Consumption Patterns as a Dependent on Foods Product Attributes Among Auto-Technicians in Ibadan Metropolis

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A b s t r a c t

Food is an essential need in the lives of people rich or poor for nourishment, growth and sustainability. Tomeet the growing demand for vended foods of an increasing population, the need to develop marketing policy and strategy cannot be unheeded for better management of consumer behaviour and understanding of food consumption patterns. This study therefore examined the effect of food product attributes on consumption patterns of vended foods among auto-technicians in Ibadan metropolis. The study employed the survey research design. The population consisted of 5,468 registered members of National Auto and Technical Association (NATA) in11 Local Government Areas in Ibadan metropolis, out of which 2,014 members were selected through scientific sampling method. A questionnaire titled "Determinants of Food Consumption Patterns Questionnaire (DFCPQ)" was used. Data generated were analysed using frequency, mean, standard deviation and regression analysis at 0.05 alpha level.The findings revealed that food attributes ($F_{.stat}$ =232.304; R^2=0.713; p(.000)<.05) significantly affect and determined food consumption patterns of auto-technicians in Ibadan. This study recommended that Food product attributes, location, accessibility, price, packaging and branding were the determinants that need to be focused in the production and marketing of street foods. Finally, street food vendors should pay attention to personal appearance during sale of food, cleanliness of the vending environment as well as maintain high food hygiene.

Keywords: *Consumption patterns, Food attributes, Determinant, Vended foods and Marketing strategy*

Background to the Study

Food consumption patterns vary widely from country to country. It is a critical issue in most developing countries such as Nigeria. Nearly every Nigerian eats different kinds of food that could best be described as nutritionally deficient in one way or the other (Adewuyi, Mafimisebi & Awe, 2007). In the past few decades, health professionals and few marketers have engaged in systematic efforts to understand why people chose to eat foods they ate, and in the way and manner they ate (Akinyele, 1987; Abdussalam & Kaferstien, 1993; Arulogun & Owolabi, 2001). Initially, marketers were primarily concerned with two foremost reasons as they concern understanding food consumption patterns: to develop and offer foods that consumers will buy, and also to create successful marketing strategies to generate profit, through higher sales of foods and brand products (Mathye & Maliwichi, 2015).

Food consumption is important from a marketer's perspective because it creates demand for suppliers in the food system: who produces, processes and distributes food (Me-Nsope, 2013). Food consumption is also about determining which nutrients and other substances enter a body and subsequently influence health, morbidity and mortality. The demand for food depends on the population and the dietary habits of the people (Amusa & Odunbaku, 2009). Also, the food requirements of a nation are greatly dependent on additional factors namely: local food production, food import and export balance (Obayelu & Okoruwa, 2009). At the national level, per-capita growth of production of major foods in Nigeria has not been sufficient to satisfy the demands of an increasing population (Kormawa, 1999), hence, there is a big gap between national supply and national demand for good food (National Bureau of Statistics, 2012). To this extent, food consumption patterns in Nigeria have been undergoing dramatic changes over the last few years. This has been as a result of increase in numbers of food items consumed relative to food items available and affordable (NBS, 2012).

Changing patterns of workforce has led a lot of people to migrate to cities, which grow informal sector. The informal sector exists in many forms, it includes small manufacturing enterprises, small traders, service providers and a wide array of artisans (Food and Agriculture Organisation, 2003; International Labour Organisation 2002). The most prevalent types of work in the informal sector are home-based workers and street vendors (FAO 2003).Informal worker comprises of self-employed (i.e. small and/or unregistered), part-time worker and temporary workers (i.e. without secure contracts, worker benefits, or social protection) (ILO 2002). In Nigeria, some examples of informal sector organizations are Nigeria Automobile Technicians Association (NATA), Road Transport Employers Association of Nigeria (RTEAN), National Union of Road Transport Workers (NURTW) and Tricycle Owners and Operators Association of Nigeria (TOOAN), which are generally categorized as auto-technicians.

