

Farmers' Perception on the Effect of Insecurity on Cucumber Production in Ikwerre Local Government Area, Rivers State, Nigeria

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Abstract

The perceptive study examined the effect of insecurity on cucumber production in Ikwerre Local Government Area, Rivers State, Nigeria. Primary data and structure questionnaire were employed to elicit data from 120 cucumber farmers. Two-stage sampling procedure (purposive and simple random sampling) was adopted. Data were analysed using frequency counts, percentages, and mean score. Result from farmers' socio-economic characteristics showed that majority (56.7%) were female, while 43.3% were male. The study also found that majority of the farmers were in their youthful and active ages. Study results further indicated that majority of the farmers received formal education with tertiary education topping the list at 46.7%. In their production operation, results on the nature of cucumber production showed that the farmers relied more on the non-staking method (60.8%). They also relied more on organic fertilizer (53.3%), manual labour (80%), physical method of weed control (63.3%), and natural precipitation (86.7%) in their farming operations. Further findings indicate that two of the most acknowledged effect of insecurity on cucumber production were poor access to financial institutions and services and poor access to farm, since they both had respective mean scores of 3.0667 and 3.1333, higher than those of other factors considered. The study findings on the factors affecting cucumber production indicates that the highest ranked constraints were pest and diseases closely followed by the pilfering of farm produce. Nevertheless, the study recommends that government and policy makers should strategize on measures to effectively overcome the scourge of insecurity in reducing pilfering to ensure an increase in farmers' access to their farms.

Keywords: Insecurity, cucumber, production, farmers, perception, Nigeria

Introduction

The nutritional and financial potential of vegetables make them one of the most significant crops in agriculture (Agbugba and Shelaby, 2018). Worldwide, it is estimated that several plant species are used as vegetables; however, only a small proportion of them are commercially valuable (Food and Agriculture Organization, 2016). Fruit vegetables like cucumbers (*Cucumis sativus*) are a good source of manganese, beta-carotene, and vitamin C, which are common antioxidant minerals (Agbugba, 2013). Due to their approximately 95% water content, they are frequently suggested as natural diuretics and beneficial for bodybuilding (Elum *et al.*, 2016).

The cucumber (*Cucumis sativus*) is a member of the Cucurbitaceae family. It's a creeping vine that climbs trellises and other supporting structures and wraps its thin, twirling tendrils around them

(Gelaye, 2023). Although cucumbers are a vegetable with several uses, such as medicinal, nutritional, culinary, and beverage, their potential is still untapped (Ndanitsa et al., 2009). Researchers indicated that Calories, vitamins, and minerals can be found in cucumbers (Zargar Shooshtari *et al.*, 2020). It is also projected that the crop contains a high percentage of water (about 96%). Producing cucumbers can improve food security, economic development, and agricultural productivity (Elavarasan et al., 2022; Adeoye & Balogun, 2016).

The Food and Agriculture Organization (2007) reports that Nigeria produces 1.26% of the world's total production of 17,397 tons of fruits and vegetables. Accordingly, Nigeria contributes little to the world's vegetable output and this suggests it has room to do more. Cucumber in Rivers State, Nigeria is majorly produced in places like Igwuruta, Omagwa, Oyigbo, and Bunu/Ban-Ogoi (Songhai Rivers Development Initiative Farms). Commercial cucumber sales in Rivers State are mostly conducted at the town markets in Port Harcourt, particularly at the Fruits Gardens in the Trans-Amadi area (Elum et al., 2016).

Producing vegetables like cucumbers is not without its difficulties. Cucumbers' unique characteristics, such as their perishability, seasonality, pest and disease sensitivity, and standard needs, make production and selling them difficult and complex. Gender concerns, labour costs, insufficient energy supply, and an aging farming population are among additional challenges (Elum et al., 2016). These challenges can lead to a shortfall in the production and supply of cucumber a term Ufiobor (2017) described as demand-supply deficit. He asserted that Nigeria has a food demand exceeding its local production and attributed this to several factors which include, insecurity and conflicts in agrarian communities.

One of the most destructive problems that disrupts the harmonious coexistence of people in Sub-Saharan Africa is insecurity, which has been linked to instability and significant economic setbacks (Fang *et al.*, 2020). Banditry, armed robbery, kidnappings for ransom, livestock rustling, farmer-herder conflicts, and theft are only a few of the various manifestations of insecurity in Nigeria. This has had a significant impact on job and food security, disrupted agricultural production, and damaged morale. Past studies on this subject like those of, Tanko et al. (2024), Elum et al. (2016), and Onuwaa et al. (2023), to name a few, only addressed the impact of insecurity on general agriculture or merely focused on ascertaining the profitability or costs and returns of cucumber production. This study however, was situated to examine farmers' perceptions of the impact of insecurity on cucumber production. As such it was bound to uncover the interplay between insecurity and the production of a specific agricultural crop, thus generating specific recommendations directed at improving cucumber production in the agriculture sector.

