

## Effectiveness of university-based extension outreach for maize production in southwestern Nigeria

### Eficacia del alcance de extensión universitario para la producción de maíz en el suroeste de Nigeria

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#### ABSTRACT

The study assessed the effectiveness of maize management practices by University-based extension outreach (UBEO) in southwestern, Nigeria. A total of 165 outreach beneficiaries were interviewed for the study via a structured and pre-tested interview schedule, in the two purposively selected UBEOs using a multistage sampling technique. Data collected were analyzed using descriptive statistical tools such as frequency counts, percentage, mean and standard deviation while inferential statistics such as Chi-Square and Pearson Product Moment Correlation were used to test the hypotheses. The mean age of the respondents was  $52.4 \pm 19.8$  years and their years of experience in maize farming was  $16.4 \pm 13.6$ . Besides, the mean years of formal education of the beneficiaries was  $7.4 \pm 4.6$ . Also, 75.6 percent got information about the outreach through their community leaders and they participated to better their lot in life. Slightly above average (51.2%) of the respondents had been benefiting for the past 10 years. Besides, maize management practices by UBEOs were appropriate land preparation, seed selection, timely planting and appropriate seed rate among others. The maize yields before and after the management practices were  $3.4 \pm 1.3$  and  $4.2 \pm 2.1$  tons/ hectare respectively, and the majority (92.3%) of the maize farmers indicated that the management practices by UBEOs were effective in improving the yield. The findings further revealed that at  $p < 0.01$ , reasons for participation ( $\chi^2 = 31.612$ ) had a significant association with the effectiveness of maize management practices by UBEOs. Also, at  $p < 0.01$ ,

farming experience ( $r= 0.503$ ) and years as beneficiaries ( $r= 0.501$ ) had a significant relationship with the effectiveness of the management practices; also at  $p<0.05$ , age ( $r=0.322$ ) and years of formal education ( $r=0.389$ ) of respondents had significant relationship with effectiveness of the management practices. The study concludes that the maize management practices by UBEOs in the study area were effective in improving the capabilities of the beneficiaries. It was recommended that UBEOs be sustained and expanded to cover more rural communities.

Keywords: Effectiveness, management practices, university-based extension outreaches

## RESUMEN

El estudio se llevó a cabo con el propósito de evaluar la eficacia de las prácticas de gestión del maíz por parte de la extensión basada en la Universidad (UBEO) en el suroeste de Nigeria. 165 beneficiarios de la divulgación fueron entrevistados para el estudio a través de un calendario de entrevistas estructurado y probado previamente, en los dos UBEO seleccionados íntemente utilizando una técnica de muestreo multietapa. Los datos recopilados se analizaron utilizando herramientas estadísticas descriptivas como recuentos de frecuencias, porcentaje, media y desviación estándar, mientras que se utilizaron estadísticas inferenciales como Chi Square y Pearson Product Moment Correlation para probar las hipótesis. La edad media de los encuestados fue de  $52,4\pm 19,8$  y su experiencia en la cría de maíz fue de  $16,4\pm 13,6$ . Además, la media de años en la educación formal de los beneficiarios fue de  $7,4\pm 4,6$ . Además, el 75,6 por ciento obtuvo información sobre el alcance a través de sus líderes comunitarios y participaron para mejorar su suerte en la vida. Muchos (51,2%) de los encuestados se han beneficiado durante los últimos 10 años. Además, las prácticas de manejo del maíz por parte de los UBEO eran la preparación adecuada de la tierra, la selección de semillas, la siembra oportuna y la tasa de semillas apropiada, entre otras. Los rendimientos del maíz antes y después de las prácticas de gestión fueron  $3,4\pm 1,3$  y  $4,2\pm 2,1$  toneladas/hectárea respectivamente, y la mayoría (92,3%) de los productores de maíz indicaron que las prácticas de gestión de los UBEO eran eficaces para mejorar el rendimiento. Los hallazgos revelaron que, en la  $p<0.01$ , las razones de la participación (2-31.612) de los encuestados tenían una asociación significativa con la eficacia de las tecnologías de producción. Además, en la  $p<0,01$ , la experiencia agrícola ( $r=0,503$ ) y los años como beneficiarios ( $r=0,501$ ) tuvieron una relación significativa con la eficacia de las prácticas de