Statement of the Problem

In spite of efforts of marketers at having effective marketing strategies in food industry, identification of food pattern and psychological factors of consumers towards vended food consumption is still a major challenge facing marketers in Nigeria particularly in Oyo

State (Odusina, Akinsulu & Ijagun, 2011).As stated by Obayelu, Okoruwa and Oni, (2009), in Nigeria, there is limited data on people who consume vended foods. Additionally, understanding the complex interaction of consumers with its environment, health, religion and family life cycle are other factors affecting effective food products marketing and consumption.

Though, many empirical studies have examined these factors independently on food consumption patterns, but non to the best of the researcher's knowledge, has considered food product attributes and dimension of vended food on consumption pattern of vended foods (Akpan, Patrick, Udoka & Okon, 2013; Amao, 2013). Even those that reported psychosocial effects on food consumption patterns were unclear about the extent of its influence on food consumption patterns as many of them were conducted in Western countries and relatively few in Africa. Additionally, no study has ever considered the relationship of consumption patterns of vended foods in Nigeria with dimension of vended foods, neither has it been used to identify product attributes of importance in vended foods among informal workers (Mathaulala, 2013).

Objective of the Study
This study elicited the determinants of food consumption patterns of auto-technicians in Ibadan metropolis. Specifically, the studydetermines the relationship between foods product attributes and consumption patterns among auto-technicians in Ibadan.

Research Question
How do food attributes relate to consumption patterns among auto-technicians in Ibadan?

Research Hypothesis
Ho: There is no significant relationship between food attributes and consumption patterns of auto-technicians in Ibadan.

Conceptual Clarification
Food Consumption Pattern of Informal Workers
Food is one of the basic and essential necessities of life. Every human being needs a minimum amount of it for existence and a balance diet to maintain sound health. Pipes and Trahms (2003) describe food as a substance or combination of substances which when consumed supplies the body with nutrients which are very essential for the proper functioning of the body. Begum, Farooq, Khan, Begum and Khan (2010) describe food as an essential ingredient for human beings to survive. Food is also a profound social urge, as it is almost always shared by people, sometimes eating together. Birch, Barrett and Wiedmann (2004), food refers to the psychological, social, physiological and biochemical aspects of nutrition. It is majorly consumed in the form of carbohydrate, protein, fat and oil, alcohol, which are referred to as the macronutrients of an individual's diet (Murano, 2003).

Similarly, Begum et al. (2010), affirm that, food contains energy, proteins, vitamins and all nutrients necessary for human life. Olusanya, Vartanian, Herman and Wansink, (2008) also classify food nutrients into five major groups which are: carbohydrate, proteins, fats

and oils, vitamins and minerals. Therefore, the need for man to eat includes essential nutrients in his diet, biological formation and equally influences his social evolution (Alberts, 1990). Olusanya et al (2008) declare that food nutrient has the chemical substances that promote growth, supply energy and regulate all the body processes. Silva, Atapattu and Sandika (2010) states that, most foods contain more than one nutrient but often one predominates and the food has to be associated primarily with that nutrient. Hubbard and Onvmah (2001) assert that a good diet has tremendous bearing on a person's vitality, emotional stability and enthusiasm for life. An individual who is well nourished protrudes this fact in his personal appearance. In contrast, for those that are under-nourished, their life often appears to be ill than the well-nourished (Hubbard &Onvmah, 2001). Foods are consumed in order to furnish the body with the necessary nutrients necessary for proper functioning of the body. Therefore, emphasis should be placed on important features of these nutrients which include carbohydrate, fat and oils, minerals, protein and vitamins.

Food Product Attributes of Importance
A product is anything that can be used to attract attention. Its acquisition, use or consumption is to satisfy a need (Kotler & Armstrong 2005). Product is an important element of the marketing mix and must be properly conceived and managed to meet the needs of the consumers and achieve organizational goals. Organizations' product policy is therefore fundamental to the organization's ultimate success. Whether measured by total profits, return on investment, market share or any other criterion, is largely dependent upon its product policy. It is therefore imperative for product planners to see products beyond their physical attributes or characteristics. This is because, the tasks involved in developing and marketing a successful product cannot be accidental, but well thought-out. Kotler and Armstrong (2006) also suggest that product planners should think about their product on three levels. According to the same source, the most basic or elementary level is the core product which addresses the question: what is the buyer really buying? The second level is the actual product level which is built around the core product. Prominent issues at this level include quality level, features, design, brand name etc which enhance the core benefits expected by the consumers. The third level is the augmented product which complements the core and actual product. It offers additional services and benefits to the consumers.

