Content list available at BioEnv

Bioresources and Environment

Journal homepage: www.bioenvuitm.com

Informal Land Delivery System and Access to Land for Urban Agriculture in Ilorin, Nigeria

Raheem Wasiu Mayowa[1] & Ola Akeem Bayonle[1*]

[1]Department of Urban and Regional Planning, Faculty of Environmental Sciences, University of Ilorin, P.M.B. 1515, (240222), Ilorin, Kwara State, Nigeria.

Received June 14, 2025, Accepted in revised form October 25, 2025
Available online October 28, 2025
DOI: 10.24191/bioenv.v3i3.105

ABSTRACT. Most studies on land delivery systems have focused on the role of informal mechanisms in facilitating residential land access, while their influence on agricultural land delivery has received limited attention. This study examines the role of informal land agents in supporting urban agriculture in Ilorin, Nigeria. Using a cross-sectional survey design, primary data were collected through structured questionnaires administered to 73 randomly selected informal land agents and 303 urban farmers across the three Local Government Areas of Ilorin. Data was analysed using descriptive statistics and inferential techniques, including the Respondents' Agreement Index (RAI) and Pearson correlation analysis. Results revealed that most informal agents were male, aged between 20 and 39 years. Land was mainly acquired through direct contact with owners (72.6%), and location was the primary factor determining price (78.2%). Informal agents serve as key intermediaries in supplying land for urban agriculture, bridging gaps in the formal land administration system. A strong positive correlation was found between the existence of informal land delivery systems and access to agricultural land. The study recommends formal recognition of these agents and regular training on urban land use priorities.

Keywords: *Urban agriculture, food security, informal land agents, formal land administration, access to land*

1. INTRODUCTION

Nigeria is currently facing the challenge of food insecurity, accompanied by widespread hunger and malnutrition among its citizens. The situation is more severe in urban centres, where over 50% of the population resides (Statista, 2024). Available data show that total annual food crop production declined from 37.5% in 2002 to 21.6% in 2016, with no significant progress recorded in reducing the nation's food deficit (Urama and Nfor, 2018). In contrast, the country's population grew by about 40% during the same period (Statista, 2024). A study conducted in Lagos by Roberts et al. (2019) found that only 33.8% of urban households were food secure, while 45.1% were food insecure without hunger, and 21.1% were food insecure with hunger. According to Nzeka (2018), approximately 80% of food consumed in urban areas is supplied from rural regions, despite a declining farming population.

Recent findings indicate that about 33 million people are currently facing food insecurity in Nigeria. The population classified as being in an 'Emergency' phase is projected to increase from 680,000 between March and May 2025 to 1.2 million between June and August 2025—a 43% rise. The north-western states are the most affected, with Zamfara (400,000), Sokoto (183,000), and Katsina (130,000) leading, followed by the north-eastern states of Borno (146,000) and Yobe (133,000). Kaduna State in the north-central region records about 100,000 people affected. Collectively,

*Corresponding author: Tel.: +234 37991615.
E-mail address: *ola.ab@unilorin.edu.ng*

the Borno, Adamawa, and Yobe (BAY) states account for 15% (3.7 million people) of Nigeria's food-insecure population, while the north-west represents 17% (4.2 million people). Without sustained intervention, these figures are expected to rise during the lean season to 4.6 million in the BAY states and 5 million in the north-west (World Food Programme, 2024; FAO, 2025).

With the overdependence of urban centres on rural areas for food supply, the continuous rise in urban populations, and the government's recent policy to reduce food imports by closing land borders to restrict certain food items, urban food insecurity has intensified. Furthermore, persistent rural depopulation has rendered rural communities increasingly incapable of producing sufficient food to meet national demand (FAO, 2025). Consequently, the participation of urban residents in agricultural production has become inevitable. Coincidentally, thousands of unemployed individuals reside in urban areas, with the current urban unemployment rate standing at 4.84% (Statista, 2025). Many of them possess the potential to engage in urban agriculture (Ola, 2020), but their efforts are hindered by limited access to land - a challenge rooted in a distorted land delivery system (Thwaites et al., 2025).

There are two principal channels of land delivery in Nigeria: the formal and the informal. The formal channel operates within the legal and administrative frameworks established by the Land Use Act of 1978 (Olapade and Aluko, 2023). In contrast, informal land delivery channels function within unregulated urban land markets, providing access to land through unofficial processes; consequently, such transactions do not receive state approval (Baye, 2025). The success rate of these informal channels is notably high, particularly in facilitating land access for low- and middle-income households (Alabi et al., 2020). Hence, informal land delivery systems may serve as the principal means of land supply for urban agriculture in Nigeria.