gestión; también en  $p < 0.05$ , la edad ( $r = 0.322$ ) y los años de educación formal ( $r = 0.389$ ) de los encuestados tuvieron una relación significativa con la eficacia de las prácticas de gestión. El estudio concluye que las prácticas de gestión del maíz por parte de los UBEOs en el área de estudio fueron eficaces para mejorar las capacidades de los beneficiarios. Se recomendó que los UBEO se mantuvieran y ampliara para abarcar a las comunidades más rurales.

Palabras clave: Eficacia, prácticas de gestión, alcances de extensión universitarios

## INTRODUCTION

Nigerian agricultural technology transfer policy since political independence, emphasized a transfer of technical information to farmers using various agro-technology transfer systems. Agricultural technology involves the application of mechanical, chemical, biological, cultural inputs to improve production (Yeoshua, 2005). At independence, in 1960, the Nigerian agricultural technology transfer policy emphasized the transfer of technical information on specific cash crops using regional ministries of agriculture (MOA) in the north, west and east. The period saw the establishment of agro-research institutes, namely: Institute of Agricultural Research (IAR) in the north; Moore Plantation in the west; and National Root Crops Research Institute (NRCRI), Umudike in the east, to link research and extension services (Madukwe *et al.*, 2002).

With state creation in 1968, the main focus of agro-technology transfer policy was food production through the federal and states' MOA. It was slow in achieving the desired objectives of agro-technology transfer, because of the bureaucracy. However, it was the sole agency responsible for agro-technology transfer until the 1976 local government reform, which gave some specific agricultural technology transfer functions to local government councils (LGC) (Mijindadi, 1983). Some defects of the LGC technology transfer policy include poor job description of staff, lack of mobility and absence of staff training and contact with farmers (Madukwe, 1996). Further reforms of the Nigerian agricultural technology transfer policy gave rise, in the seventies, to the involvement of universities and Agricultural Development Projects (ADPs) to transfer agro-technology to farmers.

Initially, five conventional universities namely: Ahmadu Bello University, Zaria; University of Ibadan, Ibadan; University of Ilorin, Ilorin; University of Nigeria, Nsukka; and Obafemi Awolowo University, Ile-Ife, were involved. Later, the University of Agriculture Policy was initiated in 1988 to amplify the efforts of conventional universities in agro-technology

transfer services to farmers. This led to the establishment of three universities of agriculture namely Federal University of Agriculture Abeokuta (FUNAAB), Federal University of Agriculture Makurdi (FUAM) and Michael Okpara University of Agriculture Umudike (MOUUAU) in the southwestern, northcentral and southsouthern, Nigeria, respectively

The University-Based Extension Outreach (UBEO) is borne out of the need for universities to fulfil their social corporate responsibility to the immediate communities that host them. The outreach was modelled after the Cooperative Extension System of the United States (Ogunfeditimi and Ewuola, 1995) and tagged as part of the third of the tripartite roles (teaching, research and community service) of the universities. The approach is anchored by faculties/colleges/universities of agriculture as the case may be. Although they have a small area of coverage, nevertheless they are demand-driven, have in place highly technical staff, access to research reports of their academic departments, connections with research institutes and other development agencies, high-quality services which are integrated into nature in implementing developmental outreaches to selected rural communities and these developmental efforts are geared towards improving the livelihood of the rural dwellers (Adeloye, 2016).

A number of studies have been carried out on different aspects of UBEOs in Nigeria such as: United State Agency for International Development (USAID) in 1988 that conducted a research on three Nigerian universities and their role in agricultural development; Dipeolu, Adebayo and Fabolude (1998) who examined optimal farm plans for sustainable environmental and economic resource use for food crop farmers in Federal University of Agriculture, Abeokuta (FUNAAB) model extension villages; Madukwe, Okoli and Eze (2002) who carried out a study on the analysis and comparison of the Agricultural Development Programme (ADP) and University agricultural technology transfer systems in Nigeria.

