

Transportation and Physical Distribution Managements on Profitability of Livestock Dealers in Selected Livestock Markets in Ogun State, Nigeria

Dr. Onu C. A.*

Babcock University, Ilishan Remo, Ogun State, Nigeria

Dr. Akinlabi B. H.

Babcock University, Ilishan Remo, Ogun State, Nigeria

Dr. Kabuoh M. N.

Babcock University, Ilishan Remo, Ogun State, Nigeria

Odunmbaku A. A.

Moshood Abiola Polytechnic, Abeokuta, Ogun State, Nigeria

Abstract

Transportation and physical distribution are elements of logistics management which organizations realized that improvement in logistics would enable them to gain competitive advantage and achieved higher profitability around the world. Transportation of livestock (sheep, rams, cattle, goats) from the north to the south in Nigeria is very expensive and risky business among illiterate livestock dealers. Also, the livestock are kept standing, and some cases lying in the vehicles throughout the long journey of between 2-3 days with bad shape of most Nigerian roads which trucks and vehicles are prone to accidents. This study examined the effect of transportation and physical distribution management on profitability of livestock dealers in selected livestock markets in Ogun State, Nigeria. This study adopted survey research design. The population of the study comprised 1678 livestock dealers across four main divisions (Remo, Ijebu, Yewa, Egba) of Ogun State. The sample size estimated through raosoft sample size calculator was 407 selected through a multi-stage sampling technique. This sampling technique was used because livestock dealers are scattered across the four main divisions of Ogun State. A structured and adapted survey questionnaire was validated and used for collecting of data for the study. The Cronbach's alpha coefficients for the constructs, ranged from 0.782 to 0.838. The response rate was 79.7%. Data were analyzed using descriptive statistics (Partial Least Square Structural equation modeling). Findings revealed significant influence of transportation management activities on the profitability of livestock dealers in selected markets in Ogun State ($\beta=.495$, $t=11.814$, $p<0.05$). Physical distribution management had effect on profitability of livestock dealers in selected livestock markets in Ogun State ($\beta=.839$, $t=41.453$, $p<0.05$). The study concluded that logistics management has the opportunity to increase the profitability of livestock dealers and to be recognized for that contribution by implementing initiatives in the areas of transportation management activities and physical distribution management. It recommended a channel that enables faster distribution of livestock and at lower cost should be put in place. Also, it is necessary because physical distribution of livestock is essential for livestock dealers to realize their potential revenue and achieve customer satisfaction.

Keywords: Transportation management; Profitability; Physical distribution management.



CC BY: [Creative Commons Attribution License 4.0](https://creativecommons.org/licenses/by/4.0/)

1. Introduction

Transportation and physical distribution are among the components of logistics management which encompasses all business activities associated with the transfer of a product from the producers to the consumers (Kohls and Uhl, 2002). In the case of livestock such as sheep, goats, cattle and rams, they are mostly produced in the north and consume in the south. Therefore, the northern Nigeria depends on southern Nigeria for livestock markets while the southern Nigeria equally depends on the northern Nigeria for the supply of livestock for consumption. Transportation and physical distribution management are concerned with the movement of livestock from the pastoralists in the production locations in northern states of Plateau, Zamfara, Borno, Niger, Adamawa, Nassarawa, Kaduna, Yobe, Bauchi, Gombe, Jigawa, Taraba and Kastina states in Nigeria to other parts of the country. The livestock marketing process makes possible the delivery of sheep, goats, rams and cattle to the buyers in the form, place and time needed. This process of bringing the livestock from where they are surpluses (production/origin areas) to where they are shortages (consumption/sink markets) is known as arbitraging. This process needs to be fully understood to enhance the efficient working of livestock markets, which is vitally important in achieving sustainable and profitable agricultural commercialization in the livestock sub-sector in Nigeria (Mafimisebi, 2011; Mafimisibi, 2012).

