

GENDER DIFFERENCES IN ADOPTION OF RECOMMENDED IMPROVED CASSAVA PRODUCTION TECHNOLOGIES IN IMO STATE, NIGERIA

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ABSTRACT

The study which was designed to investigate the adoption gaps in the recommended improved cassava production technologies by male and female farmers generated its primary data through interview schedule and Focus Group Discussion (FGD) from 48 and 72 male and female farmers respectively. Simple statistic, ranking and technology gap index were the tools for data analysis. The socio-economic finding reveals that more females (57.31%) than males (39%) are involved in full time farm employment and the incidence of single parenthood was also higher in the former than the later. Also, the males had higher knowledge (89%) about these recommended practices than the females (81%). The females on the other hand recorded higher adoption rates of the recommended practices (56%) than the males (52%). Again, chemical treatment of cuttings with chemical solution was not adopted at all by the respondents. The study further reveals that the gender adoption of practices such as seed rate and plant spacing were poorly adopted. Also, both sexes view the high cost of cuttings and fertilizers well as the inability of the tubers to last for more than one year in the farm as very serious constraints to the adoption of the technology. However, the issue of lack of awareness and high incidence of tuber rotting were not regarded as adoption constrains by the respondents.

INTRODUCTION

Nigeria is a country that has consistently suffered from the problem of food shortage. Cassava is of great economic importance in the country as it serves as a major staple food. They are processed into

various forms like gari, foo-foo, tapioca, cassava flour, chips, flakes, starch and fermented paste (Ugwu, 1996). Apart from its use as food, cassava is an important industrial raw material for the production of alcohol, pharmaceutical gum and confectionaries (Okonkwo, 2002). Again, the leaves and tender shoots are also consumed as vegetables.

The option of increasing agricultural production which involves the use of improved high yielding varieties of crops is now being made popular among farmers through extension activities in the Agricultural Development Programmes (ADPs). In this process, scientific and technological research play significant roles in producing appropriate innovations. Cassava is one of the crops on which the extension services of the ADPs is disseminating information with respect to the use of its improved high yielding technologies (Afolami et al 1998). Included in the component technology are such practices as seed selection, seed treatment, seed rate, spacing, planting method, fertilization rate and time, weeding period and harvesting time.

Despite these efforts by the government, farmers have not been able to produce enough of this product to meet its high demand and have often a times recorded low yields. IITA (1990), have attributed the low yields in cassava production to failure of farmers to abide by the recommended practices. They further identified the socio-economic constraints to improved cassava production to include inadequate resource allocation, infrastructure and extension services.

Therefore given the economic importance of this crop, which was traditionally regarded as women's crop, but is now recording high level of men involvement (Kormawa, 2003), with women still dominating in all aspects of its production and other operations associated with it (Mgbada 2000), there is the need to look into the adoption behavior by gender of the various components of the technology. In the course of the study we will answer the following questions; 1) to what level do men and women adopt the individual components of the technology? 2) What are the factors that constrain the adoption of the technology by

gender? 3) How do male and female farmers perceive the benefits of adopting this technology?

Answers to the above questions will help us to achieve the broad objective of the study, which is aimed at evaluating the rate by gender of adoption of the various practices recommended in the improved cassava technology.

METHODOLOGY

This study was carried out in Imo State, which is located in Southeastern Nigeria. The economy of the State is purely agrarian and the main crops grown include cassava, yam, rice, cocoyam, maize, and beans while the major vegetables grown are melon, okro, tomatoes, African spinach, and fluted pumpkin.

The sample was collected through multi-stage random sampling technique. The study selected 4 Local Government Areas (LGAs) in the State namely; Okigwe, Ikeduru, Ngor-Okpuala and Aboh Mbaise (LGAs) out of which 2 communities each were selected. This was followed by the selection of 3 villages from each of the communities and finally, 3 female and 2 male farmers were selected at random from the villages to give a total of 72 female and 48 male farmers.

Primary data were collected from the respondents between February and April 2003 through Focused Group Discussion (FGD) and interview schedule with the aid of questionnaire. Analysis of the data was done through the use of simple statistics such as means, percentages and the adoption gap index (AGI) as used by Okoro (1999) The AGI is calculated as follows;

$$AGI = \frac{P-A}{P} \times 100$$

Where AGI = Adoption gap index

A = Adoption score obtained by a respondent over all the items /practices.

P = Possible maximum scores for all the practices/respondents.

The main areas of the technology/practice studied were; Knowledge of improved cassava production technology (1 item ie 10%); Pre planting practices (2items ie 20%); Planting practices (3 items ie 30%); Management practices (3 Items ie 30%) and Harvesting (1 item ie 10%). Adoption of each item/practice attracted 1 point (i.e. 10%). With this procedure, each farmer was assume to have an adoption score ranging between zero and 100.

RESULTS AND DISCUSSIONS

Table 1; Socio-Economic Indicators Sample Mean of the Cassava Farmers (Percent of Farmers, unless otherwise specified).

<i>Characteristics</i>	<i>Males</i>	<i>Females</i>
Sex	35%	65%
Age	58.46	51.32
Marital Status		
Single	3.86	19.62
Married	97.14	80.38
Primary Occupation		
On-Farm	39.01	57.31
Off-farm	60.99	42.67
Farm-size	1.23	0.82
Number of Years Spent in Formal Education		
	11	9
Family size	10	9
Farming Experience	31.11	27.80

Source; Field Survey 2002.

