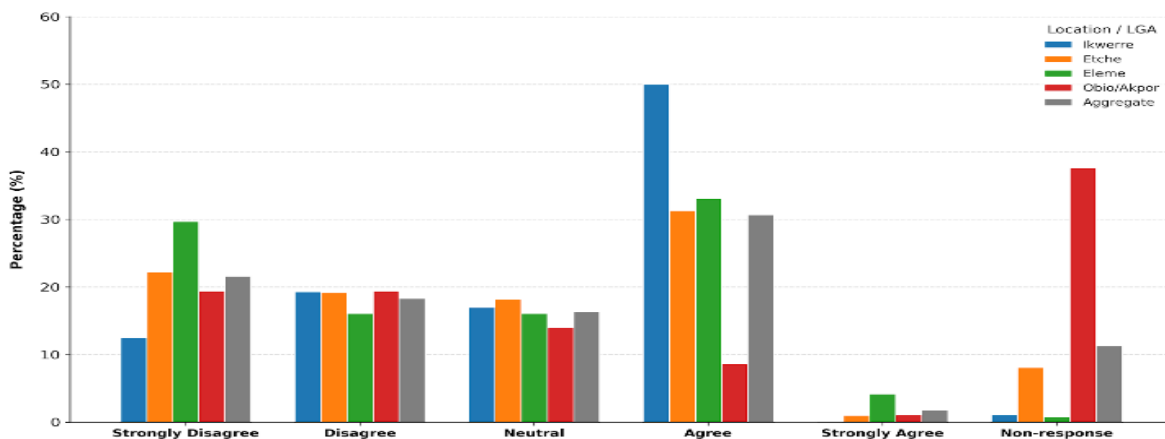


Figure 9. Perception of access to credit on agricultural land accessibility

Source: Researcher's Field Survey, 2026

5.1.10. Poor Infrastructure as a Constraint to Agricultural Land Accessibility

The result of households' perceptions on poor infrastructure as a limitation to agricultural land accessibility in the study area is presented in Figure 10. The results show that 29.9% strongly disagreed and 21.9% disagreed that poor infrastructure controls

access to agricultural land and it represents a total of 51.8% of respondents. In contrast, about 19.3% agreed and 1.5% strongly agreed, giving a collection of about 20.8% who considered inadequate infrastructure a limitation.

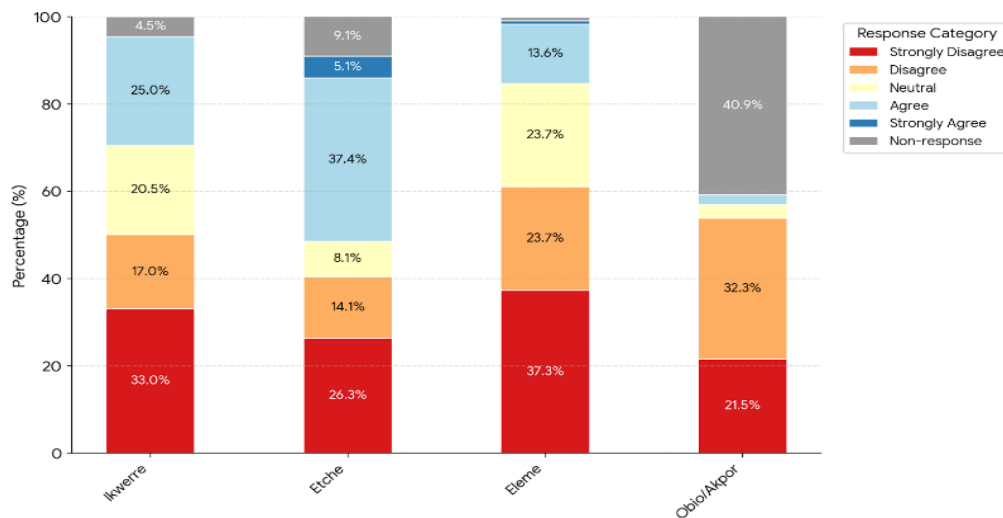


Figure 10. Perception of Poor infrastructure on agricultural land accessibility
Source: Researcher's Field Survey, 2026.

