

THE RELATIONSHIPS BETWEEN SOCIO-ECONOMIC CHARACTERISTICS OF WOMEN CASSAVA PROCESSORS AND MODERN CASSAVA PROCESSING TECHNIQUES IN OGUN STATE, NIGERIA

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Abstract

This study examined the extent of relationships between socio-economic characteristics of women cassava processors and utilization of modern cassava-processing techniques in Ogun State. A hypothesis was formed to achieve the purpose of the study. A multi-stage sampling method was used to select 546 women cassava processors in Ogun State. In the first stage, 20 Local Government Areas (LGAs) of Ogun state were stratified into Savannah and Rain Forest Agro- Ecological Zones. The second stage involved the selection of two LGAs from Savannah and four LGAs from Forest Zones. The third stage involved a random selection of 36 Villages of the selected LGAs with 12 and 24 from each zones. Finally, 10.0% of women cassava processors were randomly selected from the villages, comprising 201 and 345 women cassava processors from each zones. Data were collected through a structured questionnaire and analyzed using Pearson's Product Moment Correlation Coefficient (PPMCC) and Chi-square statistics. The result showed that marital status is significantly related to the level of utilization of processing techniques among respondents in savannah zone ($\chi^2=29.72$, $p<0.05$), and no significant relationship existed in the forest zone ($\chi^2=12.93$, $p>0.05$) as well as when the zones were pooled ($\chi^2=13.37$, $p>0.05$). The result also showed that educational level is significantly related to the level of the utilization of processing techniques in savannah and forest zones with ($\chi^2=15.57$, $p<0.05$; $72-44.96$, $p<0.05$). The result also showed that cosmos-politeness of respondents is significantly related to the level of the utilization of processing techniques in the forest zone ($\chi^2=33.26$, $p<0.05$) and the pooled result ($\chi^2=28.57$, $p<0.05$) as well as in the savannah zone, cosmos-politeness is not significantly related to the level of the use of processing techniques ($\chi^2=2.10$, $p>0.05$). Respondents' age is also found to significantly related to the utilization of processing techniques in the savannah zone ($r=0.33$, $p<0.05$) and not significantly related to the utilization of processing techniques in the forest zone ($r=0.08$, $p<0.05$) while it is significantly correlated to the pooled result from both zones ($r= -0.16$; $p<0.05$). The result further showed that the household size of respondents was only significant in the savannah zone ($r= 0.15$; $p<0.05$), in such that household with capable hands to operate the equipment enhances the level of the utilization of cassava processing techniques.

Keywords: Cassava Processing Techniques, Socio-Economic Characteristics, Rain Forest Zone, Savannah Zone, Women Cassava Processors.

Introduction

The concept of food security depicts the ability of people to gain sustained access to adequate quantity of the right quality of food as to be able to live an active and healthy life. Food security may be defined as access by all people at all times to enough food (of good quality) for an active, healthy life (Ojo & Adebayo, 2012; Idisi, 2021). Food security is, therefore, concerned with the ensuring that all people at all times have both physical and economic access to the basic foods they need. At the household level, access to food depends on what household members can produce using the resources at their disposal as well as the

ability to generate sufficient income with which they could purchase required food (Maxwell, Vaitla & Coates, 2014; Sahu, Chūzho & Das, 2017).

Besides, food production and income levels, many factors could affect household food security. For instance, in most rural households where food is available, cultural and family food distribution practices can endanger the food security of its members (Alonso, Cockx, Lara & Johan, 2017). At the national level, food insecurity could be due to seasonal fluctuations as well as improper management of national agricultural resources. Globally, drought, poor agricultural planning, political instability, and mismanagement of natural resources have been said to be associated with starvation of millions of people throughout the world and, as such, estimated that each year between 5 and 20 million people die of starvation, among whom are children (Food and Agriculture Organization of the United Nations, 2015). In Nigeria, cassava is a traditional subsistence crop of predominantly low-income families in rural and urban areas (Nigerian Federal Ministry of Agriculture and Natural Resources, n.d; Salau, Nofiu & Jomoh, 2019). Cassava unlike other root crops is a long duration crop that is particularly tolerant to drought conditions and can be stored in the ground for up to 36 months (Koundinya, et al. 2024). Cassava is also a highly productive crop per unit of land and labour; which represent its popularity among African farmers.