According to the National Livestock Project Division (National Livestock Project Division, 1992), the supply of livestock and its products have witnessed a decline while the demand has been increasing with the result being a

shortfall in the supply. The high cost of marketing livestock is often the commonly cited culprit for this situation. Owing to the considerable spatial separation of production area from consumption area and other ancillary factors, there is high handling cost especially in relation to livestock transportation (Filani, 2006). This was further revealed by Ogebeide (2015) that most livestock supplier in Nigeria do not employed effective logistics management which in turn negatively affect livestock delivery to their customers, inventories, and profit performance. As a result, organizations and establishments need to be responsive to customers' needs and explore the potential of the concept of Logistic Management to improve their revenue growth. As a result, organizations and establishments need to be responsive to customers' needs and explore the potential of effective transportation and physical distribution activities to improve their profitability.

1.2. Statement of the Problem

Transportation of livestock from the north to the south in Nigeria presents a daunting problem because it is both a costly and risky business. Sheep, goats, rams and cattle are kept standing and in some cases, lying in the vehicles throughout the long journey of between 2-3 days. Most rural roads are seasonal and inoperable during the rainy season and some inter-state roads are also in bad shape. The livestock is conveyed by roads with long trailers, trucks and Mitsubishi vehicles which are prone to accidents while freight insurance is still unpopular among the generally illiterate livestock rearing business, middlemen and transporters. The possibility also exists of transporters and traders being robbed in transit (Filani, 2006). Based on the above challenges, this study is to ascertain the effect of transportation and physical management activities on profitability of livestock dealers in selected livestock markets in Ogun State, Nigeria.

1.3. Objectives of the Study

- i. To establish the influence of transportation management activities on profitability of livestock dealers in selected livestock markets in Ogun State, Nigeria.
- ii. To examine the effect of physical distribution management on the profitability of livestock dealers in selected livestock markets in Ogun State, Nigeria

1.4. Hypotheses

- H₀₁:** There is no significant influence of transportation management activities on the profitability of livestock dealers in selected livestock markets in Ogun State, Nigeria
- H₀₂:** Physical distribution management has no effect on profitability of livestock dealers in selected livestock markets in Ogun State, Nigeria

2. Literature Review

2.1. Conceptual Review

2.1.1. Transportation Management Activities

The work of making sure that products are affordable and available when they are needed is a complex orchestration whose many parts depend on up-to-the minute information, resilient and efficient supply chains, and reliable transportation. Transport system is the most important economic activity among the components of business logistics systems. Around one third to two thirds of the expenses of enterprises' logistics costs are spent on transportation (Carbone and Soifer, 2009). Transportation plays a connective role among the several steps that result in the conversion of resources into useful goods in the name of the ultimate consumer. It is the planning of all these functions and sub-functions into a system of goods movement in order to minimize cost and maximize service to the customers that constitutes the concept of business logistics. The system, once put in place, must be effectively managed (Fair and William, 2011).

Without well-developed transportation systems, logistics could not bring its advantages into full play. Besides, a good transport system in logistics activities could provide better logistics efficiency, reduce operation cost, and promote service quality. The improvement of transportation systems needs the effort from both public and private sectors. A well-operated logistics system could increase both the competitiveness of the government and enterprises (Tseng *et al.*, 2005).

Transport system makes goods and products movable and provides timely and regional efficacy to promote value-added under the least cost principle. Transport affects the results of logistics activities and, of course, it influences production and sale. In the logistics system, transportation cost could be regarded as a restriction of the objective market. Value of transportation varies with different industries (Carbone and Soifer, 2009). For those products with small volume, low weight and high value, transportation cost simply occupies a very small part of sale and is less regarded; for those big, heavy and low-valued products, transportation occupies a very big part of sale and affects profits more, and therefore it is more regarded.

2.2. Physical Distribution Management

Activities of distribution performance cycle come under the scope of outbound logistics. Distribution includes all activities that enable the transfer of material and/or economic power over tangible and/or intangible goods from one economic subject to another (Phelan, 2009). Domschke and Schild (2004), emphasize that distribution encompasses a system of all activities that are related to the transfer of economic goods between manufacturers and consumers. It includes coordinated preparation of manufactured goods according to their type and volume, space and

time, so that supply deadlines can be met (order fulfillment) or estimated demand can be efficiently satisfied (when producing for an anonymous market) (Domschke and Shild, 2004).

