



# Demand for Branded Sausage Rolls in Ibadan Metropolis

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**Abstract:** With increasing urbanization and population growth in Nigeria, demand for fast food has increased considerably. The market for sausage roll of different brands in particular has continued to expand attesting to its competitive market. The need to determine the factors influencing the consumers' expenditure on branded sausage rolls and the extent of sales inequalities among sellers prompted this study. These objectives were achieved using multiple regression and Gini coefficient/Lorenz curve analyses. The study revealed that buying and selling of sausage rolls were common among the youths. Despite the expansion in the sausage rolls market, less than 1% (0.69%) of the respondent's monthly income was spent on sausage rolls. Gala has the largest market share (25.8%) and highest inequality in sales revenue (0.30). Fifty percent (50%) of the gala sellers controlled about 71% of the total sales for gala in the study area. Age, marital status, year of education and monthly income of respondents were factors influencing amount spent on sausage rolls per week in the study area. Brand dominance can be reduced if other competitors increase their market penetration and embark on market segmentation based on age and locations.

**Keywords:** Sausage rolls, Market share, Demand for fast food, Lorenz curve

**JEL:** C01, D11, D41

## 1.0 Introduction

Ready-to-eat foods can be described as the status of foods ready for immediate consumption at the point of sale and reasonably priced. Ready-to-eat

foods could be raw or cooked, hot or chilled and can be consumed without further heat treatment (Tsang, 2002; Habib, Dardak, & Zakaria, 2011). Different terms have been used to

describe ready-to-eat foods. These include convenient, ready, instant and fast foods. Examples of ready-to-eat foods include pastries such as meat pie, sausage rolls, burger; moin-moin, salad or coleslaw, fried meat, fried chicken, milk and milk products (Caserani & Kinston, 1974). In the last ten years, lifestyle and eating patterns have changed and as urban lifestyles get increasingly hectic, people no longer have enough time to cook meals at home, this has led to a gradual increase in demand for snack foods. Since these snacks and fast foods are readily available, many of the urban residents, especially the middle class, the youth and the children, obtain a significant portion of their diet from snacks and fast foods sold cheaply on the street (Olutayo & Akanle, 2009). Consumption of snacks is thus becoming a passion as snacks are sold everywhere, and may be eaten at every meal time as well as in between meals.

According to Longman Dictionary of Contemporary English, sausage roll is a piece of sausage meat surrounded by pastry. It is sold along the roads in traffic, corner shops, open market, supermarkets and virtually in every nooks and crannies of major towns and cities in Nigeria. Among the fast foods, sausage roll is one of the most convenient fast foods. It is handy, tasty and affordable. The most popular branded sausage rolls in Nigeria are Gala, Meaty, Chopsy, Super bite/beef, Bigi, Yum yum and Rite spicy beef. According to Dailymail (2000), sausage rolls are an easily absorbed source of protein with some iron, zinc and B vitamins for a healthy immune and reproductive system. Studies (Jekanowski, Binkley & Eales, 2001; Schlosser, 2002) have shown that the

fast food industry has continually found ways to make its products more accessible, with retail outlets appearing in such varied locations as roadsides, motor parks, office buildings, department stores, and other public places. Fast food consumption is attributable to an increasing supply of convenience.

The major cities in Nigeria with high population density comprised of urban, semi urban and a few areas that are pre-urbanized. High demand for food including fast food (sausage roll) is common among residents and transiting travellers in these locations. According to Jekanowski *et al.* (2001), a distinguishing characteristic of fast food is its convenience. Consumption patterns of Nigerian in cities and urban centres have altered dramatically over the past several decades due to increase in the number of service industries like banking, oil and gas, marketing, telecommunication, education among others. This has led to increase in demand for meals prepared outside the home (fast food) because it is convenient and saves time. The study is aimed at adding to the existing literature (Kolade, 2015; Ladislav & Buchtova, 2015; Jekanowski *et al.*, 2001; Habib *et al.*, 2011) on the demand for fast food; sausage rolls in particular. The motivation for this study is based on the need to determine the market share of each brand of sausage rolls, the factors influencing the consumers' expenditure on sausage rolls per week and the extent of sales inequality among the sellers. To achieve the objective of the study, following research questions were raised:

- i. What are the socio economic characteristics of sellers and buyers of beefy sausages in the study area?

- ii. What is the market share of each brand of beefy sausage in the study area?
- iii. What are the factors influencing consumers' expenditure on branded sausage rolls?
- iv. What is the extent of sales inequality among the sellers branded sausage rolls?

