ASSESSMENT OF THE TRANSPORTATION SYSTEM AT DAWANAU INTERNATIONAL GRAIN MARKET KANO, NIGERIA

Said Ali SAID
saidalius@gmail.com, 07060698932
Nigerian Institute of Transport Technology (NITT), Zaria.
Transport School PMB 1148, Zaria, Nigeria

ABSTRACT

The success of any social and economic activity is established on the basis of the Transportation system it employs which forms one of the most essential aspects of Supply Chain and Logistics. All markets and the process of distribution of agro-based commodities necessary for the survival of any community are dependent on this aspect of supply chain, the study focused on the “Assessment of Transportation System at Dawanau International Grain Market Kano, Nigeria”. Two (2) research objectives were raised to guide the study which includes, identify the mode of Transportation employed in Dawanau International Grain Market Kano and highlight the challenges facing Transportation of grains in the Dawanau International Grain Market Kano. Two (2) research questions were asked to guide the study and they were in line with the stated objectives of the study. Descriptive survey research design was used for the study. Questionnaire was used to collect data for the study and descriptive statistics of frequency counts, simple percentage and graphs were used to analyze the bio-data of the respondents, while mean was used to answer the research questions. Findings revealed that mode of transportation employed in Dawanau International Grain Market, Kano include road (93.2%), wheel borrow (3.7%) and human portage (3.1%). The study recommended that there is need to revamp train services to reduce the dependence on the Roads transportation and for better haulage of grains and to Optimize transportation logistics.

Keywords: Transportation System, Grain, Logistics; Dawanau International grain Market.

1.0 Introduction

Transportation is a key factor in all aspect of development and there is hardly any sector of development that does not require the services of transportation. It plays a key role in connecting areas of production and areas of consumption. Transport is of paramount importance for the success of any organization and caters to customer needs bearing great impact on profitability and success of the enterprise. These important aspects of logistics management is an essential ingredients involved in the movement of goods from the point of origin to the point of consumption in any society. For many years, transportation and agriculture have always co-existed because the value of any agricultural products can be realized only when commodities are transported to the buyer in good condition. Road transport which is the most relied on for transportation of agricultural goods has been in deplorable state and grossly inadequate. In fact, 90% of the rural roads which was estimated at between 130,000
and 160,600Km nationwide were in poor condition (Adamu, 2017). The state of rural transport services has the potential to influence the marketing of agricultural produce in terms of the cost of commodity and the purchasing power of the consumers among others. Grain is one of the important agricultural produce. Transportation of grains is the process of moving grains from the farm to a storage within a Market or other points of distribution. Grains are typically transported by trucks or railroad in some cases, but in the case of Dawanau International Grain Market, road transportation is mainly the means by which food produced at farm sites in the rural areas is moved to the market. Transport plays an important role in the political, economic and social development of any society, both in rural or urban societies (Aderamo & Magaji, 2010).

In agrarian communities of developing economies (sub Saharan Africa) like that of Nigeria, Siziba et al. (2011) clearly noted that a robust transportation system serves as determinant of smallholder participation in cereal marketing, and therefore, an effective linkage between the producers of agricultural commodities and markets, and also a source of agricultural resources like inputs to the farmers. However, Adamopoulos (2011) observed that there are huge disparities in transportation infrastructure and technology across nations and these differences are correlated systematically with the level of development. In addition, Tunde and Adeniyi (2012) observed that it serves as a crucial factor in improving agricultural productivity, enhances quality of life of the people, facilitates interaction among geographical and economic regions; and opened up new areas to economic focus. However, Afolabi, Ademiluyi and Oyetubi (2016) noted that in spite of the immense benefits of transportation to emerging developing communities in the third world countries, the deplorable conditions or nature of this important infrastructure as vehicle of development in rural set-up is a major problem to contend with. As Ikejiofor and Ali (2014) affirmed that majority (94%) of the rural agricultural merchants mainly used roads and employed variety of vehicles to convey farm products to selling points, Abubakar (2015) reported that maintenance of a conducive passable roads invariably led to attainment of minimum amount of time and cost at various levels. Achieving this desirable feat in the current trend of calls for development by the general populace of Nigeria, demands the huge involvement of all the three tiers of the authorities (Local, State and Federal Governments) in massive opening-up of rural roads across the length and breadth of the country.

