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Economic Analysis of Demand for Beef and Broiler in Ibadan, Oyo State Nigeria

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Abstract

This study was conducted to analyze the beef and broiler marketing in Oyo State using the two prominent beef and broiler markets in Ibadan. The marketers and traders were interviewed through the use of structured questionnaire. Their responses were analyzed using both descriptive and multiple linear regression analysis. The results showed that trading in beef and broilers is profitable with the marketing efficiency value greater than 1 for the two commodities. However, the regression result only show 5% significance for labour cost and cost price of beef but the cost price of broiler marketing is the only significant variable in the model for broilers. It is also important to note that virtually all traders sampled in the study area are educated at least for the first nine years of basic education and that has gone a long way in facilitating the transfer and exchange of marketing information among traders which makes it easy for them to make good strategy in their marketing deals. It is therefore recommended that more abattoir be constructed at strategic places so that transport cost can be reduced and that poultry farmers should be encouraged with subsidies at least for the drugs and feeds so that they could produce more for supply at affordable prices.

Keywords: Broilers, Marketing Chain, Livestock, Poultry, Beef, Cattle, Avian

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Introduction

Nigeria is a major hub of animal product consumption in West Africa. It is also one of the largest livestock raising countries in the region. Meeting the ever-increasing domestic demand and access to these flourishing markets are major economic stakes for Nigeria and for the neighboring Sahel countries that raise livestock. By its population and capacity for animal production, with 25% of livestock heads in the sub-region, Nigeria is by far the leading livestock producer in Central and West Africa. The country's cattle herds are estimated at over 16 million head, far ahead of Niger (8.7million), Mali (8.2million) and Chad (7million). The share of Sahel countries is significant, however, representing over 50% of total cattle herds. Cattle raising in Nigeria is largely supplemented by short-cycle livestock operations, estimated at 33.8 million head of sheep and 175 million poultry birds. Between 85% and 90% of domestic cattle heads are tended by 8 million migratory shepherds and farmer herders, the majority of whom are of Fulani ethnicity although other groups are also herders (Shuwa Arabs, Koyam, Kanuri, Kanembou, Touareg, etc). It is difficult to assess import flows of live animals from Niger, Chad or Mali as many animals are "naturalized" when they cross the border, some of which are fattened and finished on their way to the final market outlets. A large part of the livestock sold on these markets, come from the Sahel countries. Cross-border movement of herds during seasonal migration also involves a significant number of animals. Demand for beef is largely driven by the population of Nigeria, as Nigerians make up 50% of beef consumers in ECOWAS. Nigeria is experiencing a historic demographic expansion and a spectacular change in food habits. With a population growth nearing 2.8% per year, the country's own domestic production is far from being able to meet demand. Nigeria is therefore a major outlet for Sahel livestock, via direct sales or the moving of commercial purposes. At the federal level, livestock operations contribute only about 5% of GDP, whereas agriculture as a whole contributes 35% of GDP. (FAO 1998b)

Animal protein is an important dietary source of Nigeria's middle and elite classes but its cost limits its accessibility by the poor. The relevance of livestock trade for the poor in Nigeria is less in the area of consumption but more in employment generation and the inter-ethnic relations it fosters. Traditional forms of production and marketing dominate Nigeria's livestock market and operate at two levels. The trading and marketing side of the livestock is dominated by the Hausas both at local and national levels, second level are cattle holders (mostly Fulani), who own large herds of cattle meant for the market. (Mafimisebi, *et al*, 2013, Adamu, *et al*, 2005). Many factors and processes are involved in the livestock trade. The first stage in the north is carried out by small traders who move among the cattle rearers who have between 5-10 herds of cattle. The *Dillali* (selling commission agent) and *yankwamisho* (transport commission agent) build up herds for transportation to the South of Nigeria. At the market, retailers operate through a host of intermediary traders who seek carcass butchers in the urban and peri-urban areas to petty traders who take the cattle into more remote rural areas. There the butchers and the meat buyers who form the last link in the chain. They either operate from their own retail outlets or through sub-agents who are itinerant meat sellers in the urban areas. Central to the livestock commodity chain in the Hausa society is the *kraal* (Hausa for "livestock"). Sources of livestock in *Acidakara* are breeders from villages and towns in Niger Republic, Sokoto, Zamfara and Kebbi state. In the market, the sale is done by a *Dillali* for a commissioned fee. The sale could be done either direct to a consumer, a wholesaler, a butcher or a long-distance trader. At every stage, there are the drovers (*yan'kora*) who transport the livestock by foot to the market for loading to other markets (Mafimisebi, *et al*, 2013, Adamu, *et al*, 2005).

