



SOCIO-ECONOMIC CHARACTERISTICS OF COWPEA-BASED CONSUMERS IN WESTERN ZONE OF BAUCHI STATE, NIGERIA

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ABSTRACT

The study examined the socio-economic characteristics of cowpea-based consumers in Western zone of Bauchi State, Nigeria. A multi-stage random sampling technique was employed in the selection of 210 households for this study. Data were collected using questionnaire and analyzed with descriptive statistics. The results revealed that majority (82.9%) of the households were males with a mean age of 42 years. The result also showed that 79.5% and 42.9% were married and had tertiary education, respectively. The findings revealed a mean household size and mean income of 10 persons and ₦35,485.71, respectively. Furthermore, the result showed that 34.3% of households consumed cowpea daily, 31.9% and 12.8% consumed cowpea twice a week and thrice a week, respectively. The major constraints to cowpea consumption include high cost of cowpea (97.1%), insect infestation (81.4%) and abdominal discomfort (70.0%) among others. The study recommended that government should create an enabling environment to make the prices of food items most especially cowpea reasonable and affordable by creating a favourable policies on price to tackle the menace of price fluctuations and Cowpea farmers should be encouraged to use improved cowpea varieties that are resistant to insect attacks so as reduce the damaged done by insects.

Keywords: Bauchi, Characteristics, Consumer, Cowpea, Western zone.

INTRODUCTION

Cowpea, (*vigna unguiculata*) is one of the most important grain legumes which are widely cultivated in semi-arid areas of the tropics and subtropics for human as well as animal consumption. In West and Central Africa, the most important cowpea growing regions in the World, cowpea constitutes the cheapest source of dietary protein for the low-income sector of the population (Luka *et al.*, 2015). Cowpea leaves, green pods, green peas and dry grains are consumed as food by humans and the haulms which contain about 20% protein are fed to livestock (Luka *et al.*, 2015).

According to Food and Agriculture Organization (FAO, 2017), West Africa sub-region produced about 81% (4,525,891 metric tonnes) of the global production of cowpea (5,589,216 metric tonnes) in 2014. Nigeria's production of 2,137,900 metric tonnes for the same period accounted for 38.3% and 47.2% of global and West African production, respectively. Consequently, Nigeria has remained the largest producer of the commodity globally despite the fall in production of about 58.5% between 2012 and 2016 which was largely attributed to insurgency in the North-eastern part of the country which dislodged many farmers from their farms. Nigeria is also the largest consumer of cowpea globally, arising from the economic importance of the crop among households. However, due to the inability of the country to match its population growth rate with commensurate increase in production, persistent gap has been reported between the country's supply and demand for cowpea (FAO, 2017).

The increasing population of Nigeria without a commensurate increase in cowpea production is likely to further widen the demand-supply gap, thus resulting in persistent



increase in price of this commodity among other staple crops. A price increase of 44.2% between May 2016 and May 2017 (NBS, 2017) is indicative of the persistent pressure on the supply of the commodity. Therefore, reversing this trend would require expanded local production of the commodity to satisfy the growing demand. Cowpeas are consumed regularly in virtually every household in West Africa. Although some cowpeas are purchased as green pods at harvest time and in some regions the leaves are eaten as greens, the majority of cowpeas are sold as grain in bulk form (FAO, 2018). Cowpea is an important grain legume crop for the livelihood of the millions of rural poor in the underdeveloped /developing countries of the tropical and subtropical regions of the world. High protein (18-35%) and carbohydrates (50-60%) contents, together with an amino acid pattern complementary to that of cereal grains make cowpeas a potentially important nutritional component in the human diet (Prinyawiwatkul *et al.*, 1996; Kushwaha, 2013). The cowpea seeds are a rich source of amino acids like tyrosine, tryptophan and lysine and contain substantial amount of histidine, phenylalanine and cysteine. Cowpea seeds also contain small amounts of carotene, thiamin, riboflavin, niacin, vitamin A and folic acid. It is rich in nutraceuticals compounds such as dietary fibre, antioxidants and polyunsaturated fatty acids and polyphenols. Compared with other pulses it is less expensive (Farzana *et al.* 1996; Kushwaha, 2013) with almost same nutritive value.