Besides, Laogun, Olayinka, Olubunmi, Alimi, Farinde and Amujoyegbe (2003) who studied Isoya rural development project in relation to food security in Nigeria; Okunade (2007) who determined the accessibility of agricultural credit and inputs to women farmers of Isoya Rural Development Project; and Adisa and Adeloye (2013) who examined the organization and management of farmers' groups under Isoya rural development project.

The foregoing reviews dwelt on various studies on UBEOs in Nigeria. While the findings of some of the studies acknowledged the prospects of the outreach, none of the studies

focused on its effectiveness for maize management practices. Therefore, the study aimed to assess the effectiveness of UBEOs for maize management practices in Southwestern Nigeria.

#### Objectives of the study

The main objective of the study was to assess the effectiveness of UBEOs for maize management practices in southwestern Nigeria. The specific objectives were to

- i. describe socio-economic characteristics of maize farmers under the coverage of UBEOs;
- ii. identify maize management practices by UBEOs;
- iii. examine the perception of respondents towards UBEOs; and
- iv. assess the effectiveness of UBEOs for maize production.

#### Hypotheses of the Study

- i. There is no significant relationship between the effectiveness of UBEOs for maize production and the socio-economic characteristics of farmers; and
- ii. There is no significant relationship between the effectiveness of UBEOs for maize production and farmers' perception towards UBEOs.

### MATERIAL AND METHODS

**The study area:** The study was carried out in communities in southwestern Nigeria under the coverage of UBEOs. Southwestern Nigeria comprises UBEOs such as Isoya Project of Obafemi Awolowo University, Ile-Ife (OAU); Badeku Project of University of Ibadan (UI); Agricultural Media Resources and Extension Centre (AMREC) model villages' development project of the Federal University of Agriculture, Abeokuta (FUNAAB). All the maize farmers under the coverage of UBEOs in Southwestern Nigeria constitute the population for the study.

**Sample selection:** A multi-stage sampling procedure was used to select respondents for the study. At the first stage, two UBEOs were purposively selected from the zone based on full spring activities going on in the outreach communities. The UBEOs selected were the AMREC and Isoya model villages' development outreaches which consist of 58 and 24 communities, respectively. At the second stage, using proportionate sampling technique, twenty-five percent of the benefiting communities in each of the UBEOs was selected making 21 communities (15 and 6 communities from AMREC and Isoya outreaches, respectively). Finally, at the third stage, a systematic random sampling technique, with a random start at an interval of two using beneficiaries' register to select 165 maize farmers that representing fifty percent of total number of the maize farmers in the selected UBEOs (115 and 50 from AMREC and Isoya outreaches, respectively) for the study (Table 1). A pre-tested interview

schedule was used to elicit information from the respondents. The data were summarized using descriptive statistical tools such as frequency counts, percentage, mean and standard deviation while inferential statistics such as Chi-Square and Pearson Product Moment Correlation were used to test the hypotheses.

Table 1: Distribution of UBEOs' beneficiaries sampled for the study

UBEOs	Number of communities covered	25% of the total number of communities covered selected	Number of beneficiaries in each of the selected community	Number of sampled beneficiaries
AMREC of FUNAAB	58	15		
		Fami	48	10
		Alabata	45	09
		Ijemo-Fadipe	38	09
		Boodo-Sanyaolu	30	06
		Ilewo-Orile	36	08
		Ijale-Orile	32	06
		Ogijan	36	08
		Ogboja	44	09
		Kango	45	09
		Owe	32	06
		Ojoo-Oluwo	30	06
		Ikeiye	40	09
		Agbede	35	08
		Kofesu-Alaro	32	06
		Adao	30	06
Sub-total			553	115
Isoya of OAU		6		
		Esa-Oke	36	08
		Erefe	35	08
	24	Obiri	35	08
		Iyanfoworogi	36	08
		Ojo	36	08
		Aro	48	10
Sub-total			226	50
Grand-total	82	21	779	165

