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Article

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### GENDERED SOCIO-ECONOMIC PROFILES AND LEVELS OF INVOLVEMENT IN URBAN AGRICULTURE IN AKWA IBOM STATE, NIGERIA

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#### Abstract

This study is an analytical review of socio-economic characteristics of male and female urban farmers and their level of involvement in urban agriculture in Akwa Ibom State, Nigeria. The specific objectives were to; describe the socio-economic characteristics of male and female practitioners, identify the types of urban agriculture activities they engage in, and ascertain the level of involvement of both gender in urban farming. Data was collected from 240 respondents (120 males and 120 females) who were selected through a multistage sampling procedure, while collated data were analysed with the aid of descriptive statistics. Findings revealed that urban agriculture was dominated by middle-aged adults (41–60 years), accounting for the highest proportion 77.5% of all respondents, with most participants being married (74.6%) and mainly, possessing secondary-level education. (46.3%). Crop cultivation ( $\bar{x} = 3.37$ ) and livestock rearing ( $\bar{x} = 3.26$ ) were the most common urban agriculture activities among both gender, though women showed higher engagement in agro-processing ( $\bar{x} = 3.18$ ) and day-to-day routine tasks. Categorically, a high proportion (50.8%) of respondents demonstrated moderate involvement in urban agriculture, while only a moderate 32.5% recorded high involvement, with women having a slightly higher rate of high involvement in comparison (35.0%) compared to male respondents (30.0%). The results highlight the significant but under-recognised role women play in sustaining urban food systems in the State. The study concludes that gender differences exist in the nature and intensity of participation, with women showing relatively higher involvement. It recommends gender-responsive capacity building, targeted support programmes, and youth engagement strategies to enhance inclusive participation and productivity in urban agriculture.

**Keywords:** Urban Agriculture, Gender, Socio-economic Characteristics, Involvement, Food Security, Nigeria.

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## **Introduction**

Urban agriculture has gained increasing recognition as a vital livelihood strategy capable of enhancing food security, generating income, and improving urban resilience, particularly in developing countries. Rapid urbanisation, changing consumption patterns, and rising economic pressures have resulted in a growing need for urban households to diversify their sources of food and income through agricultural activities within city spaces (Putra et al., 2020). In Nigeria, urban agriculture has evolved beyond backyard gardening to include a broad spectrum of activities such as crop production, livestock rearing, aquaculture, and agro-processing within urban and peri-urban environments (Ovharhe et al., 2020). Although these activities contribute significantly to household nutrition and survival, participation patterns vary across socio-economic groups, with gender emerging as a defining variable influencing access, involvement, and benefits. Gender remains a key lens through which agricultural participation and benefits can be understood. In most African societies, gender norms shape the roles, responsibilities, and opportunities available to men and women, thereby influencing agricultural engagement, access to land, control over resources, and decision-making power (Food and Agriculture Organisation (FAO - 2021). Within Urban Agriculture, these gendered roles are often redefined due to the urban context, where traditional land tenure systems, labour dynamics, and economic incentives differ from rural settings. While studies have shown that women often dominate subsistence-oriented urban farming due to their household food provisioning role, men tend to participate in activities with higher commercial value (Olufemi, 2019)). However, limited empirical evidence exists on how these gender patterns manifest in the urban agricultural landscape of Akwa Ibom State.