## 2.0 Theoretical framework and literature review

According to Reynolds (2005), utility is the capacity of a good (or service) to satisfy a want. Concept of utility is one approach that explains the phenomenon of value. Factors that affect consumer behaviour include marketing factors (product design, price, promotion, packaging, positioning and distribution), personal factors (age, gender, education and income level), psychological factors such as buying motives, perception of the product and attitudes towards the product., situational factors (physical surroundings at the time of purchase, social surroundings and time factor), social factors (social status, reference groups and family) and cultural factors (religion, social class—caste and sub-castes). For instance, consumer's demand for a brand of sausage roll would be influenced by the price, packaging, size, consumer's income, taste, expiry date, and packaging among other factors. Specifically, demand theory establishes the relationship between the consumers demand for goods (e.g. sausage roll) and services and their prices. The demand analysis refers to the organized processes aimed at exploration of a certain variable behaviour (demand) in future, based on a systematic study of the existing historical data.

Various analytical tools methods have been used by scholars in demand

analysis. These are Almost Ideal Demand System (Adetunji & Rauf, 2012; Iwang, 2014; Motallebi & Pendell, 2013), The Linear Approximate Almost Ideal Demand System (LA/AIDS) (Green & Alston, 1991; Pashardes, 1993; Alston, Foster & Green, 1994; Buse, 1994; Hahn, 1994; Moschini, Moro & Green, 1994; Moschini, 1995; Asche & Wessels, 1997), Linear Expenditure System (Pollak, Robert & Wales, 1992), Double Hurdle model (Eakins, 2014; Blundell & Meghir, 1987; Newman, Henchion & Matthews, 2003; Akinbode & Dipeolu, 2012) and Quadratic Almost Ideal Demand System (Lakkakula, Schmitz & Ripplinger, 2016; Olorunfemi, 2013; Surabhi, 2010; Moro & Sckokai, 2000; Meenkashi & Ray, 1999; Gould & Villarreal, 2006; Banks, Blundell & Lewbel, 1997; Bopape & Myers, 2007). However, despite the wide usage of these analytical tools their shortcomings have been well documented in literature. For instance, AIDS model assumes non-linearity. The AIDS model may be difficult to estimate because the price index is not linear in terms of parameters estimated and particularly the income elasticity tends to be smaller as income increases. LA/AIDS models, as originally proposed by Deaton and Muellbauer (1980), did not consider the demographic variables. Also, the simplification in estimation of LA-AIDS is offset by difficulties in deriving the elasticities. According to Pollark and Wales (1969), Linear Expenditure System does not rest on a specification of the error structure, the properties of the estimator are not known. It should be noted, however, that it is not a maximum likelihood procedure since a maximum likelihood interpretation requires a disturbance covariance matrix proportional to the identity, whereas in

fact the covariance matrix of the system (although unknown) is singular. Determination of elastistities as expected in demand study is not obtained using double hurdle model. The study utilized Multiple Linear Regression (MLR) which is suitable for

the available data. It is an extension of simple linear regression. MLR is used to predict the value of a variable (dependent variable) based on the values of two or more other variables (independent variable). The explicit model of MLR is given as:

$$Y = \alpha_o + \sum_{i=1}^n \alpha_i X_i + \epsilon_o \dots\dots\dots(1)$$

Where:

- Y represents the dependent variable,
- X<sub>i</sub> represents the independent variable
- ε<sub>o</sub> represents the error term

Measures of income inequality used in literature include Atkinson index (Lamporte, 2002; Atkinson & Micklewright, 1992, Regidor, Calle & Navarro., 2003), Coefficient of variation (Champernowne & Cowell, 1998; Campano & Salvatore, 2006), Generalised entropy index (Kawachi & Kennedy, 1997; Weich, Twigg & Holt, 2003; Hou & Myles, 2005; Cowell, 1995; Jenkins, 1991), Robin Hood index (Kennedy, Kawachi & Prothrow-Stith, 1996; Shi, Macinko & Starfield, 2003; Sohler, Arno & Chang, 2003) and Theil index (Cowell, 2003; Milanovic, 2002). While Atkinson index is subjective because the user can choose what subgroups to weight more heavily than others, the coefficient of variation would not be an appropriate choice of income inequality measure if a study's income data did not approach a normal distribution (Campano & Salvatore, 2006; Fernando, 2007). Also, the generalised entropy index result is often difficult to interpret. The Robin Hood framework does not incorporate a sensitivity parameter while Theil index is particularly sensitive to inequality

arising from extreme wealth and less sensitive to that arising from extreme poverty.

