

## *Full-Length Research Paper*

# Analysis of Gender Access to Farm Inputs among Small Scale Crop Farmers in the North Central Zone of Nigeria

Ajuwon, Abiola Olajumoke\*, Ajah, Julius, and Idu, Edwin Ejoga

Department of Agricultural Extension and Rural Sociology  
University of Abuja, FCT, Nigeria.

Corresponding author email: [biuratic@yahoo.co.uk](mailto:biuratic@yahoo.co.uk)

Received 2 October 2021; Revised 15 November 2021; Accepted 18 November 2021; Published 23 November 2021

**ABSTRACT:** The study was conducted to examine gender access to farm inputs among small-scale crop producers in Nigeria's North Central zone. The study's objectives are to determine male and female small scale farmers' access to inputs in the study area, to identify inputs that are more accessible by men and women small scale farmers across the study area, to identify inputs that are least accessible by male and female small scale farmers across the study area, to analyze the locational differences in the level of access to farm inputs by male and female small scale crop farmers in the study area, and to determine the constraints faced by both male and female small scale farmers. For sample selection, a multistage random sampling procedure was applied. A total of 1080 farmers were questioned at random in three North Central states (360 respondents in each): Abuja, Plateau, and Kwara. Data was examined using descriptive statistics, three-way mixed factorial analysis of variance, and mean separation at a 5% probability level. The findings found that there was no significant difference in the level of access to farm inputs between the male and female genders, however the male gender had more access than the female. It also demonstrated that gender access to farm inputs is greatly influenced by the type of farm input and the farmer's location. Land, labor, and herbicides were the most accessible agricultural inputs, whereas tractor and loan were the least accessible farm inputs, according to mean separation.

**Keywords:** Gender, access, inputs, small scale, crop farmers

## INTRODUCTION

Gender refers to the societal distinctions that exist between men and women (Oladeebo, 2012). It focuses on the interaction between men and women in terms of their roles, access to resources, and control over production resources, division of labor, and a variety of other demands (Imoh and Nwachukwu, 2016). Gender research focuses on the interaction of men's and women's roles, rights, and responsibilities as they manifest in their performance in areas such as knowledge, desires, wants, needs, talent, and experience (UNESCO, 2003). Gender analysis in a socioeconomic system provides in-depth knowledge on how to identify and differentiate the roles and responsibilities of men and

women in production and processing (Doss, 2013). Gender studies can examine roles and responsibilities to determine the optimum role for a man or woman. Women, for example, are thought to be more calm and honest than men (Cornwall et al., 2007). However, emphasizing women's positive characteristics may result in a gender prejudice. Gender analysis is linked to a variety of characteristics, including culture, class, color, age, sex, belief, geography, philosophy, and political activity (David et al., 2014).

According to Olagunju et al. (2012), despite the critical role that women play in agriculture, only a small %age of them own/control productive resources. Land, financing,

agrochemicals, technical services, market outlets, information, and so on are examples of these resources. This, combined with their long-term low socioeconomic level, renders them unable to make critical judgments regarding the utilization of such resources and the profits coming from farm production. As a result, they have not been granted fair decision-making privileges.

Therefore, for women and men to have a positive effect on their productivity, income and food security, agricultural research and extension, the place of gender cannot be ignored. Simonyan et al. (2011) stated that there is a contrast between the northern and southern parts of the country. In the Southern part of Nigeria, women are more involved with farm work and they have ownership of farms and inputs; meanwhile, in the Northern part, men do most of the farm work and have ownership of farms and inputs. The prevalence gender stratification in the distribution of production resources, access to information and even access to appropriate innovation is an issue of great importance.