Buyers range from the house-bond breeder, merchant, butcher, to individuals who need meat for family consumption and food businesses. For each livestock sold, the *dillali* get a fee. A *dillali* can transact business involving tens of livestock in every market. The sales of an average of 20 animal heads in every market per market day had been reported. In Southern Nigeria, the sale of cattle at Akinyele Kraal is done by the Hausa dealers (*dillali*), who are under the control of the landlords to whom they report their transactions with buyers. There are some middle men called 'barandas' locally. These are people around the Kraal waiting on new buyers who are new to the cattle business practice. They link these new buyers with the *dillali* and often do the bargaining on behalf of the buyer. After any successful bargain, the buyer then pays the middlemen fees, ranging from N500 to N1000. This is in addition to the N1000 paid as '*laada*' to the *dillalai*. It therefore means that, it is more costly to buy through a middleman. This is why they concentrate on new buyers. A cow may change hands up to between five and seven times between the source in the northern markets to the slaughter slab at Bodija market. While at Akinyele only live cattle sold, at the Bodija market cows are sold either live or slaughtered. The majority of the dealers are those who buy different parts of the slaughtered cows for transportation to other markets in Ibadan metropolis (Mafimisebi, *et al*, 2013, Adamu, *et al*, 2005). Poultry production has undergone rapid changes during the last decades due to the introduction of modern intensive production methods, new and improved biosecurity and preventive health measures. Moreover, its management place high demands on proper health and hygiene and requires only a small, but very skilled work force. The progress in the industrial production method has thus had little work force. The progress in the industrial production method has little effect on subsistence poultry production in the rural and peri-urban areas in developing countries. Although poultry production is considered as secondary to other agricultural production systems, it has an important role in supplying man with additional income and high quality protein (through a low-input system), now representing 30% or more of protein consumed (FAO, 1998a)

Any bird reared or hunted for a useful purpose is a member of the group collectively known as poultry. There have been greater changes in the method of keeping poultry than probably in any sector of the world's livestock production in very recent times over a span of more than thirty years. In Nigeria, poultry particularly the keeping of the domestic fowl generally follows a traditional line without the innovations, which modern scientific endeavors have introduced. The term "poultry" apply only to the Avians species that are of use to man in various ways, although principally as producers of eggs and meat. They include domestic fowl, turkey, guinea fowl, duck, goose, quail, pigeon and ostrich. The domestic fowls include layers, broilers and cockerels and breed stock. The qualities and quantities of poultry products are the result of the

performance of the domestic fowl, which is determined by the combined actions and interaction of genotype and environment. According to FAO (1998b), the environmental factors affecting performance are nutrition, temperature, relative humidity, ventilation, stock rate, pathogens and pollutants, stress, light and diseases. The primary objective of poultry management therefore is control and manipulation of the environment that enhances the manifestation of their genetic potentials, which is often expressed in the fast growth and high output in egg production.

In the cattle trade, transportation constitutes a crucial function and a significant cost item. Formal regulations are the transport road worthiness and drivers' and vehicle licenses. Police are supposed to provide security through check points. Police are bribed. The amount of bribe allegedly offered to the Police range from as little as N1000 to as high as N10, 000 depending on the alleged offence(s) committed. Livestock truck drivers say that they just pay the bribe in order to overcome delays on their journey (Mafimisebi, *et al.*, 2013, Adamu, *et al.*, 2005). Many other semi-formal and non-formal sector actors are involved in the conduct of the livestock transportation business. The various cattle dealers' association, the National Union of Road Transport Workers (NURTW), the Association of Cart Pushers and loaders perform the regulatory role of ensuring good behavior among their members, controlling their activities and setting petty quarrels which might ensue in the process of transacting business. Many of these associations have no formal constitutions but they rely on norms which they have developed after long years of existence and which they enforce with relative ease. The livestock are looked after and guarded by the *Maigadi* until the following day for loading into the lorry. The *Dan'kwamisho* makes contact with lorry owners and drivers and negotiate fare with them on behalf of the trader. The *Dan'kwamisho* performs similar function as that of the *dillali* such as mediating between livestock traders and drivers and providing security and insurance by settling problem of stolen animals, issuing tickets to departing vehicles, which is useful in the case of accident on the road or problems in the area of destination.