Existing literature on land delivery systems has largely focused on the role of informal mechanisms in facilitating access to land for residential purposes (Agheyisi, 2020; Adegbemile, 2022), whereas their influence on land delivery for agricultural purposes has received limited scholarly attention. This constitutes the knowledge gap that the present study seeks to address, with particular reference to the city of Ilorin, Kwara State, in Nigeria's North Central zone. Official data show that 11,264 residents have expressed interest in the state government's urban agriculture programme; however, poor access to land remains a major obstacle to achieving this goal (Babaita and Amin, 2024). Paradoxically, over 20,000 hectares of vacant land exist within the city that could be utilised for urban agriculture (Morakinyo et al., 2025). Hence, this study examines the nature of the informal land delivery system and its impact on urban agricultural practices in Ilorin. The choice of Ilorin is based on its distinctive vegetation and edaphic conditions, which are favourable for agriculture. Moreover, the security challenges afflicting Northern Nigeria have triggered an influx of displaced persons into Ilorin, resulting in rapid population growth and exacerbating food shortages. Notably, many of these migrants are unemployed but possess the potential to engage in agriculture if land becomes accessible.

2. METHODOLOGY

2.1. The Study Area

The study was conducted in Ilorin, the capital city of Kwara State, located in the North-Central region of Nigeria (Figure 1). The city lies between latitudes 8°24'N and 8°36'N and longitudes 4°31'E and 4°41'E. Ilorin occupies a strategic position at the intersection of major transportation routes, including the Lagos–Kaduna highway and the railway line linking Lagos to northern Nigeria (Encyclopedia Britannica, 2019). This advantageous location has greatly contributed to its emergence as a major commercial and administrative centre in the region.

Ilorin is situated within the transition zone between the southern rainforest and northern savanna vegetation belts (Oseni, 2013). The city experiences a tropical savanna climate characterised by distinct wet and dry seasons. The wet season usually spans from April to October, with peak rainfall occurring between July and September, while the dry season extends from November to March (World Atlas, 2019). The city's topography is generally flat, with an average elevation of about 300 metres above sea level, although gentle undulations and hills are present. The highest point is Sobi Hill, which rises to approximately 394 metres (Ayanshola et al., 2018). Ilorin is drained by several rivers and streams, the most prominent being the Asa River, which flows through the eastern part of the city and serves as a major water source for domestic and agricultural use (Oseni, 2013). Other notable water bodies include the Oyun River, Oba River, and several smaller streams and ponds.

The economy of Ilorin is diverse and vibrant, with multiple sectors contributing to its growth and development. Agriculture remains a key component, with both urban and peri-urban areas actively engaged in farming. The peri-urban zones are particularly noted for their extensive farmlands and agricultural output (Ajala and Olayiwola, 2020). Major crops cultivated include cereals such as maize, sorghum, and millet; root crops such as cassava and yam; vegetables; and cash crops such as cotton and groundnuts (Oseni, 2013). In addition to agriculture, Ilorin hosts a growing industrial sector that includes textile and garment factories, food and beverage processing plants, and metal fabrication workshops (Babaita and Amin, 2024). The city's strategic location and efficient transport connections have further stimulated industrial expansion and commercial activity.

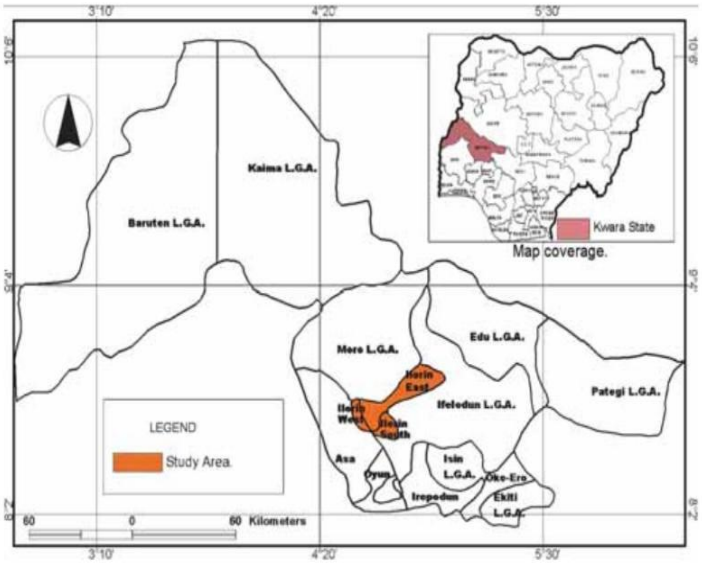

Figure 1. Ilorin in the National Context

2.2. Research Approach

This study investigates the role of informal land delivery agents in enhancing access to urban land for agricultural purposes in Ilorin, Nigeria. Data was collected through a questionnaire survey and field observations, supplemented by information obtained from relevant public and private documents.

