

Estimating Demand and Supply of Halal Consumables in Nigeria: Evidence from Selected Shop-rites and Supermarkets in Abuja, Nigeria

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Abstract

This study estimates demand and supply of halal consumables in selected shop rites and supermarkets in Abuja, Nigeria. This study adopts survey research design and demand and supply functions technique and a qualitative method of data collection was employed. There are total of 35 supermarkets and 5 shop rites in Abuja and a cluster sampling technique was adopted in selecting the shop rites and supermarkets. Both reliability and validity tests were conducted on the data. Data was sourced through the administration of questionnaires and interview on both customers and staff of the shop rites and supermarkets conducted. The questionnaire was structured into Strongly Agree (SA), Agree (A), neutral (N), disagree(D), and Strongly Disagree (SD). An interview was conducted to respondents in order to estimates demand and supply of halal consumables in selected shop rites and supermarkets in Abuja, Nigeria. The study revealed that, there is excess demand of halal consumables by both Muslims and non- Muslims in Abuja, Nigeria most especially during Ramadan and other festivities by over 60% as it was discovered that halal consumables are healthier and safer. The result also shows that there is shortage in the supply of halal consumables most especially food and beverages to both Muslims and non- Muslims in Abuja Nigeria by over 30%. The study recommends that government should intervene to encourage supermarkets and shop rites owners in Abuja, Nigeria to supply more halal consumables that are certified in order to meet up with the excess demand. Halal industry is of great importance to a Nigerian economy by stimulating investment job creation and opening up export opportunities and attracting foreign investment.

Keywords: Demand, Supply, Halal, Consumables, Shop-rites, Supermarkets

Introduction

In Islam, consumption and production of goods must be in accordance with the teaching and ethics of Islam. Halal goods are significant contributor a nation's economy and demand of halal goods creates jobs and business opportunities. However, consumption and production of certain goods are considered prohibited or

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using the products as an ingredient in production process is also considered haram. Example, consumption of products whose ingredients contains animals' meats such as pigs, donkeys, lions, tigers, cheetahs, dogs, and cats, eagles, vultures and so on are considered not Halal. Halal consumables present a significant opportunity for Nigeria to take advantage of the market productivity at domestic and international economy. At domestic level, Nigerian economy is one of the top Halal consumer's markets across the globe. According to Imam (2023) opined that Muslims spends 107 Billion US dollar, across Halal products and lifestyle sectors making it ninth largest in the world. While at international level, Nigeria is the largest exporter of Halal products in Africa with food export accounting for 98% of the export despite all these opportunities, there are still challenges that need to be addressed, these include poor trade, logistic infrastructure, regulatory and policy challenges, quality challenges and rising competition from others (Imam, 2023).

Being considered as one of the most populous Muslim's nation, Nigeria is now ranked the number eight -largest domestic halal market economy. This report implies that incremental value of inflow and outflow of goods and services alone will significantly improve the nation's economy by US\$1.49 billion. Export value of Nigeria at the moment stood at 5.7% (Nigeria Halal Economy Report, 2023).

Islam is for humanity and is concerned about health and wellbeing of the people regardless of their race, faith, beliefs, ethnic extraction, region or country. Nigerians needs a healthy life and eating a healthy diet containing Halal products provides many benefits to consumers which in turn raises the profit of the suppliers such as fast growth of the business, security of the business, competitive advantages, acceptable to all ages, high guarantee of food safety.

Halal consumables demand is now on the increase across shop rites and super markets in Abuja, Nigeria by Muslims and other faiths alike. This is because of some factors that enhances demand and supply halal consumables such as certification, healthy product, integrity controlled and monitor high guarantee of food safety acceptable to all ages and members of other religion and these has led to the increase in security of halal products, fast growth of market competitive advantage trust, commitment, standard and so on.