According to Doss and Morris (2010), when female farmers have equal access to essential agricultural inputs, they use them at nearly the same rate as male farmers. This indicates that input accessibility is a critical issue for many female farmers. Additionally, Anyawu (2011) stated that the advantage of a gender viewpoint is that it enables the progress of gender equality and equity regardless of whether women or men are advancing their positions. Women constitute more than half of the population in the majority of countries. As a result, any development approach that disregards the life chances of half the population would fail to address poverty and the sustainability challenge. This is why, at this vital stage of global transformation, it is critical for the development process to completely embrace a women's empowerment agenda by fully incorporating women's realities.

According to Ayanwuyi et al. (2009), gender disparities and imbalances in access to agricultural production resources have been a serious issue in a number of developing countries, including Nigeria, and this has a negative impact on the country's economy because the potentials of female gender are unaccounted for, untapped, or even underutilized. Women, on the other hand, appear to play critical roles in agricultural production resources, particularly in marketing, processing, and value addition to farm products.

Women's participation in agricultural development is critical for maintaining long-term food security. Their limited access to agricultural productive resources has been a significant issue over the years, diminishing their efforts and contributions to the agricultural sector due to a variety of causes, including social, cultural, and political. Women's insufficient contribution to sustainable food security is a result of their limited access to farm inputs. They are disadvantaged in terms of access to development

tools and means of improving their standard of living, such as access to farm inputs, financing facilities, and extension services (Olagunju et al., 2012).

Women play a significant role in agriculture, accounting for approximately 70% of agricultural workers, 80% of food producers, and 10% of those who process basic foodstuffs. They also account for 60–90% of rural marketing, accounting for more than two-thirds of the workforce in agricultural production (FAO, 2013). However, it has been found that men and women have a significant disparity in their access to a variety of agricultural resources such as land, labor, financing, and extension services.

### Objectives of the study

The overall objective of this study is to analyze gender access to inputs among small scale crop farmers in the North Central zone of Nigeria.

The specific objectives are to:

- (a) Determine the socio economic characteristics of male and female small scale crop farmers to inputs in the study area.
- (b) Determine the level of access of male and female small scale crop farmers to inputs in the study area.
- (c) Ascertain the inputs that are more accessible by male and female small scale crop farmers across the study area.

### Hypotheses of the study

Ho: There is no significant difference in the level of access to inputs between male and female farmers in the study area.

## MATERIALS AND METHODS

### Study area

The study was carried out in the North Central Zone of the Nigeria. It is one of the six geo-political zones in the country. The North Central zone is made up of 7 states which are: Kwara, Kogi, Niger, Nasarawa, Benue, Plateau States and Abuja, the Federal Capital. The study area is located between latitude 10° 20' 00" N and longitude 7° 45' 00" E (geographic.org, 2019). Niger State is the largest in the North Central Zone with a land mass of 76, 363 square kilometers while Benue State is the smallest in the zone with a land mass of 27, 117 square kilometers (Olayemi, 2014) (Figure 1).

