

## Effects of Consumer Life Style, Attitude and Belief on Preferences for Meat and Milk Products in Kano Metropolis, Nigeria

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**Abstract:** This study investigated household demand for livestock products in Kano metropolis, Nigeria. Proportionate random sampling technique was used to select respondents from the eight local government areas (LGAs) that make up Kano metropolis. Kano State Agricultural Development Project (KADP) household survey was used to select 57, 27, 49, 50, 40, 81, 30 and 50 respondents respectively in proportion to the size of the farm households in each of the eight LGAs to get a total sample size of 384 households for the study. Only 378 respondents were used for analysis. Data were obtained through oral interviews, direct observation and use of structured questionnaire administered to livestock product consumers. Data were analyzed using factor and cluster analyses. Data segmentation was used to link consumer characteristics with their preference for taste, nutritive value, health risk, product hygiene, shelf life, availability, handling convenience and price. The first step was to define the variables on which the factor analysis was based. The result showed a proximity matrix (proxm) between clusters 1, 2, 3 and 4 and preferences in relation to product attributes such as taste, nutritive value, health risk, product hygiene, shelf life, availability, handling convenience, price and brand significantly at proxm 323. while preferences in relation to livestock product consumption was significant at proxm 334. A relationship was also found between clusters and preferences in relation to forms of milk such as raw fresh milk, pasteurized milk, powdered and evaporated milk significant at proxm 150. Thus there was a strong relationship among clusters in relation to milk and preferences for attributes of milk in the study area. Most relationships were found with preference for milk regardless of types or forms at proxm 334. It was concluded that once the needs, brand attitudes, demographic and lifestyle characteristics of a target market are identified marketers can develop products and marketing strategies to appeal to them.

**Key words:** Consumer • Preferences • Attitude • Lifestyle • Belief • Meat and Milk

### INTRODUCTION

It is important to understand how consumers perceive a product, how they make choices and how they construct purchasing intentions. Consumer decisions about food choices are the result of a complex relationship among personal preferences, socio demographics, psychosocial and environmental factors [1]. With an

ample range of brands in the market, it is vital to identify the target audience before launching a product. It is easier to select which information to include on the label, if the researcher understands the target market. Market segmentation is widely practiced in marketing research [2]. It is used to differentiate a target population by segments of consumers with shared needs, lifestyles, values and behavior.

The first step in market segmentation is to identify which variables are necessary to use in order to group customers. Often, researchers use more than one variable to construct a comprehensive description of the segments. The most common variables used are demographic, geographic, psychographic and behavioural.

Demographic segmentation is perhaps the most commonly used and easy to collect. It has been widely described in the literature that demographic characteristics is an important factor to determine fruit intake [3]. However, they are useful only when they are correlated with the relevant objective function, such as purchase behaviour or brand preference [4].

The main purpose of psychographic segmentation is based on attitude, lifestyle and values. Lifestyle segmentation has been used for several marketing and advertising purposes [5]. The most widely used measures of lifestyle segmentation are Rotech's value survey, List of Values (LOV), Values and life Style (VALS2) and Activities, Interest and Opinions (AIO).

Many studies have emphasized the relationship among beliefs, attitudes, motivations, past behavior and product familiarity regarding a healthy diet with fruit intake [6]. Situational factors, such as moment and place of purchase, may also influence a consumer's intention to purchase fruits and vegetables [7]. These measures are called behavioral segmentation and are based on what consumers actually do, their knowledge of particular products, their uses of products and their responses to certain products. Some examples of type of segmentation are user status, usage rate, loyalty status, benefits and media habits.

## MATERIALS AND METHODS

This study investigated household demand for livestock products in Kano metropolis, Nigeria. Proportionate random sampling technique was used to select respondents from the eight LGAs that make up Kano metropolis according to the number of households captured in the Kano state ADP household survey as follows: 57, 27, 49, 50, 40, 81, 30 and 50 households to give a total sample size of 384 households used for the study. However, 378 households were used for analyses because 6 questionnaires were poorly completed. Data were obtained mainly through oral interview, direct observation and use of structured questionnaire administered to livestock products consumers. Data were analyzed using factor analysis and cluster analysis were also used to

identify groups of respondents with similar lifestyles and behaviors. The purpose of the segmentation was to link consumer characteristics with their preference for taste, nutritive value, health risk, product hygiene, shelf life, availability, handling convenience and price. The first step was to define the variables on which the factor analysis was based.