The study utilized Gini coefficient/Lorenz curve as a measure of income inequality. Gini coefficient is most sensitive to inequalities in the middle part of the income spectrum (Elisson, 2002; Hey & Lambert, 1980). It has been used extensively in literature (De Vogli, Mistry & Gnesotto, 2005; Beckfield, 2004; Blakely, Atkinson & O'Dea, 2003; Lopez, 2004) and it remains the most popular measure of income inequality (Fernando, 2007). The Gini coefficient measures inequality of a distribution (examples are income, sales revenue and output). It is defined as a ratio with values between 0 and 1. The numerator is the area between the Lorenz curve of the distribution and the uniform distribution line; the denominator is the area under the uniform distribution line (Garvy, 1952). The Gini index is the Gini coefficient expressed as a percentage, and is equal to the Gini coefficient multiplied by 100. It is expressed mathematically as:

$$G = 1 - \sum_{k=1}^n (X_k - X_{k-1})(Y_k - Y_{k-1}) \dots\dots\dots(2)$$

Where:

$X_k$  is the cumulated proportion of the population variable.

$Y_k$  is the cumulated proportion of the income variable, for  $k = 0, \dots, n$ , with  $Y_0 = 0$ ,  $Y_n = 1$ .

**3.0 Methodology**

The study was carried out in Ibadan metropolis. The study made use of primary data collected with structured questionnaires in 2017. Multi-stage sampling technique was used. The first stage involved purposive selection of three local government areas (Ibadan North, Ibadan North East and Oluyole local government) out of six local government areas that make up Ibadan Metropolis. The choice of the local government was based on the large number of co-operate and commercial activities which encouraged demand for fast food (sausage rolls). The second stage also involved purposive selection of three major commercial centres from each of the selected local government areas. The third stage involved random selection of 15 sausage rolls sellers from the list obtained from the association of sausage roll sellers in the identified commercial centres. Also 20 respondents were selected from each of

the major commercial centers (3 per local government areas gave 60 respondents). A total of 180 and 135 questionnaires were administered for the sellers and consumers of sausage rolls respectively. However, 154 (sellers) and 122 (buyers) questionnaires were returned to time and good for analysis.

Data were analyzed using descriptive statistics, Gini coefficient/Lorenz curve and Multiple Linear Regression. Specifically, descriptive statistics was employed to profile the socioeconomic characteristics of the sellers and buyers of sausage rolls as well as estimating the market share of each of the identified sausage roll brands. Gini coefficient/Lorenz curve was employed to estimate the market concentration/extent of inequality of each brand of sausage rolls. The factors influencing the amount consumers spend on sausage roll per week was determined using multiple linear regression.

(i) *Gini- Coefficient*

$$G_1 = 1 - \sum_{k=1}^n (X_k - X_{k-1})(Y_k + Y_{k-1}) \dots\dots\dots(3)$$

Where:

$Y_k$  is the cumulated proportion of the number of seller for each brand of sausage roll.

$X_k$  is the cumulated proportion of the daily sales revenue recorded for each brand of sausage roll.

(ii) *Multiple linear regression model:*

$$ASS = a_0 + a_1MIC + a_2AGR + a_3SER + a_4YOE + a_5HHS + a_6MSR + \epsilon_0 \dots \dots \dots (4)$$

Where:

ASS represents the amount consumers spent on sausages per week in the study area.

MIC represents monthly income of respondent (consumer) (₦ in naira)

AGR represents age of respondents (in years)

SER represents sex of respondents (male = 1, female = 0)

YOE represents the years of education of respondents (consumer)

HHS represents household size of respondents (consumer)

MSR represents marital status of respondents (consumer)

$\epsilon_0$  represents random term

**4.0 Results and Discussion**

*Profile of sausage sellers and consumers:* The study revealed that 58 percent of the sausage rolls buyers were male while expectedly 82.3 percent of the sellers were female. Female are more into trading in sausage rolls than male in Nigeria. The often employ youth to assisting hawking on the

highway. Also majority (52.0 percent) of sausage roll consumers were single while 45 percent were married. The buyers (96.0 percent) and the sellers (92.2 percent) were well educated. The large number of educated buyer means that the value for the money spent on the sausage rolls was assured (see Table 1).

