

An Assessment of Farmers' Perceptions of Environment-Friendly Farming Practices in Ekiti State, Nigeria

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ABSTRACT

Farmers' perceptions are preconditions that determine their attitudes towards an innovation/practice. The main objective of the study was to determine perceptions of farmers on environment friendly farming practices in Ekiti State. The data for this study were collected using an interview guide from 200 farmers in the two purposefully selected agricultural zones of Ekiti State Nigeria using an interview schedule. Data were analyzed using descriptive and inferential statistics such as Chi-Square and Pearson's Product Moment Correlation. The results indicated that the means of farmers' perceptions ranged from 1.99 to 4.39 for mulching, 1.87 to 4.51 for integrated pest management, 3.69 to 4.57 for terracing, 4.16 to 4.72 for contour farming and 1.98 to 4.98 for cover cropping. Farmers strongly agreed with 14 perceptual statements, agreed with 13 perceptual statements, undecided with 3 perceptual statements and disagreed with 5 perceptual statements. Based on this study, farmers had high perceptions about Environment-Friendly Farming Practices (EFFPs). Significant relationships ($p < 0.05$) existed between farmers' perceptions and their age, average annual income, farming experience and farm size. In addition, no statistically significant relationships ($p > 0.05$) existed between farmers' perceptions and gender, marital status, religion, and education of the farmers. However, there was significant difference in farmers' perceptions of EFFPs ($p < 0.05$) based on the selected blocks and cells for the study. It is therefore recommended that farmers' perceptions should be assessed critically before any developmental action is taken because perceptions predict the practice of any environment friendly farming practice.

Key words: Environment-friendly, farmers, farming practices, perception

INTRODUCTION

Agriculture is the process of producing food, feed, fiber and other desired products through the cultivation of plants and the raising of domesticated animals. In a true sense, it is a productive unit where humans get the free gifts of nature namely; land, light, air, temperature, rain water, humidity etc are integrated into a single primary unit indispensable for human beings (Mishra, 2013). Production and distribution of food is becoming increasingly industrialized and globalized, the industrial approach to producing food on a large scale could lead to degradation of soil, deforestation, eutrophication (the process by which nutrients runoff leads to oxygen depletion in water) and acidification of marine and fresh water systems, climate change and pesticide and antibiotic resistance (Leinonen, 2012). The effects of prolonged and over usage of chemicals in crop production has resulted in human health hazard and pollution of environment and ground water (Mishra, 2013). Abbasov (2015) opined that in order to decrease the negative effects of large-scale agriculture production on the environment and, if possible, to prevent

them, many countries are taking to agro-environment measures. For the success of the agro-environment policies, which actually integrate the policies relate separately to agriculture and environment, the relationship between agriculture and environment should be understood well because agriculture evidently depends on the quality of soil and water, both of which are the elements of the environment (Abbasov, 2015).

Environment-friendly agricultural production system usually includes restricting and abandoning the use of chemical fertilizer and pesticides, decreasing the degree of pasture use, application of crop rotation to avoid the pollution of underground water, and growing feed crops (Piorr, 2003). Environment-friendly agricultural technologies for food safety are appropriate technologies, which do not assault the nature, plays the key roles of ensuring food security, improving human health as well as rehabilitating and conserving the environment safeguards the wellbeing (Mishra, 2013). Instead of striving for more

