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## Research article

# Participation of Urban Women in Agricultural Production Activities in the Sokoto Metropolis, Nigeria

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## Abstract

This study examines the participation of urban women in agricultural production activities in the Sokoto metropolis, Nigeria. Both primary data and secondary information were used in the study. The primary data were obtained using a structured questionnaire, administered to 72 respondents selected using the snowball sampling technique. Descriptive and inferential statistics were used to analyze the primary data generated. These include frequency and percentage, and Pearson product moment correlation, respectively. The results show that most of the urban women (38.9 %) were in the active age range and had a family size of 1-5 persons (73.6 %). The majority attained tertiary education (62.5 %) and have relatively low income (61.1 %), with monthly earnings of 5,000-99,000 Naira. The majority of the women were involved in agricultural production activities all year round (52.8 %) with the highest participation seen in poultry farming (43.1 %). Although most of the women were motivated to participate for several reasons, it was mostly for the increased income (33.3 %). It was also found that the major constraint faced was inadequate capital (43.1 %). Age, marital status, educational attainment, household size and farm size were negatively and not significantly ( $p < 5\%$ ) related to the participation of urban women in agricultural production activities. Monthly income was however, positively related to the urban women's participation in agricultural production activities and was also significant ( $p < 5\%$ ). In general, urban women participate in agricultural production activities on a small scale all year round. Proper orientation and awareness programs, provision of credit and women-targeted agricultural programs would go a long way to improving the participation of urban women in agricultural production activities.

## 1. Introduction

Agricultural production activities are any activity directly related to the production of crops, poultry or livestock for initial commercial sale or as a principal means of personal subsistence [1]. They also include any activity directly related to fish farming, and cultivation and harvesting of trees. On the other hand, the word urban lacks a universally applicable definition, but could literally be referred to as referring to a city or metropolitan area. However, agriculture is ever trending and gaining prominence especially in developing economies because it has been discovered to be a viable poverty intervention strategy. The presence and potential of agricultural production activities in Nigeria, especially in big cities, is not in doubt. Urban agriculture is being practiced in almost all metropolitan areas in both developing and developed countries. The popularity of urban agriculture has increased considerably in the last few years as concerns about the environment have combined with increased interest in health and community building issues, giving rise to support for food systems in metropolitan areas as an integral part of a sustainable development path for cities [2].

It was projected that, by 2020 the number of people living in developing countries will grow from 4.9 to 6.8 billion, 90 % of this expansion will be in cities and towns accounting for more than half the population of Africa and Asia [3]. As these events unfold, West Africa will not be left out. For example, the Nigerian population was 111.6 million in 2000 while the urban population was 49.1 million. In 2006, the Nigerian population hit 140 million. By 2020 the population is projected to be 168.2 million, while urban population will be 97.9 million. If no action is taken, the rapid rate of urbanization combined with lack of economic growth in rural areas, will exacerbate unemployment, poverty and urban food insecurity problems over the next two decades [4]. Many studies in developing countries have shown that women contribute as much or more than men do to family food security and children's nutritional status when unpaid work is included in the estimates. Urban women are likely to work for income when their children are very young and to stay in the labor force longer than they did previously. The percentage of households that rely on women's financial contribution for food security has also increased and women are contributing a higher percentage of income than before [5].

Nigerian women have always played a key role in the country's society and its economy. In fact, they perform five multiple roles which include; mother (child-bearer), producer of agricultural crops, home manager, community organizer and social, cultural and political activity [6]. [7] opined that the role men and women perform in society, especially in traditional society, is based on mere assumptions or perceptions of their skills and abilities as culturally constructed and determined by that society. Meanwhile, increasing population in urban centers as a result of rural-urban migration and natural growth rate lead to the need to feed more mouths. Hence, there is the need to increase productivity since food produced in rural areas cannot sustain the growing population. In order to attempt to solve this food insecurity problem, women have become the backbone of urban agriculture, just as in rural areas. [8] argued

that lack of socialization in conventional agriculture may be key to the motives of women entering farming. Women entering agriculture without these experiences are more likely to have been socialized into egalitarian perspectives on gender roles.