Table 1: Socioeconomic characteristics of buyers and sellers of sausage roll

Variables	Percentage of buyers	Percentage of sellers
<i>Sex</i>		
Male	58	17.6
Female	42	82.3
<i>Level of education</i>		
No formal education	4.00	7.8
Primary education	4.00	27.5
Secondary education	12.00	39.2
OND/NCE	17.00	15.7
HND/BSc	43.00	9.8
Post graduate	20.00	0.00
<i>Marital status</i>		
Single	52.00	23.5
Married	45.00	72.5
Divorced	3.00	3.9

Source: Field Survey (2017)

The averages of the buyers and sellers ages were 26.5years and 37.7years respectively. Majority of the consumers and sellers were within the age bracket of 18 – 27 and 28 – 37years respectively (see Figure 1). Few

respondents above 47years of age consumed sausage rolls. This shows that the consumption and sales of sausage rolls was dominated by youths in their economic active ages.



Figure 1: Age distribution of buyers and sellers of sausage rolls

The study also showed that the average household sizes of the consumer and sellers were 4.3 and 4.2 respectively. The distribution revealed that most respondents had household size below the average values (positive skewness).

Among the brands of sausage rolls in the study area, Gala (big and small) had the highest market share of 25.8 percent. This may be attributed to its consistent

quality and taste over the years. The market share was followed by Bigi (17.8 percent) and Ritespicy (17.0 percent) (see Table 2). This may be due to its big size, attractive packaging and consumer friendly advertisement. Despite gala having the highest market share, ritespicy had the highest average daily sales of ₦288.10. This was followed by superbite and gala respectively.

Table 2: Market share (%) and average daily sales of sausage rolls

Sausage rolls	Number of buyers	Market Share (%)	Average daily sales (₦)
Gala	89	25.8	263.8
Chopsy	25	6.3	200.0
Superbite	51	12.8	288.1
Yummyum	42	10.5	263.5
Ritespicy	68	17.0	313.3
Bigi	71	17.8	203.1
Beefie	19	4.8	200.0
Meaty	20	5.0	200.0

Source: Field Survey (2017)

The study showed that most buyers of sausage rolls (59.0 percent) were within the monthly income ₦50,001 - ₦150,000 while the average monthly income was ₦101,082.50. The average monthly sales by sellers was ₦42,055.00. The price charged by different brands was the same (₦50 per one). The percentage of monthly income of respondents (consumers) spent on sausage rolls in the study area was

0.69%. This means that 0.69% of the buyer's monthly income would be spent on sausages (see Table 3). This may be attributed to occasional demand for sausage rolls by most consumers who did not consider it as 'must eat' unlike the staple food. This was corroborated by the study that majority of consumers (45%) bought two pieces of sausage rolls per week

Table 3: Distribution of monthly income of respondents (buyers and sellers)

Monthly income (₦)	Percentage of buyers	Monthly sales (₦)	Percentage of sellers
At most 50000	28.0	At most 20000	5.9
50001 - 150000	59.0	20001 - 40000	33.3
150001 - 250000	9.0	40001 - 60000	47.1
250001 - 350000	2.0	Above 60000	13.7
Above 350000	2.0	Total	100.0
Total	100.0		
Mean	₦101,082.50	Mean	₦42,055.00
Std. deviation	₦68,907.17	Std. deviation	₦14,111.45
Skewness	2.21	Skewness	-0.09

Average amount spent on sausage rolls per month by respondents = ₦700

Percentage of monthly income spent on sausage rolls by buyers = 0.69%

Source: Field survey (2017)

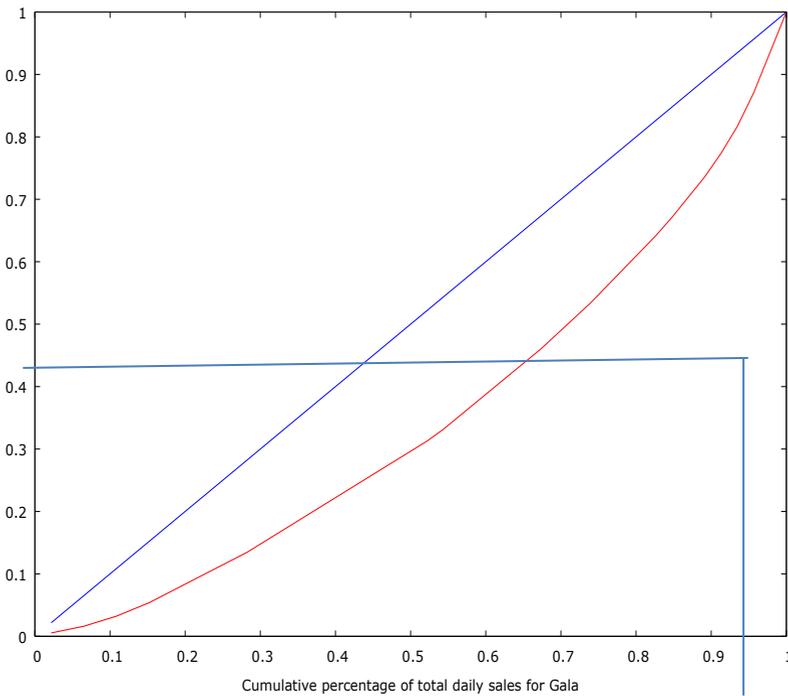
*The extent of inequalities in sales revenue among sausage sellers:* the study revealed that gala had the highest inequality (concentration) in average daily sales. This was followed by meaty and superbite (see Table 3). This result was confirmed by the Lorenz curves (see Figures 2, 3, 4 & 5). The figure shows that 50.0% of the gala sellers controlled about 71.0% of the total daily sales of gala sausage roll while 50.0% of