5.1.11. Perceived Accessibility of Land for Agricultural Purposes

Most respondents perceived agricultural land as accessible: 190 (48.3%) selected accessible and 68 (17.3%) selected very accessible. Together, these categories accounted for 65.6% of valid responses

(Table 4). In comparison, 16.0% perceived land as inaccessible or very inaccessible, while 18.3% were neutral. The mean score was 3.64 (SD = 1.01), and both the median and modal response were 4.00, corresponding to accessible.

Table 4: Descriptive Statistics for Perceived Agricultural Land Accessibility

N	M	SD	SE	Median	Mode	95% CI for M
393	3.64	1.01	0.05	4.00	4.00	[3.54, 3.74]

Note. M = mean; SD = standard deviation; SE = standard error; CI = confidence interval.

Wilcoxon signed-rank test: The null hypothesis stated that the median perceived accessibility score would equal the neutral midpoint of 3.00. The observed median was 4.00. After neutral responses were excluded from the rank calculation, 258 ratings were above the midpoint and 63 were below it. The result was statistically significant, $W = 9,549.00$, $z = 10.37$, $p < .001$. The rank-based effect size was large, $r = .58$,

calculated using the 321 non-zero differences included in the Wilcoxon ranking (Table 5). Therefore, the null hypothesis was rejected: perceived accessibility was significantly higher than neutral.

Supplementary one-sample t test: A supplementary one-sample t test produced the same substantive conclusion. The mean accessibility rating ($M = 3.64$, $SD = 1.01$) was significantly higher than the neutral midpoint, $t(392) = 12.52$, $p < .001$, with a mean difference of 0.64, 95% CI [0.54, 0.74].

Respondents generally perceived land for agricultural purposes as accessible, this is because out of the 393 valid responses, 65.6% rated agricultural land as accessible or very accessible, whereas 16.0% rated it as inaccessible or very inaccessible and 18.3% reported a neutral position. The average accessibility rating was above the scale midpoint ($M = 3.64$, $SD = 1.01$), with a median of 4.00 (Table 5). A one-sample Wilcoxon signed-rank test confirmed that ratings were significantly higher than the neutral midpoint of 3.00,

$W = 9,549.00$, $z = 10.37$, $p < .001$, $r = .58$. A supplementary one-sample t test supported this finding, $t(392) = 12.52$, $p < .001$, 95% CI for the mean difference $[0.54, 0.74]$. Accordingly, the null hypothesis was rejected. The results suggest that respondents held a statistically significant and substantively positive perception of agricultural land accessibility.

Table 5: Tests of Perceived Agricultural Land Accessibility Against the Neutral Midpoint

Analysis	Test value	Statistic	df	p	Effect/mean difference	95% CI
Wilcoxon signed-rank	3.00	$W = 9,549.00$; $z = 10.37$	—	<.001	$r = .58$	—
One-sample t test	3.00	$t = 12.52$	392	<.001	MD = 0.64	$[0.54, 0.74]$

Note. The Wilcoxon test was the principal analysis. Neutral ratings ($n = 72$) were zero differences and were excluded from ranking. For Wilcoxon, $r = |z|/\sqrt{N}$, where $N = 321$ nonzero differences. MD = mean difference; CI = confidence interval.

5.2. Discussions of results

5.2.1. Land Policy as a Constraint to Agricultural Land Accessibility and Household Food Security

This finding on land policy as a constraint to agricultural land accessibility and household food security suggests that most households do not consider official land policy to be a common obstacle to accessing agricultural land in their locality. The result likely reflects the importance of customary and informal land-access mechanisms which comprised inheritance, family arrangements, communal ownership and informal rental agreements. In these circumstances, households may access land without directly engaging with formal land administration systems and may consequently not perceive land policy as restriction. This is principally applicable in Nigeria, where statutory and customary tenure systems operate alongside each other. Kehinde et al. (2021) reported that land-tenure arrangements significantly impact household food-security outcomes among Nigerian farming households, indicating that the nature and security of land rights can be more

important than official ownership documentation alone. Nevertheless, the finding is not to be interpreted to mean that land governance has no implications for food security. Previous studies have revealed that secure land rights can boost agricultural investment, improve accessibility to productive resources and contribute to household food security. Adeyemo and Adeagbo (2023), found that land titling was connected with improved agricultural production and food-related household expenditure in Nigeria. Likewise, a study in Benin indicates that perceived land-tenure security can boost investment, access to credit facilities and sustainable land-management practices (Adéchián & Baco, 2025). Hence, land policy is not perceived as an immediate constraint in the study area, other dimensions of land accessibility like land availability, affordability, tenure security, inheritance practices and competition for agricultural land might have more influence on household food security. Land policies must consequently address not only formal land regulations but also the practical and customary process through which households obtain and retain agricultural lands.