1.2 Statement of the Research Problem
Transport system efficiency is critical to agricultural marketing and inefficiency in transport is what leads to inadequate supply and high cost of food item. Dawanau international Grain market is established as one of the largest Grains market in West Africa. It is essential for the distribution of food among local consumers and across the globe. As a market, transportation and delivery of Agricultural produce forms the backbone of the supply chain management in the Dawanau market upon which success or failure highly depends on. Unfortunately, it was observed by the researcher that transportation processes engaged in the market are below standard and conveyance of agricultural products from various parts of the country to the grains market has been poor. These observable failures have led to inefficient delivery of raw materials timely, cheaply and safely preventing
formidable and sound economic performance of the market.

Some of the identified problems include reliance on a single modal of transportation, traffic congestion, environmental damage, accidents, armed banditry and extortion by authority agent and thugs among others. A good transportation system allow customers satisfaction and control the differences between the incoming flow of goods (grain received from supplies) and the outgoing flow of goods (grains being sold to customers). Based on the above exposition, this research study assessed the transportation system in Dawanau International Grain Market Kano.

2.0 Literature Review

The study reviewed the following concepts.

2.1 Concept of Transportation

Transportation basically involve the movement or conveyance of goods, humans and services from one point to another for the purpose of fulfillment of physical, social or economic need. The transportation systems broadly include waterways, highways and airways. It is the single most important aspect of logistics activities in any business organization. The physical movement of finished product or goods is pivotal in fulfilling the demand of the customers and satisfying their needs. However, the mode adopted by any group of people in an area would largely depend upon the major economic activity of a community, the geographical terrain of a locality, the level of financial capacity of the individuals as drivers of economy in that particular sphere, and of course more importantly, the commitment of government in terms of infrastructural development in a given area. In agrarian communities of developing economies (sub-Saharan Africa) like that of Nigeria, Siziba et al. (2011) clearly noted that a robust transportation system serves as determinant of smallholder participation in cereal marketing, and therefore, an effective linkage between the producers of agricultural commodities and markets, and also a source of agricultural resources like inputs to the farmers.

However, Adamopoulos (2011) observed that there are huge disparities in transportation infrastructure and technology across nations and these differences are correlated systematically with the level of development. Be that as it may, the relevance of a reliable transport system in any farming community cannot be over emphasized. Tunde and Adeniyi (2012), Ijkejiofor and Ali (2014), Afolabi et al. (2016) and Gban (2017) all reported the essence of transportation in rural agrarian set-up as it plays an important role in the distribution of agricultural products, and immensely assisting in creating markets for agricultural produce and minimizing spoilage and wastage of these farm products. In addition, Tunde and Adeniyi (2012) observed that it serves as a crucial factor in improving agricultural productivity, enhances quality of life of the people, facilitates interaction among geographical and economic regions; and opened up new areas to economic focus.

Afolabi et al. (2016) noted that in spite of the immense benefits of transportation to emerging developing communities in the third world countries, the deplorable conditions or nature of this important infrastructure as vehicle of development in rural set-up is a major problem to contend with. As Ijkejiofor and Ali (2014) affirmed that majority (94%) of the rural agricultural merchants mainly used roads and employed variety of vehicles to convey farm products to selling points. Abubakar
(2015) reported that maintenance of a conducive passable roads invariably led to attainment of minimum amount of time and cost at various levels. Achieving this desirable feat in the current trend of calls for development by the general populace of Nigeria, demands the huge involvement of all the three tiers of the authorities (Local, State and Federal Governments) in massive opening-up of rural roads across the length and breadth of the country.

The road network in Nigeria accounts for over 90% of freight and passenger services (for inland transportation). With such a high percentage of goods transported by road, the importance of the road network to businesses cannot be over-emphasized. The Nigerian road network has an estimated length of 200,000km of which 18% is owned by the federal government, 16% owned by the state government and 66% (mostly earth roads) are owned by the local government. The federal roads constitute only 18% of the road network but carry over 70% of the vehicular traffic. Although the road network provides a broad national reach, the condition of the roads varies between good, fair and poor across the country the bad roads are among the major challenges of distribution. There has been a recent push to improve the road networks in Nigeria as the road infrastructure has seen decades of neglect. Only 15% of the total road network has been constructed in the last 55 years. The biggest issue hindering the continuous development of the road network is the abandonment of construction projects by contractors that were not adequately funded to complete projects. A steady flow of investment into the road infrastructure can significantly ease the distribution of goods, leading to a boost in economic development in the country.