Distribution systems are usually divided into: (a) acquisition distribution system (b) logistic, i.e. physical distribution system (Segetlija *et al.*, 2010). The authors pointed out that this division is not completely accurate, since both of these subsystems exhibit certain common starting points. Acquisition distribution system management includes the management of distribution routes, i.e. distribution channels. Logistic distribution system is focused on bridging the space and time by transportation and storage, as well as order processing and shipment, supply logistics, i.e. the movement of materials.

A third-party logistics partner with an established global network can offer the possibility of expanding distribution to a larger population and can provide inbound services from manufacturing to consumption sites globally. This can provide a competitive advantage versus competitors insofar as it offers readily available capabilities rather than creating one's network and capabilities from scratch (Boyson *et al.*, 2009). A 3PL provider with the right footprint of physical locations and transportation modes can offer high-speed services. Customer experience should no longer be viewed as a term used in marketing; this is now a term as relevant in the supply chain given how distribution impacts customers (Abdallah, 2004).

Companies may develop an efficient distribution system based on an offer of logistic service provider. In such a case the outsourcer becomes responsible for scheduling all distribution routes to the scattered customers. An effective distribution strategy is also one that changes to meet shifting market needs. Third-party logistics partners can play a crucial role in increasing supply chain agility. Through years of servicing the high tech and retail industries, 3PL providers have developed significant expertise in dealing with high-volatility demand. They can provide both proven business processes and flexible resources (people, space, and transportation assets) required to deal much more effectively with sudden demand spikes, label changes. The flexibility of 3PL provider networks can translate to improved delivery performance during demand spikes, faster time-to-market and smoother product introductions (Patel and Aran, 2005).

2.3. Profitability

Desarbo *et al.* (2005), in their research, collected a battery of performance indicators, which included profit (that is, total revenue minus variable costs divided by total revenue); average percentage of the return on investment; return on investment; return on assets; relative market share; overall customer retention; retention of major customers; sales growth rate; and overall profit margin relative to the objective for a business unit. Also, Griffith and Carrol (2001) stated that profits are measures of how well organization performed from its business activities. Also, profitability is one of the indices used by the firms to maximize revenues and minimize cost in its business activities (Lipse *et al.*, 2003).

Karibo (2017) and Balunywa (1992) found that profit is the financial benefit that is realized when the amount of revenue realized from business activity exceeds the expenses, cost and taxes required to sustain the activity and also for the continuity of the firm. It is a known fact that a non-profitable firm is not likely to continue for long profitability of a firm is affected by factors such as cost of goods sold; stock level, consumer spending, economic performance and technological changes. More so, cost of goods directly affects profit because the money used to produce the product is deducted from the money taken from sales. Also, if a company stock too much of a product, the cost of goods may over weigh the total sales while too few of an item means that cost is reduced of a product. In the same vein, the trend of how much consumer spends on a product primarily affects the profit of the firm.

2.4. Theoretical Review

2.4.1. Resource Based View

Resource Based View (RBV) theory is a type of model that sees resources as a key to superior firm performance which emerged in 1980s and 1990s after the major works were published by Wernerfelt (1984) and other proponents such as Rumelt (1984) and Barney (1986) where they discussed extensively firm resources and sustained competitive advantage. In addition, Rumelt *et al.* (1991) posits that the basis of the Resource Based View theory is that successful organization will find their future competitiveness on the development of distinctive and unique capabilities which may often be intangible in nature. Hence, the essence of strategy should be defined by firm's unique resources and capabilities for organizational performance (Rumelt, 1984). However, one of the assumptions of the Resource Based View theory which talks about a firm been profitable in a highly competitive market as long as it can exploit advantageous resources does not always hold. This shows that the theory ignores some external factors that pertain to the industry. In Resources Based View theory firms utilize resources in order to improve their competitive advantage and firm performance. The employment of RBV enhances the understanding of how supply chain collaboration and supply chain management could improve firm performance through a development of capability and competitive advantage. RBV suggests that collaboration between supply chain partners will enhance competitive advantage in terms of speed, convenience and reliability of the supply chain operations.

