

Demographic analysis of gum Arabic marketers in Kano State, Nigeria

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Abstract



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The study analyzed price movement in the marketing of gum Arabic in Kano State Nigeria, with the aim of assessing how price flow from the various markets in the studied areas. The specific objectives were to examine the nature of price movement between markets in the study areas, evaluate the cost and returns on gum Arabic marketing during peak and lean seasons as well as to examine the possible constraints in the marketing of gum Arabic among the respondents. A two-stage sampling procedure involving both random and purposive sampling were used to select 240 respondents using questionnaire. Secondary data on prices were sourced from Rubber Research Institute of Nigeria, (Gashua sub-station) and the States' Agricultural Development Programme. Data obtained were analysed using descriptive statistics, marketing margin, correlation and profitability analysis. Findings of the study showed a mean age of 46 years, 79.8% were married, 41.8% had no formal education while 58.2% were literate with a mean marketing experience of 20 years. The marketing of gum Arabic was dominated by men in the study area. Cost and return analysis showed a net return of ₦291.99 and ₦378.16 for peak and lean seasons per kg of gum Arabic respectively. The results also show a high level of correlation between the prices in central market and other markets in Kano. The major constraints encountered by gum Arabic marketers were inadequate fund, high cost of transportation, unpredictable prices, adulteration of products and poor Government support. The study thus recommended that both farmers and marketers of gum Arabic should form an association in order to have a common front that will enable them access loans from government and even establish industries for better method of processing of gum that will encourage international buyers.

Keywords: Gum Arabic, marketing, Kano

Introduction

Gum Arabic (Acacia species) is a perennial tree found growing wild in large commercial quantity in the Northern parts of Nigeria. However when cultivated, it takes about five years to mature (Rubber Research Institute of Nigeria, 2011). At maturity, the tree when struck or pierced with sharp metal object (like knife),

oozes out a whitish, sticky, sparkling substance. The raw gum commands high commercial value both local and international. It is also called and commonly known

as gum acacia. It is called gum Arabic because the first traders on the gum exudates were the Arabs (Wyk and Erick, 2005; FAO, 1997). Its gum is the economic livelihood of some African countries such as Sudan and Kenya. Gum Arabic is mainly produced from two Acacia

species, namely *Acacia senegal* that produces hard gum which is of a higher quality (grade 1) and *Acacia sayel* that produces friable gum which is of lower quality (Grade 2) (ACACIA GUM, 2005).

Acacia trees are drought tolerant and grow abundantly in about 11 states of Northern Nigeria of which Kano State is one. The high demand for the product necessitated the Nigerian Government's interest for the development of gum Arabic, especially the Grade 1 and 2 (Giroh, Moses, and Umar, 2007).

Gum Arabic is a unique product as the consumers do not have direct access to the raw product except after it has been processed (Agbonkpolor, 2015). It has a wide range of uses; hence the actual marketers of the product (tappers and collectors) do not have proper market intelligence for their produce due to the fact that they market more of their gum at farm gate. This paper seeks to find out the main reasons why collectors and tappers cannot make as much profit as the other agencies in the marketing chain.

Different players along the market chain who include collectors, buyers, agents and exporters stand to benefit from the commodity if they are more organized and if the business is more developed (Chikamai, 2001). This work will be a useful document to policy makers, potential investors and marketers.

The study therefore was to carry out an analysis of price variation in the marketing of gum Arabic in Kano State of Nigeria, while the specific objectives were to: describe the socio-economic characteristics of the gum Arabic marketers in the study area, identify the functions performed by marketers of gum Arabic in the study area and to identify the constraints facing gum Arabic marketers in the study area.

Research Methodology

The study was carried out in Kano state, Nigeria. Kano state was formed on the 28th of May, 1967 from the Northern region. The capital is Kano. Kano State has an estimated population of 9.3million (NPC, 2006). It is made up of 44 Local Government Areas and lies within the geographical coordinates of 11°30'North, 8° 30'East, with a land mass of 20,131km².

