

Consumers' Food Value Attributes on Ghana's Local Market; Case Study of Berekum Municipality.

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Abstract— This paper investigates consumers' price perceptions at Ghana's local markets. By analyzing the questionnaire survey results, it identifies the relative importance local customers placed on weights and measures in comparison to other food attributes in purchasing agricultural products. In determining customers' decision-making behaviors, we applied Kahneman's (2012) prospect theory and developed picture-based scenarios for the customers to express their value perceptions at the market. We also asked questions to see what food attributes are important for them. We wanted to find out if such attributes as weights and measures are important for local Ghanaian customers other than more well-recognized ones such as food quality and price. The results indicate that our respondents decide to buy agricultural products like vegetables, eggs, and rice, on the basis of four attributes: (1) weights and measures, (2) health values, (3) safety, and (4) affordability. As previous studies on Western consumers tend to show high importance on food quality, our results suggest that customers' choices may differ more likely by socio-cultural backgrounds. This conclusion can be buttressed by another part of our survey that shows that our respondents are mostly middle-class, educated nuclear families in this region. About 80percent of them agreed that traditionally prescribed weights and measures were important to understand the value of agricultural products at the market.

Keywords— consumer behavior, Ghana, traditional weights and measure, local market, price perception.

I. INTRODUCTION

Consumer behaviors at ubiquitous and vibrant local markets of Africa like Ghana are among seemingly uncontrollable but important variables retailers should want to understand better. There, consumers employ various standards in deciding to buy a product. However, studies on consumer behaviors toward food products have focused mostly on such product quality cues as freshness,

taste, health values, and origin, for purchasing. In examining food value cues, for example, scholars in the United States and other developed countries have shown good interests in organic products (Yiridoe, K.E., Bonti-Ankomah, S., & Martin, C.R, 2005). Consumers become either willing to accept or willing to pay for a product base on their perceptions of price. Prices at the market, therefore, are the representation of the product value (Zeithaml, 1988).

Several studies on price perceptions have argued that quality and value, though important in understanding consumer behaviors, are erratic and volatile. Zeithaml (1988) argues that there is limitation in the meaning of quality and value. There are inconsistent measurement procedures that limit the meaning of these concepts. Quality and value are not clearly defined, leading to the disparately using the concepts (Yiridoe et al, 2005; Acebrónand Dopico, 2000; Doorn and Verhoef, 2011; Zeithaml, 1988).

Lusk and Briggeman (2009) argue that consumers have a set of stable beliefs associated with food price and consumption. These beliefs play important roles in explaining consumer choices and illustrate the core underlying values that motivate their purchasing decisions. Lusk (2011) relates food values to consumers' purchasing decisions of organic products. He argues that consumers prefer organic products to inorganic ones because the former are more traditional and environmentally friendly even though some customers are concerned about relatively high price. Another study finds that, in general, product appearance tends to be less important among consumers with a high preference for organic and pesticide-free products (Yiridoe et al., 2005).

This paper attempts to understand if these generalized attributes also help understand local consumers in Ghana. In other words, we examine if other seemingly less important attributes such as weight and measures influence the consumers. If so, to what extent? To investigate this question, we designed and applied a questionnaire to ask local consumers at one of popular

vegetable markets in Ghana. In the discussion below, we first briefly introduce our study area, and then elaborate on our survey method. In the final section, we discuss the result of our survey. The result shows that local Ghanaian consumers emphasize the importance of weights and measures more than quality attribute.

II. METHODS

2.1 Background

The field study was carried out in Berekum Municipality of Ghana. This Municipality lies in the northwestern part of the Brong Ahafo Region with a land area of 863.3km². It has a population of 129,628. About two thirds (67.3%) of the population was economically active. More than half of the labour force is involved in agriculture especially crop farming (GSS, 2014).

The most economic market within the Municipality is operated weekly. During this period all wholesalers, retailers and other actors in and out of the Municipality meet to engage in diverse agriculture related businesses. The proximity of the Municipality to Cote D'Ivoire is another remarkable feature, which promotes economic and commercial activities between the Municipality and Cote D'Ivoire during this weekly market day.