2.4.2. Collaborative Network Theory (CNT)

The vital bases of the performance of the firm do not base only on effectiveness of the collaboration between the firm and its partner but also with the partners' partners (Halldórsson *et al.*, 2007). Collaborative Network Theory (CNT) is used as the foundation of the give-and-take effect in inter-firm relationships (Oliver, 1990). Therefore, the

connections between firms and other players in the layers of the logistic management become more important (Hakansson and Ford, 2002).

An operative and effective association among logistic management partners can enhance mixture of the resources owned by the firms. Resource mixture consequences lead to better outcomes than those achieved by a single firm acting alone (Halldórsson *et al.*, 2007). The amalgamation of these firms can be referred as quasi-organization or supply chain or logistic management collaboration (Cao and Zhang, 2011; Hakansson and Snehota, 1995; Hakansson and Ford, 2002; Simatupang and Scridharm, 2005). CNT contends that the value of the resources can be lengthened by its amalgamation with other firm resources, which in turn forming effective inter-firm associations within the network or logistic chain in order to enhance higher performance (Halldórsson *et al.*, 2007). Thus, the efforts of the firms in forming positive associations with their logistic partners are important (Halldórsson *et al.*, 2007).

In SCM, CNT has been employed to plot the logistic management in terms of functions, actors and flows of the resources (Collis and Montgomery, 1995; Fayezi *et al.*, 2012). The main focus of CNT is to form long-term relations based by constructing mutual trust between logistic chain partners (Fayezi *et al.*, 2012). In this study, CNT was used to explain the effect of supply chain management on firm performance in term of profit performance.

Collaborative Network Theory has been employed to plot the supply chain in terms of functions, actors and flows of the resources. The main focus of CNT is to form long-term relations based by constructing mutual trust between supply chain partners in order to enhance firm performance in term of financial and non-financial performance. CNT established that an operative and effective association among supply chain partners can enhance mixture of the resources owned by the firms which cause strong and better performance of the firms in partnership.

In view of the above two theories and discussions; this study adopted Resource Based View theory and Collaborative Network Theory. These theories view transportation management activities and physical distribution management as a vital tool to achieve organization stated objectives and goals; the Resource Based View theory deal with firm resources in terms of transportation management activities and physical distribution management (Independent variables) while Collaborative Network Theory deals with organization performance (Dependent variable) achieve through firm resources employed.

3. Methodology

3.1. Population and Sample

The population in this study involves all 1678 livestock dealers (goats, sheep, rams and cattle) across the four divisions (Remo, Ijebu, Yewa, and Egba) of Ogun State. The sample size of 402 livestock dealers was obtained using Raosoft sample size calculator for sample size determination. A multi-stage sampling technique was adopted to obtain the sample from the population; the first stage employed the stratified sampling method. This involved grouping the livestock dealers according to four divisions of Ogun State as stated above. The second stage used the simple random sampling method to pick the respondents from each Abattoir/ market and lastly the third stage involved the use of proportional sampling technique.

3.2. Reliability and Validity

The instrument is used as a tool for primary data collection. The questionnaire consists of 4 sections such as Section 1 collects demographical data of the respondents, Section 2 collects the of management information flow data, Section 3 collects warehousing management activities data, and section 4 collects the profitability of livestock dealers data. The questionnaire is developed based on a review of related studies and is subject to a content validity test as well as reliability test. For pilot study, the questionnaire was try-out with 43 (10% of the sample size) livestock dealers in Agege Local Government area of Lagos State which are not part of the target sample of the study. The reliability test was determined using Cronbach Alpha coefficient α .