Review of Literature

Ariff et al (2019) conducted a study on the impact of consumption value on consumer behavior of halal-certified food vendors. The study used convenience sampling technique to sample from the population of one thousand five hundred and fifty (1,550) Muslim respondents in Malaysia. The study employed multiple regressions and the findings revealed that the importance of halal certification had the highest impact on consumer choice behavior, particularly in the purchase of halal-certified

food supplies. Also, epistemic and emotional values were both statistically significant in terms of their influence on the consumer decision-making process.

Dominika et al (2019), conducted research on religiously granted consumption. They utilized an experimental design wherein two goods (cake and energy drink) were shown, one with the halal label (n=85) and one without (n=102), depending on the experimental condition. Participants were allocated to the research conditions at random. Following product exposure, participants rated products using perception scales (e.g., pleasant, nutritious). Finally, the centrality of religion (the moderator variable) was assessed. The findings of the investigation revealed that the halal label improved positive product views among Muslims who scored high on the CRS. Both items (cake and energy drink) had identical findings, however the indicated impact was stronger in the energy drink.

Abderahman (2021) did a study on Halal food supply chains: A literature analysis of sustainable measures and future research directions using inquiry technique by evaluating forty (40) publications selected from leading, highly-ranked journals to answer research questions. The findings revealed that the improvement of Halal processes through the implementation of quality management systems, the effectiveness of Halal labeling, and the use of technology could boost the economic performance of HFSCs. Furthermore, HFSC's sustain ability efforts are strengthened by enhancing trust and transparency benefiting human resource skills development, encouraging animal welfare concerns, and strengthening regulatory compliance. The deployment of environmental protection measures is a significant driving element for environmental sustainability operations. Environmental sustainability could be fostered by a shift to the application of greening practices and the support of environmentalism in the Halal food industry and the findings of this study concluded that critical managerial implications for Halal food practitioners as they can have a summary of the previous studies and thus use it as a benchmark for introducing sustainable measures in their Halal food firms.

Abdul, Muhammad & Endah (2019) did a study on Potency and Prospect of Halal Market in Global Industry: An Empirical Analysis of Indonesia and United Kingdom. The research utilized quantitative and qualitative method, which is in quantitative method employing estimation of Fixed Effect Methods and the validity assessed by AR and Jarque-Bera test. The result showed that sales in UK and RI are strongly dependent on changes in time and period in each Country indicated by PER_EFFECT, even though this analysis has employed white heteroscedasticity strategy to eliminate such impact. Potentials and Prospects in the United Kingdom and the Republic of Indonesia have a positive and important influence on Halal market and both countries have the same potential and prospective conduct toward the Halal Market, but different individual country and time or period. Idris & Asnidar (2018), did a study on prospects of halal products in developing countries: comparison between Nigeria

and Malaysia utilizing a conceptual framework to evaluate practises of halal implementations in industries in Malaysia as a benchmark to apply the same way in Nigeria. The paper also boldly recommends why emerging countries, like Nigeria should establish a government backed halal regulatory institution. The conclusions of this study imply that as a Muslim dominated country, Nigeria has the potential to grow as one of the leading players in halal sector.

Conceptual Clarification

Halal Certification Authority in Nigeria

Halal Certification Authority is a religious body saddled with the responsibility of certification of consumable products that are processed in accordance with Islamic teaching and ethics acceptable both by domestic and foreign consumers.

Demand for Halal Consumables

Demand for halal consumables refers to the quantity demanded of halal consumables demanded by consumers who are willing and able to purchase halal consumables such poultry meat, beef at a given market price and point in time. Demand for halal consumables is regarded as inelastic; usually, halal products are special so, an increase in price does not significantly affect consumption and as a basic necessity in which no one can do without it. Demand for halal products refers to the desire and wiliness of consumers particularly Muslims to purchase and consume products that conform to Islamic principles and permissible under shariah law.

Supply of Halal Consumables

Supply of halal consumables can be defined as the quantity supply of halal consumables supply and distributed for sale at a given market price and point in time. It also refers to the availability and provision of goods and services that conform to Islamic principles and permissible under shariah law.