Geographically, Kano State borders Katsina to the North-West, Jigawa to the North-East, Bauchi to the South-East and Kaduna to the South-West (Ibrahim, 2003). Kano is the most populous state in Nigeria. Industrially, it is the second largest after Lagos in Nigeria with textiles, tanning, cosmetics, plastics, pharmaceuticals, and enamel industries.

Type and Sources of Data

The data used in this study were obtained from both primary and secondary sources. The primary data were collected from a cross-sectional survey of selected markets in Kano State through the use of questionnaire, which were used to gather information from marketers of gum Arabic. The socio-economic characteristics examined were age, sex, marital status, level of education, household size and marketing experience of the marketers which were used to address the

objectives of the study while secondary data on prices were sourced from Rubber Research Institute of Nigeria (2011), Gum Arabic Sub-station, Gashua, Yobe State respectively.

Sampling Technique

A two stage sampling procedure was used in selecting respondents for the study. Stage one involved the purposive selection of six markets in the study area. These were Kurmi, Kura, Danbata, Dawakin Tofa, Takai and Sabon-Gari based on the fact that they were the major gum Arabic marketing areas. The next stage involved the random sampling of 40 gum Arabic marketers from each of the selected markets to be interviewed for the study.

Analytical Technique

Data collected were analyzed using descriptive statistics and inferential statistics. The descriptive statistics include frequency counts, percentages and mean scores. The specific objectives were analyzed as follows

Objective 1: This objective was achieved using descriptive statistics such as frequency counts, mean values and percentages.

Objective 2: This objective was achieved using market margin

Marketing Margin (MM) is given as:

$$MM = \text{Selling Price} - \text{Purchase Price} \dots\dots\dots (1) \text{ (Adegeye and Dittoh, 2015).}$$

Objective 3: The constraints in gum Arabic marketing were examined using the results obtained from a five point Likert scale, which employs an ordinal level of measurement. The responses to various constraints were scored in a way that the response would indicate the most serious constraint to be giving the highest score (i.e 5). As a point scale the responses will be grouped into five as shown below;

Very Serious = 5; Serious = 4; Moderately Serious = 3; Least Serious = 2; Not Serious = 1.

The method of examining constraints is important because it tells exactly those constraints that are of least importance and those of major importance. A score above the mean is considered very serious while that below the mean is considered less serious.

Results and Discussion

Socio- Economic Characteristics of Respondents

The socio-economic characteristics of gum Arabic marketers in the study area are presented in Tables 1 – 3.

Age: The results show that in all the markets sampled for this study, majority of the marketers were between 40-49 years, (37.1%). This indicates that gum Arabic marketing in the study areas were dominated by middle age people (Table 1). The reason may be due to the laborious nature of the processes involved in gum Arabic marketing such as moving from market to market searching for the produce, careful sorting according to grades, shade drying of the produce and bagging. The youths usually don't have the patience to undergo these

processes, which agrees with the findings of Adigun, Awoyemi and Omonona (2011) who stated that older/middle-aged people usually have higher ability of patience, and patience in business influences higher gains for the entrepreneur. The result infers that the middle aged people are willing to bear the possible risk in business, this is also in line with the findings of Giroh, Moses and Umar, (2010) who reported that middle aged people have relatively higher degree of risk bearing than the young people in agricultural marketing.

Table 1: Age distribution of respondents

Age(years)	frequency	percentage
< 29	21	9.9
30-39	54	25.4
40-49	79	37.1
50-59	53	24.9
>60	6	2.8
Total	213	100

Source: Field survey, 2016, Mean = 43.7

Level of Education: Results from the pooled data showed that 41.8% of the respondents had no formal education, 26.3% had primary education, while 24.4% had secondary education (Table 2). The study further revealed that the level of education was high, which

implies that literacy is essential in gum Arabic marketing as 58.2% were literate. These also suggest that with the high literacy level, the marketers could adopt improved method of marketing.