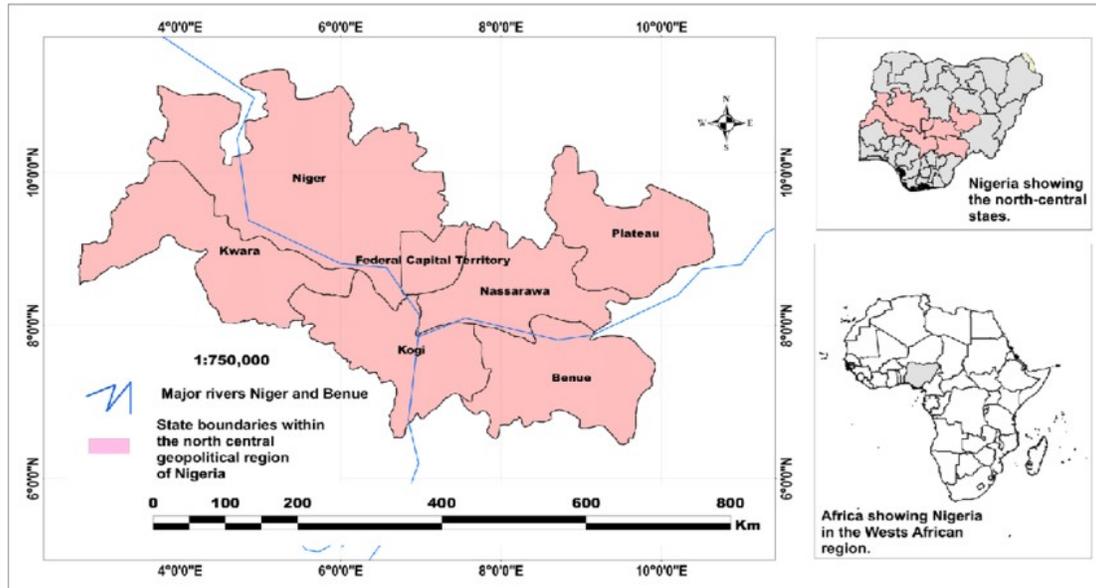


Figure 1: Map of the North Central Nigeria.

**Population of the study**

The population of the study was male and female small scale farmers in the North Central zone of Nigeria.

**Sampling technique and sample size**

Multistage sampling technique was used to arrive at the sample size in each state. Three out of the seven states in the North Central zone were sampled for the study. A total of 540 male and 540 female crop farmers were sampled for the study, giving a total of 1080 respondents used for the study.

**Method of data collection**

Primary data was used for the study. The data were collected with the use of well-structured questionnaires which were administered to the respondents with the help of trained enumerators who are familiar with the study area.

**Method of data analysis**

Descriptive statistics and analysis of variance (ANOVA) were used to analyze the data used for the study.

**Test of hypothesis**

The hypothesis for the study was tested using analysis of variance (ANOVA).

**RESULTS AND DISCUSSION**

**Socioeconomic characteristics of respondents**

The age distribution of farmers in North central Nigeria is depicted in (Table 1). It demonstrates that the majority of farmers are between the ages of 41 and 50, with 39.5 % of male farmers and 44.1 % of female farmers falling within this age bracket. Additionally, Table 1 indicated that 63 % of male farmers had completed secondary and post-secondary education, while 48.4 % of female farmers had completed secondary and post-secondary education. According to the table, 58.1 of male farmers have more than twenty years of farming experience, compared to 45.2 % of female farmers. Additionally, this data indicates that there are more single male farmers in North Central Nigeria than single female farmers. Female children are encouraged to marry at an early age, which explains why a higher number of male and female farmers were married, at 84.8 and 85.9 %, respectively. Additionally, Table 1 demonstrates that 33.1% of male farmers had households of 11 or more members, compared to 23.9 % of female farmers. However, 11.7 %

**Table 1:** Socio economic characteristics of the small scale crop farmers.

Variables	Male		Female	
	Frequency	% age	Frequency	% age
<b>Age of the farmers (years)</b>				
≤30	91	16.9	54	10
31 – 40	165	30.5	136	25.2
41 – 50	215	39.5	238	44.1
51 – 60	48	8.9	81	15
>61	21	3.9	31	5.7
<b>Educational Status</b>				
No formal education	95	17.6	138	25.6
Primary School	105	19.4	141	26.1
Secondary School	210	38.9	178	33
Post-secondary school	130	24.1	83	15.4
<b>Years of farming experience</b>				
≤10	106	19.6	126	23.3
11-20	120	22.3	170	31.5
21-30	155	28.7	148	27.4
31-40	141	26.1	84	15.6
>40	18	3.3	12	1.2
<b>Marital Status</b>				
Single	70	13	21	3.9
Married	458	84.8	464	85.9
Divorced	9	1.7	19	3.5
Widowed	3	0.6	36	6.7
<b>Household Size</b>				
<5	159	29.4	173	32
6-10	203	37.6	238	44.1
11-15	174	32.3	127	23.5
>15	4	0.8	2	0.4
<b>Farm Size</b>				
<5	300	55.6	484	89.8
6-10	177	32.7	48	8.9
11-15	59	10.8	5	0.9
>15	5	0.9	2	0.4

Source: Field data analysis (2020)

of male farmers own farms of at least 11 hectares, compared to 1.3% of female farmers.