Factors influencing Demand and Supply of Halal Consumables in Nigeria

Some of the major determinants of halal consumables in Nigeria are Price, Certification and Regulations, Cost of Production, Technology, Income, profit, Awareness, Attitude & moral obligations.

Research Methodology

This study adopted survey research and it is a method of collecting data through direct participation such as questionnaires, interviews. The purpose is to gather information about attitudes, beliefs, opinions and behavior from a given sample. Demand and supply functions technique and a qualitative method of data collection was employed. There are total of 35 supermarkets and 5 shop rites in Abuja and a cluster sampling

technique was adopted in selecting the shop rites and supermarkets, 5 shop rites and 14 supermarkets were cluster sampled. Data was sourced through the administration of questionnaires and interview on both customers and staff of the shop rites and supermarkets conducted. The questionnaire was structured into Strongly Agree (SA), Agree (A), neutral (N),disagree(D),and Strongly Disagree(SD).An interview was conducted to respondents in order to estimates demand and supply of halal consumables in selected shop rites and supermarkets in Abuja, Nigeria. Both reliability and validity test were conducted on the data.

Model for the Study

$S=f(P, CR, PR, CP, T)$ 1

Where

S = Supply of Halal Consumables

P = Price

CR= Certification and Regulations

PR = Profit

CP = Cost of Production

T =Technology

$D = f(P, I, CR, AW, AO, T)$ 2

Where

D =Demand for halal consumables

P=Price

I= Income

CR= certification & regulations

Aw= Awareness

AO = Attitude & moral obligations

This study modified the model of Amy (2021) the algebra of demand and supply model as follows:

$P= f(P)$3

Where

Px= Proxy of supply = Production

P= Price

Cx=f(P).....4

Where

Cx= Proxy of demand = Consumption

P= Price

Table 1: List of Sampled Supermarkets and Shoprites in Abuja, Nigeria

S/N	Supermarkets	Shoprites
1	Abuja Supermarket	Shoprite Silverbird Abuja
2	Right Shop	Shoprite Jabi Lake
3	Right Varieties Stores	Shoprite Grand Tower
4	Sahad Central Area Stores	Shoprite Apo 2 Mall
5	Grocery	Shoprite Abuja Gateway
6	Supreme Supermarket FCT	
7	Sweet rose supermarket Central Area	
8	Pay Fair Supermarket Area 2	
9	Super Store Area 3	
10	R.U Investment Zuba	
11	4U Supermarket Central Area	
12	Laheeta Ventures Central Area	
13	The Shop Supermarket Central Area	
14	Garki Supermarket – Garki	

Source: *Field Survey, 2023*

Results and discussion

The results of this study is presented and discussed below:

From equation three and four in 3.1 Model of the Study above

$$P = f(P) \dots\dots\dots 3$$

Where

Px= Proxy of supply = Production

P= Price

$$Cx = f(P) \dots\dots\dots 4$$

Where

Cx= Proxy of demand = Consumption

P= Price

Substituting price responses from questionnaire into demand and supply equation 3 and 4 we have:

Table 2:

Quantity demanded	Price	Quantity supplied	Price
$QD = 185 - 1/187P$ $1/187P = 185 - Qd$	$P = 34,595 - 187Qd$	$QS = 1/174P - 89$ $1/174P = Qs + 89$	$P = 15,486 + 89Qs$
At equilibrium			
	$P = 34,595 - 187Qd =$		$P = 15,486 + 89Qs$
	$34,595 - 187q =$		$15,486 + 89q$ $19,109 = 276q$
		$19,109/276$ $\therefore Q = 69.2469$	
By Substituting the value of Q we have:			

$$\begin{aligned}
 P &= 34,595 - 187Q_d \\
 &= 34,595 - 187(69.24) \\
 &= 34,595 - 12,947.88 \\
 &= \text{₦ } 21,647 \\
 P &= 15,486 + 89(69.24) \\
 &= 15,486 + 6,162.36 \\
 &= \text{₦ } 21,648
 \end{aligned}$$