In Nigeria, the involvement of women in agriculture has attracted greater attention in recent years. The need to develop a suitable extension service that is gender specific cannot be overemphasized. This is in recognition that women play significant roles in Nigeria's agricultural production, processing and utilization [9]. On average, women contribute 43 % of the agricultural labor force in developing countries, ranging from about 20 % in Latin America to almost 50 % in East and South-east Asia and Sub-Saharan Africa. Some sources even claim that in many African countries up to 80 % of farm labor is done by women [10]. This necessitates their integration into planning, policies and programs for effective and sustainable development of a nation. Hence, the role of women in agricultural production in developing nations cannot be overlooked [11].

The Nigerian government has continued to make development plans, which aim at poverty alleviation and provision of an enabling environment for rural women, with little intervention for women living in urban areas. However, most women living in urban areas depend mainly on white collar jobs and other menial jobs, while others stay at home as full housewives, depending mainly on the income of their husbands with little or no participation in agricultural activities. Yet, despite the glaring facts on the presence and potential of agricultural activities in urban areas in Nigeria, especially in big cities like Abuja, Lagos, Kano and Ibadan, policy makers and the government have deliberately neglected this veritable component of the agricultural sector by not making concerted efforts to acknowledge and channel the required attention towards it. Moreover, there is a lot of unexploited potential for participation in agricultural production activities, as they can represent a source of income and improved livelihood for urban women, their families and ultimately go a long way in solving the problem of urban food insecurity, enhancing economic growth and livelihoods among urban women.

Despite all this, little or no studies have been carried out to assess the participation of women living in urban areas in agricultural production activities, especially in the north-western part of Nigeria, where most women are full housewives depending on the income of their husbands and are assumed to be home makers [12]. The inadequacy of empirical data on the subject of investigation leads to the need for the present study. It is in realization of this that the study was set to achieve the following objectives:

- To describe the socioeconomic characteristics of urban women;
- To examine the participation of urban women in agricultural production activities;
- To identify the constraints faced by urban women participating in agricultural production activities; and
- To explore the relationship between the socioeconomic characteristics of the urban women and their participation in agricultural production activities.

## 2. Methodology

The Sokoto metropolis is the capital of the present Sokoto State, which is bound by the Kware Local Government Area to the North, Wamakko to the West and Dange Shuni to the East. The minimum temperature of the area is 17°C (62.2°F). The warmest months are February to April, where day temperatures can exceed 45°C (113°F). The highest recorded temperature is 47°C (117.0°F), while the average temperature is 28.3°C (82.9°F). The rainy season is from June to October, during which showers are a daily occurrence. Rain starts late and ends early with mean annual rainfall ranging between 500 mm and 1,300 mm. The showers rarely last long and are unlike the regular torrential showers known in tropical regions. Harmattan wind blows Sahara dust over the land. The dust dims the sunlight thereby lowering temperatures significantly [13]. The area's lifeline for growing crops is the floodplains of the Sokoto Rima river system, which are covered with rich alluvial soil. The general dryness of the region allows for few crops, millet perhaps being the most abundant, complemented by maize, rice, other cereals, and beans. Apart from tomatoes, few vegetables grow. In terms of vegetation, Sokoto falls within the savannah zone. The topography of the metropolis is dominated by the famous plain of northern Nigeria. The vast Fadama land of the Sokoto Rima river system dissects the plain and provides the rich alluvial soil fit for the cultivation of a variety of crops in the state. Apart from Hausa and Fulani in the state, there are natives of other parts of Nigeria and the Zarma and Tuareg minorities in the border Local Government Areas. All these ethnic groups speak Hausa as a common language.

A snow-ball sampling technique was used in the study to select a sample of 80 urban women; this is due to the nature of the environment where majority of the women are full housewives and stay at home, thus, it was difficult to find women that participate in agricultural activities. As a result, it was not feasible to identify the women respondents except through referral. Though the sample size was initially set at 80 only 72 were obtained.

Primary data and secondary information were used in the study. The primary data was generated by the use of a structured questionnaire and the secondary information was sourced from the internet, journals, past projects, proceedings, and other literature related to the study.

Data collected were analyzed using descriptive and inferential statistical tools in the form of frequency and percentage for descriptive statistics, while the inferential statistic used was Pearson product moment correlation analysis.