Source: Field survey, 2017

#### Measurement of variables

*Dependent variable:* The dependent variable for this study was conceptualized as UBEOs' effectiveness for maize production, using the list of determinants of UBEOs' effectiveness for maize production adapted and modified from Omoro (2008) which were outreach's holistic approach to development; participation of beneficiaries in the outreaches' activities; organisation of pieces of training on SYN 8; commitment of the outreach to objectives realisation; identification of beneficiaries' need; integrity of the outreach's personnel; technical skills of the outreach's personnel; facilitation skills of the outreach's personnel; communication skills of the outreach's personnel; the professionalism of the outreach's personnel; and regular visitation of the outreach's personnel. The respondents were asked to assess each determinant of UBEOs' effectiveness for maize production for the last five years. The reaction was against a 4-point Likert-like scale from excellent (4), good (3), fair (2), and poor (1) as used by Adeloye (2016). The total score per respondent was further classified into three levels of effectiveness as follows: low, moderate and high effectiveness using the mean of total effectiveness score plus/minus standard deviation. That is: high for scores above mean plus standard deviation; low for scores below mean minus standard deviation, and moderate for scores between the two.

Beneficiaries' perception towards UBEOs was measured through their perception/feelings towards some declarative statements about the outreaches. Based on the researcher's observation of outreaches' beneficiaries and literature reviewed, eight declarative statements consisting of both positive and negative items were constructed for testing this construct of interest. They contained statements such as UBEOs are an avenue where University exploit farmers, UBEOs aid greatly in the diversification of livelihood, UBEOs are waste of time and resources, UBEOs help to have better management of SYN 8, UBEOs do not focus on the identified needs of the people, UBEOs are enforced on the people, UBEOs implementation is not good enough the way it has been carried out, and UBEOs is relevant to improving the socio-economic status of the people. They were listed and scored against a four-point Likert-type scale of strongly agree (4), agree (3), disagree (2), and strongly disagree (1) for the positive and vice versa for the negative statements. The total perception score per respondent was further classified into three categories: positive, indifferent and negative using mean score plus/minus standard deviation. That is: positive for scores above mean plus standard deviation; negative for scores below mean minus standard deviation; and indifferent for scores between the two. The hypotheses were measured using Chi-Square (for categorical variables)

and Pearson Product Moment Correlation at 0.005 level of significance. All the analysis was done using SPSS version 22.

## RESULTS AND DISCUSSION

Socio-Economic Characteristics of Maize Farmers under UBEOs: Results in Table 2 reveal that many (58.1%) of the respondents were in their middle age, while the mean age of the respondents was  $52.4 \pm 19.2$  years. This implies that the respondents comprised people of active minds and bodies, which might be versatile in making use of management practices disseminated to them by the outreach. About half (52.3%) of the respondents were male. This result indicates that the outreaches were gender-sensitive. The result in Table 2 also, shows that the respondents interviewed had an average year of farming experience in maize of  $16.4 \pm 13.4$ . Since only a few (8.6%) were not having formal education, it implies that the majority of the respondents were literate. The findings aligned with the submissions of Soyebó (2005) and Alao (2010) that rural dwellers in Osun State were literate. This submission implies that the respondents were likely to be more receptive to innovations, improved practices and new ideas introduced to them. Besides, the result indicates that information about UBEOs in the study area were mainly through outreach's personnel (75.6%), community leaders (74.7%) and the media (71.4%). Furthermore, the respondents participated in the outreach to better their lot in life (100%). This is a departure from previous reasons for participating in development outreaches (mere interest and leisure) as reported by Olujide and Adeogun (2006). Also, the idea of anything coming from universities (69.8%) is authentic and laudable was strong in the study area. The average period of being outreaches' beneficiaries was  $7.4 \pm 4.6$  years. The result implies that the relatively long years of participating in UBEOs were part of shreds of evidence that the UBEOs had impacted the lives of the respondents positively. The majority (79.4%) of the respondents indicated that they recorded higher yield after the introduction of management practices by UBEOs. This finding affirmed that of Iken and Amusa (2014) and FAOSTAT (2015) which reported that the maize management practices were critical to increasing of maize yield in southwestern Nigeria.