The equilibrium value for quantity demanded and quantity supply of halal consumables in Abuja, Nigeria, we substitute into either of the equation to find the quantity as:

$$P = 34,595 - 187Q = 34,595 - 12,903 = 21,692$$

(Quantity Demanded for Halal Consumables in Abuja, Nigeria)

$$P = 15,486 + 89Q = 15,486 + 6,141 = 21,627$$

(Quantity Supplied for Halal Consumables in Abuja, Nigeria)

The Findings/Discussions

- Excess demand

Quantity Demanded for Halal Consumables in Abuja, Nigeria - Quantity Supplied for Halal Consumables in Abuja, Nigeria = $21,692 - 21,627 = 65$. This implies that there is excess demand of Halal Consumables in Abuja, Nigeria with over 60% and a shortage of supply of over 30%.

Change in demand of consumables in Abuja, Nigeria

A major determinant of demand of Halal Consumable is changes in price. Our initial demand equation which was $P = 34,595 - 187$ quantity demanded and our supply equation $P = 15,486 + 89$ quantity supply. Supposed that supply conditions of Halal consumables in Abuja, Nigeria remain fixed and the increase in consumers incomes (consumption of Halal goods) results in the new demand equation $P = 350 -$

187quantity demanded. Then new equilibrium Price and Quantity of Halal consumables in Abuja, Nigeria are thus:

Demand	Supply
165 – 187quantity demanded	201 + 89 quantity supply
350-201	187quantity + 89quantity
149	276 quantity
Quantity = 0.54	

Determining the price for new quantity demanded and quantity supply of halal consumables in Abuja, Nigeria we then substitute using either of the equation to find price:

Here's the calculation with the demand equation:

$$P = 350 - 187(0.54) = \text{₦}100.98$$

(Quantity Demanded for Halal Consumables in Abuja, Nigeria)

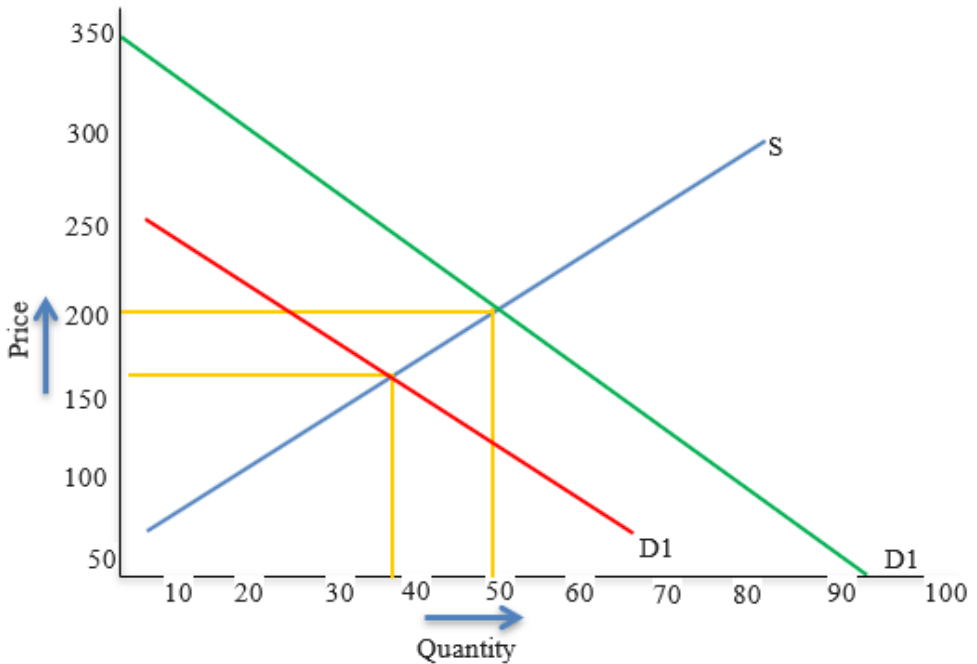


Figure 1: Shift in Demand of Halal Consumables

The figure 1 above shift in demand curve of halal consumables implies that, increase in demand has led to a higher price and a higher quantity demanded of Halal consumables in Abuja, Nigeria.