The socio-economic characteristics of individuals involved in urban agriculture provide critical insights into participation trends and livelihood outcomes. Factors such as age, marital status, education, income level, household size, and occupation significantly influence the nature and intensity of involvement in urban farming (Gavrilas et al., 2025). For instance, higher education and income levels may affect individuals' motivation, whether for commercial production, household food supplementation, or as a coping strategy against economic shocks (Ansah et al., 2020). In a State like Akwa Ibom, where the rising cost of living, fuel subsidy removal, and limited wage growth have heightened urban livelihood vulnerabilities, understanding the socio-economic profile of urban farmers becomes even more relevant for policy and development planning. Urban agriculture in Akwa Ibom State has recently experienced increased attention due to the State Government's agricultural transformation and food security agenda under the ARISE Initiative, which promotes local food production, youth inclusion, and agribusiness development (Akwa Ibom State Government, 2023). Despite these interventions, there is limited research that disaggregates urban agriculture participation by gender to show who participates, what activities they engage in, and the extent of involvement across households. Such evidence is crucial for designing gender-responsive policies, targeted training, access to inputs, and livelihood support mechanisms that can optimise the socio-economic potential of urban farming.

Existing studies in Nigeria have focused largely on rural agricultural participation or general urban farming without a gender-specific analysis. For example, Olufemi (2019) explored income effects of urban farming in Lagos but did not examine gendered involvement, while Ayogu et al. (2025) reported on food security benefits of urban agriculture in Enugu with limited focus on gender dynamics. This creates a research gap on the socio-economic variations in engagement between men and women in urban agriculture,

particularly within Akwa Ibom State. Addressing this gap is vital for informing gender-equitable agricultural programming and ensuring inclusive participation in urban food systems. Against this backdrop, this paper examines the gendered socio-economic characteristics and levels of involvement in urban agriculture in Akwa Ibom State. Specifically, it seeks to:

- i. Describe the socio-economic characteristics of men and women involved in urban agriculture in Akwa Ibom State;
- ii. Identify the main types of urban agriculture practised by men and women in Akwa Ibom State; and
- iii. Ascertain the level of involvement of men and women in urban agriculture in Akwa Ibom State.

### **Methodology**

This study was carried out in Akwa Ibom State, located in the South-South geopolitical zone of Nigeria. The State shares boundaries with Cross River State to the east, Abia State to the north, Rivers State to the west, and is bordered to the south by the Atlantic Ocean. Administratively, Akwa Ibom State consists of 31 Local Government Areas (LGAs), with Uyo serving as the State capital. Vegetation ranges from tropical rainforest to coastal mangrove, offering favourable ecological conditions for various forms of urban agriculture, including vegetable production, livestock and poultry rearing, aquaculture, and backyard gardening. Major urban centres such as Uyo, Eket, Ikot Ekpene and Oron play a key role in urban farming activities due to their high population density, increasing food demand, and limited land access, which encourages innovative farming practices such as container, homestead, and small-plot farming. The study population comprised male and female urban agriculture practitioners residing in selected urban areas of Akwa Ibom State. The target population included individuals engaged in various urban farming activities such as crop cultivation, livestock rearing, poultry production, aquaculture, agro-processing and other related urban agricultural ventures. A multistage sampling procedure was adopted for the study. In the first stage, four out of the six agricultural zones in Akwa Ibom State (Uyo, Eket, Ikot Ekpene and Oron) were purposively selected due to their high concentration of urban farming activities. In the second stage, one block was purposively selected from each zone based on the prominence of urban agricultural practices. Two urban cells were then purposively selected from each block, yielding a total of eight urban cells. In the final stage, a snowball sampling technique was used to identify and select 30 urban agriculture practitioners (15 males and 15 females) from each cell, resulting in a total sample size of 240 respondents. Snowball sampling was appropriate for reaching dispersed and informal urban agriculture practitioners who may not be easily identified through conventional sampling approaches.

The sampling frame is presented in Table 1.