## 3. Results and Discussion

### 3.1 Socioeconomic characteristics

The results in Table 1 show that 38.9 % of the respondents fall between the ages of 29-39 years, while 9.7 % were above 50 years. It implies that the majority were still at an active age (18-40), which

facilitates the labor supply in agricultural production. This is similar to the findings of [14] who reported that women involved in agricultural seed system activities in Borno State, North-East Nigeria, were within the economically productive age range of 18-35. [15] reported that active age of 18-35 facilitates the energy demanding labor in agricultural production. Based on marital status 69.4 % were married, while 1.4 % were separated. This may be due to the fact that women in the study area marry early and constitute the highest proportion of the urban populace. In line with this, [16] reported that 17 % of girls in Sub Saharan Africa get married by 15 years, while 43 % marry by 18.

Most of the inhabitants were Hausa/Fulani (47.2 %), 23.6 % were Yoruba, 12.5 % were Igbos and 16.7 formed others, such as *Idoma, Gbagyi, Tiv, Nupe, Efik, Urobo and Otunkon*. This is because the study area is a core northwestern Nigerian state, therefore it is normal for it to be dominated by Hausa/Fulani, being the native inhabitants. According to [17], Sokoto state has a population of 3.7 million people based on the 2006 census, and this is made up of majorly two ethnic groups; Hausa and Fulani.

**Table 1: Distribution of the respondents based on their socioeconomic characteristics**

Variable	Frequency	Percentage
<b>Age</b>		
18 - 28	24	33.3
29 - 39	28	38.9
40 above	20	27.8
<b>Marital Status</b>		
Single	15	20.8
Married	50	69.4
Divorced	4	5.6
Separated	1	1.4
Widowed	2	2.8
<b>Ethnic Group</b>		
Hausa/Fulani	34	47.2
Igbo	9	12.5
Yoruba	17	23.6
Others	12	16.7
<b>Occupation</b>		
Civil service	19	26.4
House wife	7	9.7
Public service	2	2.8
Farming	8	11.1
Student	16	22.2
Trading	15	20.8
Handiwork	5	6.9
<b>Educational attainment</b>		
Primary	4	5.6
Secondary	20	27.8
Tertiary	45	62.5
Qur'anic only	3	4.2
<b>Farming experience (Years)</b>		
01-oct	55	76.4
nov-20	12	16.6
20 above	5	6.9
<b>Monthly income (Naira)</b>		
5,000 - 99,000	44	61.1
100,000 - 299,000	25	34.7
300,000 above	3	4.2
<b>Household size</b>		
1 - 5	33	73.6
6 - 10	19	26.4
<b>Farm size (hectare)</b>		
0.1 - 0.3	34	47.2
0.4 - 0.5	38	52.8
<b>Total</b>	<b>72</b>	<b>100.0</b>

The table also shows civil service as the dominant occupation among the respondents (26.4 %), while the least common was public service with 2.8 %. This finding opposes [18] who claimed that when Nigerian women work, they are more likely than men to be in occupations and sectors that pay much less and have lower productivity levels, typically in farming, or work as self-employed or unpaid family workers in non-farm household enterprises. The table goes further to show that the majority of the respondents attained tertiary education (62.5 %), while 4.2 % attained Qur'anic education only. This implies that the majority of the urban women in the study area are educated which may be due to the availability of the educational facilities in the area. Women farmers' education has been found to improve output [19].

In terms of farming experience, 76.4 % of the respondents had 1-10 years of experience in agricultural production activities, while only 6.9 % had 20 years' experience or above. This is due to the fact that most people in urban areas prefer white collar jobs.

The majority (61.1 %) of the respondents earn between N5,000 and N99,000, putting them in the low class, while 4.2 % earned from N300,000 above and belong to the high class. The monthly income of most of the women was generally low and this could have an effect on their participation in agricultural production activities. Generally, one of the situations for women and adolescent girls in agriculture when compared to their male counterparts is that they typically operate small farms, produce low and earn less [20].