The broad objective of this study was to analyze farmers' perception on the effect of insecurity on cucumber production in Ikwerre Local Government Area (LGA), Rivers State, Nigeria. The specific objectives were to: describe the socio-economic characteristics of farmers that grow cucumber in the study area; ascertain the nature of cucumber production in the study area; analyse the perceived effect of insecurity on cucumber production by cucumber farmers in the study area, and; determine the factors affecting cucumber production in the study area.

Methodology

The study was conducted in Ikwerre Local Government Area (LGA), situated in Rivers State, Nigeria. It lies between longitudes 6° 40' and 6° 55' E and between latitudes 4° 55' and 5° 15' N. It has a very flat topography, covers an area of about 1,099 km², and has a few surface streams. It has twelve (12) autonomous communities with an estimated population of 298,149 in 2019. The communities are as follows: Isiokpo, Aluu, Apani, Elele, Igwuruta, Ipo, Omademe, Omagwa, Omarelu, Omuanwa, Ozuaha, and Ubima (Ukpere et al. 2021). Ikwerre LGA has a viable agricultural sector with variety of crop such as yam, cassava, plantain, okra, cucumber, etc. grown in the area. Also, the area has a booming trade sector with several markets being hosted in the LGA.

The study employed descriptive design. Descriptive design is suitable for this study as its procedure involves taking a representative sample of a population to study and subsequently generalizing the result obtained from the study group to reflect the entire population. In another light, the pre-study disclosed that the study area has a population of 171 cucumber farmers. However, using the Taro Yamene formula, the sample size was estimated to be 120 cucumber farmers.

Further, two-stage sampling procedure was used in the selection of the cucumber producers. The first stage involved the purposive selection (because they were the dominant producers) of six (6) clans out of the twelve (12) communities that made up the LGA. The second stage involved the simple random sampling of twenty (20) farmers across the six communities (Igwuruta, Omagwa, Omerelu, Ubima, Ozuoha., and, Elele) respectively.

The Taro Yamene formula is given as:

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

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

$$n = \frac{171}{1+171(0.0025)}$$

$$n = 120$$

Where:

n= Sample size

N = Study population

e = Margin of error (0.05)

Method of Data Analysis

The study utilized primary data which were collected using structured questionnaire and analysed as follows: objective (i) and (ii) were achieved using tabular presentation of frequency distribution and percentages. Objective (iii) and (iv) were analysed by using mean score through 4- point Likert Scale Rating Technique as a measurement tool.

4-Point Likert Scale Rating Technique

Likert scale rating technique was used particularly in identifying the constraints to poultry farming in the study area. This was done on a four-point basis. The 4-point scale rating technique does not give room for the respondents to be indifferent. The rating is presented in the following order:

Strongly agreed (SA) = 4; Agreed (A) =3; Disagree (D) = 2; Strongly disagree (SD) = 1.

The mean scores of the respondents based on the 4-point scale will be $4 + 3 + 2 + 1 = 10$, $10/4 = 2.50$.

Therefore, 2.50 serves as the decision rule; any variable that is equal or greater than 2.50 is considered accepted while variables that scored less than 2.50 are rejected.

Results and Discussion

Socio-economic Characteristics of the Farmers

The socio-economic characteristics of the farmers are shown in the Table 1 below.

Table 1: Socio-Economic Characteristics of the Farmers

Characteristics	Frequency	Percentage
Sex		
Male	52	43.3
Female	68	56.7
Total	120	100
Age		
20-29 years	44	36.7
30-39 years	40	33.3
40-49 years	28	23.3
>49 years	8	6.7
Total	120	100
Years of Experience		
1-10 years	92	76.7
11-20 years	28	23.3
Total	120	100
Highest Educational Qualification		
No Formal Education	8	6.7
Primary Education	12	10
Secondary Education	44	36.7
Tertiary Education	56	46.7
Total	120	100

Source: Field Survey, 2024

Table 1 shows that the percentage of the female in cucumber production was more than male. Female accounted for 56.7% while male accounted for 43.3% of the cucumber farmers. This result corroborates with the work of Elum et al. (2016) who posited that that cucumber production is likely a gender skewed occupation. The frequency distribution of the farmers in respect to age shows that majority of the cucumber were in their youth, such that 36.7% were of ages, 20 – 29 years and 33.3% were 30 - 39 years old. On the other hand, 23.3% fell on the relatively older side, ranging from 40 - 49 years while 6.7% had ages greater than 47 years. This result suggests that cucumber farming is highly dominated by the young and youthful perhaps the prevalence of the young in cucumber farmer could be attributed to high profitability which is associated with the seasonal crop. It is worthy of mention that it takes roughly three months after sowing and harvesting begins in a cucumber farm. So, this and other economic factors could be the reason for the massive presence of the young in cucumber farming. Again, this result agrees with the findings of Elum et al. (2016) who found that cucumber farmers were in their youthful and active years.

Further, entries on years of farming experience in Table indicate that about 76.7% farmers had years of experience of 1 to 10 years while 23.3% had years of experience of 11 to 20 years respectively. Years of experience in agricultural production is handy in lowering risk suffered by farmers (Amadi-Robert et al., 2023). The study also found that majority of the farmers received formal education within which 46.7% underwent tertiary education, 36.7%, secondary education, and 10%, primary education. According to Reuben et al. (2023), higher levels of education are more likely to result in higher adoption levels, increased crop yields and farm income and thus enhanced livelihood.