Dominant improved varieties of cowpea grown in Nigeria include, genetically modified (GMO) cowpea, SAMPEA 20-T, IT97K-499-35, IT89KD-288, IT90K-277-2, IT89KD- 391, and IT98K-205-8 (International Crops Research Institute for the Semi-Arid Tropics, [ICRISAT], 2011). Although these varieties become difficult to identify by their code varietal names when they reach markets, they have however been categorized in line with their popular local names such as *kwankwasiya*, *Kanannado fari*, silver, *Jan wake*, *yaro da kokari*, *'yar camar*, *rienna*, BSADP, (2019). Others include, *Olo-1*, *Olo-2*, *Banjara*, *karadua*, *Manyan fari*, *kanannado yar*, *akidi*, *Ife-brown*, *Oloyin*, *drum*, *milk*, *Sokoto* amongst others (Afolami, 2002; Oyewale, 2016; Kassali *et al.*, 2018; Ojedokun, 2020). The different varieties are thus demanded by households for different purposes based on the forms in which they are utilized (Mundua, 2010; Oyewale, 2016). There are several dishes using cowpea flour produced in the household (cake, pie, stew, fritters, buns, pancake, pudding and chips) and these provide a varied nutritious diet and have added desirable attributes, which include easy cooking, availability and favourable taste; Although, a large number of food processors are aware of the new cowpea utilization technologies (Nyankori *et al.*, 2002).

Cowpea is a cash crop for small-holder farmers and a vital source of income, meaning that growing cultivars with more valuable characteristics could lead to increased income (Samireddypalle *et al.*, 2017). However, for breeders to know which traits to target, it is necessary to determine those which are most desired by consumers. Seed coat color, pattern, and texture traits are important consumer-related traits in cowpea (Herniter, 2019). Consumption is the combination of qualities, quantities, actions and tendencies that characterised a community or group of people in the course of using resources for their survival, comfort and enjoyment (Ibbih, 2018).

The broad objective of the study was to examine the socio-economic characteristics of cowpea-based consumers in western zone of Bauchi State. The specific objectives were to: describe the socio-economic characteristics of the households' cowpea consumers; and identify and describe the constraints associated with cowpea consumption among households.



MATERIALS AND METHODS

The Study Area

The research was conducted in two (2) Local Governments Areas (LGAs) from western zone of Bauchi State, namely: Dass and Bauchi. It occupies a total land area of 49,119 km². It is located between latitudes 9° 3' and 12° 3' north and longitudes 8° 50' and 11° east. According to National Population Commission (NPC, 2006), the population of Bauchi state was 4, 476, 465 segregated to 2, 426, 215 males and 2, 250, 250 females. According to the National Bureau of Statistics (NBS, 2019) with the rate of population growth of (3.5%per annum) the study area has a total of 7, 057, 045 people both males and females. Most of the people of Bauchi state engage in crop, livestock, fisheries productions etc. either in mixed farming or specifics are their dependable occupation (BSADP, 2019).

Sampling Procedure and Sample Size

Multi-stage sampling techniques were employed in the selection of households. In the first stage, two LGA's were purposively selected from western zone. This is based on the high prevalence of cowpea producers and consumers in the area. In the second stage, 3 communities were randomly selected from each of the LGA, given a total of 6 communities across the zone. In the third stage, from each of the communities selected, a total of 210 households were proportionately (8%) selected, to constitute the sample size as depicted in Table 1.

Table 1: Sampling procedure and Sample size

LGAs Selected	Ward Selected	Population	Sample size (8%)
Bauchi	a. Dankade	439	35
	b. Dawaki	439	35
	c. Liman Katagum	439	35
Dass	a. Bagel	439	35
	b. Bundot	439	35
	c. Wandu	439	35
Total		2,634	210

Source: BSADP, (2019)

Data Collection

Primary data were collected by the used of structured questionnaire administered to 210 household heads or their representatives with the help of well-trained enumerators.

