ANALYSIS OF CONSUMER BEHAVIOUR ON COWPEA QUALITY ATTRIBUTES IN GOMBE STATE, NIGERIA.

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INTRODUCTION

Cowpea (*Vigna unguiculata (*L.) *Walp.)* is a leguminous crop grown in many parts of Nigeria. It is considered as an important stable food, affordable and a cheap protein source to many rural and urban populations. Cowpea consumer behaviour is an effort to study and understand the buying and consumption tendencies of cowpea consumers. However, the current food price crisis in Nigeria seems to have affected consumers behaviour on consumption of food crops of which cowpea would not be as an exception. Increase in high cost of living amongst others have led consumers nowadays to take decisions in changing their buying and consumption pattern, even for basic needs to cheap, quality protein foods such as cowpea.

Regardless of the numerous benefits associated with cowpea and its based product, there is limited published literature on the types of cowpea attributes preferred by different segment of consumers, their buying behaviour, consumption pattern and consumer's behaviour to pay for certain characteristics of cowpea which include cowpea size, seed colour and seed texture. Consumer purchasing behaviour and consumption pattern is ever changing. It is important to take care of consumer changing behaviour. The most important reason for studying cowpea consumer behaviour is the significant role it plays in our daily lives, because directly or indirectly we are all consumers of cowpea. The types of cowpea we purchased and the way we utilised it significantly influence the way we live our daily lives. Cowpea in this regards present a great economic potentials. Therefore, the broad objective the study is to analysed consumer behaviour on cowpea quality attributes in the study area. While specific objectives are to:

i. a describe the socio economic characteristics of cowpea consumers in the study area
ii. ascertain cowpea quality attributes preferred by the consumers ;
iii. describe cowpea consumers consumption pattern in the area; and
iv. estimate the prices paid by consumers for different cowpea characteristics.

MATERIALS AND MTHOD

Gombe State is located between latitude 9 ^{0} 30' and 12 ^{0} 30' N and longitude 8^0 45' and 11 ^{0} 45' E of the Greenwich meridian. It lies within the North east region of Nigeria and occupies a total area of about 20,265 square kilometres. The State had, by 2006 an estimated population of 2,365,000 inhabitants (NPC, 2006).The projected population is about 2,730,622 people in 2018. A multi-stage sampling procedure was used for the study: First stage: Purposive selection of six Local Government Areas of Gombe State, namely: Billiri, Shonghom, Akko, Yamaltu-Deba, Gombe and Kwami Local Government Areas. Second stage: within each of the selected Local Government areas two villages were randomly selected. Third stage: random sampling of 20% proportionate to size from the sampling frames in each of the selected areas in stage II above. A sample size of 267 actors was arrived at and used for the

study.Data for the study were collected from primary source through the administration of structured questionnaires to the four categories of respondents in the study area.

RESULTS AND DISCUSSION

Socio-economic characteristics of the cowpea consumers in the study area

Socio economic characteristics of the consumer considered for this study includes age and household size, years. This can be seen in Table 1

Age of cowpea consumer in Gombe State

The age of the household head is important because it shows the level of his or her experience which influences consumption choices of each consumer (Table 1).Household consumer is the one who buys cowpea from different actor for his or her consumption. The actors might be farmers, processors, wholesalers and retailers. The age distribution of the household cowpea consumers shows that 56.93 %, of the respondents were within the age bracket of 36- 60 years .While those within the age group of 18-35 years represent 42.70 % of household consumers .The mean age is 38.94 years. It was noted in Table 1 that consumers are in their active age group in terms of protein and nutritional requirement and in that respect cowpea has a lot to do under these groups. They are likely therefore to consume significant quantity of cowpea in their household for their growth and development. This outcome was also in line with the similar findings obtained by Adejobi (2005) who revealed that the market trader groups in his study in Maiduguri were within the age range of 32 to 42 years.