Livestock originating from the market are transported through the *yan'kwamisho*, unless if by foot. Movement on the hoof is the oldest means of cattle movement and now accounts for a very small portion of the total cattle transport market. The dwindling use of movement on the hoof can be ascribed to harsh environment and transit animal mortalities. Sky T.K. *et al* (2012) noted that a crude estimate showed that animals lose up to 40% of their original weight during the more than 1000 kilometer journey from the northern to the southern markets. However, movement on the hoof to northern collecting markets like Acida is still common. Although more costly than rail transport, road transport now dominates the movement of cattle in Nigeria. Road truckage is dominated by the private sector and therefore, more efficiently run than the publicly owned and operated railways. The cattle traders who do not own vehicles rely on road transporters to haul their herds from northern sources to the southern markets. Sometimes 5 or 6 dealers together hire a vehicle and the cost of hire is shared according to the number of cattle owned. Cattle movement by road is not without its own problems. For example, the cattle are kept standing and in some cases, lying in the vehicle, throughout the journey without food or water. Most rural roads are seasonal and inoperable during the rainy season. Vehicle are prone to accidents and cattle and freight insurance is absent in Nigeria. Numerous feeders were constructed by the Directorate of foods, Roads and Rural Infrastructure (DFRRI) between 1986 and 1990, mostly in the rural areas (Ibrahim J.M. *et al* 2011, Filani, 1995). These link some of the cattle producing areas to their primary markets in the northern states, facilitating the cattle dealers' movement of cattle to weekly markets. Unfortunately due to the poor maintenance culture in Nigeria most of these roads have deteriorated.

Nowadays, the global system of mobile telecommunication has enabled the *Dan'kwamisho* to provide the trader with price information for livestock markets across the country. Armed with this information, the trader can decide where to send his livestock to for sale. The livestock trader may or may not accompany the driver, but most of them said they select one of them to go with the animals but the person may not stay until all livestock are sold. There is an element of mutual trust among the dealers in the transportation of cattle. Some of the traders may return with the sales they have made before the week run out to trade again in the Acida next day, leaving the unsold livestock with the *dillali* to sell. Central to livestock transportation by road are the *masulodi*, those who load and offload the livestock. Payment for the service of the *yan'kwamisho*, *yanlodi* and *yankora* is supposed to be a fixed fare, but the information in the transactions has made most of the payment to be negotiated.

Livestock raising is an important area of activity in Nigeria, but it is subject to some major constraints. Available pasture land is receding quite significantly as cities and farming expands. Access to animal husbandry inputs seems insufficient and technical support for animal health inadequate. Cattle are raised essentially in the Sudan-Sahel region of the northern states, where agro-pastoral activities generally involve seasonal and cross-border migration so as to take advantage of Sahel pastures in the rainy season. Higher demand for livestock products is due not only to the high rate of urbanization (60% of Nigerians are city dwellers), but above all to consumers' greater purchasing power and the emergence of a new middle class. Furthermore, this trade giant account for nearly 60% of international trade in this region. At the same time, more and more consumers want healthier meat from regulated slaughterhouses. Some industrial meat companies are now segmenting the market, selling frozen meat packaged in individual portions. Fast-food restaurants suited to this new type of consumer are also developing rapidly. Some instances of value chain integration are also being seen as the sector evolves, with a few companies processing meat in their own slaughterhouses supplied by their own networks of producers. Although this last segment is growing, it still accounts for less than 10% of the overall meat product market.

Despite these emerging dynamics, many people still do not have access to Sahel beef, which is deemed to be too expensive by less-well-off segments of the population. Thus in relation to the total population, meat consumption in Nigeria is below the regional average (2kg per person and per year in Nigeria compared to 8kg per person per year in ECOWAS).

Many specific professions, with real knowhow, are mobilized throughout the value chain, usually informally: stock breeders, buyers, market intermediaries, drovers, cross-border handlers, truck haulers, herders who fatten animals for

market in vicinity of final markets (Lagos) butchers, retailers, rotisseurs, in Lagos, activities specialized in recovering organs, bones and hides have gradually come concentrated in many neighborhoods that are close to slaughterhouses. The objectives of the study were to identify the socio-economic characteristics of the respondents involved in the study, determine the marketing performance in beef and broiler markets, determine the factors affecting beef and broiler marketing performance and identify the problems militating against beef and broiler marketers in the study area.