the meaty sellers controlled about 69.0% of the total daily sales of meaty sausage roll in the study area. Also, 50.0% of the super bite sellers control about 65.0% of the total daily sales of super bite in the study area. Since there was uniformity in the price per unit of sausage rolls, the inequality may be attributed to location of seller's stall/shop and how the seller relates with buyer.

Table 4: Gini coefficients of sausage rolls

Sausage rolls	Gini coefficient estimate
Gala	0.30
Meaty	0.28
Superbite	0.20
Bigi	0.19
Ritespicy	0.18
Yummyum	0.16
Chopsy	0.10
Beefie	0.09

Source: Field Survey (2017)



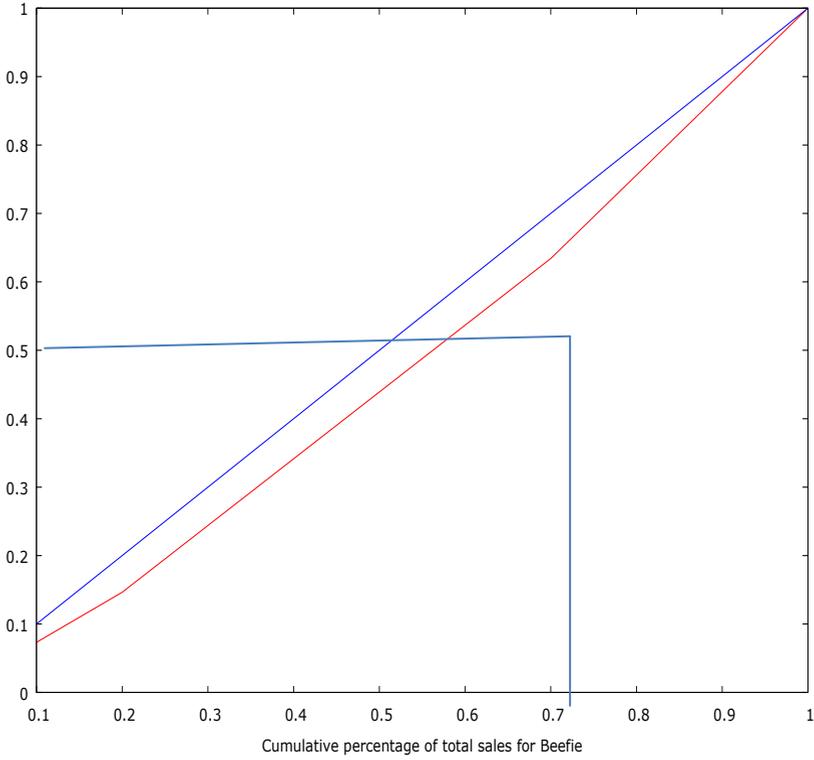
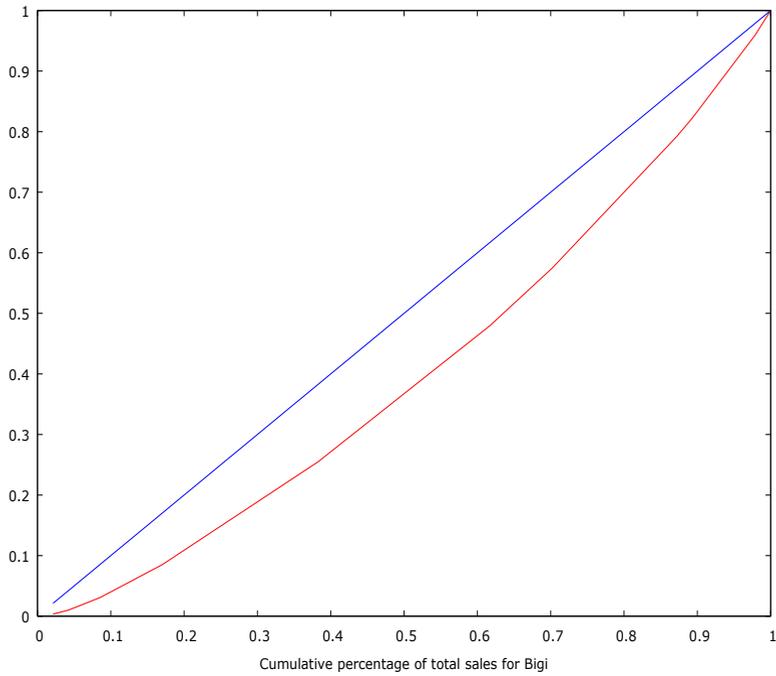