3.3. Data Collection

Research sample were collected from four senatorial district of Ogun State. The researchers distributed and collected back the questionnaire from the sample with 82.7% response rate greater than 72% response rate recommended as representative and adequate for drawing conclusions on the study objectives by Fowler (1984). Confidentiality and anonymity was assured. These measures were taken as previous studies have shown that low response rates are experienced when questionnaires are mailed to respondents.

4. Data Analysis and Findings

4.1. Measurement Model

The outer or measurement model assessed the relationship between the observable variables and the theoretical constructs they represent. First, a reliability test was conducted to determine the internal consistency of the measures used. The Cronbach alpha (α) value for transport management activities was 0.782, and that of physical distribution management was 0.801 while profitability had a value of 0.838 which is higher than the recommended threshold of 0.500 demonstrating adequate reliability (Hair Jr *et al.*, 2010). The variables were validated through factor analysis. Before performing exploratory factor analysis, two statistical tests were performed to assess the suitability of the data for structural detection; Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The result of KMO was found to be 0.833 above the threshold of 0.5 and Bartlett's Test of Sphericity was significant at $p < 0.000$ which indicated that the data was useful for factor analysis (Kaiser, 1974).

The variability of each observed variable that could be explained by the extracted factors were checked by extracting the communality values. The extracted communalities were found to be greater than 0.5 which indicated that the variables fitted well other variables in their factor (Pallant, 2010). Factor analysis was assessed using Principle component analysis. One item of firm performance was deleted as it had a factor loading lower than 0.5 (Cooper and Schindler, 2011).

Confirmatory factor analysis was estimated on multiple criteria of construct reliability, convergent and discriminant validity. All the variables exhibited construct validity as the composite reliability and the Cronbach alpha (α) were above the acceptable threshold of 0.6 (Ahimbisibwe and Abaho, 2013) demonstrating construct validity. The Average Variance extracted (AVE) for transport management activities was 0.533, physical distribution management was 0.565 and profitability was 0.631 which exceeded the cutoff value of 0.5, thus confirming convergent validity (Bryman, 2012). To satisfy the requirement of discriminant validity of the measurement model, this study followed the criterion suggested by Fornell and Larcker (1981). The discriminant validity was confirmed as the square root of a construct's AVE was greater than the correlation between the construct and other constructs in the model Madhoushi *et al.* (2011).

The findings showed that there was a weak correlation between transport management activities and profitability ($r = 0.474, p < 0.05$). However, there was a strong positive relationship between physical distribution management and profitability ($r = 0.782, p < 0.05$). The normality of data was assessed by examining its skewness and kurtosis (Pallant, 2010). The result showed that skewness was within the range of -0.203 and +0.306 and kurtosis was within the range of -0.156 and + 0.626 which complied with the normality threshold of -1 to +1 (Cooper and Schindler, 2011).

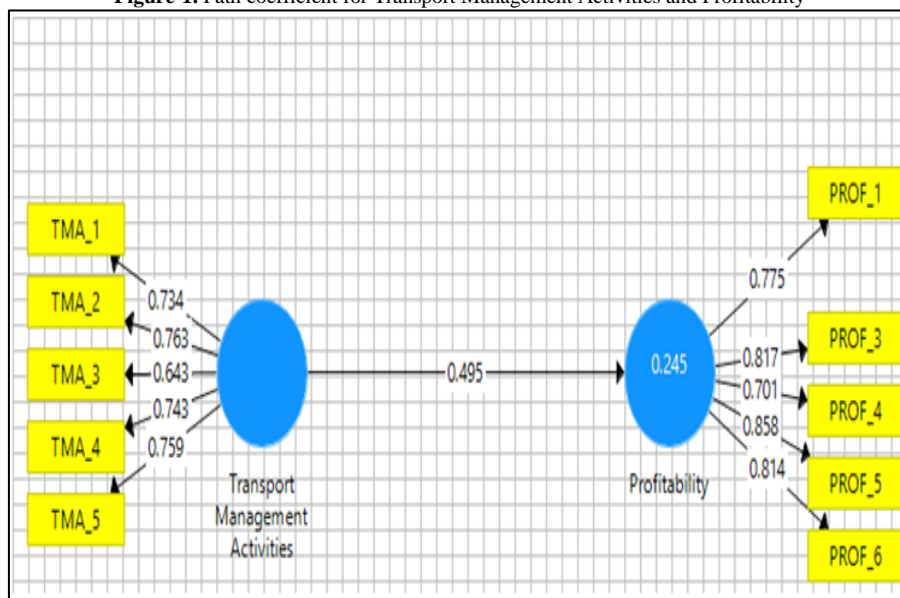
4.2. Structural Model and Hypothesis Testing