2.2 Dawanau International Grain Market Kano

The Dawanau International grain market is one of the major single commodity markets in Kano metropolis. It is an international market and probably the largest grains market in West Africa that deals mainly with buying and selling of crops (Maigari, 2014). Dawanau Market serves as a major hub for grain distribution, attracting traders from different parts of Nigeria and neighboring countries. The market is renowned for its bustling atmosphere, with numerous vendors, buyers, and middlemen engaged in grain transactions. The market operates on a large scale, with grains being sold in bulk quantities to cater to both domestic and international demands, the market is a major outlet of export storing of staple food to other parts of Nigeria, West African countries such as Benin Republic, Cameroun, Central African Republic, Chad, Ghana, Libya, Mali. Niger Republic and faraway places like Dubai, India, China, Britain and America.

The market occupied a total area of 624,836m² (Maigari, 2013); accommodated over 9,000 stores, about 80 standard warehouses, and hundreds of ordinary warehouses own by individual marketers (Deenu, 2014). It is worth noting that specific details about the market, such as the number of warehouses or their current status and details of available transportation may vary over time. But personal observation by the researcher and information provided by the general overseers of the market i.e Dawanau Market Development Association (DMDA) has provided information on Transportation and Storage in the Market. Basically Road transportation in Dawanau market is characterized by the following detail:
1. **Suppliers and Farmers:** Grains are transported to Dawanau Market by suppliers and farmers from various regions. They typically use trucks, Lorries, pickups, or other suitable vehicles to transport the harvested grains. These vehicles are loaded with bags or bulk containers filled with grains such as wheat, sorghum, maize, or millet.

2. **Distance and Routes:** The transportation distances to Dawanau Market can vary depending on the origin of the grains. Suppliers may travel from nearby towns, villages, or farms within Kano State or other regions of Nigeria. They choose the most feasible routes based on factors such as road conditions, distance, and transportation costs.

3. **Market Access Roads:** Dawanau Market is located in Dawakin tofa Local Government Area of Kano. The market is typically accessed via well-connected roads that allow smooth movement of vehicles carrying grains. These roads are essential for the efficient transportation of grains to the market.

4. **Vehicle Loading and Unloading:** Upon arrival at the market, vehicles carrying grains are unloaded at designated areas. The grains are then transferred to storage facilities or directly to traders’ stalls for sale. Similarly, vehicles transporting purchased grains for buyers are loaded with the purchased quantity before departing from the market.

5. **Market Traffic and Congestion:** Dawanau Market is known for its bustling atmosphere and high trading activities. During peak periods, such as harvest seasons or when market demand is high, increased traffic and congestion can be expected around the market vicinity. This can impact the movement of vehicles and the overall transportation efficiency.

6. **Transportation Costs:** The cost of road transportation to Dawanau Market depends on various factors such as the distance travelled, the quantity of grains transported, fuel prices, and vehicle capacity. Suppliers and traders negotiate transportation costs based on these factors and prevailing market conditions.

Dawanu international grain market is organized in six different sections with each section holding specific grains or food market activity. Section A for Cowpeas, Soya Beans, Hibiscus, Sesame and Locust Beans, Section B for Cassava Chips and Flower, Groundnut, Bambara nuts and Local wheat. Section C is for Yam Tubers, Sugar cane and local chickens, Section D is for retailing for all kind of food items. While Section E is for Transport companies and agents, spare parts, Chili pepper and Section f is for Warehouses and Machineries (cleaning, loading and offloading). All these sections operate on daily basis. Adebayo (2016) reported that the market which today is the hub of grains and seeds trading across the world, was started by Alhaji Uba Ahmad in 1985 after he lost 40 shops of grains in a fire incident at the SabonGari market. But today the grain market is a daily hub for Business transactions worth billions of naira because of the influx of both local and international buyers to the market as asserted by the Chairman of the Dawanau Market Development association (DMDA).