Consumer's value attributes are used as basis for evaluating a product in relation to the benefits to be derived when purchasing a product. Consumers also use attributes to make comparisons between competitive brands. The importance of attributes goes beyond the physical features of a product because, consumers most often link attributes to consequences of purchasing or consuming products. Some consequences often result in certain end states or values that consumers intend to achieve (Belch & Belch, 1995; Kotler, 1996).

Attributes are the elements or features that an object may or may not possess (Inman, 2001). Attributes can be categorized as being concrete or abstract, tangible or intangible (Peter & Olsen, 1994). Concrete or tangible attributes according to Aaker, Batra and Myers

(1992) refer to those physical characteristics and define them as the most objective tangible characteristics of a product and they can be assessed based on some criteria such as colour, shape, form and size. In contrast, abstract or intangible attributes are referred to as pseudo-physical characteristics, and represent intangible and subjective characteristics that are not easily discernable or measured, e.g. design, or functionality of a product (Aaker et al, 1992).

Theoretical Framework
Structural-Functionalism Theory

Structural-functionalism theory is developed by Beardsworth and Keil (1997). It is a sociological theory that originally attempted to explain social institutions as collective means to meet individual biological needs (originally just functionalism). Later it came to focus on the ways social institutions meet social needs (structural-functionalism). The functionalism of this theory is based on an analogy between a society and food system (Beardsworth&Keil, 1997). Piscopo (2004) states that human body is made up of different parts, each one having a unique and indispensable role in the maintenance of the living system. Society is seen as made up of a set of features and institutions which make their own contribution to the cohesion and continuity of the social system. Functionalism has been primarily used by social anthropologists in investigating food system in less-developed countries. In relation to this study, this theory is important in developing certain food-related issues like social patterns of food preferences and consumption as well as establishing product attributes of relative importance of vended foods among auto-technicians.

Empirical Framework
Food Attributes and Consumption Patterns

Several studies on determinants of food consumption patterns have been carried out on food attributes (for example satiety value, affordability, taste, convenience, texture, safety, healthy, appearance, brand name, nutritious and so on) (Kearney, Kearney, Dunne &Gibney, 2000; Bowman &Vinyard, 2004; Aikman, Min & Graham, 2006).Glanz, Basil, Maibach, Goldberg and Synder (1998) examined the influence of taste, nutrition, cost, convenience and weight control on food consumption in America. The result of the study indicated price as one of the most influential factors in determining food choice, second only to taste. Sharma (1997) also examined the factors determining consumer's acceptance and preference for food in general. Among the factors that combine and interact to make buying a complex process, price was identified as a significant factor while motivation undoubtedly influenced food consumption.

Kearney, Kearney, Dunne and Gibney, (2000) investigate sociodemographic determinants of perceived influences on food choice in a nationally representative sample of Irish adults and reported taste as the most important food choice factor. Another study by Bowman and Vinyard, (2004) on impact of energy, nutrient intakes and overweight status on fast food consumption of U.S. adults revealed that nutrient intakes have significant effect on fast food consumption. Similarly, Ayala, Mueller, Lopez-Madurga, Campbell and Elder (2005) explored the role of value activation and prices in food product

experience, and revealed that activation of consumers' personal values leads to positive product experiences, such as sensory evaluations, product images and buying intentions. The study also showed that high price led to positive food quality expectations, and value activation significantly increased sensory evaluation.

Methodology
Data required for this study was gathered from two sources, the first from a field study and the second from text books, journals and past studies. The study population was comprised of all registered auto-technicians of National Auto and Technical Association (NATA) in Ibadan metropolis. Ibadan metropolis was comprised of eleven (11) Local Government Areas (LGAs) (Adeyeye, 2006). According to NATA (2014), there were a total of five thousand four hundred and sixty-eight (5,468) registered members in these LGAs in Ibadan metropolis as shown below:

Table 1: List of Registered NATA's members in each LGAs in Ibadan Metropolis

S/No.	LGAs	No. of Registered NATA members
1	Ibadan North	655
2	Ibadan North-East	570
3	Ibadan North-West	340
4	Ibadan South-East	635
5	Ibadan South-West	778
1	Akinyele	360
2	Egbeda	300
3	Oluyole	820
4	Ona-Aara	490
5	Iddo	275
6	Lagelu	245
11		**5,468**