Materials and Methods

This study was carried out on selected markets Bodija market and Gbaremu market in Ibadan North Local Government Area of Oyo State. Ibadan, the capital of Oyo State is situated in the South western part of Nigeria. It is bounded on the south by Ogun, on the north by Kwara State, on the west by the Republic of Benin and on the east by Osun State. Located between altitude 7° and 9° of the equator and longitude 2°E and 5°E on the Greenwich meridian. Ibadan is 228m above sea level and has a rainfall of average distribution of about 1250mm and 1800mm. Ibadan is blessed with two seasons: the dry season season which begins from November to April and the wet season, from April to October. It also has a temperature that ranges between 27°C and 32°C, with a relative humidity of about 25% to 90%. (Microsoft Encarta, 2009, Okon and Babalola 2005, Alabi and Ibiyemi, 2000). Data were collected from the respondents with the use of questionnaire and by interviewing the respondents individually. Primary, data covered the procurement price of different sizes of beef and broiler chicken and the cost of factors involved in the performance of all marketing functions. It also covered the factors affecting the marketing of beef and broiler chicken and problems militating against the demand for beef and broiler chicken in the study area. Two markets, Bodija and Gbaremu markets were purposely selected in Ibadan North Local Government area of Oyo State. This is because the markets are known as beef and broiler chicken market. One hundred (100) questionnaires each for beef and broilers chicken was designed and distributed randomly among the beef and broiler sellers in two markets respectively. Analytical tools used were Descriptive analysis and Regression analysis.

Results and Discussion

Table 1 shows the socio demographic distribution of sampled respondents. It shows that 60 questionnaires and 140 questionnaires were administered in Gbaremu and Bodija market respectively in which 56 and 138 were recovered. The result also shows that 106 respondents, representing 54.6% were males while 88 respondents representing 45.4% were females. This implies that there are more males involved in beef and broiler marketing in the target markets. The result also shows that 60 respondents representing 30.9 were within the age bracket of 31-40 (62.9%) while 11 respondents (5.7%) were aged between 41 and 50 years. In term of marital status, 45% were single, 73.2% were married while 3.6% were divorced. This shows that majority of the respondents in the target population were married. It also shows that 15.5% of the respondents had no formal education, 43.3% completed primary education, 39.2% had secondary school certificate while 2.1% of the respondents acquired tertiary education. This means that a good number of beef and broiler marketers in the study area were completed basic education of at least nine years. The implication is that the ability to read and write could enable them to easily account for their transactions, adopt innovations and seek for market information which could lead to more efficient marketing activities.

From Table 2, 77.3% of the respondents belonged to the beef and broiler association, 22.7% did not. The table shows that 17.5% of the respondents had between 1 and 5 years experience (less than 5), 52.1% between 6 and 10 years, 25.3% between 11 and 15 years and only 5.1% between 16 and 20 years. This shows that the year of experience of respondents may likely determine the level at which they operate in the market. Since the marketing efficiency of both beef and broiler is greater than one (>1), it means that the business is profitable i.e. for every one naira invested, the gain of 0.11825 and 0.09452 respectively is realized (Table 3). That means they can still remain in the market even though supernatural profit is very difficult due to competitions and the fear and costs of keeping left over. Table 4 shows that the cost price and the money incurred on labour had a positive influence on the total sales of beef. Other variables in the model exerted no significant influence on the sale of beef. The R^2 value of 0.932 implies that about 93% of the change in the dependent variable is explained by the independent variables, which shows that the model has a good fit.

Table 5 shows that only the cost price had a significant influence on the total sales of broiler chicken. Other variables in the model exerted no significant influence on the sale of broiler chicken. This is not unconnected with the fact that broilers are mostly sold live and no labour cost is incurred on the dressing of carcass. The broiler model also had a good fit with an R^2 value of 0.844. Of particular surprise to the results is the coefficients of transport cost and years of experience that were found to be insignificant in the two models. Though, in most cases, the marketers do come together to hire a truck that will convey their goods to the markets together and this greatly reduce the cost incurred on transport. Also, as observed on the field by the researcher, most of the experienced butchers and marketers do have one or two apprentices who assist them with the sales and that is true particularly to the beef marketing and this shows that years of experience may not matter too seriously in their marketing.