5.2.2. High Land Cost as a Constraint to Agricultural Land Accessibility

The perception of respondents on high land cost as a constraint to agricultural land accessibility varied

across the study areas and the significant difference indicates that the affordability of agricultural land is a more prominent challenge among households than formal land policy, as observed in Figure 2. The finding shows that increasing land prices or rental costs may likely restrict households with inadequate financial resources from acquiring sufficient land for food production. This can also limit farm size, reduce agricultural production and ultimately affect household food availability and income level. This interpretation is supported by studies in Nigeria that show that the size of land accessed by agricultural households is significantly connected to household welfare and poverty levels (Odozi & Oyelere, 2024). Also, study among urban crop farmers in Lagos identified affordability and security of tenure as the most serious limitation to land access, emphasizing the importance of the economic dimension to land accessibility by households in the study area. The implication for household food security is mostly important because access to land must be both physically available and economically affordable by the households. This is possible even when land is available, households may be incapable to obtain it if the acquisition or rental cost exceeds their financial capacity. Evidence from Nigeria shows that greater access to agricultural land can reduce household food insecurity, while restricted access can limit households' ability to produce food and generate agricultural income. Furthermore, Kehinde et al. (2021) established an important connection that exist between land tenure arrangements and household food security among Nigerian smallholder farmers. The result generally indicates that land affordability constitutes a significant economic limitation to agricultural land accessibility. Addressing this limitation will require policies that improve access to affordable land, strengthen land-rental arrangements, facilitate agricultural credit and protect smallholders from excessive increases in land costs. This type of measures will enhance households' capacity to cultivate adequate land and, subsequently, contribute to improved household food security.

5.2.3. Land Tenure System as a Constraint to Agricultural Land Accessibility

The moderately high proportion of neutral responses on land tenure system as a limitation to agricultural

land accessibility in the study area suggests that many households likely have mixed experiences with the tenure system or may not clearly differentiate between customary, family and formal land arrangements when evaluating access to agricultural land. The combined 49.5% who disagreed or strongly disagreed indicates that approximately half of the respondents did not consider the present tenure system as a major impediment to agricultural land access. This might likely reflect the continued importance of customary and family-based arrangements through which households obtain land in the study area. In many rural communities in Nigeria, access to agricultural land is mostly facilitated through inheritance, family allocation, communal arrangements and informal rental contracts. Therefore, households may be able to obtain land for agricultural purpose without undergoing the formal tenure system as a significant limitation. The finding is not to be interpreted as evidence that land tenure is generally inconsequential to agricultural livelihoods. Land tenure security can influence if farmers are ready to invest in land improvement and maintain long-term agricultural production. The result of investigation by Kehinde et al. (2021) concluded that land tenure contracts are connected to household food security implication within the rice farmers in Northern Nigeria. Likewise, Adeyemo and Adeagbo (2023) also stated that land titling was connected to improved agricultural production and food-related household expenses among farming households in Nigeria. These research findings are of the position that land security and stability of land rights are more important than the tenure arrangement as experience in the study area. The relatively small percentage (8.3%) that identified tenure as a limitation may therefore show that tenure-related difficulties are experienced by specific households rather than the broader population. These challenges may include the insecure rental contracts, inheritance disagreements, restricted transfer rights or uncertainty over long-continued access. The overall result suggests that land tenure is not perceived as the leading barrier to agricultural land accessibility in the study area, although strengthening tenure security remains very significant for encouraging agricultural investment and, eventually household food security.