2.3 **Research Questions**

Based on the research objectives, the following questions are raised to guide the study:

1. What are the modes of Transportation employed in the Dawanau International Grain Market Kano?
2. What are the challenges facing Transportation of grains in the Dawanau International Grain Market Kano?
2.4 Research Objectives

The following objectives are raised to guide the research study:

1. Identify the mode of Transportation employed in Dawanau International Grain Market Kano;
2. study the challenges facing Transportation of grains in the Dawanau International Grain Market Kano;

3.0 Methodology

This research study adopted a descriptive survey research design. This design is considered to facilitate extraction of data from different sources. According to Shehu and Ezenwegbu (2016), descriptive survey design portrays accurately the characteristics of a particular individual, situation or group and determine the frequency of a particular event. The type of data contained the information on mode transportation used in Dawanau International market Kano and means of transportation employed for the transportation of grain in the market. The primary and secondary sources of data were used. The primary source of data used by the researcher to obtained information for the research was questionnaire. The questionnaire contained relevant and well-structured questions aimed at eliciting responses that aid the understanding of the topic. The questionnaire has two parts. Part one is on socio-economic bio-data of the respondents. Part two was divided into two (2) sections designed to study the transportation of grains in Dawanau grains market Kano. The instrument was structured on a four points modified Likert rating scale with a response mode of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with the numerical values of 4, 3, 2 and 1 respectively. The respondents were requested to indicate by ticking (√) in the appropriate boxes, the responses applicable to the items. The secondary data include relevant literature such as journals, textbooks, conference proceedings, theses, dissertations and online publications amongst others used for the literature review.

The sample size used for the conduct of this study was three hundred and fifty-seven (357) respondents. The selection of 357 respondents was based on the recommendation of Researcher Advisors (2006) “Table for Selection of Sample Size”. The table suggested that for population of 5000 to 7,500 at 95% confidence level and 5% margin error, the sample size of 357 respondents could be used. Proportionate sampling technique was used to select the sample of Grain Traders, Transporters and Storage Owners used for the study. Also, purposive sampling technique was used to select the required number of respondents for the study. The Information from the questionnaire were collated and analyzed, using descriptive statistics of frequency counts and simple percentage to analyze the socio-economic bio-data of the respondents while mean was used to answer the research questions. However, a total of 209 copies of the questionnaire were distributed to the grain sellers/traders, but only 190 were returned. 85 copies of the questionnaire were distributed to the transporters but, 74 were retrieved. Also, 63 copies of the questionnaire were distributed to storage owners, but 57 copies were retrieved. Therefore, a total of 357 copies of the questionnaire were distributed but only 321 copies were returned. The analysis of the study was therefore, based on the data gathered from the above mentioned number of returned copies of questionnaire.
3.1 Study Area

The study area is Dawanau international grain market located almost in the Kano metropolitan area but in Dawakin Tofa local government area of Kano State (North-West Nigeria). The market occupied a total area of 624.836m\(^2\) (Maigari, 2013); and accommodated over 9,000 stores, it have about 80 standard warehouses, and hundreds of ordinary warehouses own by individual marketers (Deenu, 2014). The market occupies a 7km X 6km area, having over fifty thousand (50,000) members with more than ten thousand (10,000) stores which export an average of 9,200 metric tons (MT) of various grains and more.

Kano State lies between latitude 13\(^\circ\)N in the North and 110 \(\circ\) n in the south and longitude 80W in the West and 100E in the East. Kano State lies south of the Sahara Desert in the Sudanian Savanna region that stretches across the south of the Sahel. The city lies near where the Kano and Challawa rivers flowing from the southwest converge to form the Hadejia River, which eventually flows into Lake Chad to the East. Kano is 481 meters (1,578 feet) above sea level. Kano has a tropical savanna climate (Köppen Aw). The city has on average about 980 mm (38.6 in) of precipitation per year, the large majority of which falls from June through September. The vegetation of Kano State is the semi-arid savannah. The Sudan Savannah is sandwiched by the Sahel Savannah in the north and the Guinea Savannah in the south. The savannah has been described as the zone that provides opportunity for optimal human attainment. This is because it is rich in faunal and floral resources and suitable for both cereal agriculture and livestock rearing.
4.0 Results

4.1 Status of the Respondents

The status of the people in the market is often ascribed to their occupation in the market as traders, storage owners or transporters. Occupation of people most often determines their income levels which also have a further effect on choice of trade in the market. Figure 1 presents the status distribution of the respondents.