2.3. Sampling Method and Size

The study covered the three Local Government Areas (LGAs) of Ilorin—Ilorin South, Ilorin East, and Ilorin West—which were selected for the survey. Each LGA comprises twelve (12) political wards, except Ilorin South, which has eleven (11) wards. Preliminary investigations revealed that urban agricultural activities are primarily concentrated on the fringes of these wards across all the selected LGAs. Accordingly, three wards from each LGA, where agricultural practices were most prominent, were purposively selected for the survey. These include:

I. Ilorin South: Oke-Ogun, Akanbi IV, and Akanbi V;
II. Ilorin East: Oke Oyi/Oke Ose/Alalubosa, Zango, and Agbeyangi/Gbadamu/Osin;
III. Ilorin West: Oloje, Wara/Egbejila/Oshin, and Okoerin.

2.4. Informal Land Agents

Records from the Association of Informal Land Agents indicate that a total of 146 land agents operate across the three LGAs, with 45 in Ilorin South, 38 in Ilorin East, and 63 in Ilorin West. Fifty per cent (50%) of the agents in each LGA were randomly selected for the survey, resulting in a total sample of 73 land marketers.

2.5. Urban Farmers

A unique characteristic of this group of workers is that, while some are registered with the government and the Association of Urban Farmers, others are not. To obtain a reliable estimate of the total farming population, the researchers enumerated the unregistered farmers using the snowball sampling technique. According to Barnard (2000), snowball sampling involves identifying one or more key individuals and asking them to nominate others who may qualify as research participants. Using this approach, a total of 207 urban farmers were identified in the study area between 9 June 2024 and 25 July 2024 – comprising 52 in Ilorin South, 91 in Ilorin East, and 64 in Ilorin West. Data obtained from the Kwara State Ministry of Agriculture indicated that 398 registered urban farmers operate within the three LGAs, distributed as follows: 157 in Ilorin South, 135 in Ilorin East, and 106 in Ilorin West. This brought the total number of identified urban farmers to 605. In line with Neuman's (1994) recommendation, fifty per cent (50%) of the farmers in each LGA were randomly selected for the survey. The breakdown is as follows: Ilorin South – 105; Ilorin East – 113; and Ilorin West – 85, giving a total sample of 303 urban farmers across the three LGAs.

2.6. Data Collection

To examine the socio-demographic characteristics of informal land agents, their operational attributes, and their awareness of the constraints to land acquisition for urban agriculture in Ilorin, a pre-tested structured questionnaire was administered to 73 sampled land agents between 9 June and 25 July 2024. The questionnaire comprised 23 closed-ended (tick-box) questions, 8 open-ended questions, and 3 Likert-scale items, organised into five sections.

Part One focused on the socio-economic characteristics of the respondents, including gender, age, marital status, educational attainment, income, and household size. Part Two addressed the operational characteristics of the agents, with questions on methods of securing land for sale, determinants of land cost, categories of clients, and strategies for client acquisition. Part Three examined respondents' awareness of the challenges associated with land acquisition for urban agriculture. This section included questions on land-use preferences, awareness of the difficulties faced by practising and potential urban farmers in accessing land, and reasons for the agents' willingness or unwillingness to lease or sell land for agricultural purposes. Similarly, to capture the perceptions of urban farmers regarding the role of informal land agents in land delivery for urban agriculture, a pre-tested structured questionnaire was administered to 303 sampled farmers in the study area. Respondents were instructed to select the appropriate options where provided and were also allowed to express their views freely in response to the open-ended questions.

2.7. Data Analysis

The data collected were processed using the Statistical Package for the Social Sciences (SPSS) version 25, where two analytical approaches were employed to summarise the data and draw inferences. First, univariate descriptive statistics—comprising frequency distributions and percentages—were used to describe the socio-economic profile and operational characteristics of the informal land agents. Second, the Respondents' Agreement Index (RAI) was applied to assess the role of informal land agents in facilitating farmers' access to land for agricultural purposes within the city. Six variables describing this role were identified: serving as the main channels of land supply for urban agriculture; filling the gap in the formal land administration system; enhancing the ability of disadvantaged groups to access land; increasing land access for the urban poor; facilitating land ownership for women; and establishing spatial patterns of agricultural land. It was assumed that the level of respondents' agreement would reflect the extent of the role played by informal land agents, as indicated by the strength of these variables within the study area. To calculate the RAI, respondents were asked to rate each variable on a five-point Likert scale: Strongly Agree (SA) = 5, Agree (A) = 4, Just Agree (JA) = 3, Disagree (DA) = 2, and Strongly Disagree (SD) = 1. The Summation of Weight Value (SWV) for each variable was obtained by multiplying the number of responses for each rating by its corresponding weight value and then summing the results. Mathematically, this is expressed as:

$SWV = \sum^{5}_{i=1} X_i Y_i$ ……..Equation (1)

Where, SWV is the summation of weight value;

X_i is the respondents' rating of a particular variable indicating land agents' role;

Y_i is the weight value assigned to each variable.