Change in supply of consumables in Abuja, Nigeria

The new supply equation for Halal consumables in Abuja, Nigeria is $P = 201 + 89$ Quantity supply and our original demand equation is $P = 34,595 - 187$ Quantity (Quantity Demanded for Halal Consumables in Abuja, Nigeria) Determining the new equilibrium Price and Quantity of Halal consumables in Abuja, Nigeria:

At Equilibrium

$34,595 - 187$ Quantity demanded	$201 + 89$ Quantity supply
$34,595 - 201$	$89Q + 187$
$34,394$	276
Equilibrium Quantity = 124	
The new equilibrium price is $P = 201 + 89(124) = N11,237$	

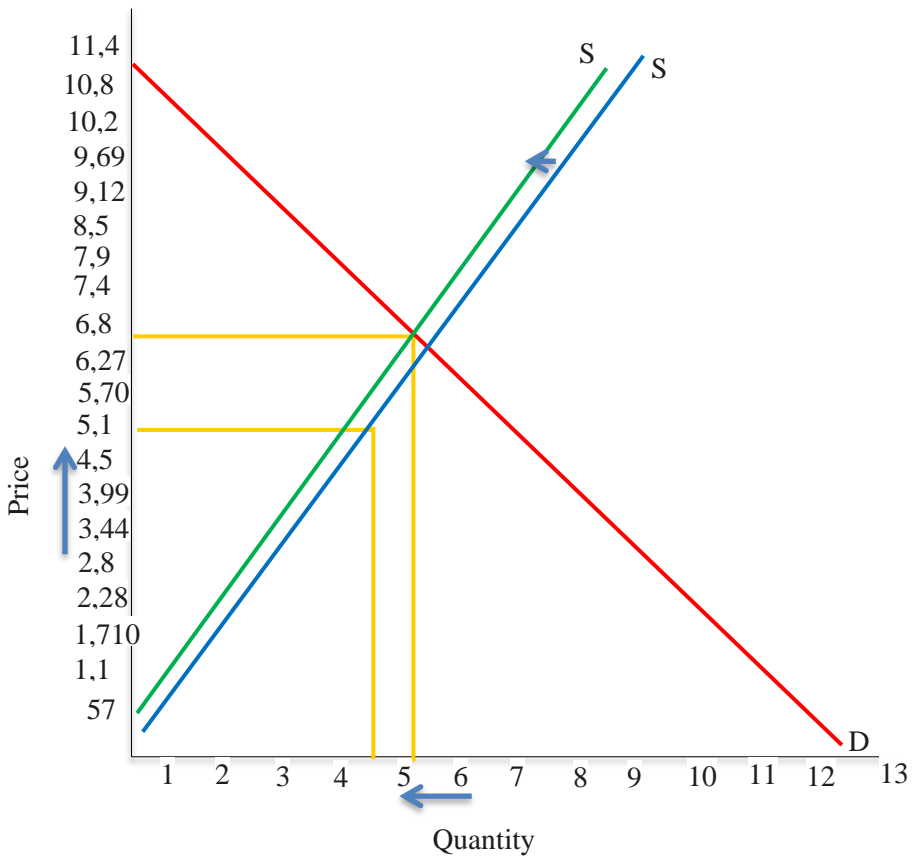


Figure 2: Shift in Supply of Halal Consumables

The figure above 2 indicates decrease in supply of Halal consumables due to high input costs which in turn lead to an increase in price and decrease in quantity of Halal consumables in Abuja, Nigeria.