Four blocks out of 16 blocks (25% of the blocks) were randomly chosen from the selected zones at stage two. At stage three, five cells were randomly selected from each of the blocks, making a total of 10 cells, with 20 farmers selected randomly from each cell, making a total of two hundred respondents. An interview guide was used to elicit information on environment friendly farming practices from the farmers. Reliability coefficient (r) obtained for the instrument was 0.84. Farmers' perceptions of EFFPs were measured on a 5-point Likert scale types of strongly agree-5, agree-4, undecided-3, disagree-2 and strongly disagree-1. The means of responses to all the perceptual statements were categorized according to Bagheri (2010) and Bagheri *et al.* (2008) as 1.00-1.49= Strongly Disagree (SD), 1.50-2.49=Disagree (D), 2.50- 3.49= Undecided (U), 3.50-4.49= Agree (A) and 4.50- 5.00=Strongly Agree (SA). Perceptions on EFFPs were calculated by obtaining a weighted mean on farmers' responses. Aggregate scores obtained on perceptions of each farmer were categorized into high, medium and low level of perception. Descriptive tools such as tables, percentages and frequencies were used to present the data while Chi-square, Pearson's Products Moment Correlation and one-way Analysis of Variance were used to test the stated hypotheses.

RESULTS AND DISCUSSION

Table 1 presents the socio-economics and production characteristics of the respondents. It shows that 81.0% of the farmers were male. This could imply that environment friendly farming is mostly practised by male farmers probably because these practices are labour intensive. The result is in agreement with Ugwuja *et al.* (2011) who reported that 83.9% were male as observed in their study conducted on socioeconomic characteristics of farmers in Ekiti State while Adesope *et al.* (2012) reported 34.4% male farmers. The result also indicates that 89.5% of the farmers were married. This could imply that most environment friendly farming practices are labour intensive and family labour could be an added advantage. However, Oluwasusi (2014) reported that 97.8% of farmers were married. Furthermore, 56.5% of the respondents were within the age range of 41-60 years. Oluwasusi and Tijani (2013) observed that 89.4% of the farmers were between the ages of 41 and 70. Contrary to this result, Agwu (2006) reported that most of their farmers were within 20-39 years in their study on intra-household roles and constraints. Furthermore, the findings of this study show that 53% of the farmers had no formal education but may have acquired some forms of non-formal education. Oluwasusi (2014) in a study conducted on farmers' attitudes towards organic farming practices reported that 47.0% of the farmers had no formal education while Adesope *et al.* (2012) reported that 26.7% of respondents had no formal education. The study reported that 27.5% of the farmers earned between ₦41,000.00 and

₦60,000.00 per annum. This is in line with Odoemela and Ajuka (2015) who reported that 29.4% of the respondents earned between ₦40,000- ₦80,000 per annum while Agera *et al.* (2010) reported that 55% of farmers earned between ₦21,000- ₦40,000 per annum. The result further reveals that 37.0% of the farmers cultivated 6-10ha. On the contrary, Njoku-Matthew and Onweremadu (2006) reported that 72% of their farmers cultivated less than

Table 1: Distribution of farmers based on their socio-economic and production characteristics (n=200)

Variables	Frequency	Percentage (%)
Age (years)		
1-20	11	5.5
21-40	47	23.5
41-60	113	56.5
>61	29	14.5
Gender		
Male	162	81
Female	38	19
Marital status		
Single	12	6
Married	178	89.5
Widow	9	4.5
Divorced/ separated	2	1
Religion		
Christianity	117	56.5
Islam	78	39
Traditional	5	2.5
Educational Status		
No formal education	106	53
Primary Sch. Cert.	46	23
Secondary Sch. Cert.	26	13
N.C.E/OND	14	7
B.Sc./HND	7	3.5
Master/Ph.D	1	0.5
Average annual income (₦)		
1,000-20,000	39	19.5
21,000-40,000	44	22
41,000-60,000	55	27.5
61,000-80,000	33	16.5
>80,000	29	14.5
Farm size (ha)		
0-5	56	28
10-Jun	73	37
15-Nov	36	18
16-20	25	12.5
>20	9	4.5
Farming experience (years)		
0-5	18	9
6-10	17	8.5
11-15	20	10
16-20	25	12.5
>20	120	60

2.0ha. Findings also indicate that 60% of the farmers had over 20years of farming experience.