Source: Adopted from Alagbe, (2016)

This study adopted the stratified sampling technique. This method was used to classify the LGAs into strata (that is, Inner and outer cities of Ibadan) and this gave five (5) LGAs in the inner city of Ibadan and six (6) LGAs in the outer city of Ibadan (See Table 2). In determining the sample size, the formula of Paler-Calmorin and Calmorin (2007) was adopted in this study. The sample size was computed as:

$$S_s = \frac{NV + [Se^2 (1-p)]}{NSe + [V^2 p (1-p)]}$$

S_s = Sample size
N = Total number of population = 5,468
V = Standard value (2.58) at 1% level of probability with 0.99 reliability
Se = Sampling error (0.01)
p = Largest possible proportion (0.50)

Therefore, the total sample for this study was 2,014 respondents. And proportionate sampling method was adopted to finally select the sample size from the population.

Table 2: Computed Samples for Population at 0.01 Level of Probability to a Proportion of 0.50

Ibadan	S/No.	LGAs	No. of Registered NATA members	Scientific determination of sample size
Inner City	1	Ibadan North	655	206
	2	Ibadan North-East	570	200
	3	Ibadan North-West	340	173
	4	Ibadan South-East	635	204
	5	Ibadan South-West	778	213
Outer City	1	Akinyele	360	176
	2	Egbeda	300	166
	3	Oluyole	820	215
	4	Ona-Aara	490	193
	5	Iddo	275	161
	6	Lagelu	245	107
Total	**11**		**5,468**	**2014**

Applying the modifiedLikert scale where 6= strongly agree, 5= agree, 4=fairly agree, 3= fairly disagree, 2= Disagree and 1= strongly disagree and this will contain questions relating to the study variables: Food attributes and Consumption patterns of food vendors In this study, data collected were analysed using both descriptive statistics and inferential statistics. Descriptive statistics of frequency distribution, percentage, mean and standard deviation were used to analyse the demographic information and research questions. Afterward, inferential statistics of multiple regression analysis was used to test the determinants of food consumption patterns among auto-technicians in Ibadan-OyoState.

Table 3: Influence of Food Product Attributes on Consumption Patterns among Auto-technicians in Ibadan

S/No.	Food Product Attributes of Importance	VU	SU	U	SI	I	VI	$\overline{X}$	Std.D.
1	Brand name	-	537 (30.7%)	44 (2.5%)	217 (12.4%)	514 (29.4%)	436 (24.9%)	5.10	0.85
2	Packaging size/presentation	2 (0.1%)	-	45 (2.6%)	537 (30.7%)	948 (54.2%)	216 (12.4%)	4.81	0.65
3	Appearance	-	537 (30.7%)	-	45 (2.6%)	731 (41.8%)	435 (24.9%)	4.31	1.62
4	Novel	2 (0.1%)	-	687 (39.3%)	3 (0.2%)	1051 (60.1%)	5 (0.3%)	4.21	0.97
5	Value of Money	-	537 (30.7%)	45 (2.6%)	218 (12.5%)	492 (28.1%)	456 (26.1%)	4.19	1.61
6	Popular	-	537 (30.7%)	44 (2.5%)	217 (12.4%)	514 (29.4%)	436 (24.9%)	4.18	1.60
7	Quantity/size	2 (0.1%)	537 (30.7%)	-	45 (2.6%)	948 (54.2%)	216 (12.4%)	4.18	1.52
8	Product safety	44 (2.5%)	537 (30.7%)	4 (0.2%)	217 (12.4%)	730 (41.8%)	216 (12.4%)	4.10	1.48
9	Acceptability	45 (2.6%)	537 (30.7%)	-	491 (28.1%)	219 (12.5%)	456 (26.1%)	4.03	1.57
10	Healthy	3 (0.2%)	537 (30.7%)	44 (2.5%)	269 (15.4%)	675 (38.6%)	220 (12.6%)	4.02	1.48
11	Convenience (ease of preparation)	44 (2.5%)	540 (30.9%)	-	270 (15.4%)	676 (38.7%)	218 (12.5%)	4.02	1.48
12	Tasty	45 (2.6%)	537 (30.7%)	-	218 (12.5%)	492 (28.1%)	455 (26.0%)	4.01	2.08
13	Product Quality	44 (2.5%)	539 (30.8%)	-	218 (12.5%)	489 (28.0%)	458 (26.2%)	3.88	2.05
14	Affordability	47 (2.7%)	537 (30.7%)	-	218 (12.5%)	491 (28.1%)	455 (26.0%)	3.87	2.05
15	Nutritious	44 (2.5%)	540 (30.9%)	-	218 (12.5%)	511 (29.2%)	435 (24.9%)	3.86	2.04
16	Cultural	3 (0.2%)	686 (39.2%)	-	461 (26.4%)	221 (12.6%)	377 (21.6%)	3.80	1.59
17	Texture	44 (2.5%)	541 (30.9%)	-	270 (15.4%)	892 (51.0%)	1 (0.1%)	3..57	1.79
18	Unique	688 (39.4%)	3 (0.2%)	-	181 (10.4%)	657 (37.6%)	219 (12.5%)	3.45	2.03