Therefore, while cassava does not allow for the rapid turnover of some short duration crops in rotation, it enables the farmer to achieve maximum returns for each unit of land and time using minimum input (Sanusi, Lordbanjou, Ibrahim, Abubakar & Oke, 2022). It should also be noted that cassava could be grown in poorer soils that may not support other crops. Therefore, cassava is the last crop in the rotation, a practice that underlines its importance and role in household food security. According to the Food and Agriculture Organization of the United Nations (2013), farmers who grow cassava do so for several reasons, which include: Its ability to adapt to survive under different ecological conditions; better protection against soil erosion; insurance against crop failure; more efficient use of labour; continuous crop harvesting; and ability to grow on less fertile soil.

Statement of the Problem

Recent development in cassava processing techniques has been focused on production of industrial products such as cassava flour for baking, cassava chips for livestock feeds and industrial starch. This has led to increases in the rate of processing cassava product for sale with decreased emphasis on environment, communities, link to market, development of infrastructure and household of the processors that are yet to be fully understood. The implication is that food security could either be positive or negative, depending on how the potential increase in income is utilized. These new products could include flour, livestock feeds, and starch, and alternative processing techniques are expected to be socially and economically advantageous in expanding the use of cassava for industries. This is necessary because experience has confirmed that over production of any commodity for a single product market may lead to a glut situation. For cassava, a market glut could result to a price instability, which will act as a rapid disincentive to farmers' cultivation and the utilization of the crop. In the worst cases, glut could lead to food insecurity and, as such, generate the need for food importation. The question, therefore, is that: What is the level of modern cassava-processing techniques available in Ogun State and to what extent do women processors use them?

Research Hypothesis

Research Hypothesis: There is no significant relationship between socio-economic characteristics of cassava processors and utilization of modern cassava-processing techniques.

Methods

Location and Administrative Structure

Ogun State is located in the south-western rainforest zone of Nigeria. It lies between latitude 6°N and 8°N and longitudes 2°E and 5°E. The State is bounded on the west by the Republic of Benin and on the east by Ondo State. To the north of the State are Oyo and Osun States, while Lagos State and the Atlantic Ocean lie to the south. With the relative geographical setting of the State, it shares international boundary with the Republic of Benin particularly Idi Iroko through which it has enjoyed tremendous association with other West

African countries. The state serves as entry point for goods from these countries into Nigeria; hence it is called gateway to Nigeria. Ogun State was created on 3rd February, 1976, when the two provinces of Ijebu and Abeokuta were merged under the then military regime of late General Murtala Mohammed. The state was created along with 18 others and derived its name from the Ogun River, which traverses major parts of the State.

Socio-Economic Characteristics of Respondents

Ethnic Group

Table 1 showed the distribution of sampled women cassava processors in the study area by ethnic nationalities. The Table shows the majority (90.7%) of the women cassava processors are Yoruba, which is most likely because the study is part of the native land of the Yoruba in Nigeria. Meanwhile, Hausas and the Ibibios accounted for the lowest percentage (0.5%) of processors in the study area. Across agro-ecological zone, the study finds that there are more Yoruba in the forest zone (96.2%) than what obtains in the derived savannah zone (81.1%). Also, the Table shows that there are three different ethnic groups (Igbiras, Hausa and Ibibio), that are not found in the forest zone but very few (below 5.0%) are found in the derived savannah zone. This may be attributed to the geographical, occupational distribution and infrastructural provision of respondents' household.