Table 3: Regression for First Model

Model	B	Std. Error	Beta	t	Sig.
(Constant)	1.793	0.458		3.915	0.000
P	.240	0.047	0.265	5.100	0.000
CR	-0.118	0.043	-0.149	-2.753	0.006
PR	0.265	0.051	0.295	5.246	0.000
T	0.111	0.042	0.137	2.656	0.008
CP	0.066	0.054	0.065	1.225	0.222

Source: Author’s Computation using SPSS 27

From the estimated regression results in model two, shows that the coefficients of certification and regulation, technology and cost of production are statistically insignificant.

The regression results in table 3 shows that coefficient of price is positive and statistically significant at 5% level of significant which implies that for every unit in price, there is predicted increase of 26.5% in supply.

Also, the coefficient of certification and regulation is statistically insignificant at 5% level of significant which indicates that for every unit increase in certification and regulation, there is a predicted decrease of 14.9% in supply.

Furthermore, the coefficient of profit is positively significant, which indicate that for every unit increase in profit, there is predicted increase of 29.5% in supply. Similarly, the coefficient of technology is positively insignificant and revealed that for every unit increase in technology, there is predicted increase of 13.7% in supply. Finally, the cost of production is positively insignificant which indicates that for every unit increase in cost of production, there is predicted increase of 6.5% increase in supply.

Table 4: Regression for Second Model

		B	Standard error	Beta	T	Sig.
1	(Constant)	4.035	0.618		6.528	0.000
	CR	0.108	0.064	0.111	1.686	0.000
	P	0.055	0.062	0.055	0.875	0.000
	I	0.069	0.082	0.056	0.843	0.400
	AW	-0.009	0.064	-0.008	-0.136	0.892
	AO	-0.187	0.061	-0.179	-3.060	0.002

Source: Author’s Computation using SPSS 27

Table 4 above the coefficients of all explanatory variables is statistically significant except income and awareness which are greater than 5% level of significant.

The regression results in table 4 shows that coefficient of certification and regulation (CR) is positive and statistically significant at 5% level of significant which implies that for every unit in certification and regulation, there is predicted increase of 11.1% in demand. Also, the coefficient of price (P) is positive and statistically significant at 5% level of significant which indicates that for every unit increase in price, there is a predicted increase of 5.5% increase in demand.

Furthermore, the coefficient of income is positively insignificant, which indicate that for every unit increase in income, there is predicted increase of 8.2% in demand. Similarly, the coefficient of awareness is negatively insignificant and revealed that for every unit increase in awareness, there is predicted decrease of 0.8% in demand.

Finally, the coefficient of attitude and moral obligation is negatively insignificant which indicates that for every unit increase in attitude and moral obligation, there is predicted decrease of 17.9% decrease in demand.

Table 5: Reliability test for first model

Cronbach's Alpha	Number of Items
0.795	6

Source: Field Survey, 2023

From the table above, alpha are above the 0.60 accepted level. This implies a high level of internal consistency. Table 5 indicates alpha levels of coefficient of 0.795 which is greater than 0.60, which shows reliability of model two.

Conclusion

The study revealed that, there is excess demand of halal consumables by both Muslims and non- Muslims in Abuja, Nigeria most especially during Ramadan and other festivities by over 60% as it was discovered that halal consumables are healthier and safer.

The study also shows that there is scarcity in the provision of halal commodities most specifically food and beverages to both Muslims and non- Muslims in Abuja, Nigeria by over 30%. The outcomes of this study coincide with the findings of Idris and Asnidar (2018) who performed study on Halal prospects of halal products in emerging countries: comparison between Nigeria and Malaysia. Their analysis recommends why developing nations, like Nigeria should establish a government backed halal regulatory authority, and also conclusions of their study conclude that as a Muslim dominated country, Nigeria has the potential to flourish as one of the leading participants in halal business.

The study recommends that government should intervene to encourage supermarkets and shoprites owners in Abuja, Nigeria to supply more halal consumables that are certified in order to meet up with the excess demand.

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