**Table 1: Sampling Frame for the Study**

<b>Agricultural Zone</b>	<b>Selected Block</b>	<b>Selected Cells</b>	<b>Male Respondents per Cell</b>	<b>Female Respondents per Cell</b>	<b>Total Respondents per Block</b>
Uyo	Use Ikot Ebio	Uyo Urban	15	15	60
		Use Offot	15	15	
Eket	Ukwa	Ikot Usekong	15	15	60
		Afaha Uqua	15	15	
Ikot Ekpene	Ikot Ekpene	Ifuho	15	15	60
		Ikot Abia Idem	15	15	

Oron	Oron/Udung Uko	Esuk Oro	15	15	60
		Udung Osin	15	15	
<b>Total</b>	–	8 Cells	<b>120</b>	<b>120</b>	<b>240</b>

**Source:** Derived from official data of Akwa Ibom Agricultural Development Programme (2024)

Primary data were collected through a structured questionnaire administered to respondents within the selected urban cells. The questionnaire comprised both closed-ended and Likert-scale items to facilitate ease of response, comparability of data and subsequent analysis. Socio-economic characteristics were measured using structured questions capturing variables such as age (in years), marital status, educational level (ranging from no formal education to tertiary education), primary occupation, household size (number of persons), years of urban farming experience and monthly income derived from urban agriculture. Types of urban agriculture practised were assessed using items relating to crop production, livestock rearing, aquaculture and agro-processing. Respondents rated how frequently they engaged in each practice on a four-point Likert scale ranging from 1 = Not at all, 2 = As occasion demandsA little, 3 = Every other seasonSometimes, to 4 = Regularly. Levels of involvement in urban agriculture were measured using 13 core farming activities rated on a four-point Likert scale (1 = Not involved to 4 = Highly involved). Composite scores were generated, and involvement levels were categorised into low, moderate and high based on score ranges. Data collected were analysed using descriptive statistics such as frequency counts, percentages, means and standard deviations to address the study objectives. Mean scores and ranking were computed to determine the types of urban agriculture most practised by men and women. For the level of involvement in urban agriculture, total scores for each respondent were computed (maximum score of 52) and categorised as low (13–25), moderate (26–39) or high (40–52) involvement. All analyses were conducted using the IBM SPSS Statistics software, Version 26.

## **Results and Discussion**

**Socio-Economic Characteristics of Men and Women Involved in Urban Agriculture:** The socio-economic characteristics of the 240 respondents (120 males and 120 females) involved in Uurban Aagriculture are presented in Table 2. The findings show that urban agriculture in Akwa Ibom State is dominated by middle-aged adults, with 77.5percent % of respondents aged between 41–60 years. This suggests that the activity is more attractive to economically active adults rather than to younger populations. This aligns with Oyebanji (2024), who reported that Uurban Ffarming in Southern Nigeria is highly concentrated among middle-aged individuals due to their household food security obligations and livelihood responsibilities. Only 2.5 percent% of respondents were below 21 years, indicating low youth participation, which may be linked to youth migration to white-collar jobs and lack of interest in agriculture (Kamuzora, 2025). A greater proportion of respondents were married (74.6%), with more females (81.7%) than males (67.5%) in this category, implying that married women may be more engaged in urban farming to support household food supply and family nutrition. About Nearly half of the respondents had attained secondary school education (46.3%), indicating a moderate literacy level that can enhance the adoption of improved agricultural practices. This aligns with Aranguri et al. (2025), who found that basic literacy improves farmers’ ability to access urban agriculture information and markets. Trading was on a proportional basis, the most common occupation (36.3%), particularly among women (46.7%), while men were more likely to be artisans (29.2%). Only 7.9

percent% of respondents were full-time farmers, confirming that urban agriculture is largely practised as a secondary activity. Household sizes were mostly between 4–6 persons (52.1%), reinforcing the potential role of urban agriculture in sustaining household food needs. The majority earned below ₦20,000 monthly from urban agriculture, suggesting that although the practice contributes to livelihoods, its income-generating capacity remains limited, a trend also noted by Kuusaana et al. (2022), who observed that urban farming in developing cities is largely subsistence-driven with minimal commercial returns.