5.2.4. Gender Bias as a Constraint to Agricultural Land Accessibility

The large proportion of respondents who disagreed on gender bias as a constraint to agricultural land accessibility suggests that gender discrimination is not perceived by the majority of households as a key barrier to agricultural land accessibility in the study area. But the percentage that acknowledged gender bias remains significant, indicating that gender-related inequalities may still affect access to some households in the area. The finding is a reflection of differences in the manner in which the households obtain land within the study area. In communities where land is usually accessed through family, inheritance, marriage or communal arrangements, households may not certainly perceive these mechanisms as gender discriminatory, mostly where women are able to cultivate land through their husbands or male relatives. However, access to land through these arrangements might not provide women with independent ownership or secure control over land. This clarification is in line with the study of Nnaji et al (2022), who stated that female-headed households in Nigeria usually have less access to agricultural land and are more likely to experience food insecurity than households headed by men. This analysis showed that a one-acre increase in land access will directly reduce the chances of food insecurity among the households headed by females by nearly 16%, demonstrating the significant relationship that exist between gender, land access and household food security. The low percentage (17.6%) that identify gender bias as a limitation not be interpreted as evidence that there are no gender inequalities in land access in the study area. Gender limitations may be indirect or embedded within customary and social institutions, rather than being practiced as explicit discrimination. Nnaji et al. (2021) note that women in parts of developing countries commonly face restrictions in land inheritance, ownership and control because of sociocultural rules, even when they have some practical access to land. The summary of the finding indicates that gender bias is not perceived as the dominant limitation to agricultural land accessibility by most respondents, but it is also relevant to household food security. The improvement of women's independent and secured access to productive land, particularly for female-headed households, possibly will enhance agricultural

production and strengthen household food security outcomes. The result encourages the need for land access interventions that recognize both formal access and actual control over agricultural land.

5.2.5. Insecurity/Land Conflict as a Constraint to Agricultural Land Accessibility

The higher percentage of agreement on insecurity/land conflict as a constraint to agricultural land accessibility suggests that insecurity is an important factor that influence households' ability to access and effectively use agricultural land in the study area. This finding can be described by the fact that insecurity does not necessarily remove land from physical existence; rather, it can make available land practically inaccessible. For example, fear of attack, kidnapping, destruction of crops, disputes over land boundaries and violent confrontations may discourage households from cultivating distant or contested land. Thus, households may likely abandon productive areas, reduce the area cultivated or relocate their farming activities to safer places. The recent experience from Nigeria demonstrates that conflict significantly reduces land area allocated to agricultural investment, thereby affecting crop production and rural livelihoods. This result is also consistent with the findings of Nnaji et al. (2022), who established that the incidence and severity of farmer-herder conflicts significantly increase household food insecurity in rural part of Nigeria. The study highlighted that, conflicts connected with competition over land and other productive resources can interrupt agricultural activities and reduce households' ability to produce food. Likewise, research on conflict-induced shocks in Nigeria identifies competition over land and other natural resources as an important source of conflict, with insecurity subsequently unsettling agricultural production, livelihoods and food access. The issue of conflict has direct implications on household food security, since households that cannot securely access their land may experience reduced food production and agricultural income. FAO (2025) also reports that persistent conflict in Nigeria has severely constrained farmers' access to their fields and contributed to acute food insecurity in the country. The result indicates that insecurity and land conflict create an important practical barrier to agricultural land accessibility. Addressing this limitation will require improved

community-level conflict resolution, protection of farming communities, secure land rights and conflict-sensitive agricultural policies. These measures would enable households to cultivate available land safely and sustainably, thereby improving agricultural production and household food security.

5.2.6. Weak Land Administration as a Constraint to Agricultural Land Accessibility

The result on weak land administration as a constraint to agricultural land accessibility indicates that most households did not perceive weaknesses in land administration as a major hindrance to accessing agricultural land. This finding like imply that households primarily obtain land through customary, family and informal arrangements, which can reduce their direct dependence on formal land administration authorities. When land is inherited or allocated through family and community structures, households may access land without engaging widely with government agencies responsible for land registration, documentation, surveying and formal transfers. Therefore, weaknesses in formal land administration may not be directly visible to many households, even where such weaknesses exist. However, the low level of concern about land administration are not to be interpreted to mean that effective land governance is unimportant. The World Bank (2017) emphasizes that proper land administration provides reliable information on land rights, provides secure tenure, reduces disputes and facilitates efficient land transactions. Weak institutional activities can create uncertainty over land ownership and boundaries which will result to increased transaction costs and discourage agricultural investment. In the same way, the FAO (2022) highlights that transparent and proper land governance is essential for defending legitimate tenure rights and improving equitable access to land. This finding also varies from the evidence showing that inefficient land administration can limit access to secure land rights in developing nations. In Nigeria, challenges that involve land registration, documentation, bureaucratic procedures and high transaction costs have been identified as significant dimensions of land governance. Adeniran and Sidiq (2024) contend that weaknesses in land administration can undermine tenure security and limit the productive use of land. The summary of the findings suggests that