The structural or inner model identification was obtained by examining path coefficients or betas for hypothesis testing (Hair *et al.*, 2011). The paths between the constructs represent each hypothesis. Structural Equation Modeling Partial Least Squares (SEM-PLS) was used for model analysis and hypothesis testing. SEM-PLS was used because of four reasons. First, PLS makes no prior distributional assumptions and is applicable to small populations. Secondly, PLS can analyze complex model with large set of relationships among constructs and sub-constructs (Esposito *et al.*, 2010). It provides more flexibility in modeling second order constructs and formative constructs (Chin, 1998). Thirdly, PLS can account for measurement errors of latent constructs and assess significance of structural models simultaneously. Lastly, PLS examines the causal relationships among latent variables in situations of high complexity and low theoretical information (Byrne, 2001).

The statistical objective of SEM-PLS is to show high R^2 and significant t-values, thus rejecting the null hypothesis of no effect. R^2 values range between 1 and 0 where 1 means a perfect prediction of the structural model (Hair Jr *et al.*, 2010). The hypothesized relationships were tested by running PLS algorithm and bootstrapping algorithm in SmartPLS 3.0. The path coefficient estimates was used to determine the significance of the relationship (Bordens and Abbott, 2014). The resultant T tests statistics from the bootstrapping procedure provided the basis for determining which relationships are statistically significant (Henseler *et al.*, 2009).

For hypothesis one, the path coefficient between transport management activities and profitability was positive and significant at 0.05 level of significance ($\beta = 0.495, p < 0.05$). The path coefficient implied that for every 1 unit increase in transport management activities, profitability of livestock dealers was increased by 0.495 units. The quality of the structural model was assessed using the coefficients of determination R^2 . The value of R^2 coefficient was 0.245 which indicated that 24.5% of the variation in profitability of livestock dealers can be accounted for by transport management activities undertaken. Based on the assessment criterion suggested by Cohen (1988), the outer model was found to reflect a moderate predictive relevance.

Figure-1. Path coefficient for Transport Management Activities and Profitability



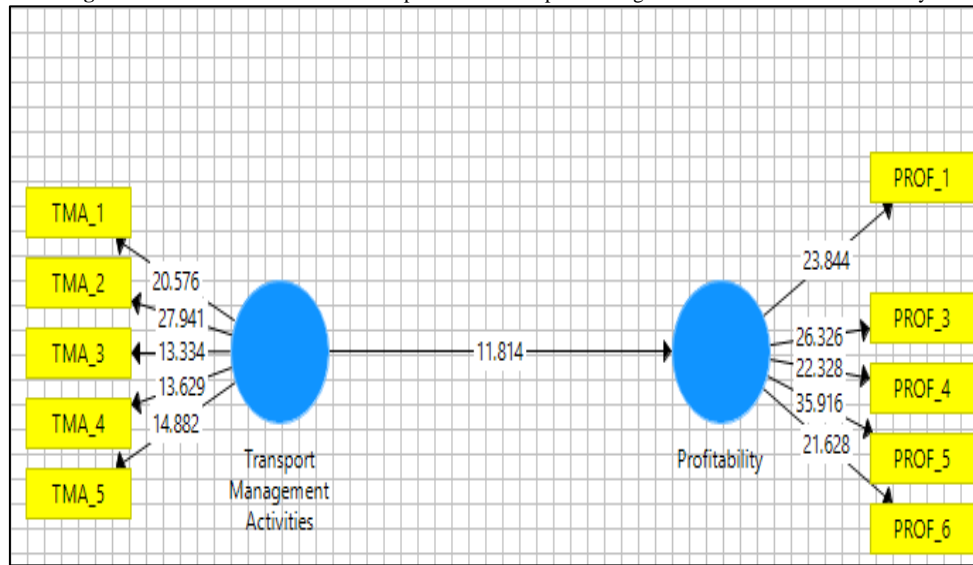
The stability of the estimates was examined by using the t-statistics obtained from a bootstrap test with 500 resamples. Table 2 below sets out the path coefficient and the t- values observed with the level of significance achieved from bootstrapping.