The household size of the majority (73.6 %) ranges from 1-5 members, while 26.4 % had 6-10 household members. This is in contrast with the findings of [21] where the major family size was 7 and above. Thus, they state that a large family size has the advantage of family labor and division of labor at home which aids those families to do more work on the farm. Furthermore, the findings reveal that 52.8 % of the respondents had 0.3 - 0.5 ha of land, while 47.2 % had 0.1 - 0.3 ha; as such they are mostly small-scale farmers. This can be attributed to the fact that in Nigeria, despite their significant role in agricultural production, women have relatively limited access to agricultural land and less access to inputs and extension services compared to men [22]. Land is an important factor of production and to a great extent determines the level of participation of women in agricultural production.

### 3.2 Agricultural production activities participated

The results in Table 2 show that most (43.1 %) of the respondents participate in poultry farming. Other agricultural production activities (such as millet, beans, maize and sorghum farming) and fish farming had 5.6 % each, while 1.4 % participate in tuber (mostly potato and cassava) farming.

Globally, a number of studies have established that women are involved in various agricultural activities alongside domestic work [23]. However, their roles vary between and within regions, and are changing rapidly in many parts of the world, where economic and social forces are transforming the agricultural sector [24].

**Table 2: Distribution of respondents based on the agricultural production activities participated**

Variables	Frequency	Percentage
Small ruminant farming	10	13.9
Poultry farming	31	43.1
Rice cultivation	6	8.3
Wheat farming	2	2.8
Horticulture	14	19.4
Fish farming	4	5.6
Roots and tuber farming	1	1.4
Others	4	5.6
<b>Total</b>	<b>72</b>	<b>100.0</b>

### 3.3 Participation of urban women in agricultural production activities

Table 3 shows that the majority (52.8 %) of the respondents engage in agricultural production activities all year round, 33.3 % sometimes, while 13.9 % rarely engaged in agricultural activities.

**Table 3: Distribution of the respondents based on participation in agricultural production activities**

Variables	Frequency	Percent
All year round	38	52.8
Sometimes	24	33.3
Rarely	10	13.9
<b>Total</b>	<b>72</b>	<b>100.0</b>

Agriculture is the backbone of developing economies, and women are the key figure in these vast agrarian socioeconomic setups, however their participation varies from region to region [24].

### 3.4 Motivation for participation in agricultural production activities

The results in Table 4 show that 33.3 % of the respondents were motivated by increased income, while 11.1 % were motivated by inherited land, wealth or both. Those motivated by increased income is a function of the low income earned by most of the urban women (N5,000 - N99,000) as presented in Table 1.

**Table 4: Distribution of urban women based on motivation for participating in agricultural production activities**

Variables	Frequency	Percent
Increased income	24	33.3
Passion	21	29.2
Inheritance	8	11.1
Potentiality	19	26.4
<b>Total</b>	<b>72</b>	<b>100.0</b>

Similarly, it was reported that in Nigeria urban women go into farming so as to improve food security as well as get supplementary income [25].

### 3.5 Constraints faced by agricultural production activities

The results presented in Table 5 indicate that the major constraint faced by the respondents was a lack of capital (43.1 %), while the least was a lack of fertilizer (1.4 %).

**Table 5: Distribution of respondents based on the constraints faced in agricultural production activities**

Variables	Frequency	Percentage
Inadequate capital	31	43.1
Limited access to land	8	11.1
Lack of awareness	19	26.4
Cultural barriers	13	18.1
Lack of fertilizer	1	1.4
<b>Total</b>	<b>72</b>	<b>100.0</b>

[20] asserted similar constraints are faced by women and adolescent girls in agriculture. This could inhibit the effective participation of women in agricultural production activities.

### 3.6 Relationship between socioeconomic characteristics of the respondents and their participation in agricultural production activities

The results in Table 6 reveal that age had a coefficient of -0.026, which is a very weak negative correlation implying that the older the urban women get the less they participate in agricultural production activities. This may be due to the fact that as the urban women grow old they decline in strength and are not able to meet the labor requirements for agricultural production. Marital status had a coefficient of -0.116, which is also a very weak negative correlation, implying that the longer urban women stay married the less they participate in agricultural production activities, which might be due to increased responsibilities that hinder active participation and allow for less time for agricultural production activities.