2.2 Research Methodology

The field study was carried out during the periodic market (Thursday) for three weeks between December 2016 and January 2017. A consumer survey was conducted to clarify food attributes that influence consumers' purchasing decisions and to investigate if weights and measures influence their purchasing behaviors. Using random sampling technique, we interviewed 60 regular consumers at this market. The respondents were mostly women. This dominance by female indicates the general gender expectation in procuring food at market.

Our questionnaire survey had two components. The first component was to identify respondents' socio-economic backgrounds, including household size, income, occupation, age, and educational level. In the second part the respondents were asked to indicate their preference between two-basic scenarios. These scenarios are designed to determine consumers' preferences and thus pricing attributes. To help the respondent at the market to better understand these scenarios, questions were translated into the local language, Twi, and scenarios were presented with simplified pictures. Those respondents who had time and literate, filled the questionnaire themselves. It was later collected by a field officer. Of the surveyed individuals, 59 individuals filled all portions of the survey questions, implying a response rate of 98percent.

The questionnaire designs draw upon the idea of food value scale and the prospect theory. The questions meant to elicit consumer's food values in relation to prices. Some questions meant to identify consumers' perceptions about food product value attributes to determine the importance of weight and measure. Following Lusk's research (2011), we selected five general food values that motivate consumer choices: quality, quantity, health, trust and origin.

In designing scenarios in the questionnaire, ideas from Kahneman's (2012) prospect theory was applied. This theory evaluates our decision-making processes by using our notions of losses and gains. Like the paired comparison method, it measures the extent to which an individual recognizes preferences over the other in the business world. In other words, it was akin to a game of gamble. To help us understand consumers' decision making at local market, this notion was used to examine if consumers consider their losses and gains when they buy food crops with a standard or without any standard measurement. In addition, this will help explain the factors or criteria consumers use at the local market.

The scenarios were based on three operating components: food scale values, price and weight. The respondents answered seven questions in the form of choosing A or B option. For instance, one question established a scenario, in which there are two packages of eggs with the same weight. Package A contains four big eggs, whereas package B contains 8 small eggs. Four big egg costs GH¢ 1 and eight small egg cost GH¢1.5.

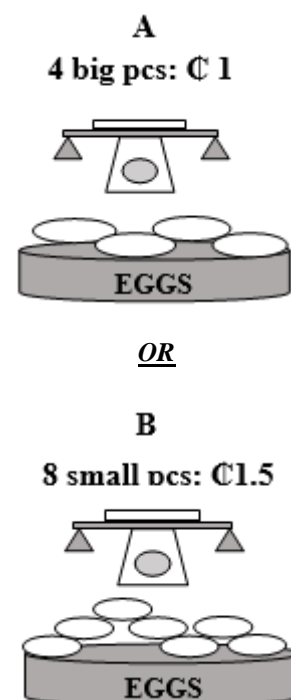
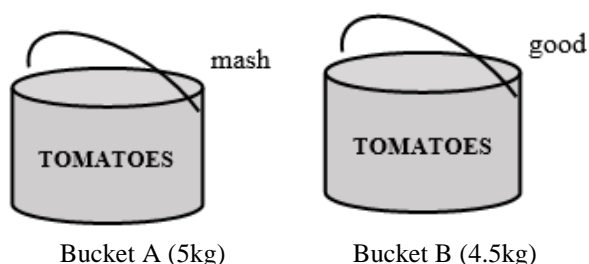


Fig.1: Scenario A and B which do you Prefer?

This scenario seeks to examine if consumers examine quantity, size and weight. Respondents were asked to circle their preference and explain their reasons for their selection.

In another scenario below design under the food value quality, we tried to examine consumers' preferences for quality, what they mean by quality and in so doing do they consider the weight.



SAME PRICE

Fig.2: Bucket A and Bucket B, circle the one you prefer?

To measure consumer's food values, we used the paired comparison method. This method allows an analysis on the relative importance of available options. Consumers were asked to circle the highest preference and to describe their reasons. The probability that a consumer chooses A is greater than B, and reasons for this decision may differ. In addition, it focused on observations, explanation and the general assumption of consumers on the local market.