Note: $\overline{X}$=mean, Std.D=Standard deviation, VI=Very important, I=Important, SI=Slightly important, U=Undecided, SU=Slightly unimportant, VU=Very unimportant
Source: Researcher's Field Survey Result (2015)

The table above reveals respondents' opinion on the level of food product attributes of importance and their influence on consumption pattern of auto-technicians in Ibadan. Among eighteen foods product attributes of importance considered in the study, the result reveal that auto-technicians paid serious attention to brand name (X=5.10, Std.D=0.85), followed by packaging size or presentation of food product by the seller (X=4.81, Std.D=0.65), appearance of the seller (X=4.31, Std.D=1.62), novel (X=4.21, Std.D=0.97), value of the food product for money (X=4.19, Std.D=1.61), popularity of the food sellers (X=4.18, Std.D=1.60), quantity or size of food products (X=4.18, Std.D=1.52), safety of the food product (X=4.10, Std.D=1.48) and general acceptability of the food product (X=4.03, Std.D=1.57). The result also reveals that slight attention is paid to health, convenience,

taste, quality and affordability as other food product attributes but, lesser attention was paid to uniqueness of the food (X=3.45, Std.D=2.03), followed by texture (X=3.75, Std.D=1.79), cultural value (X=3.80, Std.D=1.59) and nutritious value (X=3.86, Std.D=2.04).

It is apparently deduced from the above result that consumption of street foods by auto-technicians is mostly influenced by food name, packaging size or quantity, appearance of the food seller, action or storyline of food seller, value of the food for money, popularity of the food sellers, food safety and acceptability. The result reveals that healthy, convenience, tasty, quality and affordability of street food product have slight influence on consumption pattern of auto-technicians. Conversely, the result exposes that auto-technicians pay lesser attention to food uniqueness, texture, cultural and nutritious.

There is no significant relationship between food attributes and food consumption patterns among Auto-technicians in Ibadan.

Table 4: Regression Model of Food Attributes and Food Consumption Patterns of auto-technicians in Ibadan

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Intercept a_0	16.941	2.901		5.839	.000
Quantity/size	-3.386	1.178	-1.498	-2.874	.004
Affordability	1.264	.580	.754	2.178	.030
Packaging size/presentation	4.228	.904	.802	4.677	.000
Value of Money	-2.061	1.043	-.966	-1.975	.048
Tasty	-1.540	.666	-.933	-2.311	.021
Acceptability	1.972	.777	.902	2.538	.011
Appearance	3.146	.533	1.483	5.896	.000
Product Quality	-.348	.357	-.208	-.974	.330
Convenience (ease of preparation)	3.603	1.393	1.549	2.586	.010
Nutritious	-2.737	1.059	-1.625	-2.584	.010
Texture	-3.864	.719	-2.015	-5.375	.000
Product safety	6.334	2.028	2.736	3.124	.002
Brand name	-.468	.617	-.116	-.758	.449
Popular	-2.154	1.137	-1.003	-1.894	.058
Healthy	.762	.601	.328	1.268	.205
Unique	2.258	.146	1.327	15.457	.000
Novel	-4.441	.219	-1.279	-20.244	.000
Cultural	-.833	.144	-.381	-5.798	.000