The RAI for each variable is arrived at by dividing the summation of weight values by the sum of the number of respondents to each of the five ratings. This is expressed as:

$$RAI = \frac{SWV}{\sum^{5}_{i=1} P_i} \quad \text{.....Equation (2)}$$

The only hypothesis of the study was tested using Pearson correlation analysis.

3. RESULTS AND DISCUSSION

3.1. Socio-Demographic Characteristics of the Informal Land Agents

The study was conducted among 73 informal land delivery agents across the three Local Government Areas of Ilorin, Kwara State, Nigeria. As shown in Table 1, the sample was predominantly male, with 69 respondents (94.5%), and most were aged between 20 and 39 years (52; 71.1%). A large proportion were married (59; 80.8%) and had attained tertiary education (40; 54.8%). In terms of income, 39 respondents (53.5%) earned between ₦100,000 and ₦200,000 per month. Additionally, 53 respondents (72.6%) had been engaged in land merchandising for between five and fifteen years. These demographic characteristics provide valuable context for understanding the nature, structure, challenges, and benefits of the informal land delivery business. The fact that most respondents possess substantial experience in land merchandising suggests that they are well-positioned to provide informed insights into the operations of the informal land delivery sector in Ilorin.

Table 1. Socio-demographic characteristics of the respondents

Socio-demographic variable	Category	Frequency (n=73)	%
Gender	Male	69	94.5
	Female	4	5.5
Age (Years)	Less than 20	1	1.4
	20 – 29	5	6.8
	30– 39	32	43.8
	40 – 49	20	27.3
	50 – 59	8	11.0
	60 – 69	4	5.5
	70-79	2	2.7
	Above 79	1	1.4
Marital Status	Single	4	5.5
	Married	59	80.8
	Separated	1	1.4
	Widow/widower	2	2.7
	Divorced	7	9.6
Education	Primary	3	4.1
	Secondary	12	16.4
	Tertiary	40	54.8
	Vocational	14	19.2
	Quranic	3	4.1
	Informal	1	1.4
Monthly Income (₦) Note: The official rate is ₦1,610 to $1 Low, Medium, High	Less than 100,000	22	30.2
	100,000-200,000	39	53.5
	200,000-300,000	5	6.8
	300,000-400,000	5	6.8
	400,000-500,000	2	2.7
	Above 500,000	0	0.0
Years of Operation	Less than 5 years	3	4.1
	5-10 years	43	58.9
	10-15 years	10	13.7
	15-20 years	8	11.0
	Above 20 years	9	12.3

3.2. Operational Characteristics of Informal Land Agents

As shown in Table 2, the major mode of land acquisition among informal land agents was through direct contact with landowners, as reported by 53 respondents (72.6%). About 9 agents (12.3%) acquired land through professional colleagues, 8 (11.0%) through speculative purchases – buying land and holding it until its value appreciated—while 2 (2.7%) inherited the land they sold. In terms of client acquisition, collaboration with colleagues (39; 53.4%) and personal contact (26; 35.7%) were the predominant strategies. A few agents advertised through radio and television (2; 2.7%) or practised open marketing in public spaces such as shopping malls, recreation parks, and trade fairs (2; 2.7%). Only one respondent (1.4%) reported using online marketing, while three (4.1%) adopted all the aforementioned methods combined.

Private individuals constituted the largest client group, as indicated by 47 respondents (64.3%). Business ventures accounted for 13 (17.8%), followed by religious organisations (4; 5.5%), corporate organisations (2; 2.7%), socio-cultural associations (1; 1.4%), professional bodies (1; 1.4%), and government agencies (1; 1.4%). Four respondents (5.5%) reported patronage from all these categories. Notably, five agents (6.8%) enjoyed the patronage of government officials, suggesting that informal land agents play a highly effective role in land merchandising and constitute a major force in the land delivery system. The most important factor influencing land price determination was location, cited by 57 respondents (78.2%). Other factors included the client's social status (5; 6.8%), agreed payment period (4; 5.5%), third-party arrangements (3; 4.1%), existing relationships between agents and clients (2; 2.7%), and the agent's ownership status (2; 2.7%).

A majority of agents (46; 63.0%) expressed no preference regarding the use to which the land they sold was put, maintaining that ownership transfer granted the buyer full rights of use. However, 27 respondents (37.0%) preferred specific land uses and sometimes sought to influence buyers' decisions, particularly those who inherited the land or acted on behalf of landowners. Among these, residential development was the most preferred (22; 30.2%), followed by commercial (2; 2.7%), industrial (2; 2.7%), and institutional uses such as schools or hospitals (1; 1.4%). It is noteworthy that none of the agents expressed a preference for agricultural use, despite the importance of urban agriculture in addressing food security challenges in Ilorin and other Nigerian cities. Similarly, the absence of preference for recreational use suggests a low level of awareness of the physical, psychological, and economic benefits of recreational spaces.