III. RESULTS AND DISCUSSION

3.1 Social Characteristics of respondents

Table 1 demonstrates the results regarding our first part of the survey: the respondents' socio-economic variables. The majority (73%) was female. As mentioned above, this probably was because in Ghana shopping for food is traditionally the responsibility of women.

Table.1: Characteristics of participants

Variable		Frequency	Percentage (%)
Age	>10 years	0	0
	11-20 years	0	0
	21-30 years	32	53
	31-40 years	22	37
	< 40 years	6	10
Gender	Male	16	27
	Female	44	73
Education	Primary	3	5
	Junior high	11	18
	Senior High	23	38
	Tertiary	23	38
	None	0	0
Household annual income (Ghana cedi)	0-999	3	5
	1,000-1,999	2	3
	2,000-2,999	6	10
	3,000-3,999	17	28
	<4,000	32	53
Household size	1 to 4 persons	30	50
	5 to 8 persons	27	45
	9 to 12 persons	3	5

The age group and household size variables show some distinctive social characteristics of customers at the local market in Berekum. About 53percent of them were aged between 21 and 30. This means that mostly young female adults came shopping. About 50 percent of them had one to four persons at their homes, likely showing some recent trend of expanding nuclear families. Consumers with large household size, which consisted of another 50 percent are normally price sensitive to feed everyone. In our interviews, we observed that these people placed relatively high importance on quantity or convenience.

The annual income of respondents shows that about 53percent had income above 4,000 Ghana cedis (\$US 1 equals about 4.4 Ghana cedis). According to the World Bank, Ghana's GDP per capita in 2016 was US\$1,513.5 (World Bank, 2017). This means that more than half of those who came to the Berekum weekly market were relatively well-off. This condition is attributed partly to the fact that most respondents work for government institutions and trade. The average annual income of these workers is above the average GDP per capita or about 4,300 Ghana cedis (Field survey, 2016). Farmers and service providers earned between 3,000 and

3,999 Ghana cedis in 2015 (Field survey, 2016). The low-income categories largely represent students who likely came to the market alone.

With respect to education, all respondents had some form of schooling. About 38 percent of consumers had some schooling until the 18th year and 38 percent had schooling beyond their 18th year. This is not surprising since the Municipality has the high literacy rate. Moreover, the female population had more schooling than the male one. In addition, it reflects the general interest of food related topics.

2.2 Food values

In the second part of the survey, we attempted to identify how the respondents place importance on different food value attributes in deciding to buy products at this market. Table 2 shows the result. In answering the questionnaire for this part, respondents had multiple choices. The results reveal that about 15.5 percent of the respondents placed weight as an important food scale. In other words, weight is the most important factor for the respondents to decide in purchasing food items at the market.

Table.2: Food value attributes that influence consumers' choices

Variables	Frequency	Percentage (%)
Weight	65	15.5
Health benefit	61	14.5
Safety	54	12.9
Affordability	52	12.4
Bargain	40	9.5
Shelf life	31	7.4
Appearance	29	6.9
Taste	27	6.4
Bulkiness	23	5.5
Naturalness (organic)	18	4.3
Price (cheap)	6	1.4
Origin	3	0.7
Value for money	1	0.2

Following weight, other important food attributes for the respondents were health benefit (14.5 %), safety (12.9 %), and affordability (12.4 %). Altogether these four attributes consist about 55 percent. Variables that are relevant to measures (including sizes) are "appearance," "weight," and "bulkiness." These amounted to about 28 percent. Price-related variables such as "value for money," "price (cheap)," "affordability," and "bargain" amounted to about 23.5 percent. Quality-related variables, such as "health benefit," "taste," "origin," and "naturalness," amounted to 25.9 percent.

This result shows a stark contrast to the argument Lusk (2011) made. In the 2011 study, he found that food safety was the most important food value attribute. On the contrary, our survey found that about 13 percent of the respondents found it important. This discrepancy may mean that consumers' food value choices may differ by country, region, or society. Further studies may clarify social and regional impacts on price perceptions.