Figure 1 shows the distribution of the respondents by status. It indicates that 59.2% total respondents were Grain Traders; the Transporters were 23.1% of the total respondents, while 17.7% total respondents were Storage Owner. This shows that majority of the respondents were grain traders.

4.2 Gender of the Respondents

The purpose of this is to capture the gender distribution of the respondents included in the study such that views of both genders were captured. The essence of this finding is to try as much as possible to capture the views of both sexes regarding transportation and storage system at Dawanau International Grain Market Kano. The data collected on the gender distribution of the respondents were presented in Figure 2.
Data in Figure 2 shows the distribution of the respondents by gender. It reveals that male were the major respondents with 69.8% of the total population while female was approximately 30.2%. This shows that majority of the respondents were males. Therefore, the males were more than the females. The dominance of the males could not be surprising due to the fact that the society is patriarchal and the responsibility and decision of providing for the family lies solely on the males as head of households.

4.3 Marital Status of the Respondents

Marital status of the respondents is presented in Figure 3. This information will in the cause of analysis of data provide an insight into the nature of market mobility and consequently segregation between married, single, divorced and widowed respondents in the study area.
Figure 3 shows the distribution of the respondents by marital status. It reveals that 67.3% total respondents were married and the singles were 9.3% of the total respondents. Also, widows were 6.9% while 16.5% total respondents were divorced. This shows that majority of the respondents were married. This indicates that married men and women have the most captured views in the study.

Table 1: Duration of Stay in the Market

<table>
<thead>
<tr>
<th>Year</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>51</td>
<td>15.9</td>
</tr>
<tr>
<td>11-20</td>
<td>136</td>
<td>42.3</td>
</tr>
<tr>
<td>21-30</td>
<td>110</td>
<td>34.3</td>
</tr>
<tr>
<td>31 years and above</td>
<td>24</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>321</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Investigation into the duration of stay of respondents in respective of their activities in the market shown in Table 1 reveals that 7.5% of the respondents had spent over 31 years in the market, 34.3% stayed in the market between 21 – 30 years, approximately 42.3% were in the market between 11 – 20 years and 15.9% had stayed for less than 10 years in the market. This implies that the respondents had acquired some experience in the market since the majority had spent a reasonable number of years in the market.

4.4 Duration of Stay in the Market

Data on the duration of stay in the area is presented in Table 1. This helps the study to obtain grounded first-hand information on the study area pertaining to the growth, development and transformation of the market under study. Experience as they often say, is the best teacher.

4.5 Mode of Transportation Employed in Dawanau International Grain Market, Kano

Figure 4 shows the mode of transportation employed in Dawanau Grain International market, Kano.

Figure 4: Mode of Transportation Employed in Dawanau International Grain Market,
Kan
Figure 4 shows the distribution of mode of transportation employed in Dawanau International Grain Market, Kano. It indicates that 93.2% total respondents chose road. Also, wheel borrows were 3.7% while 3.1% total respondents chose human portage. This shows that majority of the respondents agree that road transportation is the mode of transportation mostly employed for the transportation of grain in Dawanau International Grain Market, Kano.

4.6 The most used Means of Road Transportation of Grain in Dawanau International Grain Market, Kano

Figure 5 shows the different means of transporting grain in Dawanau International grain market.

![Figure 5: Means of Road Transportation of Grain in Dawanau International Grain Market, Kano](image)

Figure 5 shows the responses of the respondents by means of road transportation mostly employed for the transportation of grain in Dawanau International Grain Market, Kano. It revealed that 36.4% of the total respondents choose trucks; the buses were 25.5% of the total respondents. Also, cars were 5.6% while 32.5% total respondents chose trailers. This shows that majority of the respondents agreed that trucks and trailers are the major means of road transportation mostly employed for the transportation of grain in Dawanau International Grain Market, Kano.