Table 2. Operational characteristics of informal land agents

Operational Characteristics	Category	Frequency (n=73)	%
Mode of Acquiring Land for Sale	Inheritance	2	2.7
	Purchase over a long period	8	11.0
	Contracted by the owners	53	72.6
	Contracted by professional colleagues	9	12.3
	Contracted by government officials	1	1.4
Strategies of Securing Clients	Radio and TV adverts	2	2.7
	Collaboration with colleagues	39	53.4
	Personal contact	26	35.7

	Marketing in public places	2	2.7
	Online marketing	1	1.4
	All of the above	3	4.1
Categories of Clients	Individuals	47	64.3
	Businesses	13	17.8
	Corporate organisations	2	2.7
	Religious bodies	4	5.5
	Socio-cultural associations	1	1.4
	Professional bodies	1	1.4
	Government agencies	1	1.4
	All of the above	4	5.5
Land Cost Determinants	Land location	57	78.2
	Clients' status	5	6.8
	Payment period	4	5.5
	Third-party arrangement	3	4.1
	Agents' relationship with clients	2	2.7
	Holding the status of the agents	2	2.7
Preferred Land Uses	Residential	22	30.2
	Commercial	2	2.7
	Institutional	1	1.4
	Agriculture	0	0.0
	Recreational	0	0.0
	Industrial	2	2.7
	No response	46	63.0

3.3. Awareness of the Challenges of Securing Land for Urban Agric.

The lack of preference among informal land agents for allocating land to agricultural use is reinforced by the limited awareness of most agents—60 (82.2%)—regarding the challenges faced by practising and potential urban farmers in securing land for cultivation within the city. Only 13 (17.8%) were aware of these challenges. This low level of awareness appears to have influenced their reluctance to lease land for agricultural purposes. An overwhelming majority, 69 (94.5%), were not favourably disposed to leasing their land for urban agriculture. This attitude has contributed to the limited availability of cultivated land and the small plot sizes used for agricultural activities in Ilorin, as also reported by Ola (2020). The reasons advanced by the agents for their unwillingness to lease land for agriculture are rooted in the socio-economic structure of Ilorin. Most respondents, 62 (85.0%), cited the low profitability of agricultural land leasing as their primary reason. A smaller proportion, 5 (6.8%), expressed fear of losing ownership of their land if leased for a long period, while 2 (2.7%) believed the government might forcibly acquire the land if it were used for agriculture over an extended period, as such land could be categorised as public open space (Table 3).

Table 3. Reasons for reluctance to lease land for agricultural purposes

Reasons	Frequency	Percentage
Low profit	62	85.0
Fear of losing the land to the lease	5	6.8
Govt. may forcefully acquire the land	2	2.7
No response	4	5.5
Total	**73**	**100.0**

3.4. The Role of Informal Land Agents in Land Delivery for Urban Agriculture

As outlined in the methodology section, the Respondents' Agreement Index (RAI) was employed to assess the role of informal land agents in facilitating farmers' access to land for agricultural purposes within the city. The results of the RAI analysis are presented in Table 4.

Table 4. Respondents' Agreement Index (The role of informal land agents in facilitating farmers' access to land for agricultural purposes)

S/N	Role	(5) - Strongly agree – (1) Strongly disagree (n=985)					SWV	RAI(MS)	MD(RAI)
		5	4	3	2	1			
1	Main channels of land supply for urban agriculture	593	312	62	13	5	4430	4.50	1.18
2	Fill the gap of the formal land administration system	599	254	101	29	2	4374	4.44	1.12
3	Enhance the ability of the disadvantaged group to access land	76	683	112	97	17	3659	3.71	0.39
4	Increase land access to the urban poor	111	464	178	139	93	3316	3.36	0.04
5	Facilitate land ownership for women	23	120	186	467	189	2276	2.31	-1.01
6	Establish spatial patterns of agricultural land	5	47	82	298	553	1608	1.63	-1.69
Average RAI(MS) (composite score)								3.32	