Household size of the cowpea consumers

Table 1 shows the distribution of the respondents according to household size about 56.18 % had household size of between 1-5 persons. About 31.09 % had household size of 6-10 persons in their household. The average household size observed was 6.53 persons. Result in Table 1 also shows that only 0.75 % of cowpea consumer had a household size of 21-25 person's .This finding is also in line with Solomon (2008) and Banmeke (2003) who indicates that large household size assists more on agricultural activities. But contrary, to Okoruwa and Ogundele (2006) who stressed that large household size does not necessarily translate to higher use of family labour because some of the young able bodied family member may prefer other jobs than marketing.

Table 1: Quantitative socio-economic variable of cowpea consumer in Gombe State

Variable	Frequency	Percentages	Mean
Age			
18-35	114	42.70	
36-60	152	56.93	38.94
Above 60	1	0.37	
Household size			
1-5	150	56.18	
6-10	83	31.09	
11-15	28	10.49	6.53
16-20	4	1.50	
21-25	2	0.75	

Source: Field Survey, 2017

The Hedonic pricing model for five different cowpea varieties in the study area

The estimated model fitted the data reasonably well given the variables used. The R-square value for the five samples being 51%, 76%, 70%, 71% and 87% for *Kanannado, Kananan wake, Jan wake, Silver* and *Sa babba sata* respectively. The result from (Table 9) indicated that cowpea attributes significantly influence consumer willingness to pay depending on the variety. The result shows that seed size, colour, skin texture, eye colour, grain colour

mixes and grain size mixes are the most important parameters cowpea consumers consider in their decision to purchase cowpea in the area. Grain size coefficient had the expected positive sign for all the five samples cowpea except *Kananan wake* and *Silver* varieties. This means that consumers are willing to pay a premium of ₦19.98, ₦5.39, ₦28.31 per kilogram for a larger cowpea seeds in the case of *Kanannado, Jan wake,* and *Sa babba sata* respectively. However, consumers asked for a discount of ₦18.22, and ₦14.54 for *Kananan wake* and *Silve*r varieties respectively. These results agree with studies by Kitch *et al.*(1998) in West Africa which indicate that large white-seeded cowpeas are more readily marketed and are typically sold at a premium. Further studies by Langyintuo *et al*. (2004) on consumer preference for cowpeas in Cameroon and Ghana revealed that most consumers there prefer large grain size.

Coefficient of cowpea grain colour had the expected positive sign for all the five samples except for *Jan wake* where consumers discount for ₦8.23 per kilogram. Their result indicated that large white-seeded cowpeas are more readily marketed and are typically sold at a premium amongst a wide array of landraces varying in seed type and colour in the area. It is an indication of increasingly important role of white cowpea as a cash crop. This finding is in agreement with studies by Wolfson *et al.*(1989) on farmer's preference for cowpeas and then repeated by Lowenberg-Deboer, (1996) in Cameroon, revealed the preference of farmers for and importance of seed size and colour as selection criteria for a good seed with market potentials . Adipala *et al*.(2002) also found out that farmers in the study area select white seeded cowpeas for local consumption and only grow the black seeded for export market. This connects very well with the findings of this study that consumers in the study area too preferred white seeded cowpea, which agrees with studies done by Kitch *et al*. (1998) in West Africa concluding that the importance of seed size and colour as selection criteria appears to reflect the increasingly important role of cowpea as a cash crop

The result from (Table 8) further added that consumer discount the price of cowpea for smooth skin texture by ₦2.23, ₦2.65 and ₦1.65 for *Kananan wake, Jan wake* and *Silver* respectively, but pay for a premium for rough texture of ₦17.72 and ₦5.08 as in the case of *Kanannado* and *Sa Babba sata* varieties respectively. The result further added that consumers pay for a premium for brown eye colour of ₦37.76, ₦19.37 and ₦17.12 for *Kanannado, Kananan wake* and *Silver* varieties respectively, but asked for a discount of ₦9.99 and ₦4.19 as in the case of *Jan wake* and *Sa babba sata* varieties respectively. This finding suggests that cowpea consumers in the area also considered cowpea eye colour as an important criterion in buying their cowpea. This is in contrast with the finding of Mundua, (2010) who narrated that seed eye colour did not appear as important factor in consumer consumption decision. This finding also contradicts Faye, (2005) in which dominant eye colours found in markets in Senegal were black and maroon. Langyintuo, 2004) reported also that in North Ghanaian markets consumers preferred cowpeas with black eyes. However, in Cameroun they discounted cowpea grains with black eyes.