Another salient aspect of consumers' price perceptions is the interconnection between price and quality. Quality in general appears to influence the market. Olson (1977) emphasizes the inter-relationship between price and perceived quality although other studies have shown mixed results. He further argues that the price-quality relationship becomes less important when other indicators are factored. This may be the case in our survey as quality related attributes amounted to only 25.9 percent.

Table.3: Consumers' notions about the use of weights and measures

Statements	Yes (%)	No (%)
Traditional buckets better to know the value of vegetables	92	8
Helpful to use the same weight/measure	80	20

Another aspect of this survey asked the respondents about their notions on weights and measures. We asked if traditional buckets that are commonly used at the market help better understand the value of vegetables. We also asked them if it would help that marketers use the same weight and measure in selling products. The results in Table 3 show that about 92 percent of consumers agreed with the use of traditional weights. This suggests that though traditional weights vary sizes and do not give standardized measurements, consumers recognize the importance of using a standard that has been practiced traditional ways for identifying food values. Similarly, about 80 percent of the respondents agreed with using the same weights or measures. These results suggest that consumers at the Berekum market largely prefer the use of standardized measure, either traditional or conventional forms, in purchasing vegetables.

IV. CONCLUSION

This survey attempted to better understand the extent to which weights and measures are key factors in determining consumers' purchasing behaviors. The results show that consumers' product purchasing at Ghana's local market was based on four important food value scales: (1) weights and measures, (2) health values,

(3) safety, and (4) affordability. The least important food values were value for money, price, origin and natural. However, consumers' perceptions on product values appeared to differ by socio-economic backgrounds and the cultural value system. The study also found that food values are significantly influenced by consumers' traditional perceptions on product values. In addition, consumers' food value choice can differ by regions. The survey indicates the significance of weights and measures related to price decisions of consumers in Berekum, Ghana, and about 80 percent of consumers agree to use the same weights and measurements in pricing of agricultural products. These suggest that consumers at the local market prefer the use of a standardized measure either conventional or traditional.

REFERENCES

- [1] Acebrón, L.B. and Dopico, C. D. (2000). The importance of intrinsic and extrinsic cues to expected and experienced quality: an empirical application for beef. *Food Quality and Preference* 11 (3), 229–238. [https://doi.org/10.1016/S0950-3293\(99\)00059-2](https://doi.org/10.1016/S0950-3293(99)00059-2).
- [2] Chang, J.B., J.L. Lusk, and Norwood, F.B. (2009). How Closely Do Hypothetical Surveys and Laboratory Experiments Predict Field Behavior. *American Journal of Agricultural Economics* 91 (2), 518–534. <https://doi.org/10.1111/j.1467-8276.2008.01242.x>.
- [3] Doorn V. J. and Verhoef C. P. (2011). Willingness to pay for organic products: Differences between virtue and vice foods. *International Journal of Research in Marketing* 28 (3), 167-180. <https://doi.org/10.1016/j.ijresmar.2011.02.005>.
- [4] Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing* 46 (2), 60–72. <http://www.jstor.org/stable/3203341>
- [5] Kahneman, D. (2012). *Thinking, Fast and Slow*. Clays Ltd.
- [6] Lusk, J.L. (2011). External validity of the food values scale. *Food Quality and Preference* 22 (5) 452-462. <https://doi.org/10.1016/j.foodqual.2011.02.009>
- [7] Yiridoe, K.E., Bonti-Ankomah, S., and Martin, C.R. (2005). Comparison of consumer perceptions and preference toward organic versus conventionally produced foods: A review and update of the literature. *Journal of Renewable Agriculture and Food Systems* 20 (4), 193-205. <https://doi.org/10.1079/RAF2005113>.
- [8] World Bank (2017). GDP per capita (current US\$). World Bank Group. Accessed on September 12, 2017 at <https://data.worldbank.org/indicator/NY.GDP.PCAP>.CD.
- [9] Zeithaml, A. V. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing* 52(3), 2-22. <http://www.jstor.org/stable/1251446>.