Ethnic group had a coefficient of 0.145, which is a very weak positive correlation. This implies that belonging to one ethnic group or the other has an effect on the participation of urban women in agricultural production activities. Occupation had a coefficient of 0.009, which is also a very weak positive correlation. This implies that when the urban women are gainfully employed in one occupation it increases their participation in agricultural production activities, but to a minimal extent, probably due to increased income.

Educational attainment had a coefficient of -0.005, which is a very weak negative correlation. This implies that the more educated the urban women are the less they participate in agricultural production activities. Perhaps, with high educational attainment urban women see the activity as meant for farmers or rural people. It also goes further to indicate that women with higher educational attainment prefer white collar jobs.

Farming experience had a coefficient of 0.143, which is a very weak

positive correlation. This implies that the more experienced the urban women get the more they participate in agricultural production activities. This is influenced by skills and information acquired that could increase motivation to participate.

Monthly income had a coefficient of 0.241, which is a weak positive correlation. This implies that the more money the urban women earn monthly the more they participate in agricultural activities, since they have enough money to purchase inputs and other needed resources. Household size had a coefficient of -0.072, which is a very weak negative correlation. This implies that an increase in the number of people in the household will lead to a decrease in the participation of the women in agricultural production activities. This is due to increased household chores, responsibilities known to be carried out by women.

Farm size had a coefficient of -0.050, which is a very weak negative correlation. This implies that the larger the farm size of the urban women the less they participate in agricultural production activities. This is due to the fact that women in the study area are more withdrawn and prefer to participate in agricultural activities on a small scale. Therefore, an increase in the size of the farm makes women see agricultural production activities as a job meant for men because it becomes more tedious, so they either give the farm out on lease or leave the work to the male household members.

**Table 6: Relationship between socioeconomic characteristics of the respondents and their participation in agricultural production activities**

Variable	Coefficient	P Value	Remark
Age	-0.026	0.830	NS
Marital Status	-0.116	0.333	NS
Ethnic Group	0.145	0.225	NS
Occupation	0.009	0.938	NS
Educational attainment	-0.005	0.969	NS
Farming experience (Years)	0.143	0.231	NS
Monthly income (Naira)	0.241	0.041	S
Household size	-0.072	0.546	NS
Farm size (hectare)	-0.050	0.675	NS

\* Correlation is significant at > 0.05 level

The socioeconomic characteristics of the urban women in the study area that include age, marital status, ethnic group, primary occupation, educational attainment, farming experience, household size, farm size and family economic status were not significant at the 0.05 level of significant (i.e.  $p > 0.05$ ) except for monthly income, which was found to be significant at a level of significance of > 0.05. This result could be attributed to the reason that most of the urban women earn low income monthly. In corroboration with this finding, [20] reported that employed women were more likely to be in part-time, seasonal and low-paying jobs. Similarly, they receive lower wages for the same work, even when they have the same experience and qualifications. This could have an important impact on the participation of women in agricultural activities, because income determines the ability to purchase inputs.

## 4. Conclusions and Recommendations

### 4.1 Conclusions

- The majority of the urban women are in the active age range, married, have attained a tertiary level of education and are working class (mostly civil servants) earning between 5,000 and 99,000 Naira, with low farming experience and having a small farm size.
- Urban women participate in a number agricultural production activities on a small scale. Mostly, poultry farming; done all year round for the purpose of increasing income, out of passion, potentiality or an inherited activity.
- Urban women that participate in agricultural production activities are mostly constrained by inadequate capital and lack of awareness on agricultural production activities.
- Most of the socioeconomic characteristics do not correlate with the participation of urban women in agricultural production activities. Nevertheless, monthly income level does have a weak positive relationship with the participation of urban women in agricultural production activities. Thus, with increased monthly income there would be increased participation in agricultural production activities by the urban women, but to a small degree.

### 4.2 Recommendations

Based on the research findings obtained, the following recommendations have been made:

- Proper orientation and awareness creation should be made by the government and NGOs on the opportunities that lie in agricultural production activities, in order to increase the participation of urban women in agricultural production activities.
- Credit facilities should be provided and explored to increase factors of production such as, easy access to loans and land, by the government and urban women, respectively.
- Urban women should be encouraged to participate in agricultural production activities through women-targeted programs.

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