Data Analysis

Data were analyzed using descriptive statistics to describe the socio-economic characteristics of households' cowpea consumers and constraints to households' cowpea consumption.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Household Heads

The result in Table 2 shows that, 82.9% of the household heads were male and 17.1% were headed by female indicating that majority of the households were headed by male which is a true picture of most African societies and as such must provide for the daily needs of their family. The result is in line with the findings of Hamidu *et al.* (2017), Odusina (2011), Yakaka and Bashir (2012), and Jimoh (2017) who's reported similar results that most of households were headed by males, in Bauchi, Gombe, Oyo, Borno and Kogi, respectively. Although results of previous studies (Adetunji and Adepoji, 2011) reveals that female respondents are usually



low compared to male respondents. These results show a considerably increase in female respondents since the subject of the study borders on household nutrition in which females are usually more informed than males. The result also revealed that, 79.5% of the household heads were married, while 10.0% were single. This agrees with the findings of Hamidu *et al.* (2017) who found that majority of the respondents who consume beef; mutton, chevron and chicken in Bauchi state were married. Further agrees with the finding of Salawu *et al.* (2014), Jimoh (2017) and Muhammad (2017) in their similar studies. Emodi and Madukwe (2011) who posits that cooking remains the exclusive responsibility of the women that are married in Africa and the most preferred type of food is rice.

Table 2: Socio-economic characteristics of household heads

Variable	Frequency	Percentage
Sex		
Male	174	82.9
Female	36	17.1
Total	210	100.0
Marital status		
Single	21	10.0
Married	167	79.5
Divorced	10	4.8
Widow	12	5.7
Total	210	100.0
Educational level		
Not educated	12	5.7
Qur'anic	30	14.3
Primary	6	2.9
Secondary	72	34.3
Tertiary	90	42.9
Total	210	100.0
Occupation		
Farming	70	33.3
Trading	30	14.3
Civil service	75	35.7
Artisanship	35	16.7
Total	210	100.0

Source: Field Survey, 2020

Increase awareness of the need nutritional and better knowledge of nutritive healthy and balanced food affects the pattern of food consumption of a household. Thus, food expenditure tends to increase as educational level attainment increases (Joseph, 2018). The result (Table 2) further shows that, 42.9% of the household heads attained tertiary education, while 5.7% never attained any school. This implies that, majority of the household heads were literate and have one form of education or the other which in return has a positive effect on the consumption preference in the area. This agrees with Abubakar (2017) and Okidim (2012) who asserted that household that are literate are more likely to have a positive effect on the consumption pattern of local rice in Nigeria in their studies. The findings further revealed that, 35.7% of the household heads were civil servants, 33.3% of the households were farmers, 16.7% were artisans, and 14.3% were in to trading or business. This agrees with the study of Muhammad (2017) who reported that the majority of the household's head were civil servants



and this is connected to the high educational attainment of majority of the household heads. Muhammad (2013) reported that occupation has a significant influence on rice consumption since it is one of the major determinants of income which in turn is a major determinant of consumer's purchasing power.

Quantitative Socio-economic Parameters of Household Heads

Table 3 revealed that, the minimum age of the household heads was 18years and the maximum was 75 years with the mean age as 45 years. This finding was in agreement with Hamidu *et al.* (2017) in his study on the economic analysis of household expenditure pattern on meat in Bauchi State, Nigeria using descriptive statistics who stated that majority of the respondents had a mean age of 41 years. Nnamdi (2010) study the determinants of consumer's preference for safe chicken consumption in Imo state Nigeria showed that, majority of the consumers who prefer safe chicken have a mean age of 41years. Contrary with the findings of Muhammad (2017) who reported that majority of the household who consume either local or imported rice were between the ages of 31-40years. Household size has a significant influence on the consumption preference and pattern for food items. As the household size increases, there is tendency for the household to consume more food and the percentage of income going to every member of the family decreases (Hamidu *et al.*, 2017). Similarly, the result revealed that the minimum number of 2 persons and the maximum was 26 with the mean number of 10 persons per household was recorded. This finding agrees with Nnamdi (2010) and Hamidu *et al.* (2017) who reported that majority of the household heads had an average household size of 9 people per households, respectively. This is in line with the finding of Bamidele (2010) who reported that larger household size tends to consume more of the cheaper local rice because they have less per capita income than the small households. The result further revealed that the minimum income of the household heads in the study area was ₦8,000 per month and a maximum of ₦150, 000 with a mean monthly income of ₦35,485.71. This finding is contrary with the study of Nnamdi (2010) who reported that majority of the respondents earn less than ₦30, 000 per month. This implies that as income increases consumption of food rich in protein, i.e., cowpea also increases.