Maize Management practices by UBEOs: Results in Table 3 show that eleven maize management practices were introduced by UBEOs to maize farmers in the study area. It is also revealed that all the respondents indicated that appropriate land preparation, seed selection (SYN 8)/dressing, timely planting and appropriate seed rate (25kg/Ha) came from UBEOs; while 71 percent of the respondents indicated that timely harvesting came from UBEOs. This result is in tandem with that of Kamara (2013) and Lauer (2017) who reported



that variety selection, optimum plant density, fertilizer/nutrient management, and pest/diseases management among others are proven and practical maize management practices in African Savannahs. This finding implies that the maize management practices by the UBEOs in the study area are in line with the best practices as regards maize production.

Table 2: Socio-economic characteristics of respondents

Variables	Percentages	
Age (years)		
Below 30	16.4	Mean= 52.4 Standard deviation=19.8
31-50	58.1	
Above 50	25.5	
Maize farming experience (years)		
Below 10	26.0	Mean= 16.4 Standard deviation=13.6
11-20	63.5	
Above 20	10.5	
Sex		
Male	52.3	
Female	47.7	
Years of formal education		
No formal education	8.6	Mean= 9.3 Standard deviation= 3.9
1- 6	20.2	
7-12	52.9	
Above 12	18.3	
*Sources of information about the outreach		
Outreach's personnel	75.6	
Neighbours/ Friends	59.8	
Community leaders	74.7	
Media	71.4	
*Reasons for participation in the outreach		
To make ends meet	75.0	
Personal interest	60.4	
For leisure	25.0	
To better my lot in life	100.0	
Universities being the anchor	69.8	
Years as outreach beneficiaries		
Below 5	24.8	Mean= 7.4 Standard deviation= 4.6
5-10	51.2	
Above 10	24.0	
Maize yield before the technologies (Tons/Ha)		
Below 3	45.5	Mean= 3.4 Standard deviation= 1.3
3 and Above	54.5	
Maize yield after the technologies (Tons/Ha)		
Below 3	20.6	Mean= 4.2 Standard deviation= 2.1
3 and Above	79.4	

\*Multiple responses- Source: Field survey, 2017

Table 3: Maize management practices by UBEOs

N/S	*Maize management practices by UBEOs	Percentages
1	Appropriate land preparation	100.0
2	Seed selection (SYN 8)/dressing	100.0
3	Timely planting	100.0
4	Appropriate seed rate (25kg/Ha)	100.0
5	Appropriate spacing (75cm x 25cm)	88.1
6	Thinning and supplying (to 2-3 plants/stand)	85.1
7	Intercropping	85.1
8	Proper weed control	82.1
9	Proper soil fertility management	75.6
10	Pest and disease control	75.0
11	Timely harvesting	71.0

\* Multiple responses. Source: Field survey, 2017

Perception of Maize Farmers towards UBEOs: Results in Figure 1 reveals that the majority (60.0%) of the respondents had a favourable disposition towards UBEOs, This result is in tandem with that of Adeloje (2016) that reported that ideas from universities are authentic and laudable in Southwestern Nigeria. This implies that expected benefits from the outreach being a University-based extension outfit was adjudged to be credible by the beneficiaries.

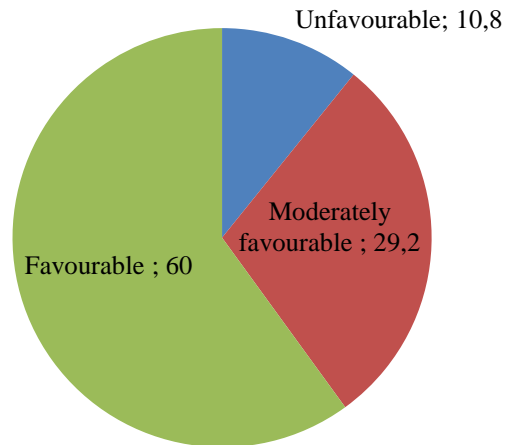


Figure 1: Categories of perception towards UBEOs for maize management

Effectiveness of UBEOs for Maize production: The results in Table 4 reveals that participation of beneficiaries in outreach's activities (3.60) ranked highest among the determinants of UBEOs' effectiveness for maize production. The was followed by identification of beneficiaries' need (3.30), communication skill of the personnel (3.25), the technical skill