Age of Women Processors

Age is an important variable that determines the nature of economic activities that can be undertaken by an individual, most especially women. While younger and more energetic women may be involved in strenuous farm-based activities, older women are most likely to be involved in more strenuous activities such as trading. Table 1 shows the distribution of women cassava processors by age and agro-ecological zone. The majority (73.4 %) of the women processors in both the forest (66.4%) and derived savannah zones (85.9%) were aged between 30 and 50 years. The mean age of the processors in the study area is 44 years. This result suggests most processors in the study area are in their mid-ages. A similar result was obtained by Buwah (2012) who reported that the majority of cassava and soybean processors in Oyo state were in the 31-50 years' age bracket. This age range can be regarded as the youthful and active age when women can make vital impact in agricultural production, processing and technological development generally.

Educational Attainment of Women Cassava Processors

Education is an important variable that tends to influence adoption of modern technology, while influencing choice of food commodities consumed by individuals and households. Table 1 shows the distribution of the sampled women processors by highest educational attainments and agro-ecological zones. The Table shows that in both zones (forest and derived savannah zones), 45.2% of the women processors interviewed had no formal education, while 29.3%, 12.3% and 7.7% had primary, secondary and tertiary education respectively. Only 5.5% of women processors are educated through adult literacy programme. However, more of the women processors in forest zone had post primary education (22.6%) compared to 15.4% in the derived savannah zone. On the other hand, more of the women processors had no formal education in the forest zone (46.4%) compared to 43.3% in the derived savannah zone. In a similar study by Fakoya, Apantaku & Unaebe (2001), it was reported that many women farmers in Ogun State have no formal education. Similarly, Ayoade (2011) and Sennuga (2023) reported that many women are non-participants in WIA programmes in Oyo State have no formal education. This low educational attainment among women processors has a tendency for low level of technology adoption, which has implications for the utilization of improved processing techniques by women cassava processors.

Involvement in Social Organization

Table 1 shows that in the forest zone and derived savannah zone, 49.3%, 46.9% and 41.4% of women processors are ordinary members of Esusu/Ajo groups, religious groups and cooperative societies respectively, while only 11.9% and 10.3% are official members of cooperatives and ethnic groups. However, the Table shows that membership of these organizations vary from each area to other, which shows that more women

are involved in religious groups (49.9%) followed by Esusu/Ajo groups (49.8%) and cooperatives (40.3%) in the forest zone as ordinary member compared to 49.8% that belong to Esusu group followed by 41,8% in the religious groups as derived in the savannah zone. This finding is in line with earlier findings of Omotesho, Akinrinde, Komolafe and Aluko (2019) who reported that women farmers belong to various social groups as ordinary members mainly and participate actively in these social groups. Women farmers’ involvement in these different groups helps them to benefit from opportunities derived from these groups.

Marital Status of respondents

Table 1 shows the distribution of women cassava processors by marital status and agro-ecological zones. The Table shows that in forest and derived savannah zones, majority of women cassava processors, 91.8% are married while only 6.2% and 2.0% were married before or are single. However, women processors that are married are more in the derived savannah zone (96.5%) than in the forest zone (89.0%). The reason is that marriage institution in the society. The study of Yahaya (2002) validated this finding that majority of women involved in agricultural activities are married.

Religion of Cassava Processors

Table 1 shows the distribution of the sampled women cassava processors by religious affiliation and agro-ecological zone. While Christians constituted the majority (about 60%) of the cassava processors. Muslims also represented significantly, having accounted for an average of 37% of women processors in the sample, and by extension, the study area. Similar findings were reported by Yahaya (2002) who noted that while most women farmers in Bauchi State are Muslims, the majority of those in the neighboring Oyo State were mainly Christians. These findings suggest that while some variation may exist in the relative composition of Christians and Muslims women processors, women from both religions were actively involved in cassava processing.

Result

Research Hypothesis: There is no significant relationship between socio-economic characteristics of cassava processors and utilization of modern cassava-processing techniques.

Table 1: Chi-square test of Relationships between Socio-Economic Characteristics of Cassava Processors and Utilization of Modern Cassava-Processing Techniques.