This could imply that the respondents are had long been practising environment farming and assumed to have more knowledge on environment farming practices. This finding is similar to the report of Oluwasusi and Tijani (2013) where 63.85% of farmers had more than 20years of farming experience. However, Oluwasusi (2014) reported that 63.8% of the farmers had between 16-20years of farming experience. The percentage of the respondents that practice Christianity was 56.5%. This might be because Christianity is the most dominant religion in Ekiti State.

The means and standard deviations of farmers’ perceptions of environment–friendly farming practices are presented in Table 2. For farmers’ perceptions of mulching, the means ranged from 1.99 - 4.39, 1.87-4.51 for integrated pest management while it was, 3.69- 4.57 for terracing, 4.16 to 4.72 for contour farming and 1.98 to 4.98 for cover cropping.

Table 2: Farmers’ Perceptions of Environment Friendly Farming Practices (n=200)

S/N	Perceptual Statements	Mean (x)	Standard Deviation (SD)
Perceptions of mulching			
1	Encourages soil microbial activities	4.39	0.68
2	Mulched plants have better vigour	4.32	0.87
3	Conserves soil water	4.23	0.6
4	Improves soil fertility	4.22	0.59
5	Mulching controls weeds	4.06	0.71
6	Requires much labour	3.96	0.88
7	May transfer diseases	2.88	1.56
8	May harbor pests thus causing damage	2.33	1.36
9	Limits water infiltration	1.99	1.33
Perceptions of integrated pest management (IPM)			
10	Requires adequate monitoring and enlightenment	4.51	0.98
11	Prevents discriminate use of pesticide	4.48	1.04
12	Judicious use of pesticides	4.44	1.11
13	Ensures long term pest control	4.31	1.2
14	Environmental pollution is minimal	4.2	0.97
15	May leave residues in produce	2.16	1.98

16	Insects may become resistance to pesticides	1.87	1.96
Perceptions of terracing			
17	Reduces the risk of wind erosion	4.57	0.86
18	Involves a great deal of work	4.55	0.53
19	Reduces erosion and run off	4.44	0s
20	Provides water for recharging shallow aquifer	3.84	0.7
21	Conserves water for agricultural crops	3.69	0.99
Perceptions of contour farming			
22	Makes sloppy area useful for crop production	4.72	0.91
23	Decrease the development of rills	4.66	1.07
24	Conserves water thus increasing crop yields	4.55	1.24
25	Protects soil from erosion agents	4.4	0.86
26	Labour intensive	4.16	1.03
Perceptions of cover cropping			
27	Reduces the impacts of rain drops	4.98	0.99
28	Suppresses weeds	4.68	0.91
29	Conserve soil moisture	4.6	0.96
30	Adds nutrient to the soil	4.59	0.94
31	Protects the soil from direct sunlight	4.59	0.94
32	Disturbs farm operations	4.56	1.05
33	Protects the soil from erosion	4.52	1.04
34	May interfere with agricultural crops	4.45	1.2
35	Labour intensive	1.98	2.04

Rated as Strongly agree-5, Agree-4, Undecided-3, Disagree-2, Strongly disagree-1

Based on the adopted rating scale, farmers strongly agreed with 14perceptual statements and agreed with 13 perceptions. The farmers thus had positive perceptions of 27 out of 35 perceptual statements on EFFPs. This could be attributed to farmers’ long farming experiences in Environment Friendly Farming Practices. In the same vein, high standard deviations in Table 2 depicts increased perceptions of EFFPs.

Table 3: Levels of Farmers’ Perceptions of EFFPs

Category	Interpretation	Frequency	Percentage (%)
35-70	Low	0	0
71-141	Medium	6	3
142-200	High	194	97

Table 3 presents farmers’ levels of perceptions of EFFPs. The results show that majority of the farmers had high level of perceptions of the studied EFFPs. Tatlidil *et al.* (2009) reported low and medium perceptions of sustainable agriculture Kahramanmaras province of Turkey.