of the personnel (3.24), and regular visitation by the personnel (3.16) while the organisation of training on SYN 8 (2.57) was ranked lowest. Participation in outreach’s activities may be connected to the credibility of UBEOs as established by Adeloje (2016). Also, the technical and communication skill of the personnel may be due to additional academic qualifications together with access to in-house and external trainings on production recommendations as affirmed by Madukwe *et al.* (2002). Besides, regular visitation of beneficiaries may be connected to the personnel’s small area of coverage and access to mobility that enhance the timeliness of agro-technology transfer programmes as reported by Laogun *et al.* (2003) while commitment to objective realisation may be linked to good working conditions in terms of regular salaries, promotion and supervisory mechanism in place as established by Madukwe *et al.* (2002). Furthermore, the better equipped to handle the intricate process of identifying the needs and aspirations of farmers.

Table 4: Effectiveness of UBEOs for maize production

	Determinants of UBEOs Effectiveness	Mean	Rank
1	Participation of beneficiaries in the outreach’s activities	3.60	1 <sup>st</sup>
2	Identification of beneficiaries’ need	3.30	2 <sup>nd</sup>
3	Communication skill of the personnel	3.25	3 <sup>rd</sup>
4	Technical skill of the personnel	3.24	4 <sup>th</sup>
5	Regular visitation by the personnel	3.16	5 <sup>th</sup>
6	Facilitation skill of the personnel	3.11	6 <sup>th</sup>
7	Professionalism of the personnel	3.06	7 <sup>th</sup>
8	Holistic approach to development	3.05	8 <sup>th</sup>
9	Commitment to objectives’ realisation	2.97	9 <sup>th</sup>
10	Integrity of the personnel	2.68	10 <sup>th</sup>
11	Organisation of trainings on SYN 8	2.57	11 <sup>th</sup>
Grand mean		= 2.99. Source: Field survey, 2017	

Categories of the effectiveness of UBEOs for maize management practices: Results in Figure 2 shows that the majority (55.16%) of the respondents indicated that UBEOs for maize management practices were effective. This finding corroborates that of Cooper (2011) which stated that UBEOs was effectiveness for development programmes in South Africa.

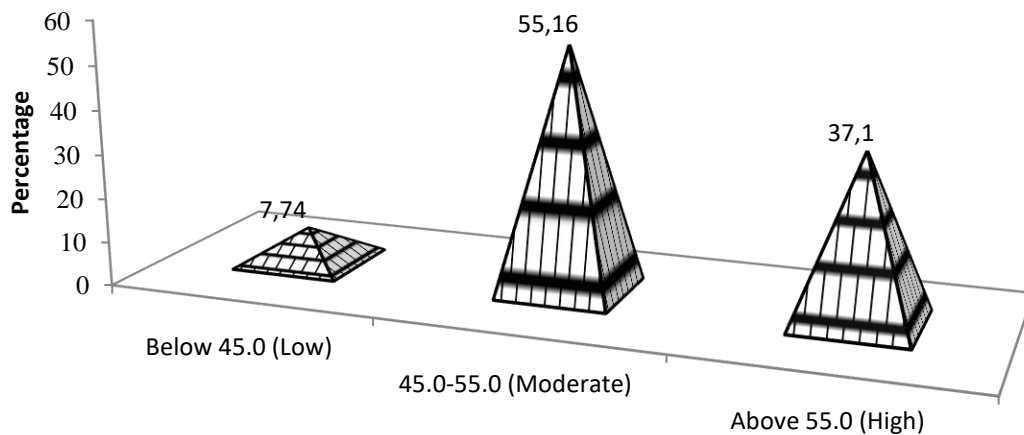


Figure 2: Categories of the effectiveness of UBEOs for maize management practices

Effectiveness of UBEOs for maize production and socio-economic characteristics of farmers: Result in Table 5 reveals that at 0.05 level of significance, sex ( $\chi^2=19.502$ ) and reasons for participating in UBEOs ( $\chi^2=31.612$ ) by the respondents had a significant association with the effectiveness of UBEOs for maize production.