With an average RAI (MS) of 3.28, the results in Table 4 indicate that, on average, respondents agreed that all the identified roles are appropriate and adequately describe the activities of informal land agents in facilitating access to land for urban agriculture. The highest RAI value was 4.50, while the lowest was 1.63. Accordingly, the deviations from the mean were +1.18 and –1.69, respectively. Variables with positive deviations around the mean MD (RAI) included: serving as the main channel of land supply for urban agriculture (+1.18), filling the gap in the formal land administration system (+1.12), enhancing the ability of disadvantaged groups to access land (+0.39), and increasing land access for the urban poor (+0.04). These variables were identified by respondents as the dominant roles of informal land agents. Conversely, variables with negative deviations included facilitating land ownership for women (–1.01) and establishing spatial patterns of agricultural land (–1.69). Respondents did not regard these as principal roles of informal land agents in the city's land delivery process. The role of serving as the main channel of land supply for urban agriculture, with an RAI of +1.18, was considered the most significant. The relatively seamless and less cumbersome nature of acquiring land through informal agents positions them as the primary suppliers of urban land for both agricultural and non-agricultural purposes. This finding aligns with Fajobi et al. (2023), who observed that state institutions responsible for land administration in Nigeria face several constraints—including hierarchical and outdated organisational structures and bureaucratic bottlenecks—that impede efficient land service delivery.

The second most important role, filling the gap in the formal land administration system (RAI = +1.12), reflects how

informal mechanisms compensate for institutional inefficiencies. Informal land delivery systems frequently provide land to individuals and groups seeking to engage in urban agriculture. For example, Siakilo (2014) reported that informal land tenure systems in Nairobi facilitate access to land for low-income farmers. These systems rely on social networks, local negotiations, and customary practices, enabling urban residents to bypass formal barriers. The third major role identified was enhancing the ability of disadvantaged groups to access land (RAI = +0.39). In the context of Ilorin, such groups include individuals from diverse ethnic or religious backgrounds and migrants from other states. Formal land delivery systems often exclude these groups due to their origins or social status. However, informal agents facilitate their access through operational flexibility and profit-oriented motivation.

Another important role of informal land delivery agents is their contribution to improving land access for the urban poor. Individuals with limited financial capacity to acquire land through formal mechanisms are often assisted by informal agents through flexible arrangements, such as incremental payment schemes. This finding aligns with the observation by Wairimu and Karanja (2016), who noted that the success rate of informal land delivery channels is significantly high, particularly in facilitating land access for low-income households. Their effectiveness stems largely from their user-friendly processes and the social legitimacy they command within urban communities.

To further examine the relationship between informal land agents and access to land for urban agriculture, the following hypothesis was formulated:

H_0: There is no significant relationship between the existence of informal land delivery practices and access to land for urban agricultural practices.

The hypothesis was tested using Pearson's correlation analysis, in which respondents' access to land was correlated with the existence of informal land delivery practices. The results, presented in Table 5, show a p-value of $0.579 > 0.05$. This leads to the rejection of the null hypothesis and the acceptance of the alternative hypothesis, indicating a significant relationship between the existence of informal land delivery practices and access to land for urban agricultural use. In essence, the involvement of informal land agents enhances opportunities for urban residents to secure land for agricultural purposes.

Table 5. Pearson correlation analysis results

		Do you have access to land to practice agriculture?	Existence of the informal land agents.
Do you have access to land to practice agriculture?	Pearson Correlation	1	-.010
	Sig. (2-tailed)	-	.579
	N	985	879
Existence of the informal land agents.	Pearson Correlation	-.010	1
	Sig. (2-tailed)	.657	-
	N	898	1031

3.5. Challenges to the Use of Informal Land Delivery Systems in Accessing Land for Urban Agriculture

Table 6 presents the responses of urban farmers to various items designed to identify the challenges they face in securing land from informal land agents. The mean scores in column 6 succinctly summarise the consensus opinions of the respondents. These scores were derived by assigning weights to a five-point Likert scale, where Strongly Agree = 5 points and Strongly Disagree = 1 point. The total score for each item was then summed and divided by the number of respondents to obtain the mean value. The resulting mean scores were categorised as follows to determine the consensus opinion for each item:

1.00–1.49 = Strongly Disagree (SD);

1.50–2.49 = Disagree (D);

2.50–3.49 = Indifferent (I);

3.50–4.00 = Agree (A);

4.10–5.00 = Strongly Agree (SA).

Table 6. Challenges to the use of informal land delivery agents

Challenges	Ilorin South	Ilorin East	Ilorin West	Mean	Interpretation
Unwillingness to lease land for agricultural purposes	4.31(SA)	4.26(SA)	4.65(Agree)	4.40	Strongly Agree
High cost of leasing land	3.63(A)	3.84(A)	2.97(I)	3.48	Agree
Incessant threats to revoke land	3.91(A)	3.75(A)	4.02(A)	3.89	Agree
Persistent disputes over the land	2.42(D)	4.00(A)	4.08(A)	3.50	Agree
Small land size	3.51(A)	4.21(SA)	3.69(A)	3.80	Agree
Long distance between the residence and the farmland	3.05(I)	3.72(A)	3.87(A)	3.55	Agree
Legal tussles	3.84(A)	2.29(D)	3.53(A)	3.22	Indifferent