Figure 2: Sale revenue Lorenz curves for Gala and Beefie sausage rolls



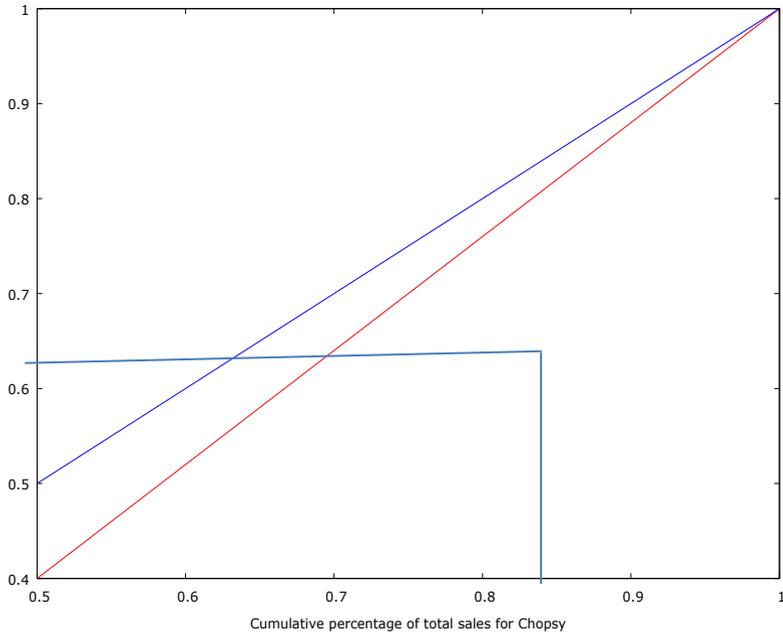
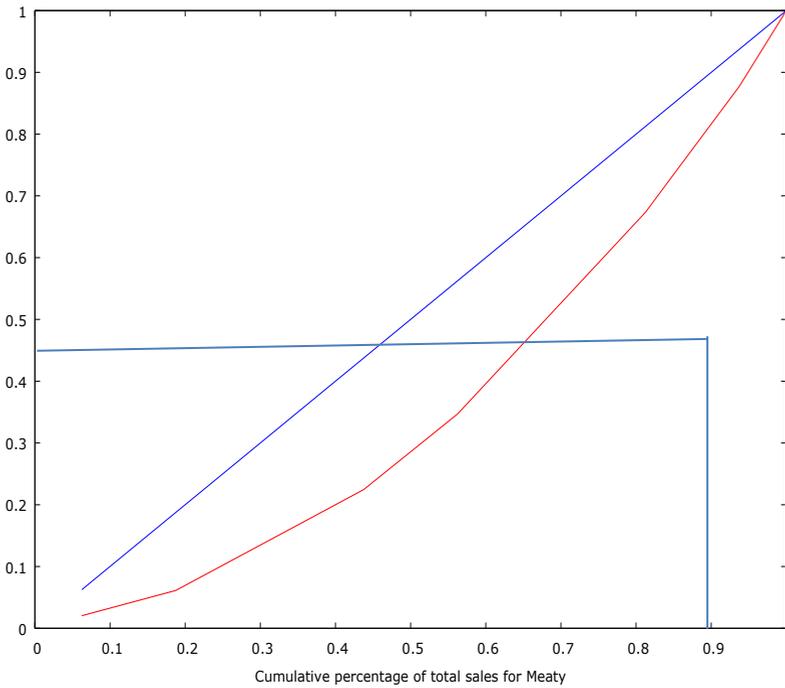