Table 5: Relationship between socio economic characteristics of respondents and effectiveness of UBEOs for maize production

Variables	$\chi^2$ Value	DF	P-Value
Sex	29.502	2	0.003*
Sources of information about UBEOs	4.370	6	0.635
Reason for participating in UBEOs	31.612	4	0.001*

Source: Calculated from field survey, 2017 \*  $P \leq 0.05$

DF- Degree of Freedom

The results in Table 6 reveals that at 0.05 level of significance, respondents' years of experience in maize farming ( $r= 0.483$ ), years as outreach beneficiaries ( $r= 0.501$ ), respondents' age ( $r= 0.322$ ) and years of formal education ( $r= 0.153$ ) had a significant relationship with the effectiveness of UBEOs for maize production. This implies that the higher the years in experience in maize farming of outreaches' beneficiaries, the higher the effectiveness of UBEOs for maize production. This finding was in tandem with that of Adisa and Adeloye (2013), which stated that farming experience of farmers under Isoya project

positively influence their participation in the project's activities. As regard respondents' age, this implies that, the higher the age of outreaches' beneficiaries, the higher the effectiveness of UBEOs for maize production. This might be connected with likelihood of accumulation of experiences by the virtue of the beneficiaries' advanced age, which could enrich their participation. This finding confirmed the assertion of Adisa and Adeloje (2012) which reported that the increase in age of members of community based organisation enhanced their participation in rural community development projects in Osun State, Nigeria. This also implies that the higher the years spent in formal education by outreaches' beneficiaries, the higher the effectiveness of UBEOs for maize production. This might be connected with the importance of formal education to rural dwellers' training, since it would help rural dwellers to understand extension recommendations better.

Table 6: Relationship between socio-economic characteristics of the respondents and effectiveness of UBEOs for maize production

Variables	Correlation coefficient (r)	Coefficient of determination( $r^2$ )
Age	0.322*	0.1037
Farming experience	0.483*	0.2530
Years of formal education	0.153*	0.0234
Years as outreach beneficiaries	0.501*	0.2510

Source: Calculated from field survey, 2017. \*  $P \leq 0.05$

Relationship between the effectiveness of UBEOs for maize production and farmers' perception towards the outreach: The results in Table 7 shows that there was a positive and significant relationship ( $r = 0.578$ ;  $P \leq 0.01$ ) between the effectiveness of UBEOs for maize management practices and respondents' perception towards the outreach. The contribution of respondents' perception towards the technologies *vis a vis* the outreach effectiveness was 33.4 percent ( $r^2 = 0.3341$ ). This implies that the more favourable the respondents perceive UBEOs, the higher the UBEOs' effectiveness for maize production. This finding is in agreement with that of Adisa and Adeloje (2013) which stated that the perception of Isoya project beneficiaries positively influenced their participation in its activities, thereafter Isoya project's effectiveness.

Table 7: Relationship between the effectiveness of UBEOs for maize production and respondents' perception towards the outreach.

Variables	Correlation coefficient (r)	Coefficient of determination( $r^2$ )
Perception	0.578*	0.3341

\*  $P \leq 0.05$ . Source: Calculated from field survey, 2017

### CONCLUSION

Based on the findings of the study, it was concluded that maize management practices by UBEOs were appropriate land preparation, seed selection, timely planting and appropriate seed rate among others; majority of the beneficiaries had favourable disposition towards UBEOs. Also, maize management practices promoted by UBEOs were effective in improving crop yield. It is recommended that UBEOs should be sustained and expanded to cover more rural communities in the study area.

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