When asked about the willingness of informal land agents to lease the land under their control to urban farmers, responses indicated that, overall, farmers across the three sampled Local Government Areas (LGAs) strongly agreed that the agents were unwilling to lease land for agricultural purposes. With a mean weighted score of 4.40, the respondents strongly affirmed this position. The urban farmers also agreed that land leased for agricultural purposes was often offered at very high prices. While respondents from Ilorin South and Ilorin East agreed with this assertion, those from Ilorin West were indifferent. As further shown in Table 6, farmers from all three LGAs agreed that land agents frequently threatened to evict them if rent payments were delayed. Regarding the statement that lands managed by informal land agents were often subjects of disputes, which constrained continuous cultivation, the farmers' mean score of 3.50 indicates agreement. Similarly, respondents agreed that the plots available through informal land agents were generally too small to support large-scale farming. Farmers from Ilorin South and Ilorin West agreed with this view, while those from Ilorin East strongly agreed, noting that their limited landholdings confined them to subsistence rather than commercial agriculture.

Many respondents also agreed (mean score = 3.55) that the distance between their residences and available farmlands was excessive. They attributed this to the growing competition for land for more profitable urban uses and to the unwillingness of land agents to lease land for agriculture. Interestingly, farmers from Ilorin South were indifferent (mean score = 3.05), possibly due to the largely peri-urban nature of the area, where access to farmland is relatively easier. A closer examination of Table 6 further shows that the mean response to the statement that lands managed by informal land agents are frequently subjected to legal disputes was indifferent overall. However, farmers from Ilorin South and Ilorin West, with mean weighted scores of 3.84 and 3.53, respectively, agreed with this assertion, whereas those from Ilorin East disagreed.

4. CONCLUSION

The findings of this study highlight the urgent need for the government to recognise urban agriculture as a viable strategy for addressing food shortages in cities. Consequently, comprehensive policies should be developed to regulate and streamline the operations of informal land delivery agents, thereby ensuring the effective supply of land for urban agricultural purposes. To this end, informal land agents should be granted official recognition and encouraged to register with the relevant authorities through simplified and transparent procedures. Furthermore, these agents should undergo periodic enlightenment and capacity-building programmes on land use planning and allocation priorities within the city to enable them to make informed decisions regarding land designated for urban agriculture, particularly in Ilorin. To promote investment in urban farming, tenure security for those accessing land through informal channels should be strengthened through proper titling. This will help curb fraudulent practices, such as the resale of the same plot to multiple buyers. In addition, threats to tenure security often stem from government-led evictions. Therefore, public authorities should guarantee short-term security of tenure for urban farmers who have acquired land informally, ensuring the protection of their investments. Tenure security can also be enhanced if government agencies adopt and formalise innovative procedures and documentation already used within informal systems, as these are widely understood, socially accepted, cost-effective, and procedurally simple.

ACKNOWLEDGMENTS

The authors would like to express gratitude for the support provided by the Management of the University of Ilorin through the Senate Research Grant to carry out this research.

AUTHOR CONTRIBUTIONS

Both authors contributed to the study's conception and design. Raheem Wasiu Mayowa performed material preparation, data collection, and analysis. Ola Akeem Bayonle wrote the first draft of the manuscript, and both authors commented on previous versions.

FUNDING

This work was supported by the University of Ilorin Senate Research Grant.

DATA AVAILABILITY

The authors declare that all data and materials, as well as the software application, support their published claims and comply with field standards. The data used was obtained directly from the field.

COMPETING INTEREST

The authors declare that there are no competing interests.

COMPLIANCE WITH ETHICAL STANDARDS

Ethical issues were given due consideration, regarding the purpose of the study, the contents of the research instrument, the acceptance of respondents' right to privacy, and the confidentiality of the data. The informed consent and willingness of the respondents to answer questions were also obtained.

REFERENCES

Adegbemile, I. H. (2022). The influence of environmental factors on the informal land delivery process in Nigeria. *International Journal of Sustainable Real Estate and Construction Economics*, *2*(2), 160-173. https://doi.org/10.1504/IJSRECE.2022.127648

Agheyisi, J. E. (2020). Informal land delivery and tenure security institutions in Benin City, Nigeria. Urban Forum, 31, 1–20. https://doi.org/10.1007/s12132-019-09365-5

Ajala, O. A. & Olayiwola, A. M. (2020). Urban crime in Ilorin, Nigeria: A spatio-temporal analysis. *International Journal of Criminology and Sociological Theory*, *13*(1), 1-15.