Utilization of Modern Cassava-Processing Techniques					
SECCP	Ecological zones	χ^2 value	P	Decision	
Cassava Processors Marital Status	Both zones	13.37	0.100	NS	
	Forest zone	12.93	0.114	NS	
	Savannah zone	29.72	0.000	Sig.	
Cassava Processors Educational Level	Both zones	51.44	0.000	Sig.	
	Forest zones	44.96	0.000	Sig.	
	Savannah zone	15.57	0.049	Sig.	
Cassava Processors Cosmo-Politeness	Both zones	28.57	0.000	Sig.	
	Forest zone	33.26	0.000	Sig.	
	Savannah zone	2.10	0.717	NS	
SECCP	Ecological Zones	Pearson’s r	P	Decision	
Cassava Processors Age	Both zones	0.155	0.000	Sig.	
	Forest zone savannah zone	-0.081	0.135	NS	
Cassava Processors Household Size	Both zones	0.334	0.000	Sig.	
	Both zones	0.056	0.195	NS	
	Forest zone	0.018	0.741	NS	
Cassava Processors Income	Savannah zone	0.151	0.032	Sig.	
	Both zones	0.186	0.000	Sig.	
	Forest zone	0.163	0.002	Sig.	

Savannah zone	0.212	0.003	Sig.
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Note. SECCP = Socio-Economic Characteristics of Cassava Processors, Sig. = Significant, NS = Not Significant.

Table 1 summarizes the results of Chi-square performed to test the hypothesis formulated. The first section of the Table shows the relationship in term of the Chi-square value due to the nominal level of measurement for the variables involved; while the second section utilized the Pearson's Product Moment Correlation Coefficient because of the interval level of measurement. While marital status is significantly related to the level of use of processing technique among respondents in Savannah zone ($\chi^2=29.72$, $p<0.05$) no significant relationship existed in the forest zone ($\chi^2=12.93$, $p>0.05$) and when the zones were pooled ($\chi^2=13.37$, $p>0.05$). This may be as a result of the high number of married respondents in the derived Savannah zone of the study area. Educational level is significantly related to the level of the use of processing techniques in both Savannah and forest zones with ($\chi^2=15.57$, $p<0.05$; $72-44.96$, $p<0.05$). The realization of the benefits of mechanical processing must have been due to exposure enhanced through formal and informal education. In terms of cosmos-politeness of respondents, significant relationships were found for forest zone ($\chi^2=33.26$, $p<0.05$) and the pooled result ($\chi^2=28.57$, $p<0.05$): while in the Savannah zone cosmos-politeness is not significantly related to the level of the use of processing techniques ($\chi^2=2.10$, $p>0.05$). This may be due to the fact that respondents in the Savannah zone do not visit urban areas regularly. Respondents' age is significantly related to the use of processing techniques in the Savannah zone ($r=0.33$, $p<0.05$) and not significant for the forest zone ($r=0.08$, $p<0.05$) while it is significant and inversely correlated to the pooled result from both zones ($r= -0.16$; $p<0.05$). The prominent age category of the respondents in each zone must have been responsible for the trend of the results. The household size of the respondents was only significant in the Savannah zone ($r= 0.15$; $p<0.05$) such that household with capable hands to operate the equipment enhances the level of the use of cassava processing techniques.

Conclusion

Based on the result, the authors concluded that the mean age of the women cassava processors is an enhancing factor for agricultural production and processing. The authors also concluded that the respondents (that is, women cassava processors) are still active and vibrant. The authors also concluded that a higher percentage of women cassava processors (54.8%) obtain one form of formal education or another. However, the relative high percentage of women cassava processors with no formal education (45.2%) has implication for technology adoption in cassava processing.

Recommendations

Based on the result, the following recommendations were made:

1. There is a need to ensure that cassava-processing techniques are made available to the rural women at low and affordable prices.
2. There is a need to ensure that cassava processing techniques are more gender sensitive, such that it favours women farmers.
3. There is a need to ensure that cassava-processing techniques are very easy for the utilization of its purpose and missions.

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