Nature of Cucumber Production in the Study Area

The nature at which cucumber is been produced in the study is presented in Table 2 below.

Table 2: Nature of Cucumber Production in the study area

Factor	Frequency	Percentage
Method of growing cucumber		
staking method	47	39.2
Non-staking method	73	60.8
Total	120	100
Fertilizer application		
Organic	64	53.3
Inorganic	56	46.7
Total	120	100
Farm labour		
Manual	96	80
Mechanical	16	13.3
Both manual and mechanical	8	6.7
Total	120	100
Weed control		
Physical	76	63.3
Chemical	32	26.7
Biological	12	10
Total	120	100
Irrigation		
Natural precipitation	104	86.7
Drip irrigation	12	10
Other	4	3.3
Total	120	100

Source: Field Survey, 2024

Table 2 above provides insights into the agricultural practices of cucumber farmers in the study area where 39.2% of the farmers used the staking method, while the 60.8% used the non-staking method. This suggests a divided preference in the growing method. Most farmers (53.3%) used organic fertilizers, while 46.7% used inorganic fertilizers. Most farmers (80%) relied on manual labour, while 13.3% used machinery and 6.7% used a combination of both. The result suggests that cucumber farming in the area is labour-intensive. Most farmers (63.3%) used physical methods to control weeds, followed by chemical method which recorded 26.7% and biological method (10%). Further, 86.7% of the farmers relied on natural precipitation for irrigation, while 10% used drip irrigation and 3.3% used other methods. This indicates that cucumber farming in the study area is highly dependent on weather conditions.

Perceived Effect of Insecurity on Cucumber Production in the Study Area

The result of the perceived effects of insecurity on cucumber production in the study area is given in Table 3.

Table 3: Perceived Effect of Insecurity on Cucumber Production

Factor	N	Mean	Std. Deviation	Remark	Rank
Poor access to farm	120	3.0667	0.89568	Agree	2nd
Lack of contact from extension workers/government agents	120	3.0333	0.91609	Agree	3rd
Poor farm income	120	3.0000	0.85994	Agree	4 th
Loss of farm produce	120	2.9333	0.89568	Agree	5 th
Poor access to financial institutions and services	120	3.1333	0.88814	Agree	1 st

Source: Field Survey, 2024

The result in Table 3 shows that the cucumber farmers agreed to all the factor as being the effect of insecurity on their farming operation because the mean score (π) of all the factors exceeded, 2.50. Following this, poor access to financial institutions and services was ranked highest as it had mean (π) of 3.1333. Second was poor access to farm ($\pi = 3.0667$), and third was lack of contact from extension workers/government agents ($\pi = 3.0333$). Generally, the farmers were of the opinion had it not been for insecurity, there would be more bank presence in the study area, they would visit the farm more frequently, and have more contact with extension workers. On the other hand, poor farm income and loss of farm produce were respectively ranked 4th and 5th by the farmers.

Factors affecting Cucumber Production in the Study Area

The result of the various factors which affect the production of cucumber in the study is given in Table 4.

Table 4: Factors affecting Cucumber Production

Factor	N	Mean	Std. Deviation	Remark	Rank
Pest and diseases	120	3.5000	0.72181	Agree	1 st
Land tenure system	120	2.7667	0.95911	Agree	4 th
Climate and weather conditions	120	2.9000	0.91118	Agree	3rd
Pilfering of farm produce	120	3.3667	0.75519	Agree	2nd

Source: Field Survey, 2024

Table 4 shows the factor that affect cucumber production in the study area. The farmers agreed that pest and diseases ($\pi = 3.5000$), pilfering of farm produce ($\pi = 3.3667$), and climate and weather conditions ($\pi = 2.9000$) were challenges to cucumber production in the study area. The result of this study is in consonance with the work of Elum et al. (2016) who ranked pest and diseases first and poor climate conditions third among the challenges encountered by cucumber farmers in their study. This amplifies the need for drastic action to be taken to control pest and disease attack in the farm.

Conclusion

This study analysed farmers' perception on the effect of insecurity on cucumber production in Ikwerre LGA, Rivers State, Nigeria. Using means score analysis, the study that insecurity has majorly led to poor access to financial institutions and services, poor access to farm, and lack of

contact with extension workers in the study area. In addition, the major challenges facing the cucumber farmers were pest and diseases, pilfering of farm produce, and climate and weather conditions.

Recommendations

Following these findings, the study recommends that:

1. Government and policy makers should strategize on measures to effectively overcome the scourge of insecurity in reducing pilfering and ensure increase in farmers' access to their farms.
2. The government should introduce agricultural insurance schemes to provide compensation for farmers who suffer losses due to pests, diseases, or insecurity in their communities.
3. The services of extension workers in transferring technology in the areas of pest and disease management should be increased so that the incidence and severity of pest and disease attacks can be reduced in the farm.

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