Principal component factor analysis was used to identify group of consumers with similar lifestyle and behaviour. The purpose of the segmentation was to link consumer characteristics with their preferences for the livestock product attributes and it is given as:

$$Y_1 = a_{11}x_1 + a_{12}x_2 + \dots + a_{1n}x_n$$

$$Y_2 = a_{21}x_1 + a_{22}x_2 + \dots + a_{2n}x_n$$

$$Y_n = a_{n1}x_1 + a_{n2}x_2 + \dots + a_{nn}x_n$$

where:

$Y_1, Y_2 \dots Y_n$  = observed variables, life style and behaviour

$a_1 \dots a_n$  = factor loadings or correlation coefficients.

$X_1, X_2 \dots X_n$  = unobserved underlying factors constraining life style and behaviour

## RESULTS AND DISCUSSION

**Household Demographics:** The socio-economic characteristics of the sampled household are presented in Table 1.

**Age Distribution of Respondents:** The result of age distribution of the respondents showed that 35.4 % of the consumers were young adults of active age bracket of 35 – 44 years. Meaning that this age group is capable of making positive decision on household expenditure on food items. Bereket (2003), [8], studied intra-household distribution of expenditure in rural Ethiopia. This study examined the combined effects of changes in prices, income and demographic composition on young and adult, males and female household members. The empirical results showed that Ethiopian rural households responded to price, income and demographic changes in a more complicated manner than usually assumed.

Table 1: Distribution of the respondents according to demographic characteristics

Variables	Category	Frequency	Percentage	Mean
Age group (years)	18 – 24	35	9.3	36.5
	25 – 34	109	28.8	
	35 – 44	134	35.4	
	45 – 54	76	20.1	
	55 and above	24	6.4	
Total		378	100	
Gender	Male	306	81	
	Female	72	19	
Total		378	100	
Marital Status	Married	272	72	
	Single	106	28	
Total		378	100	
Household size	1-5	21	5.60	11
	6-10	78	20.60	
	11-15	40	10.60	
	16-20	55	14.60	
	21 and above	184	48.60	
Total		378	100	
Years of formal education	Primary	79	20.8	17.25
	Secondary	63	16.7	
	Tertiary	119	31.5	
	Religious	117	32	
Total		378	100	
Average monthly income (Naira)	18, 000 - 27, 999	32	8.4	62.30
	28, 000 – 37, 000	41	10.8	
	38, 000 – 57, 000	79	20.9	
	58, 000 – 82, 000	89	23.5	
	83, 000 – 107, 000	58	15.3	
	107, 000 & above	79	20.9	
Total		378	100	
Occupation	Farmers	29	7.7	-
	Trader/Business	119	31.5	
	Civil Servant	109	28.8	
	Banking/Industry	79	20.9	
	Meat Marketers	42	11.1	
Total		378	100	
Ethnic Background	Yoruba	49	13	
	Hausa	218	57.7	
	Ibo	79	20.9	
	Others	32	8.4	
Total		378	100	

Source: Field Survey 2013

**Gender of Respondents:** The result of gender distribution of the respondents showed that 82 % of the respondents were male and 68 % were household heads. This implies that male are the major decision makers on the issue of household expenditure on livestock products consumption. Bereket (2003), [8], found that changes in household income affected male members (men and boys) more than female members. On the other hand, changes in prices affected women and boys more than men and girls. Also,

adjustment in household expenditure due to demographic changes implied that boys were favoured relative to girls.

**Household Size:** The most common household size in the study was between one and 20 with a minimum of five and a maximum of 20 and average size of 11. This meant that the size of the household was large enough to have significant positive impact on household expenditure on livestock products.