**Table 2: Socio-Economic Characteristics of Respondents (n = 240)**

Socioeconomic Variables	Total (n = 240)		Male (n = 120)		Female (n = 120)	
<b>Age Group</b>						
< 21 years	6	2.5	4	3.3	2	1.7
21–40 years	48	20.0	24	20.0	24	20.0
41–60 years	186	77.5	92	76.7	94	78.3
<b>Mean Age (Years)</b>	–	45.74	–	45.48	–	45.99
<b>Marital Status</b>						
Single	14	5.8	14	11.7	–	–
Married	179	74.6	81	67.5	98	81.7
Divorced	7	2.9	3	2.5	4	3.3
Widowed	40	16.7	22	18.3	18	15.0
<b>Educational Status</b>						
No Formal Education	19	7.9	9	7.5	10	8.3
Primary Education	42	17.5	20	16.7	22	18.3
Secondary Education	111	46.3	55	45.8	56	46.7
Tertiary Education	68	28.3	36	30.0	32	26.7
<b>Occupation</b>						
Full-time Farmer	19	7.9	9	7.5	10	8.3
Civil Servant	58	24.2	31	25.8	27	22.5
Trader	87	36.3	31	25.8	56	46.7
Artisan	56	23.3	35	29.2	21	17.5
Retiree	20	8.3	14	11.7	6	5.0
<b>Household Size</b>						
1–3 Members	36	15.0	28	23.3	8	6.7
4–6 Members	125	52.1	53	44.2	72	60.0
7–9 Members	79	32.9	39	32.5	40	33.3
<b>Mean Household Size (persons)</b>	–	~6	–	~5	–	~6
<b>Years of Experience in Urban Agriculture.</b>						
1–5 Years	80	33.3	44	36.7	36	30.0
6–10 Years	81	33.8	35	29.2	46	38.3
> 10 Years	79	32.9	41	34.2	38	31.7
<b>Mean Years of Experience</b>	–	8.6	–	8.6	–	8.7
<b>Monthly Income from Urban Agric.</b>						
< ₦20,000	144	60.0	74	61.7	70	58.3
₦20,001–₦50,000	72	30.0	30	25.0	42	35.0
₦50,001–₦100,000	10	4.2	7	5.8	3	2.5
> ₦100,000	14	5.8	9	7.5	5	4.2
<b>Mean Monthly Income (₦)</b>	–	28,375.17	–	30,541.82	–	26,208.52
<b>Total</b>	240	100.0	120	100.0	120	100.0

Source: Field Survey, 2025

### Types of Urban Agriculture Practised by Men and Women

Urban agriculture in the study area encompasses a diverse mix of cropping, livestock, and value-added activities. As shown in Table 3, crop cultivation recorded the highest mean score among both men ( $\bar{x} = 3.42$ ) and women ( $\bar{x} = 3.32$ ), indicating that crop production remains the most common urban farming activity. This finding corroborates Toku et al. (2024), who reported that limited land space in urban centres often favours small-scale crop cultivation such as vegetables, okra, pepper, and leafy greens. Livestock rearing ranked second overall ( $\bar{x} = 3.26$ ) but was more pronounced among men ( $\bar{x} = 3.38$ ) than women ( $\bar{x} = 3.15$ ), suggesting that men engage more in livestock ventures due to higher labour and capital requirements. In contrast, agro-processing was more common among women ( $\bar{x} = 3.18$ ), reflecting women’s stronger role in post-harvest value-addition, food vending, and home-based processing enterprises. This aligns with view of Adeniyi et al. (2023), who noted that women in urban food systems dominate small-scale processing of cassava, grains, and vegetables because of their traditional roles in household food management. Aquaculture showed the lowest level of practice, especially among women ( $\bar{x} = 2.63$ ), possibly due to the technical knowledge and start-up cost associated with fish production. With respect to farming systems, open-space farming ( $\bar{x} = 3.10$ ) and backyard gardening ( $\bar{x} = 3.06$ ) were the most common systems, indicating adaptation to space constraints typical of urban settlements. Similar observations were made by Ovharhe et al. (2020), who argued that backyard gardening is increasingly becoming integral to urban household food systems in Nigerian cities due to land scarcity. In essence, while both genders participate in a broad range of urban agriculture activities, women tend to dominate low-space processing and backyard systems, whereas men show relatively greater participation in livestock-based activities. These gendered patterns reflect socio-cultural roles, resource access, and labour capacity differences.