Table 2: Educational distribution of respondents

Educational level	Frequency	Percentage
Primary	56	26.3
Secondary	52	24.4
Tertiary	16	7.5
No formal edu	89	41.8
Total	213	100

Source: Field survey, 2016,

Marketing experience: The results from the pooled data showed that marketers with years of experience in the marketing of gum Arabic between 11-20 years dominated the market by 46.9%, 30.0% fell between 21-30 years of marketing experience, while 18.3% fell below 10 years of marketing experience (Table 3). This suggests that the marketers are experienced in their

business as stated by Wood (2008) in his study on measuring experience that the greater impacts of marketing experience are gained through experiences. This is due to the fact that experience creates behavioural confidence in the business and increased buyer-seller engagement and strong relationship.

Table 3: Marketing experience of respondents

Years of exp	Frequency	Percentage
< 10	39	18.3
11-20	100	46.9
21-30	64	30.0
>30	10	4.7
Total	213	100

Marketing functions performed by marketers in Kano state

Figure 1 presents the marketing channel for gum Arabic in Kano State, Nigeria, wherein the various marketing agencies have been identified. The various functions performed by marketing agencies include the following:

1. **Tappers:** Their function in the marketing of gum Arabic includes tapping of gum from acacia trees either from the wild or from their own plantations. They collect the tapped gum and also transport it to farm gate where they sell to the collectors. The study revealed that 65% of these tappers own their plantations. They are sometimes at an advantage as they sell directly to the wholesalers.
2. **Collectors:** Their functions include collection of gums from various collection points, assembling, sorting, grading, packaging and transportation of the product. The study revealed that 37% of these collectors are also involved in tapping of gum. They have good knowledge of the product and are able to differentiate the grades on species basis
3. **Local agents/marketers:** They have good knowledge of gum quality. Their functions include cleaning, sorting, grading, packaging and transportation of gum. From the study, it was revealed that these local marketers take commission on every purchase made before

delivering the commodity to the wholesalers. These findings agree with the work of Haliru and Ibitoye (2014) who stated that these local agents make more profit than the tappers/collectors.

4. **Wholesalers:** Their functions include the final grading and packaging to the required standards and weights. They buy in bulk, store the products and transport them for sale to the retailers. From the study, it was revealed that these are businessmen who use agents to purchase the products on their behalf for a commission. They also maintain close contacts with local processors, for example Dansa foods. This finding is in line with that of Wang (2012) who stated that these middlemen are the reason why cost of harvested products are high due to their demand for more commission
5. **Retailers:** They purchase gum Arabic from different wholesalers, buy in bits, package the products and sometimes help to finance production. Retailers prepare the products in the form in which the consumers want them. They then resell to petty marketers who buy in small quantities for local consumption, e.g the Mallams (quranic Teachers) and the Almajiris (quranic students) for making local ink, used for writing quranic verses. Gum Arabic is a unique product just like rubber that customers do not buy directly from the producers as the product needs to be processed (Agbonkpolor, 2015).