**Level of Education of Respondents:** About 69% of the respondents attained formal education either at the primary, secondary or tertiary levels which allow them to make a rational choice and decision on expenditure on food items consumed.

**Factor Analysis:** Factor and cluster analyses were used to identify groups of respondents with similar lifestyles and behaviours. The purpose of the segmentation was to link consumer characteristics with their preference for taste, nutritive value, health risk, product hygiene, shelf life, availability, handling convenience and price. The first step was to define the variables on which the factor analysis was based.

A four point Likert- type scale with 25 variables was administrated to the 384 respondents. The psychographic and behavioural variables used in this survey test for respondents were information seekers, price consciousness, health conscious, environmental responsibility, weight consciousness, which ones would choose products for convenience and which will try a new product. Demographic and frequency of livestock products consumption were also collected for use in segmentation.

Other variables used in the study were time pressure or life equilibrium and convenience. Today people have less time to cook. Usually they have at least one meal away from home. Measuring the usage of ready to eat products will help us understand why having a livestock products might have a significant meaning to respondents, because of the facility to transport this type of product.

The health and weight consciousness variables were included in the study because dairy and meat product are considered a healthy product. It was hypothesized that people who are interested in having a healthy life will choose a product with an attribute that involves a health improvement. Also people who care about weight might choose the no sugar added claim, instead of the vitamin C claim.

Since locally produced products are included as part of the attributes, measuring which respondents were more environment conscious will give a better idea why people might choose an exotic breed of animal rather than a local breed, or why they choose a product that is locally produced instead of one that is not. The questions about trying a new product were included here in order to explore the relations between the level of risk aversion and acceptance of a new product.

Factor analysis was used to reduce the 25 variables into a smaller number of factors using SPSS 16. To examine if the factor analysis model was appropriate, the Bartlett's and Kaiser-Meyer-Olkin (KMO) tests were administered. Since the objective was to determine the minimum number of factors, the method of factor analysis selected was the principal component analysis. To determine the number of factors the procedures followed were based on the eigen values. Only factors with a variance greater than one were included and based on the percentage of variance. To rotate and interpret the factors, varimax procedure was used, which minimized the number of variables with high loadings on each factor. The loadings are the correlation coefficients between the variables and the factors. The variables with the highest correlations provide the most meaning (in an interpretation sense) to the factor solution.

After defining the factors, the second step was to perform a cluster analysis. First it was necessary to select an appropriate distance measure which is going to determine how similar or not the objects being clustered were. For the purpose of this study Euclidean distance was used. Then a hierarchical and the agglomerative cluster procedure was selected. The analysis was performed using Wards minimum variance method where the means of the variables in each cluster were computed and for each individual the squared Euclidean distance was calculated. The distances were summed for all objects and at each stage, the two clusters with the smallest increase in the overall sum of squares within cluster distance were combined [9].

**Identification of Market Based on Lifestyle, Attitude, Belief and Behaviour:** Consumers were grouped into homogeneous segments. Consumers were also segmented according to their lifestyles, behaviour, attitude and beliefs because previous research has shown that the willingness to pay for a product might be influenced by individual ways of living rather than by the usual socioeconomic characteristics [10].

Factor analysis and cluster analysis were used to identify groups of respondents with similar lifestyles and behaviours. The purpose of the segmentation was to link consumer characteristics with their preference for taste, nutritive value, health risk, product hygiene, shelf life, availability, handling convenience and price. The first step was to define the variables on which the factor analysis was based. Table 2 presented variance explained by the factors.

Table 2: Variance Explained by the factors

Component	Initial Eigenvalues			Rotation sums of squared loading		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	6.295	26.231	26.231	6.295	26.231	26.231
2	2.248	9.365	35.597	2.248	9.365	35.597
3	1.645	6.856	42.453	1.645	6.856	42.453
4	1.579	6.578	49.030	1.579	6.578	49.030
5	1.343	5.597	54.628	1.343	5.597	54.628
6	1.214	5.057	59.684	1.214	5.057	59.684
7	1.080	4.501	64.186	1.080	4.501	64.186

Extraction Method: Principal Component Analysis.