**Table 3: Gender-based Distribution of Urban Agriculture Practices (n = 240)**

Variable	Total (n = 240)		Male (n = 120)		Female (n = 120)	
	$\bar{x}$	Rank	$\bar{x}$	Rank	$\bar{x}$	Rank
<b>Types of Farming Activities</b>						
Crop cultivation	3.37	1	3.42	1	3.32	1
Livestock rearing	3.26	2	3.38	2	3.15	3
Aquaculture	2.99	4	3.35	3	2.63	4
Agro-processing	3.05	3	2.92	4	3.18	2
<b>Farming Systems and Techniques</b>						
Open-space farming	3.10	1	3.13	3	3.08	1
Backyard gardening	3.06	2	3.23	1	2.90	2
Planting in containers	3.01	3	3.21	2	2.80	3
<b>Purpose of Urban Agriculture</b>						
Subsistence farming	2.86	2	2.96	2	2.76	1
Commercial enterprise	2.62	3	2.76	3	2.48	3
Mixed (subsistence and commercial)	2.89	1	3.16	1	2.63	2
<b>Scale of Operation</b>						
Small-scale	2.98	1	2.75	2	3.20	1
Medium-scale	2.92	2	3.02	1	2.82	2
Large-scale	2.33	3	2.55	3	2.11	3

<b>Income Generation</b>						
Primary source	2.42	3	2.13	3	2.70	1
Supplementary source	2.55	1	2.46	2	2.63	2
Not a source	2.47	2	2.55	1	2.38	3
<b>Employment and Labour</b>						
Employs workers	2.43	3	2.46	3	2.41	3
Family involved	3.12	1	3.30	1	2.93	2
Self-managed	2.86	2	2.68	2	3.03	1
<b>Market Access</b>						
Regular market access	3.08	1	3.30	1	2.87	1
Limited/Occasional access	2.75	2	2.70	2	2.80	2
No market access	2.29	3	2.18	3	2.40	3

**Source:** Field survey work (2025)

### **Levels of Involvement of Men and Women in Urban Agriculture**

The results in Table 4 show the level of involvement of respondents in 13 identified urban agriculture activities. The highest-ranked areas of involvement (overall) were planting and crop cultivation ( $\bar{x} = 3.35$ ), weeding and crop maintenance ( $\bar{x} = 3.26$ ), and feeding livestock ( $\bar{x} = 3.24$ ). These activities represent core farm operations that are routine and labour-focused. Women showed greater involvement in routine care-related tasks such as cleaning livestock pens ( $\bar{x} = 3.28$ ) and feeding livestock ( $\bar{x} = 3.26$ ), while men were more involved in land preparation ( $\bar{x} = 3.12$ ) and harvesting ( $\bar{x} = 3.22$ ). This supports the findings of Peralta (2022), who observed gendered performance of agricultural tasks, with men more engaged in physically demanding roles. Slaughtering/processing of livestock recorded the lowest involvement for both genders, particularly among women ( $\bar{x} = 2.61$ ), reflecting cultural norms and lower female participation in meat processing activities. When categorised (Table 4), 50.8 percent% of respondents demonstrated moderate involvement in urban agriculture, while 32.5% had high involvement. Notably, in Table 5, more women (35.0%) than men (30.0%) fell into the high involvement category, suggesting that women may be more engaged in day-to-day urban agriculture activities, consistent with findings by Mulla & Sekhar (2025), who reported that women often contribute more unpaid family labour to urban farming.