Table-1. Path Coefficient and T-values of Transport Management Activities

	Original Sample	Sample Mean	Standard Deviation	Standard Error	Path Coefficient	T Statistics	P Values
Transport Management Activities -> Profitability	0.495	0.497	0.042	0.042	0.495	11.814	0.000

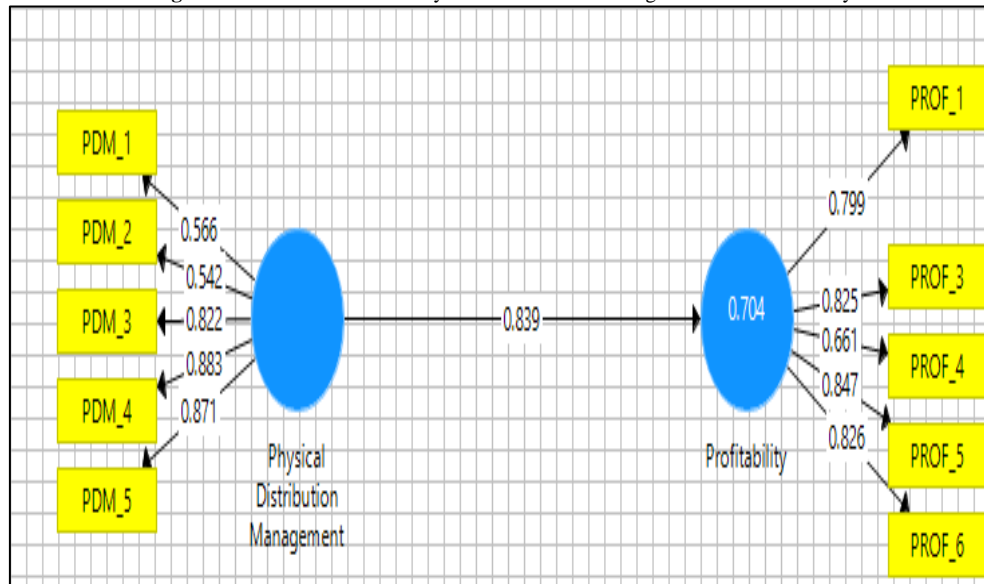
The resultant T-tests statistics are illustrated in Figure 2 showed that the model was significant at 95% significance level for a two tailed test with t = 11.814. The results showed that transport management activities has a positive and statistically significant influence on profitability. The null hypothesis Ho1 was rejected and the alternative hypothesis that stated that there is a significant influence of transportation management activities on the profitability of livestock dealers in selected livestock markets in Ogun State, Nigeria was supported.

Figure-2. T-statistics for the relationship between Transport Management Activities and Profitability



For the second hypothesis, the path coefficient between physical distribution management and profitability was also positive and statistically significant at 0.05 level of significance ($\beta = 0.839, p < 0.05$). The path coefficient indicated that for every 1 unit increase in physical distribution management, profitability of cattle was increased by 0.839 units. The value of R^2 coefficient was 0.704 which indicated that 70.4% of the variation in profitability was accounted for by physical distribution management. Based on the assessment criterion suggested by Cohen (1988), the outer model was found to reflect a strong predictive relevance.