In addition, the result further revealed that cowpea consumers also considered cowpea colour mixes as an important criterion in buying their cowpea the coefficients of *Kanannado, Jan wake* and *Sa babba sata* are all positive but negative in the case of *Kananan wake* and *Silver* varieties. This signifies that cowpea consumers in the area preferred cowpea without grain colour mixes. Additionally, consumers in the area also pay for a premium in respect of cowpea not having cowpea grain mixes as associated with *Kanannado* ₦4.03, *Jan wake* ₦10.04 and ₦7.75 for *Sa babba sata* respectively but asked for a discount of ₦7.81 and ₦1.61 for *Kananan wake* and *Silver* varieties. These result suggest that efforts to improve upon cowpea grain size, grain colour, skin texture and good grain standardization will be worthwhile in the area as consumers seems to be interested in large seeded cowpea, white

skin colour, rough skin textured cowpea as well as cowpea without grain size and grain colour mixes respectively. Further more, from the equation all the constant coefficients were positive implying that even when all the quality characteristics are zero consumers still chose to pay a premium for cowpea varieties most preferred.

Table 5: Cowpea variety attributes that influence price

	Kanannado		*Kananan wake*		*Jan wake*		*Silver*		*Sa babba sata*	
Variables	**coefficient**	**t- value**	**coefficient**	**t- value**	**coefficient**	**t- value**	**coefficient**	**t- value**	**coefficient**	**t- value**
Grain size X_1	19.979*	2.539	-18.217***	-4.505	5.392NS	1.908	-14.540***	-4.218	28.309***	10.751
Grain colour X_2	42.715***	7.371	13.680***	4.595	-8.233***	-3956	9.978***	3.860	1.031NS	0.531
Skin texture X_3	17.716***	3.428	-2.225 NS	-0.838	-2.645NS	-1.425	-1.645NS	-0.727	5.082**	2.933
Eye colour X_4	37.764***	6.413	19.372 ***	6.403	-9.993***	-4.725	17.118***	6.636	-4.980*	-2.523
Colour mixes X_5	8.405NS	1.885	-23.323***	-10.181	10.835***	6.765	-11.624***	-5951	8.524***	5.702
Size mixes X_6	4.026NS	0.672	-7.811*	-2.539	10.045***	4.671	-1.614NS	-0.615	7.746***	3.859
Constant	283.284***	23.343	394.573***	64.824	595.442***	91.502	388.001***	73.610	344.172 ***	85.309
R^2	0.515		0.765		0.694		0.717		0.873	

Source.: Field survey,2017

CONCLUSIONS AND OUTLOOK

This study, has presented a broad range of issues on cowpea consumer behaviour for quality attributes. It is concluded that consumers in the study area have different levels and forms of preference for cowpeas. The characteristics of the cowpea products and socio-economic features of consumers also have influence on the level of preference. It is also realised that cowpea was considered as an important food security crop in the area as the majority of the cowpea consumers expressed their reasons for consuming it, is due to the nutritional value of the crop, economic reason, ease of preparation and customs and tradition. Other factors include price, taste and nutrition knowledge of the crop.

Based on the finding of the study, it was recommended that;

- The most preferred quality attributes which command price premiums such as larger grain size, white skin, rough testa texture and brown eye colour should be communicated to breeders.
- Market participants can be educated on quality improvement of their cowpeas to command different prices for their products.
- There is need by retailers to improve on customer -buyer relationship as the delayed payment mechanism lead consumer to retain a constant seller.
- Governments should make policies that would encourage more production and utilization of cowpea in the study area, as it would help both the nutritional status of consumers and also help generate income to cowpea producers, marketers and processors.
- There should also be more research into the disliking intrinsic characteristics of cowpea by crop breeders

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