**Table 4: Level of Involvement in Urban Agriculture by Gender (n = 240)**

Activity	Total (n = 240)		Male (n = 120)		Female (n = 120)	
	$\bar{x}$	Rank	$\bar{x}$	Rank	$\bar{x}$	Rank
Land preparation	2.91	10	3.12	8	2.71	12
Planting and crop cultivation	3.35	1	3.42	1	3.29	1
Weeding and crop maintenance	3.26	2	3.28	2	3.23	5
Harvesting of crops	3.15	6	3.22	3	3.08	6.5.5
Processing of farm produce	3.01	8	3.10	9	2.91	9
Storage of farm produce	2.85	11	2.92	11	2.79	11
Marketing of produce	3.20	5	3.15	6	3.24	4
Managing farm finances	2.77	12	2.75	12	2.80	10
Feeding livestock	3.24	3	3.20	4	3.26	3
Cleaning of livestock pens	3.23	4	3.18	5	3.28	2
Livestock healthcare/vaccination	3.10	7	3.13	7	3.08	6.56

Livestock breeding/reproduction	2.96	9	2.97	10	2.96	8
Slaughtering/processing of livestock	2.67	13	2.72	13	2.61	13

**Note:**

The rating was based on a 4-point Likert scale: Not Involved (1); Low Involvement (2); Moderate Involvement (3); High Involvement (4)

$\bar{x}$ = Mean score; Rank (1 = highest level of involvement, 13 = lowest)

**Source:** Field Survey Data (2025)

**Table 5: Categorisation of Respondents’ Level of Involvement (n = 240)**

Level of Involvement	Score Range (13 Items × 4 = 52 max)	Total (n = 240)		Male (n = 120)		Female (n = 120)	
		F	%	F	%	F	%
Low	13 – 25	40	16.7	22	18.3	18	15.0
Moderate	26 – 39	122	50.8	62	51.7	60	50.0
High	40 – 52	78	32.5	36	30.0	42	35.0
<b>Total</b>	–	<b>240</b>	<b>100</b>	<b>120</b>	<b>100</b>	<b>120</b>	<b>100</b>

**Source:** Field Survey Data (2025)

The findings indicate that while both genders participate actively in urban agriculture, women show slightly higher levels of involvement, especially in continuous and labour-intensive tasks that sustain household nutrition. This underscores the significant but often undervalued contribution of women to urban food systems.

**Conclusion**

The study examined the gendered socio-economic profiles and levels of involvement in urban agriculture in Akwa Ibom State. The findings revealed that urban agriculture is predominantly practised by middle-aged, married, and moderately educated individuals, with women showing slightly higher representation. Trading and artisanal occupations were common alongside the farming activity, suggesting that urban agriculture serves primarily as a supplementary livelihood strategy rather than a full-time enterprise. Although income from urban agriculture was relatively low, it played a significant role in supporting household food supply and reducing living costs, particularly among female-headed households. The results further showed that crop cultivation, livestock rearing, and backyard farming were the most common forms of practice among both men and women, with women displaying greater involvement in routine care, processing, and continuous farm-related tasks. Overall, the majority exhibited moderate to high involvement in urban agriculture, with women recording slightly higher levels of engagement than men. These findings underscore the crucial role of urban agriculture in enhancing household food security and livelihoods, especially for women, and highlight the need to provide targeted support to strengthen their participation and productivity.

**Recommendations**

- i. Extension services and urban agriculture programmes should prioritise gender-responsive training to enhance both men’s and women’s skills in improved farming practices and resource utilisation.
- ii. Local government authorities and community-based organisations should promote innovative urban agriculture models such as container and rooftop gardening to address space limitations and expand participation.

- iii. Women-focused support initiatives, including access to small grants and input subsidies, should be strengthened to enhance female practitioners' productivity and income from urban agriculture. Awareness campaigns should be intensified to encourage increased youth participation in urban agriculture as a viable livelihood and food security strategy within urban communities.

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