weak land administration is not perceived as the main limitation, although improving land administration remains important for strengthening tenure security, reducing land disputes and supporting sustainable agricultural production.

5.2.7. Government Acquisition as a Constraint to Agricultural Land Accessibility

The high level of disagreement from households on government acquisition as a constraint to agricultural land accessibility could mean that government acquisition has not significantly affected the majority of households in the study area, or that respondents have not experienced the loss of agricultural land through compulsory acquisition. It may also mean that many households obtain land through customary, family and informal arrangements, thereby reducing their direct interaction with government land acquisition procedures. In rural Nigeria, land transactions and access arrangements remain strongly influenced by customary institutions, in spite of the statutory framework established by the Land Use Act. Oluwatayo et al. (2019) note that rural land markets are principally informal and that families and community heads continue to play important roles in determining access to land. However, the small percentage of respondents who identified government acquisition as a limitation are not obscured to its potential implications for agricultural livelihoods. The Land Use Act of 1978 provides government with powers to acquire land for specified public purposes which include infrastructure, urban and rural development, and economic and agricultural development. Where agricultural land is acquired for other purposes, affected households may lose productive land and, accordingly, part of their source of food and income. FAO (2008) has likewise noted that compulsory acquisition in Nigeria has in history affected rural and peri-urban communities, with fears regarding inadequate or delayed compensation in some instances. The evidence from Southwest Nigeria further demonstrated that government acquisition can result in dispossession of lands from households and conflicts associated with the loss of agricultural land (Osinowo et al., 2021). This point to the fact that government acquisition may be a localized rather than widespread limitation, affecting particular communities or households depending on their

proximity to development projects. The overall interpretation of the finding suggests that government acquisition is not perceived by most households as a main limitation to agricultural land accessibility, although it also remains an important institutional issue. From a food security perspective, transparent acquisition process, adequate compensation and protection of legitimate tenure rights are essential to ensure that development-related land acquisition does not undermine households' access to productive land and their capacity to sustain agricultural livelihoods.

5.2.8. Lack of Access to Credit as a Constraint to Agricultural Land Accessibility

The result indicates that access to finance as a constraint to agricultural land accessibility is an important economic dimension of agricultural land accessibility for a considerable percentage of the households. The finding means that agricultural land may be physically available but remain economically inaccessible to households that lack sufficient financial resources. Households often require funds to purchase or rent land and to meet associated costs like land preparation, inputs, labour and transportation. When formal agricultural credit is difficult to obtain, households may likely depend on personal savings, family assistance or informal borrowing, which may be insufficient to secure adequate land. Hence, credit availability can indirectly determine the amount and quality of land that households are able to access and cultivate. This finding is in line with Kehinde et al. (2021), who stated that access to productive resources, including financial resources, influences the capacity of Nigerian farming households to engage effectively in agricultural production and improve food security outcomes. Likewise, Odozi and Oyelere (2024) demonstrated that access to agricultural land is associated with household economic welfare in Nigeria, signifying that financial limitations can limit households' ability to obtain productive land and improve their livelihoods. The relationship that exists between credit and land access is also important because financial limitations may prevent households from making long-term investments in land. Access to credit can enable farmers to acquire or rent larger plots and invest in productivity-enhancing technologies, while inadequate financing might force households to cultivate reduced plots or use less productive land. The

FAO (2012) highlights that secure access to productive resources which include the land and financial services, is important for strengthening rural livelihoods and food security. The overall summary of finding indicates that lack of access to credit represents an important economic limitation to agricultural land accessibility for a substantial proportion of households. Improving access to affordable agricultural credit, microfinance and appropriate rural financial services could consequently enhance households' capacity to obtain productive land and invest in agricultural activities. These interventions would potentially contribute to improved agricultural productivity, household income and food security in the study area.