### Analysis of variance results on gender access to farm inputs

The findings of the three-way mixed analysis of variance (ANOVA) used to determine the level of access to farm inputs are presented in (Table 2). The findings indicated that access to farm inputs was significantly ( $p > .05$ ) dependent on the type of input desired by farmers (land, labor, loan, herbicides, rodenticides, insecticides, fertilizer, and tractor), the state in which small scale farmers were located (Federal Capital Territory, Plateau, and Kwara States), and the interaction effect of desired input and state, input type and gender, and location and. Additionally, the results indicated that access to farm

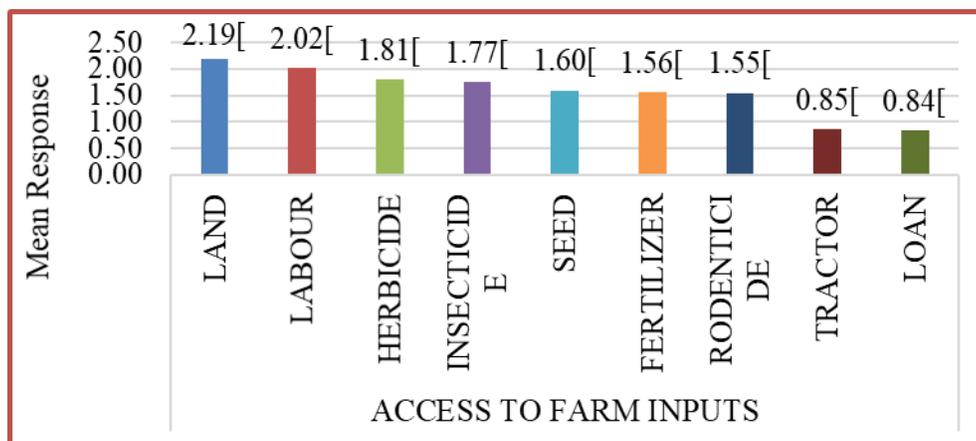
inputs ( $p > .05$ ) did not depend on the farmer's gender in the research areas.

The input type row depicts the relationship between the level of access to farm inputs by small scale farmers and the type of input used. The finding,  $F(8, 8296) = 406.481$ ,  $p = 0.00$ , suggested that access to farm input was strongly influenced by the type of input desired by the farmer in the study sample. The influence of location on access to inputs is illustrated in the location row. There was a statistically significant ( $p .05$ ) association between access to agricultural input and the place (state) in which they reside, as demonstrated by the result,  $F(2, 8296) = 16.156$ ,  $p = 0.00$ . The interaction effects of input type and location of the farmer are shown in the ANOVA table in the row labelled "input type\*location." A substantial ( $p < .05$ ) interaction effect between the access to farm input type and the location of the farmer was found in the study, as indicated by the  $F(16, 1037) 56.776$ ,  $p = .00$ .

**Table 2:** ANOVA results of small-scale farmers' access to farm inputs.

Sources of Variation	Df	SS	MS	F-cal	P-value
Input type	8	1666.874	208.359	406.481	.00
Location (State)	2	9.741	4.870	16.156	.00
Input-type*Location	16	465.241	29.078	56.726	.00
Input-type*Gender	8	14.675	1.834	3.579	.00
Input * State * Gender	16	46.825	2.927	5.709	.00
Error (within factor)	8296	4252.470	0.513		
Gender	1	1.004	1.004	3.329	.068
Location*Gender	2	2.342	1.171	3.885	0.21
Error (between subjects)	1037	312.615	0.301		

\*=Sign of interaction  
 Source: Field data analysis (2020)



**Figure 2:** Farmers' rating of access to each farm input (irrespective of state and gender)  
 Note: Means with the same alphabet do not significantly differ from each other  
 Source: Field data analysis (2020).