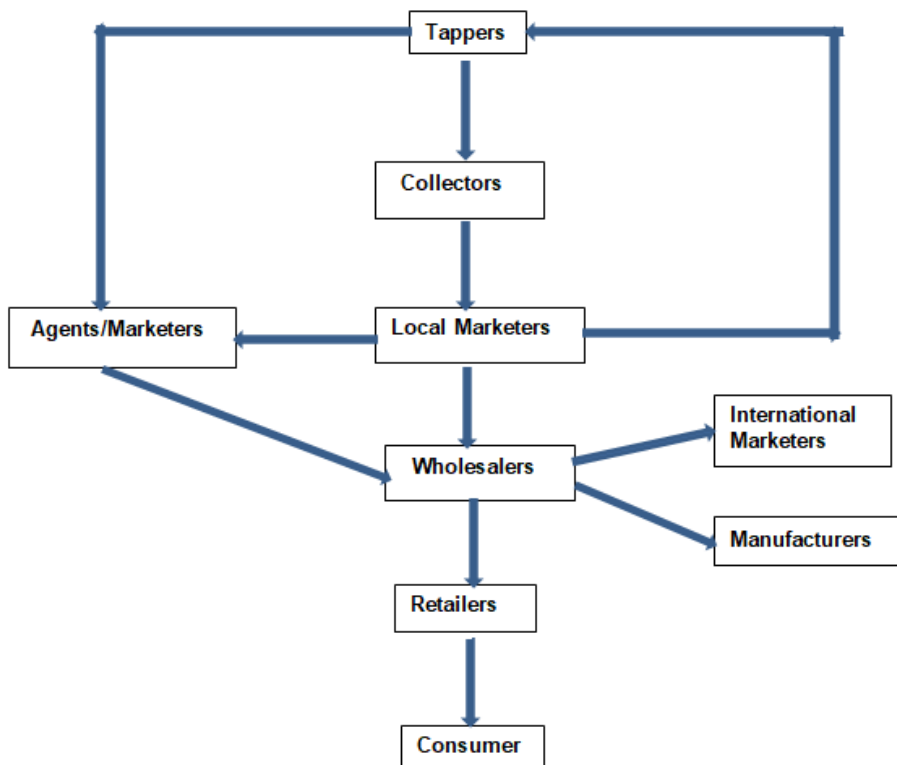


Figure 1: Gum Arabic marketing channels in Kano State, Nigeria
 Source: Computation from Field Survey, 2016

Constraints experienced by gum Arabic marketers in the study area

Table 4 presents some of the constraints that were identified by the marketers of gum Arabic in the study area. They included inadequate funds, high cost of transportation, unpredictable prices, adulteration of products, and poor government support. Others that do not really pose major constraints for the marketers were high tax, lack of buyers, poor price, lack of enough products, bad roads and too much competition.

Kurmi Market: The distribution of respondents according to constraints with regard to inadequate fund in the study area pointed out a mean value of 4.59, which depicts a serious challenge to the marketers. Lack of adequate funds and easy access to credit facilities can result in low investment opportunities. High cost of transportation had a mean value of 4.57, which is a serious constraint as high transport cost can affect the quantity of produce bought and brought to the market. This agrees with the observation of Zaknayiba et al (2014) who reported that transportation was a major challenge encountered in marketing of agricultural products. Unpredictable prices had a mean value of 3.02, which is moderately serious as prices in this market are determined by forces of demand and supply or by the union. Adulteration of the product pointed out a mean value of 4.39; this is a serious constraint as most marketers find it difficult to meet up with the approved standard quality control due to the adulteration of products. This agrees with Ojiekpon et al (2015) who reported that Nigerian gum Arabic is losing its quality in the international market due to poor quality control. Poor Government support had a mean value of 4.06. This points to the fact that Government support in agriculture has not been steady due to concentration in the oil sector.

Kura market: From Table 4, inadequate funds accounted for a mean value of 4.81, which is a serious constraints as most of these marketers had no education, they source their capital input from personal savings, local borrowing and co-operative societies. High cost of transportation pointed out a mean value of 3.52, which is moderately serious as most of the products marketed here are brought from nearby plantations. Unpredictable prices had a mean value of 3.56, which is a moderately serious constraint. Prices are determined by quantity of gum Arabic supplied to the market. Adulteration of product had a mean value of 3.55 which is also moderately serious. Poor governmental support accounted for 5.00, which is very serious in this market.

Danbatta market: Table 4 shows that the distribution of respondents according to inadequate funds had a mean value of 4.63, a serious challenge to gum Arabic

marketers in the study area which points to the fact that agricultural credit plays an important role in improving marketing and productivity in developing countries like Nigeria. High cost of transportation implied a mean value of 4.62, which is a serious challenge due to poor road network in the study area. High cost of transportation to the market and urban centers reduce the marketers' incentive to increase investment as transport removed substantial amount of profit that could have accrued to them. Unpredictable prices had a mean value of 3.50, which is moderately serious. Adulteration of product implied a mean value of 4.53, which is serious due to the fact that the grade 1 gum Arabic gets mixed up with other Acacia species. Poor Government support had a mean value of 4.51, which is serious as the marketers claimed not to have any support from the Government.