R^2 = 0.713
Adj. R^2 = 0.710
F = 232.304
Sig.: 0.000

Source: Researcher's Field Survey Result (2015)

Estimate Model 3:

$Y = f(X)$
Y = Food Consumption Patterns (FCP)
X = Food attributes

The parameter estimates comply with a priori expectation which explains that the food consumption pattern is dependent on food attributes. Considering the 1% increase level of street food consumption pattern among auto-technicians in Ibadan is brought about by 8% increase in affordability, 8% increase in packaging size/presentation, 9% increase in acceptability, 15% increase in appearance, 16% increase in convenience, 27% increase in product safety and 3% increase in healthy food. Furthermore, 1% increase level of street food consumption pattern among auto-technicians in Ibadan is also brought about by 15% decrease in quantity or size, 10% decrease in values of money, 2% decrease in product quality, 16% decrease in nutrition, 20% decrease in texture, 1% decrease in brand name, 10% decrease in popular, 13% decrease in novel and 4% decrease in cultural. Independently, the result shows that quality/size (β= -1.498; $p<0.05$), value of money (β= -0.966; $p<0.05$), tasty (β= -0.933; $p<0.05$), nutritious (β= -1.625; $p<0.05$), texture (β= -2.015; $p<0.05$), novel (β= -1.279; $p<0.05$) and cultural (β= -0.381; $p<0.05$) were negatively and significantly related with food consumption patterns among auto-technicians in Ibadan while affordability (β= 0.754; $p<0.05$), packaging size/presentation (β= 0.802; $p<0.05$), acceptability (β= 0.902; $p<0.05$), appearance (β= 1.483; $p<0.05$), convenience (β= 1.549; $p<0.05$), product safety (β= 2.736; $p<0.05$), and uniqueness (β= 1.327; $p<0.05$) were positively and significantly related with food consumption pattern. But product quality (β= -0.974; $p>0.05$), brand name (β= -0.758; $p>0.05$), popular (β= -1.894; $p<0.05$) and healthy (β= 1.268; $p>0.05$) do not significantly related with food consumption pattern among auto-technicians in Ibadan.

The estimated value of R^2 value of 0.713 signifies that 71% of the variation in vended food consumption patterns among auto-technicians in Ibadan is accounted for by food attributes. Furthermore, the overall significance of the entire model as measured by the F-statistic demonstrates that the calculated F-stat.which is 232.304 is statistically significant at 0.05. This result therefore accepts the alternative hypothesis that there is positive significant relationship between food attributes and food consumption patterns among auto-technicians in Ibadan.

Conclusion and Recommendations
There is positive significant relationship between food attributes and food consumption patterns among auto-technicians in Ibadan. Attitude and motive were positively and significantly related with food consumption patterns while mood and perception were negatively and significantly related with food consumption patterns of auto-technicians in Ibadan. Auto-technicians paid serious attention to brand name, followed by packaging size or presentation of food product by the seller, appearance of the seller, value of the food product for money, popularity of the food sellers, quantity or size of food products, safety of the food product and general acceptability of the food product.

The result also reveals that slight attention is paid to health, convenience, taste, quality and affordability as other food product attributes but, lesser attention was paid to uniqueness of the food followed by texture, cultural value and nutritious value.

The study therefore recommends the following based on the findings:

1. There is need for proper food attributes monitoring by the food regulating authorities to encourage rightful food consumption patterns among artisans
2. Large percentage of auto-technicians in the study belongs to low income groups, this is due to their very low economic status. Therefore, change in occupational pattern is necessary and minimum wage act should be enforced by government so as to improve their food consumption standard.
3. To meet the growing demand of street food consumption of an increasing population in Nigeria, there is need for food manufacturing companies to tap into the growing market of the vended foods through effective market profiling.
4. With the growing market of street food consumption, there is need to educate street food producers and sellers regarding better food processing, quality, safety and selling efforts through health talk, road show or even campaign to encourage more people to prepare healthy food. This will not only benefit individual consumers but will also make the market grow, which will in turn bring benefits to the country such as more employment, more export and hence more money inflow.

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