According to the data in Table 2, there is an interaction effect between input type and gender. The output demonstrates how each gender has access to the chosen input type. As a result of the analysis,  $F(8, 1037) = 3.579, p = .00$ , it was discovered that there was a statistically significant ( $p < .05$ ) interaction impact between access to preferred farm input type requested and the farmer's gender. Specifically, it examines the hypothesis that there is a statistically significant interaction effect between input type and gender on access to agricultural inputs, resulting in the rejection of the null hypothesis.

Table 2 shows the connection between intended input type, location, and gender. The findings,  $F(16, 1037) = 5.709, p = .00$ , revealed a significant ( $p < .05$ ) interaction impact between access to farm input for all states (location), farmer gender type, and farm input type sought by the farmer. The availability to farm input is shown in the outcome based on the farmer's gender.  $F(1, 8296) = 3.329, p = 0.68$ , indicating that there was no significant ( $p$

$>.05$ ) association between availability to farm input and farmer gender. It puts to the test the notion that access to farm inputs is independent of the farmer's gender. Table 2 depicts the interaction between location (state) and gender type.  $F(2, 1037) = 3.885, p = .21$ , revealed that there was no significant ( $p >.05$ ) interaction impact between access to farm input in each location (state) and farmer gender type.

**Farmers' rating of access to each farm input**

Figure 2 depicts farmers' perceptions of access to various farm inputs. In general, access to farm inputs is limited, with the most accessible input (land) having a mean response of 2.19, labor having a mean response of 2.02, and herbicides, a form of pesticide used to kill undesired plants, having a mean response of 1.81. The average for insecticide, which is used to control insect pests on farms and storage facilities, is 1.77. Access to a tractor and a

loan was identified as the most difficult agriculture inputs to obtain in North Central Nigeria. This means that farmers in the research area lacked enough access to loans in order to improve and grow productivity. This results in small-scale production using crude tools rather than mechanized equipment such as tractors. Farm financing has long been acknowledged as a critical component in revitalizing Nigeria's agricultural industry. This is clear because it raises production, farm profit, efficiency, and the standard of living in rural areas (Abu et al., 2011). As a result, farm finance, such as loans, is one of the critical inputs deemed essential in agricultural output (Omonona et al., 2010).

### Test of hypothesis

Table 2 is used to evaluate the study's hypothesis, which asserts that there is no significant difference in access to inputs between male and female farmers in the study area. The results show that there was a significant ( $p < .05$ ) interaction impact between availability to agricultural input and farmer gender. As a result, the null hypothesis was rejected, while the alternative hypothesis, stating that there is a substantial difference between access to inputs and farmer gender in the study area, was accepted.

### Conclusion

This study assessed the comparative analysis of gender access to farm inputs among small scale crop farmers in the north central zone Nigeria. The result indicated most of the respondents were married with a large household size, averagely educated and at their young and active age. They are also well experienced in agricultural production, however, the large household size could as well worsen the poverty situation particularly if such composition is more of dependents. Analysis of variance result showed that the gender access to farm input significantly depends on the type of farm input, location of the farmer. However, the result showed access to farm input does not significantly depend on the gender, which means gender of the farmers does not determine the level of access to farm input. Mean separation showed that land, labour and herbicides were the most accessible farm inputs while tractor and loan were the least accessible farm inputs respectively.

### Recommendations

Based on the findings of the study, the following recommendations were made:

There should be a focus of intervention and

concentrations of policies to increase scale of operation through improved access to farm inputs (loans and grants). Policies should target subsidies to production inputs e.g. capital for increasing input use efficiency in north central Nigeria.

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