Figure 3: Sale revenue Lorenz curves for Bigi and Chopsy sausage rolls



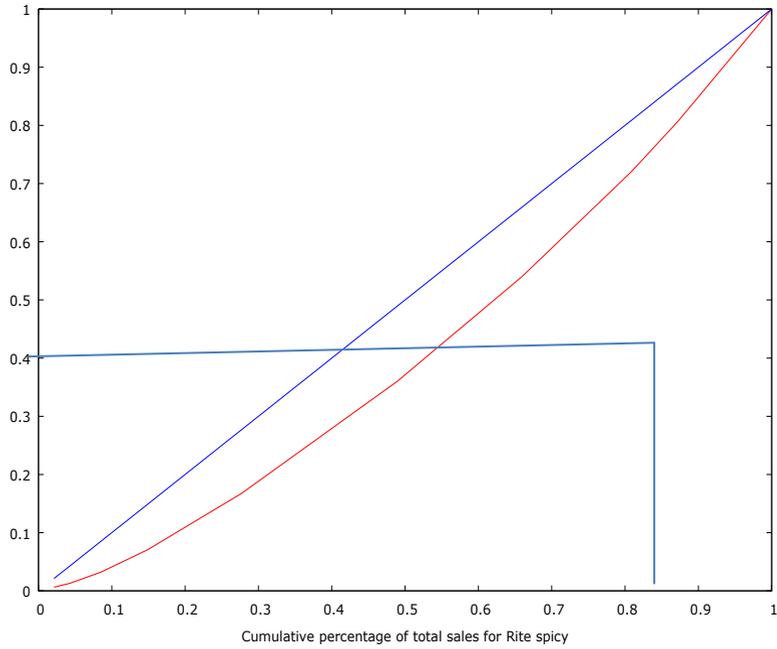
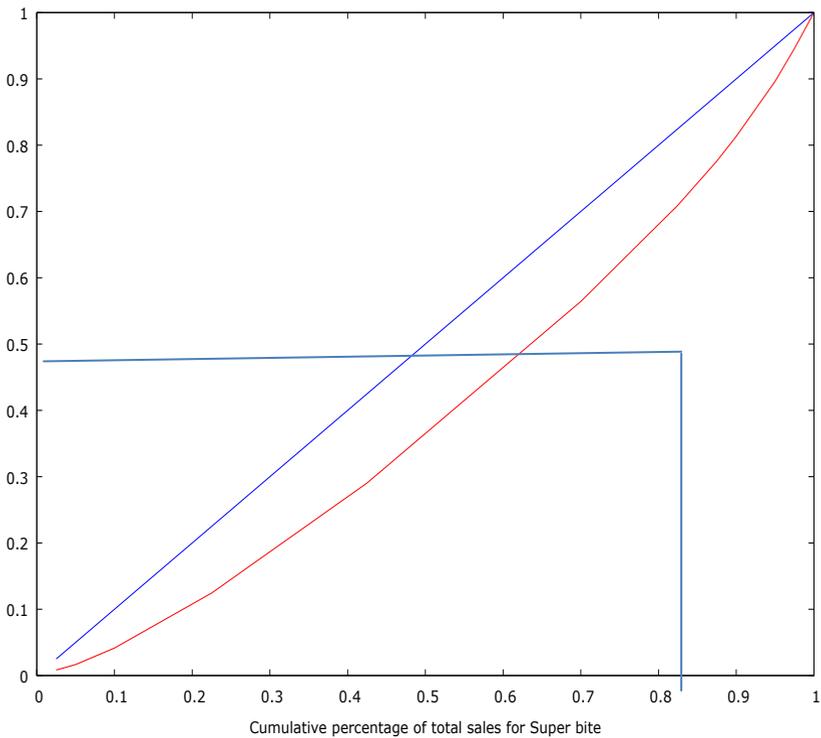