Dawakin Tofa Market: The distribution of respondents according to constraints of inadequate funds pointed to a mean value of 4.59 which is a serious challenge in the marketing of gum Arabic in the study area. Marketers shield away from obtaining loans from commercial banks due to lack of collateral. There is a high level of illiteracy among the marketers which affects them negatively (Olatokun *et al.*, 2012). The high cost of transportation had a mean value of 4.57 which is a serious constraint in the study area due to poorly tarred roads. Unpredictable prices have a mean value of 3.55 which is moderately serious. Adulteration of products implied a mean value of 3.50 which is moderately serious. Poor Government support had a mean value of 5.00. This is a very serious constraint as the marketers claimed not to feel Government impact in their trade.

Takai Market: The data presented in table 4 showed that inadequate funds had a mean value of 4.46; this is a serious constraint as the marketers source of capital is from their personal savings. High cost of transportation had a mean value of 4.51, which is a serious constraint due to the rugged earth roads that were spread all over the study area. Unpredictable prices pointed out 3.02. Adulteration of products had a mean value of 4.41 and Poor Government support, 4.41 are both serious constraints.

Sabon-Gari: The data presented in table 4 implied a mean value of 4.59 for inadequate funds which is a serious constraint to marketers in the study area. Lack of adequate funds results in low business investment. High cost of transportation had a mean value of 4.59, indicating a serious constraints as high transportation cost plays a crucial role the cost of products in the market. Unpredictable prices had a mean value of 4.42, implies a serious constraint. Adulteration of products points out a mean value of 4.51 indicates a serious constraint due to increasing level of grade 1 gum Arabic adulteration. Poor Government support had a mean value of 4.00, which is a serious constraint.

Table 4: Constraints in gum Arabic marketing

Constraints	Mean					
	Kurmi	Kura	Danbatta	Dawakin	Takai	Sabon-Gari
Inadequate fund	4.59	4.81	4.63	4.59	4.46	4.59
High cost of transportation	4.57	3.52	4.62	4.57	4.51	4.59
Unpredictable prices	3.02	3.56	3.50	3.55	3.02	4.42
Adulteration of products	4.39	3.55	4.53	3.50	4.41	4.51
Poor Government support	4.06	5.00	4.51	5.00	4.41	4.00

Source: Field survey, 2016,

Summary and Conclusion

The study was conducted in Kano state, Nigeria. The specific objectives were to describe the socio economic characteristics of the gum Arabic market chain, identify functions performed by marketers of gum Arabic and constraints facing the marketers of gum Arabic in the study area.

Data were collected from both primary and secondary sources. The primary data for this study were collected from 213 respondents which included 36 respondents from Kurmi market, 37 from Kura market, 31 from Danbatta market, 33 from Dawakin Tofa market, 40 from Takai market and 36 respondents from Sabon-gari market. The secondary data were sourced from Rubber Research Institute of Nigeria, (Gashua sub-station, Yobe State), Yobe State official diary, ministry of agriculture and agricultural journals.

The descriptive analysis shows that the mean age of the respondents was between 40-46 years in each market. 79.8% of the respondents were married, 62.4% were educated and they had large families, which is probably due to their polygamous nature. The analysis of functions performed by the marketing agents showed that the collectors buy gum Arabic from the tappers at farm-gate price, sell to local marketers who then re-sell to agents from major cities and wholesalers. The wholesalers sell to local manufacturers, international marketers and retailers. The retailers resell to petty manufacturers and finally to consumers. They all sell with margins at various levels along the channel.

The study established that gum Arabic marketing is profitable, but the marketers claim to lack Government support in their business. The study revealed that the tappers and collectors do not have proper market intelligence for the product, though the retailers earn more profit in the market chain. The gum Arabic marketing system implied that it is a unique market lacks sharp practices as consumers do not buy the product directly from the producer.

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