Source: Field Survey 2013

Seven factors with eigen values greater than one were defined and all combined account for 64.2% of the total variance. The first factor after rotation explained 26.2% of the variance, the second factor accounted for 9.4% of the variance, the third 6.9%, the fourth 6.6%, the fifth 5.6%, the sixth 5.1% and the seventh 4.1%.

The variables were assigned to each factor based on the rotated loadings. Each factor was labeled based on the variables, factor 1 was labeled the diet product users, factor 2 the information seekers, factor 3 the price sensitive, factor 4 the new product users, factor 5 the environmentally consciousness, factor 6 the convenience product users and factor 7 the health consciousness.

**Relationship among the Clusters and Preferences for Milk Attributes:** After defining the factors, the second step was to create segments based on those factors. Five clusters were identified based on the coefficients with large increases between stages, with the dendrogram and with the centroides. The five clusters were relatively distributed 23.3% of the sample, 21%, 19.6%, 19.5% and 16.6% of the sample. Because a five cluster grouping seemed to be more meaningful and more consistent with observed consumer behavior than six and seven cluster grouping, the five cluster solution was chosen. For the interpretation, the study examined the clusters centroides. The centroides are the mean values of the objects contained in the cluster on each variable. High values in each cluster were examined.

Cluster 1 was labelled information seekers, cluster 2 the health consciousness, cluster 3 the new product tryer, cluster 4 the price consciousness and cluster 5, the diet product users

**Analysis of Relationship among Clusters and Preference for Milk Consumption:** Figure 1 presented *Dendrogram* showing the analysis of relationship among clusters and preferences for milk attributes.

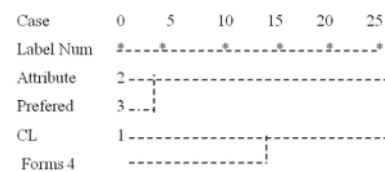


Fig. 1: Dendrogram using single linkage of Euclidean distance

Fig. 1 gives the result is nearest neighbourhood of hierarchical cluster methods using squared Euclidean distance. Between groups distance linkage was adopted to find the relationship between consumer lifestyle and behaviour and consumer preferences for milk.

Table 3 presents Agglomeration schedules for Euclidean distance showing the relationship among clusters and preferences for milk consumption in Kano metropolis. In response to the stated question, does livestock belief and attitude have any influence on consumer preference for milk and meat? It was concluded that the relationship between consumer lifestyle and behaviour was found to be significant at 0.05 level of significance.

Table 4 presented proximity matrix (proxm) of correlation between clusters 1, 2, 3 and 4 i.e the information seekers, the health consciousness, the new product tryer and the price consciousness in relation to milk consumption in the study area. The result showed a proximity matrix between clusters 1, 2, 3 and 4 and preferences in relation to product attributes such as taste, nutritive value, health risk, product hygiene, shelf life, availability, handling convenience, price and brand significantly at proxm 323. while preferences in relation to milk consumption was significant at proxm 334, a relationship was also found between clusters and preference in relation to forms of milk such as raw fresh milk, pasteurized milk, powdered milk and evaporated milk significant at proxm 150. This indicates that there is strong

Table 3: Agglomeration schedules for Euclidean distance

Stage	Cluster combined			Stage cluster first appears		
	Cluster 1	Cluster 2	Coefficients	Cluster 1	Cluster 2	Next stage
1	2	3	9.000	0	0	3
2	1	4	150.00	0	0	3
3	1	2	273.00	2	1	0

Source: Field Survey 2013

Table 4: Euclidean distance showing proximity matrix (proxm) of correlation between clusters levels and preferences for milk

Variable	Cluster level	Preference in relation to milk attributes	Preference for of milk	Preference in relation to forms of milk
Cluster level	.000	323.000	334.000	150.000
Preference in relation to milk attribute	323.000	.000	9.000	221.000
Preference for milk	334.00	9.00	.000	214.000
Preference in relation to forms of milk	150.000	221.000	214.000	.000