Table 3: Quantitative socio-economic parameters of household heads

Variables	N	Minimum	Maximum	Mean	Std. Dev.
Age of the Household head	210	18.00	75.00	42.24	11.850
Household Size Household head	210	2.00	26.00	10.13	6.419
Income	210	8000.00	150000.00	35485.71	21910.590

Source: Field Survey, 2020

Frequency of cowpea consumption

Table 4 shows the distribution of households according to frequency of consuming cowpea. The result shows that majority (34.3%) of the household heads consumed cowpea every day, 31.9% consume it 2 times a week, 12.8% consume it 3 times a week, and 9.5% consume it once a week, respectively. Finally, 6.7% and 4.8% of the household heads consume cowpea fortnightly and occasionally, respectively. This finding is in line with Muhammad (2017) who reported that majority of the households in Bauchi western zone consumed rice daily as considerable number of households consume rice twice in a week, thrice in a week and



once in a week. This is in agreement with Oyinbo (2014) who reported that rice has assumed a strategic position in the food basket of rural and urban households in Nigeria.

Table 4: Frequency of cowpea consumption

Frequency of Consumption	Frequency	Percentage
Daily	72	34.3
2 times a week	67	31.9
3 times a week	27	12.8
Once a week	20	9.5
Fortnightly	14	6.7
Occasionally	10	4.8
Total	210	100.0

Source: Field Survey, 2020

Constraints to Cowpea Consumption

The result in Table 5 revealed that the major challenges that affect the households cowpea consumption were high cost of cowpea (97.1%), insect infestation (81.4%), abdominal discomfort (70.0%), poor storage of grains at home (69.0%), long time in cooking (30.5%), unavailable all year round (24.3%) and difficulty in processing (15.2%). The result is similar to that of Muhammad (2017) who reported that high cost of the rice, poor quality, difficulty in processing as well as adulterated products were the major challenges that affect the household's consumption preference of local and imported rice in Bauchi state. Hamidu *et al.* (2017) reported that financial problem, high cost of meat, health related problem as the most severe constraints to meat consumption in Bauchi state. This implies that, as price of cowpea increases, consumption of cowpea decreases *ceteris-paribus*.

Table 5: Constraints to cowpea consumption

Constraints	SA	A	*Frequency	Percentage
High cost of cowpea	143	61	204	97.1
Insect infestation	94	77	171	81.4
Abdominal discomfort	52	95	147	70.0
Poor storage of grains	31	114	145	69.0
Long time in cooking	9	55	64	30.5
Unavailable all year round	9	42	51	24.3
Difficulty in processing	7	25	32	15.2

Note: *multiple responses were recorded; SA = strongly agreed, A = Agreed

Source: Field Survey, (2020).

CONCLUSIONS AND RECOMMENDATIONS

The study concluded that the major constraints to cowpea consumption is the high cost of cowpea that were facing most of the household heads due to economic destitutions that is attributed to high cost of food items in the country. Also, insect infestation may reduce the cowpea consumption due to the nature of damage made by insect during storage of the crop before consumption. Based on the findings of this study it is recommended that:

1. Government should create an enabling environment to make the prices of food items most especially cowpea reasonable and attractive by creating a favourable policies on prices of food items.
2. Cowpea farmers should be encouraged to use improved cowpea varieties that are resistant to insect attacks so as reduce the damaged done by insects.



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