In Table 4, results of correlation analysis are presented. The results show that positive and significant relationships ($p < 0.01$) existed between farmers’ perceptions of EFFPs and age of the respondents. This could suggest that the older the farmers, the increase in their perceptions of EFFPs, which could probably be as a result of experiences acquired on EFFPs over time. This result is supported by Gido *et al.* (2013) who asserted that age had positive relationship with organic soil management practices. However, this result is at variance with Fakoya *et al.* (2007) and Bagheri (2010) that observed negative relationship between farmers age and their perception. Average annual income had positive and significant relationships with farmers’ perceptions of EFFPs ($p < 0.05$).Kruize and Bouwman (2004)reported that income affects perception.

Table 4: Relationships between farmers’ perceptions of EFFPs and their socio-economic characteristics

Variables	Correlation value (r)	P value	Decision
Age	0.19**	0.007	Significant
Income	0.14*	0.049	Significant
Farm size	0.22**	0.002	Significant
Experience in EFFPs	0.20**	0.005	Significant

* $p < 0.05$ ** $p < 0.01$

Furthermore, there existed positive and significant relationships between farmers’ perceptions of EFFPs and their farming experience ($p < 0.01$). This therefore suggests that an increase in farmers’ farming experiences resulted in increased perceptions of EFFPs. This is in agreement with the findings of Muhammad and Ruslan (2012) who observed that the level of farmers’ perception increases with farming experience. Adesope *et al.* (2012) reported that farming experience is negatively correlated with adoption of organic farming practices. The result of this study also found positive and significant relationships between farmers’ perceptions of EFFPs and farm size($p < 0.01$). Thus, as farm size increases, their perceptions of EFFPs increase. This could indicate that the more acres

or hectares of land cultivated by farmers, the higher their perceptions of EFFPs.

Table 5: Results of Chi-square test between farmers’ perceptions and their socio-economic characteristics

Variables	χ^2 value	P	Decision
Gender	91.33	0.97	Not significant
Marital status	228.99	0.68	Not significant
Religion	124.28	0.38	Not significant
Education	277.56	0.82	Not significant

$P > 0.05$

Table 5 presents the results of Chi-square tests of relationship between farmers’ perceptions of EFFPs and their socio-economic characteristics. The findings show that there were no significant relationships ($p > 0.05$) between farmers’ perceptions of EFFPs and gender, marital status, religion, and educational qualifications of the farmers. This is an indication that these variables are not the determinants of perceptions of EFFPs observed in this study. These results are inconsistent with assertions of Gido *et al.* (2013) who reported that formal education of household heads is positively correlated with perceptions towards organic soil management practices.

Table 6: Differences in farmers’ perceptions of EFFPs among blocks and cells

Variables	F	Sig.	Decision
Farmers perceptions in blocks	8.88	0	Significant
Farmers perceptions in cells	4.38	0	Significant

$P < 0.01$

Table 6 presents the results of analysis of variance for the perceptions of farmers among blocks and cells in the study area. The results show that there were significant differences ($p < 0.05$) in farmers’ perceptions of EFFPs in the selected blocks and cells for the study. Tukey HSD indicated that block 3 had a significantly higher perception of EFFPs than other blocks while cell 5, 6, and had higher perception of EFFPs than other selected cells. This could be attributed to differences in the topographical features of the study areas.

CONCLUSION

The study examined farmers’ perceptions of environment-friendly farming practices in Ekiti State. The study thus established that the farmers had high level of perceptions of EFFPs. Similarly, significant and positive relationships existed between farmers’ perceptions of EFFPs and their socio-economic and production characteristics such as age,

income, farming experience and farm size. However, farmers' perceptions of EFFPs were not significantly related to gender, marital status, religion, and education. Differences in farmers' perceptions of EFFPs were observed based on selected blocks and cells for the study. The knowledge of farmers' perceptions of EFFPs will assist policy makers on programmes/ projects relating to environment -friendly farming and sustainable agricultural practices since the more favourable the farmers' perceptions on any innovation, the higher the adoption rate.

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