Source: Field Survey 2013

Table 5: Agglomeration Schedule for Euclidean Distance

Stage	Cluster combined			Stage cluster first appears		
	Cluster 1	Cluster 2	Coefficients	Cluster 1	Cluster 2	Next stage
1	3	5	8.000	0	0	2
2	3	4	14.000	1	0	3
3	2	3	20.333	0	2	4
4	1	2	303.250	0	3	0

Source: Field Survey 2013

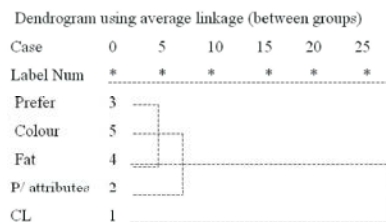


Fig. 2: Dendrogram using single linkage of Euclidean distance

relationship among clusters in relation to milk and preferences for attributes of milk in the study area. Most relationship was found with preference for milk regardless of types or forms at proxm 334.

On the issue of relationship between milk attributes and forms of milk preferences the result was significant at proxm 221. Preference in relation to forms of milk preferred and milk consumed was also found to be significant at proxm 214, meaning that clusters showed strong relationship between preference in relation to milk consumed and forms of milk preferred in Kano metropolis.

#### Relationship among Clusters and Preferences for Meat:

Figure 2 presents *Dendrogram* showing the analysis of relationship among the clusters and preferences for meat attributes.

Table 5 presents Agglomeration schedules for Euclidean distance showing the relationship among clusters and preferences for meat consumption in Kano metropolis. In response to the stated question, do livestock belief and attitude have any influence on consumer preference for meat? It was concluded that the relationship between consumer lifestyle and behaviour was found significant at 0.05 level of significance.

The proximity matrix (proxim) of correlation between clusters 1, 2, 3, 4 and 5 (Table 5) the information seeker, the health conscious, the new product tryer, the price conscious and the diet product users in relation to meat consumption in the study area showed a proximity matrix between clusters 1, 2, 3, 4 and 5 in relation to meat preferred (cattle meat, goat meat and sheep meat) and attributes of meat (fat content, cut, colour, appearance, packaging, labeling and display location) significantly at proxm 275 and 300 respectively. Relationship between clusters and preferred meat was significant at proxm 275. A strong relationship was found between cluster and preference for meat in relation to meat attributes, at proxm 300. This showed that attributes of meat play a significant role in most household decisions in meat consumption in Kano metropolis.

## CONCLUSION

A strategy of market segmentation requires identifying customers with similar needs or characteristics and targeting these segments with a product offering for segments containing a relative homogenous group of consumers. The basis for segmentation is grouping customers according to similarities in what they want (benefits and attitudes) and who they are (demographics, lifestyle and personality). In addition to segmenting, marketers must position their product to meet the needs of these segments. Before targeting market segments for marketing effort retailers must first identify these groups. Once the needs, brand attitudes, demographics and lifestyle characteristics of a target market are identified marketers can develop products and a marketing strategy to appeal to them

Market segmentation helps retailers to understand who their customers are, how they think and what they do, enabling them to build a meaningful picture of consumer needs, desires, perceptions, shopping behaviour and the image these consumers have of the retailer in comparison with other retailers.

It is important to understand how consumers perceive a product, how they make choices and how they construct purchasing intentions. Consumer decisions about food choices are the result of a complex relationship among personal preferences, socio demographics, psychosocial and environmental factors. With an ample range of brands in the market, it is vital to identify the target audience before launching a product. It was easier to select which information to include on the label, if the researcher anticipates the target market. Market segmentation is widely practiced in marketing research. It is used to differentiate a target population by segments of consumers with shared needs, lifestyles, values and behavior. This study has provided marketers with information on consumer behavior so that they can decide which basis of segmentation to use, which techniques to use to develop customer profiles and to help them to determine if the market can be segmented.

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