Gender analysis of the socio-economic characteristic of the respondents reveals that the average age of the male cassava farmer (58.46) is slightly higher than that of the women (51.32). Single parenthood was more among the women (19.62) than men (3.86). Again, while a reasonable percentage of the women (57.31) have on-farm employment as their primary occupation, a small percentage of

men (39.01) responded to this. This finding therefore supports earlier assertions that men are abandoning the rural areas and farming occupation for off-farm employment in the cities. Further results from this table show that the male farmers cultivated larger farm-plots, had more education as well as more experience in farming than the women farmers.

Table 2; Relationship between Knowledge and Adoption of Recommended Technology for Improved Cassava Varieties

Recommended practices	Mark allotted	Max. Score for all the pract. /resp. Male s	Score for Females	Knowledge Score (%)		Adoption Score (%)		Adoption Gap (%)	
				Male s	Females	Male s	Females	Males	Females
Awareness of Improved Cassava Production Tech.	1	48	72	96	92	68	74	32	26
Pre-planting Practices									
Seed Selection	1	48	72	100	84	79	82	21	18
Seed Treatment	1	48	72	62	31	0	0	100	100
Planting Practices									
Seed Rate	1	48	72	83	71	21	13	79	87
Spacing	1	48	72	74	63	19	18	81	82
Planting	1	48	72	96	82	91	96	8	4
Management Practices									
Fertilizer Application	1	48	72	93	91	42	53	58	47
1 st Weeding	1	48	72	99	99	67	81	33	19
2 nd Weeding	1	48	72	93	94	61	78	39	22
Harvesting	1	48	72	100	100	73	68	27	32
	10	480	720	89	81	52	56	48	44

Source; Field Survey 2002.

Table 2 reveals that more women (74%) than men (68%) adopted the improved cassava technology even though the awareness level is higher for men (96%) than women (92%). Again whereas practices like seed selection, planting method and weeding, which conformed to the traditional production method, recorded high adoption rates for both male and female farmers, others like seed rates and spacing recorded low adoption rates. Again practice such as treatment of cuttings with Supracide 40EC chemical before planting was not adopted at all by both sexes even though it recorded relatively high (62%) and low (31%) awareness rate by male and female farmers respectively.

The conclusion drawn from this result is that most farmers that have adopted the improved cassava production technology do not abide by the recommended practices of; 1): chemical treatment of cuttings before planting, 2): seed rate of 10,000 cuttings per hectare and 3): 1 meter apart spacing. These practices are considered by the respondents as not only costly but a waste of scarce material and natural resources and are therefore wisely avoided..

The implication of this result is that practices that are simple and conform to the traditional method of production are easily adopted by farmers than complex and alien production methods. This has a serious implication for research in the development of agricultural innovations.

Table 3: Gender Ratings of the Reasons for the Low Adoption of the Improved Cassava Technologies.

Assessment Parameter	Highly Serious		Less Serious		Not Serious	
	Male s	Female s	Male s	Female s	Male s	Females
Unavailability and High cost of Cassava Cuttings	76	82	20	16	4	2
Lack of Awareness	6	9	23	7	71	84
Cannot Last More than One Year in the Farm	87	93	7	7	6	0
High cost of fertilizer	91	100	9	0	0	0
High Incidence of Tuber rotting	7	21	31	32	62	47
Does not Allow for Intercropping	32	61	43	13	27	7
Gives poor Gari and Fufu Quality	51	71	32	22	16	25

Source; field Survey 2002

Table 3 shows that all the constraints to adoption of improved cassava technologies are more serious on the women than the men. For instance, 100% and 91% of female and male farmers respectively considered high cost of fertilizer as very serious. This is explained by the fact that given the poor economic condition of the women farmers, the removal of fertilizer subsidy by the Government and the resultant high cost of the product has resulted to more women than men abandoning the use of this input on their crops. Again, the predominance of women in this production activity is explained by the fact that cassava is a major food crop consumed in the family.

Furthermore, since the produced cassava is mostly processed into gari or fufu, for home consumption, the quality of these secondary products become very paramount to the women. This explains the high value (71%) of women as against (51%) of men that reported highly seriously about the poor gari and fufu quality associated with improved cassava varieties.

Table 4 ;Gender Analysis of Benefits of Adoption of Improved Cassava Production Technology

Assessment Parameter	Male farmers (%)	Female farmers (%)
High Yielding	76	84
Early maturity	64	38
Resistant to pest and diseases	63	90
Suppresses weeds	56	43
Numerous number of tubers	67	87
Provides long stem	32	54

Source: Field survey 2003.

Table 4 indicates that male's view the benefits of adoption of improved cassava production technologies differently from women with more women than men recording higher responses in most practices except in early maturity and weed suppression. For instance, pest and disease resistance attribute of the technology recorded (90%) and (63%) of female and male responses respectively. Similar trend was also noticed for attributes such as high yielding and numerous number of tubers.

CONCLUSION AND RECOMMENDATION

This paper found that more females are involved in full time farm employment and had higher adoption rates than males in the study

area. It is therefore recommended that more access to recommended improved cassava technologies would enhance adoption among both genders. Females should be further encouraged through provision of incentives to make them increase their scale of production.

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