Alabi, A. M., Lasisi, M. O. & Azeez, M. A. (2020). The evolution of informal land use in a Nigerian market. *Environment and Planning B: Urban Analytics and City Science*, *47*(5), 745-758. https://doi.org/10.1177/2399808318804546

Ayanshola, A., Olofintoye, O., & Obadofin, E. (2018). The impact of global warming on precipitation patterns in Ilorin and the hydrological balance of the Awun basin. *Slovak Journal of Civil Engineering*, 26(1), 40-46. https://doi.org/10.2478/sjce-2018-0006

Babaita, T. A. & Amin, A. (2024). Challenges of local government administration on socio-economic transformation in Ilorin West Local Government Area, Kwara State, Nigeria. *Lapai International Journal of Administration*, 7(1), 1-11.

Baye, F. (2025). Informal land market mechanisms for accessing and securing land for housing development: The case of peri-urban areas of Woldia Township, Ethiopia. *Cogent Social Sciences*, *11*(1), 2482115. https://doi.org/10.1080/23311886.2025.2482115

Encyclopedia Britannica (2019). Ilorin: Location, History, Facts and Population. Avalaible at https://www.britannica.com/place/Ilorin/ Accessed 5 March 2025.

Fajobi, T. A., Raheem, O. A., & Olajide, F. (2023). Food is inevitable but the land is mismanaged: exploring the impacts of local actors utilization of land resources on food security in Nigeria. *GeoJournal*, *88*(1), 971-984. https://doi.org/10.1007/s10708-022-10670-z

FAO (2025). Latest food insecurity figures reveal persistent threats to the lives of 30.6 million people. Available at https://www.fao.org/nigeria/news/detail-events/en/c/1735060/ Accessed 5 March 2025.

Morakinyo, O. E., Abdulquadri, K., Ajibade, A. A., Taiwo, R. O., Oyeniyi, S. A. & Oyeniran, D. O. (2025). Interconnections of vulnerability, everyday hazards, and sustainable urban development: A case study of Ilorin, Nigeria. *Journal of Urban Development and Management*, *4*(1), 47-57. https://doi.org/10.56578/judm040104

Neuman, W. L. (1994). Social research methods: Qualitative and quantitative approaches (2nd ed.). Boston, MA: Adyn and Bacon.

Nzeka, U. (2018). Nigeria grain and feed annual report 2018. Report prepared for USAID Foreign Agricultural Service, Global Agricultural Information Network. Washington, DC: USAID.

Ola, A. B. (2020). Building a food-resilient city through urban agriculture: The case of Ilorin, Nigeria. Town and Regional Planning, 77, 89-102. https://doi.org/10.18820/2415-0495/trp77i1.7

Olapade, D. T. & Aluko, B. T. (2023). Tenure insecurity in informal land delivery system of Lagos State, Nigeria: Causes and manifestations. *Urban Forum*, *34*(1), 31–52. https://doi.org/10.1007/s12132-022-09463-x

Oseni, Z. I. O. (2013). Ilorin: History, culture & lessons of peaceful co-existence. Centre for Ilorin Studies (CILS), University of Ilorin, Ilorin.

Roberts, A. A., Osadare, J. O., & Inem, V. A. (2019). Hunger in the midst of plenty: A survey of household food security among urban families in Lagos State, Nigeria. *Journal of Public Health in Africa*, *10*(1), 885. https://doi.org/10.4081/jphia.2019.885

Siakilo, E. (2014). Characteristics and the state of land ownership in informal settlements in Nairobi, Kenya. *International Journal of Innovation and Scientific Research*, *3*, 218-226.

Statista (2024). Population of Nigeria between 1950 and 2024. Available at https://www.statista.com/statistics/1122838/population-of-nigeria/. Accessed 5 March 2025.

Statista (2025). Socioeconomic Indicators – Nigeria. Available at https://www.statista.com/outlook/co/socioeconomic-indicators/nigeria. Accessed 2 May 2025.

Thwaites, H. J., Hume, I. V. & Cavagnaro, T. R. (2025). The case for urban agriculture: Opportunities for sustainable development. Urban Forestry & Urban Greening, 110, 128861. https://doi.org/10.1016/j.ufug.2025.128861

Urama, N. E., & Yuni, D. N. (2018). Evaluating food crop sector performance in Nigeria (1999-2016). AfriHeritage Working Paper 2018-002, African Heritage Institution, Enugu.

Wairimu, L. W. & Karanja, P. (2019). Influence of human resource information systems on performance of the banking industry in Kenya. *The Strategic Journal of Business and Change Management*, *3*(4), 107-127. https://doi.org/10.61426/sjbcm.v3i4.312

World Atlas (2019). Where is Ilorin, Nigeria? Available at https://www.worldatlas.com/af/ng/kw/where-is-ilorin.html. Accessed 21 September 2025.

World Food Programme (2024). WFP calls for urgent life-saving support in Nigeria as 33 million people face food insecurity in 2025. Available at https://www.wfp.org/news/wfp-calls-urgent-life-saving-support-nigeria-33-million-people-face-food-insecurity-2025/. Accessed 5 March 2025.