4.7 Challenges Facing Transportation of Grain in the Dawanau International Grain Market Kano

Table 2 shows some factors facing transportation of grain in the Dawanau International Grain Market Kano.
Table 2: Challenges Facing Transportation of Grain in the Dawanau International Grain Market Kano

<table>
<thead>
<tr>
<th>S/N</th>
<th>Item Statements</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High cost of transportation.</td>
<td>240</td>
<td>74.8</td>
<td>44</td>
<td>13.7</td>
<td>32</td>
</tr>
<tr>
<td>2</td>
<td>Inadequate transport facilities.</td>
<td>192</td>
<td>59.8</td>
<td>90</td>
<td>28.1</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>Poor road transport network.</td>
<td>241</td>
<td>75.1</td>
<td>21</td>
<td>6.5</td>
<td>48</td>
</tr>
<tr>
<td>4</td>
<td>Poor delivery schedules of grains in the market.</td>
<td>122</td>
<td>38.0</td>
<td>144</td>
<td>44.9</td>
<td>45</td>
</tr>
<tr>
<td>5</td>
<td>Government policy.</td>
<td>216</td>
<td>67.3</td>
<td>67</td>
<td>20.9</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>Unnecessary delay in loading and off-loading of grain from the trucks or trailers.</td>
<td>102</td>
<td>31.8</td>
<td>197</td>
<td>61.4</td>
<td>13</td>
</tr>
<tr>
<td>7</td>
<td>Bottleneck from the transport unions in the market.</td>
<td>96</td>
<td>29.9</td>
<td>185</td>
<td>57.6</td>
<td>35</td>
</tr>
</tbody>
</table>

Grand Mean 3.38

Table 2 shows the opinions of respondents on the challenges facing Transportation of grains in the Dawanau International Grain Market Kano. It revealed that item 1-7 were all accepted challenges facing transportation of grain in the Dawanau International Grain Market Kano. This was because; they had a mean score which are higher than the instrument score.

5.0 Findings and Discussion

The findings revealed that mode of transportation employed in Dawanau International Grain Market, Kano include road (93.2%), wheel borrows (3.7%) and human portage (3.1%). It also shows that means of road transportation mostly employed for the transportation of grain in Dawanau International Grain Market, Kano include trucks (36.4%); the buses (25.5%), cars (5.6%) and trailers (32.5%). The findings of the study revealed that respondents agreed with all the item statements on the challenges facing transportation of grains in the Dawanau International Grain Market Kano. This was because they had a response mean score greater than 2.50. These include high cost of transportation (3.62), inadequate transport facilities (3.42), poor road transport network (3.53), poor delivery schedules of grains in the market (3.18), government policy (3.53), unnecessary delay in loading and off-loading of grain from the trucks or trailers (3.22) and bottleneck from the transport unions in the market (3.16).

6.0 Recommendations

In line with the research findings and conclusion, the following recommendations were made:

1. There is need to revamp train services to reduce the dependence on the Roads transportation and for better haulage of grains and to optimize transportation logistics.
2. To reduce some of the challenges facing transportation of grains in the Dawanau International Grain Market, there is need to:
   a. Promotes Inter-model transportation system. Train services alone can solve
problems relating to high cost of transportation, poor delivery schedules of grains in the market;
b. enhance transportation infrastructure like road repairs, construction of new roads, and better signage can improve the road networks leading to and from Dawanau International Grains Market to ensure smooth and efficient transportation of grains;
c. to develop comprehensive transportation plan that minimizes delays, reduces transportation costs, and maximizes the utilization of vehicles for grain transportation will be effective in reducing problems in the market. This includes proper scheduling, route planning, and efficient loading and unloading procedures;
d. to establish better industrial harmony between the various Unions operating within the market and the Dawanau Market Development Authority (DMDA) to reduce delays resulting from Union activities.

7.0 Conclusion

Based on the findings of the study, it was concluded that road transportation is the mode of transportation mostly employed for the transportation of grain in Dawanau International Grain Market, Kano. Although, there are other modes of transportation system, there usage is not significant. The study also concluded that trucks and trailers were the major means of road transportation mostly employed for the transportation of grain in Dawanau International Grain Market, Kano. The study concluded that high cost of transportation, inadequate transport facilities, poor road transport network, poor delivery schedules of grains in the market, government policy, unnecessary delay in loading and off-loading of grain from the trucks or trailers and bottleneck from the transport unions in the market were the major challenges facing transportation of grains in the Dawanau International Grain Market Kano.

References


Gambo, B. (2016). Spatial product differentiation in specialized...
http://www.openscienceonline.com/journal/ajbem