Conclusion and Recommendations

Based on the findings, cattle for slaughter in Ibadan come from the North while broiler are from government and private farms within the state, especially from Oyo North. The two markets selected are known for this trade (Beef and Broiler marketing), most especially the Bodija market because of its organized set up. The performance of the beef market was traced from cattle purchasing through beef wholesales to the retail outlets while broiler was traced from poultry producer to the retailer which is the main target and to the final consumer mostly. The result shows that cost price was the major determinant of the selling price. It was found that men were involved in the beef marketing in the selected study market places while women were found to dominate in the marketing of broiler in the study area. The result also shows that profits of the marketers absolutely depend on the cost incurred, like transportation, labour, storage etc. The importance of these two products cannot be overemphasized in the provision of job for the people living around the study area thereby reducing the level of crime in our society. To facilitate a better performance of beef and broiler marketing in the study area and beyond, marketers should be provided with low-interest rate loans to boost or enhance their business, since transfer costs are important aspect of the marketing costs, more slaughter slabs should be built. This will reduce the cost of transporting meat; thereby increasing profits, reduce the price of beef in the market. Likewise, poultry farmers should be assisted with subsidy on the feeds and drugs they use in order to reduce their overhead cost, increase their production and profits. Research institutes should also be encouraged to breed genetically early maturing and disease resistance strains of beef cattle and broiler poultry in order to enhance regular meat supply at affordable prices and a definite policy should be made that will favour producers of cattle and broiler production. Government could also help in increasing the subsidy on petroleum products so as to reduce the cost of transportation and eventually reduce the price at which retailers sell to the final consumers. This will go a long way in increasing consumption of beef and broiler which would lead to a healthy population.

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Tables

Table 1: Socio-demographic distribution of respondents

Variable	Frequency	Percentage
Market		
Gbaremu	56	28.9
Bodija	138	17.1
Total	194	100.0
Age		
21-30	60	30.9
31-40	122	62.9
41-50	12	6.2
Total	194	100.0
Marital status		
Single	45	23.2
Married	142	73.2
Divorced	7	3.6
Total	194	100.0
Education		
No formal education	30	15.5
Primary six certificate	84	43.3
Secondary	76	39.2
Tertiary	4	2.1
Total	194	100.0

Source: Field survey (2013)

Table 2: Market conduct of beef and broiler seller

Variable	Frequency	Percentage
membership of association		
Yes	150	77.3
No	44	22.7
Total	194	100.0
Experience (year)		
Less than 5	34	17.5
6-10	101	52.1
11-15	49	25.3
16-20	10	5.1
Total	194	100.0

Source: Field survey (2013)

Table 3: Marketing margin and marketing

Variable	Beef	Broiler
Total variable cost	126,546.12	122,600.00
Total revenue	141,510.20	134,188.00
Market margin	14,964.08	11,588
Marketing efficiency	1.11825	1.09452

Field Survey 2013

Table 4: Regression Result for beef Model

Model	Coefficient	Standard error	T- Values	Significance
Constant	4166,654	1331.553	3.129	0.002 ^{NS}
Age	-182.858	321.205	-0.569	
Education	88.858	204.849	0.434	0.571 ^{NS}
Years of Experience	-491.485	203.786	-2.412	
	-0.619	1.206	-0.514	0.665 ^{NS}
	0.986	0.030	32.900	
	5.071	0.872	5.818	0.018 ^{NS}
				0.609 ^{NS}
Cost of Transportation (#)				
Cost price (#)				0.000*
Labour (#)				0.000*

$R^2 = .0.932.$

Table 5: Regression result for broiler model

Model	Coefficient	Standard Error	T-Value	Significance
Constant	288.828	96.526	2.992	0.004 ^{NS}
Age	11.438	23.130	0.557	0.579 ^{NS}
Marital Status	-7,795	15.716	-0.337	0.737 ^{NS}
Education	17.369	6.719	1.105	0.272 ^{NS}
Years of experience	11.908	1.144	1.772	0.080 ^{NS}
Cost of Transportation (#)	0.048	0.048	0.042	0.967 ^{NS}
Cost price(#)				
Labour(#)	0.065	0.123	2.004	0.000*
	-0.106		-0.863	0.391 ^{NS}

$R^2 = 0.844$