5.2.9. Poor Infrastructure as a Constraint to Agricultural Land Accessibility

The majority of disagreement from the respondents suggests that poor infrastructure is not perceived by most households as the key barrier to obtaining agricultural land. However, the percentage agreeing shows that infrastructure remains relevant to a considerable group of households. This finding reflects an important division between access to land and access to usable agricultural land. A household may be able to obtain land but still face problems using it productively where roads, bridges, transport facilities, storage facilities, electricity and irrigation infrastructure are poor. In such situations, infrastructure might not prevent formal access to land but can increase the cost and difficulty of reaching the farms, transporting inputs and moving harvested produce to available markets. This finding is consistent with the wider agricultural literature in Nigeria. World Bank (2022) recognizes inadequate rural infrastructure, mostly poor transport networks and limited connectivity, as important limitations to agricultural productivity and market participation. Also, FAO (2017) highlights that rural infrastructure, including roads, storage, irrigation and market facilities, is crucial for improving agricultural production and strengthening rural livelihoods. The Poor infrastructure can therefore indirectly cause a reduction in the economic value of accessible land by increasing production and transportation costs. The high percentage of respondents who disagreed may also be described due to the nature of land access in

the study area. Where households depend largely on customary or family-based land arrangements, they regard land ownership or availability as distinct from the condition of infrastructure serving the land. So, infrastructure could be perceived more as a production and marketing limitation than as a direct land-access limitation. From a household food security perception, inadequate infrastructure remains very important. Poor roads can control farmers' access to agricultural inputs and markets, increase post-harvest losses and reduce farm-gate prices, possibly weakening household income and food availability. Consequently, 51.8% of respondents did not consider poor infrastructure as a direct limitation to land accessibility, however, improving rural infrastructure can strengthen the productive benefits resulting from agricultural land and contribute to improved household food security in the area.

VI. CONCLUSION

The findings revealed the households experience on agricultural land accessibility through a number of economic, institutional, social, security and infrastructural factors but the extent to which each factor limits access differs considerably.

The respondents generally perceived land for agricultural purposes as accessible, this is because out of the 393 valid responses, 65.6% rated agricultural land as accessible or very accessible, whereas 16.0% rated it as inaccessible or very inaccessible and 18.3% reported a neutral position. The average accessibility rating was above the scale midpoint ($M = 3.64$, $SD = 1.01$), with a median of 4.00. The null hypothesis was rejected. The results suggest that respondents held a statistically significant and substantively positive perception of agricultural land accessibility.

Among the factors surveyed, high land cost emerged as one of the most prominent limitations with a combined 57.3% of respondents agreed or strongly agreed that the high cost of land limits agricultural land accessibility. This implies that land may be available, many households may lack the financial capacity to acquire or rent sufficient land. Insecurity and land conflict were also another important factor with a total of 46.7% agreeing or strongly agreeing that

insecurity causes land inaccessibility. This shows that physical availability of land does not necessarily turn into effective access when households cannot safely cultivate their lands.

The land policy, land tenure, weak land administration, government acquisition and poor infrastructure were largely not perceived as major limitations by most of the respondents. About 57.5% disagreed or strongly disagreed that land policy control access, while 49.5% expressed comparable views concerning the land tenure system. Similarly, 49.5% disagreed or strongly disagreed that weak land administration is a limitation, related with only about 12.1% who agreed or strongly agreed. Government acquisition received an even stronger pattern of disagreement, with 56.5% opposing it as a major limitation.

The respondents did not perceive Gender bias as a dominant limitation, as 53.5% disagreed or strongly disagreed that it limited land accessibility. But, the 17.6% who agreed shows that gender-related barriers remain germane for a percentage of households. Likewise, poor infrastructure was also opposed as a major limitation by 51.8%, although 20.8% considered it very significant to land accessibility.

The lack of access to credit facility was identified by 32.0% of respondents as a major limitation, demonstrating that financial access influences the ability of some households to acquire and utilize agricultural land.

These findings suggest that economic affordability and security conditions are more immediate limitations to agricultural land accessibility than formal institutional factors. The results imply that enhancing household food security needs not only increasing land availability but also enhancing land affordability, household financial capacity, security of farming environments and productive use of accessible land.

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