Figure 4: Sales revenue Lorenz curves for Meaty and Rite spicy sausage rolls



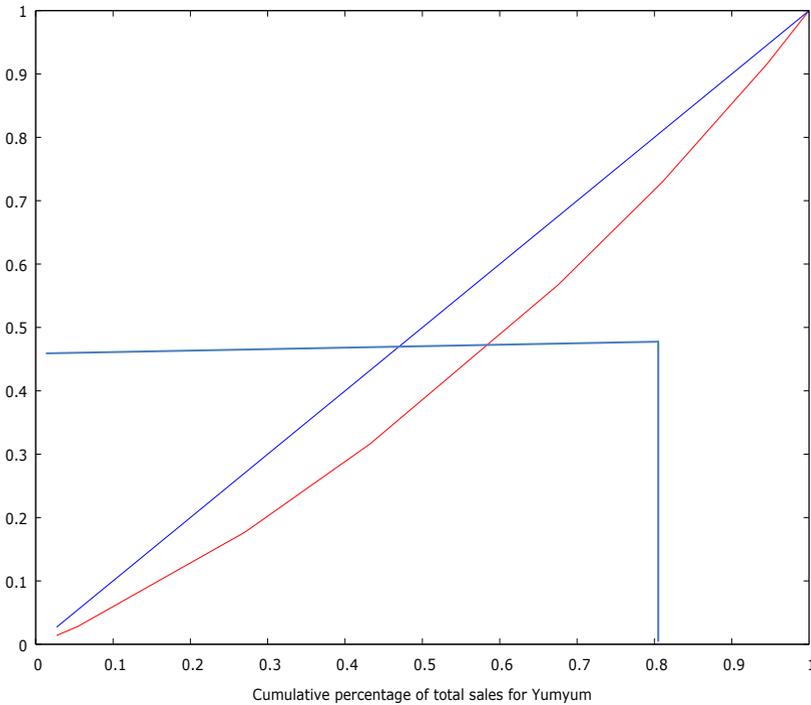


Figure 5: Sales revenue Lorenz curves for Superbite and Yumyum sausage rolls

*Factors influencing consumers' expenditure on sausage rolls:* the regression result is shown in Table 5. The model has F-value of 6.51, this shows that the model has a good fit ( $p < 0.01$ ). The adjusted R-squared of 0.653 showed that 65.3 percent variation in the weekly amount spent on sausage rolls generally was explained by the significant independent variables. Out of six (6) independent variables considered, the coefficients of four (4) independent variables (age of respondent, marital status of respondents, year of education and monthly income of respondents) significantly influenced the amount consumers spend on sausage rolls per week. The coefficient of age was negative and significant ( $p < 0.01$ ). This means that for unit increase in the age of respondent, amount spend on sausage

rolls decreases. This is in agreement with the earlier findings which showed that consumption of sausage rolls was common among the youth. There are some foods that one avoids as one is getting older which may be based on advice by nutritionist. The negative and significant relationship ( $p < 0.01$ ) between the marital status and the weekly expenditure on sausage rolls may be because almost all married persons eat cooked meal at home. Hence, the reduction in weekly expenditure on sausage rolls for every married individual. Moreover, the positive and significant relationship ( $p < 0.05$ ) between the weekly expenditure on sausage rolls and the year of education may be attributed to carry-over of eating habit from school on consumption of fast food because of tight schedule of students. Also,

increase in job responsibilities of the respondents give little time to cook, thus spending more on sausage rolls. This is

in agreement with the study of Amao and Ayantoye (2014).

Table 5: Result of regression analysis

Variables	Coefficient	Standard error	t-value	p –value
AGR	-5.202***	2.019	-3.18	0.0015
HHS	5.867	4.697	1.17	0.2420
MRS	-13.133***	5.005	2.62	0.0088
SER	19.212	22.694	0.84	0.4009
YOE	4.764**	2.380	2.00	0.0455
MIC	-2.243*	1.158	-1.94	0.0524
Constant	2.942	54.063	0.05	0.9570

Dependent variable: Amount spent by respondents on sausage rolls per week (ASS)  
 $R^2 = 0.653$ ,  $F(6, 93) = 6.51$ ,  $\text{Prob} > F = 0.000$ .

NOTE: \*, \*\*, \*\*\* represents 10%, 5% and 1% level of significance respectively.

Source: Field Survey (2017)

## 5.0 Conclusion and recommendation

The study examined the demand for trademarked sausage rolls by consumers in Ibadan metropolis. The results showed that most of the sausage rolls consumers were between the ages of 18-47 years while majority of the sausage roll sellers were within 28 - 37 years of age. Sales of sausage roll were dominated by female (82.3%). Most of the consumers and sellers were educated. The buyers and sellers had average household sizes of 4.3 and 4.2 respectively. The study revealed that gala brand had the largest market share (25.8%) as well as highest inequality in

daily sales revenue. The study affirmed that the buyers spent less than 1% (0.69%) of their monthly income on sausage rolls. Age, marital, year of education and monthly income of respondents were the factors influencing the weekly amount spent on sausage rolls by the consumers. The study showed that the sausage roll producers have to come-up with market segmentation in order to raise the amount spent on sausage rolls by consumers. Also strategy should be put in place not to allow the inequality in the sales of sausage rolls be too pronounced.

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