Figure-3. Path coefficient for Physical Distribution Management and Profitability



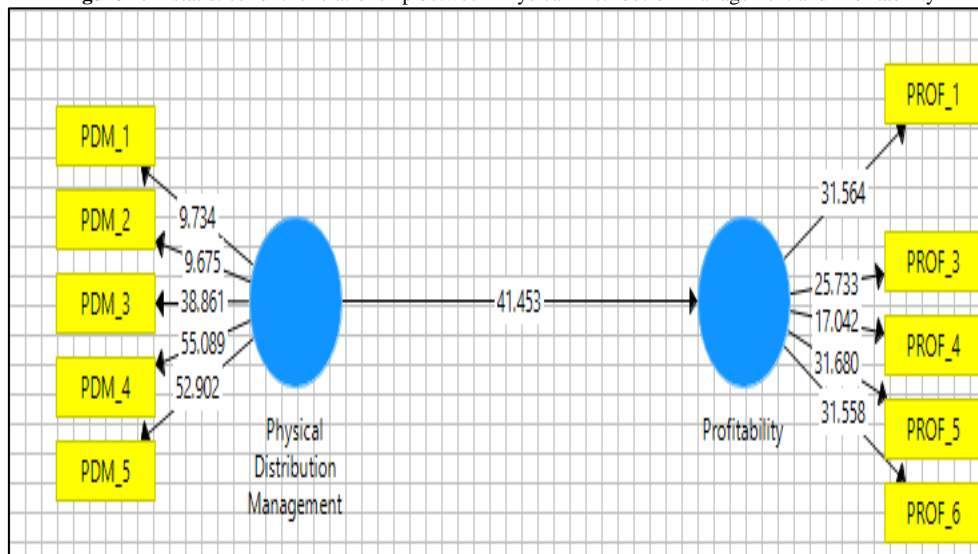
The stability of the estimates was examined by using the t-statistics produced from a bootstrap test with 500 resamples. Table 2 below sets out the path coefficient and the t- values observed with the level of significance achieved from bootstrapping.

Table-2. Path Coefficient and T-values of Physical Distribution Management

	Original Sample	Sample Mean	Standard Deviation	Standard Error	Path Coefficient	T Statistics	P Values
Physical Distribution Management -> Profitability	0.839	0.84	0.02	0.02	0.495	41.453	0.000

The resultant T-tests statistics are illustrated in Figure 4 showed that the model was significant at 95% significance level for a two tailed test with $t = 41.453$. The results showed that physical distribution management has a positive and statistically significant effect on profitability. Hence, the null hypothesis H_{02} was rejected and the alternative hypothesis that stated that Physical distribution management has significant effect on profitability of livestock dealers in selected livestock markets in Ogun State, Nigeria was supported.

Figure-4. T-statistics for the relationship between Physical Distribution Management and Profitability



5. Discussion

The results of the analysis for influence of transportation management activities on the profitability of livestock dealers in selected livestock markets in Ogun State showed a significant influence. The finding revealed that transportation management activities have significant influence on the profitability of livestock dealers in selected livestock markets in Ogun State ($\beta=0.495$, $p<0.05$, $t=11.814$).

This finding is in line with previous studies carried out by Lu and Su (2002), and Grigorjev and Hogstrom (2003) who found that the idea behind transport logistics concept is planning and coordinating the material movement from source to end-user as an integrated system rather than managing the goods movement as a series of independent activities. They further revealed that cost of purchased materials and supplies have significant effect on total costs in most firms, but there is also a major opportunity for leveraging the capabilities and competencies of suppliers through closer combination of the buyers' and suppliers' logistics processes.

The finding of this study is supported by Li and Dingti (2014) who found that logistics capabilities can be in three dimensions: process capability, flexibility capability and information integration capability. They established that process, flexibility and information integration capabilities have significant effects on competitive advantage, and that only process capability has significant effects on firm performance. The finding of this study are also concurrent with Zhao *et al.* (2001) who showed that effective logistic management improves customer-focused and information-focused capabilities which in turn enhance firm performance. Lynch *et al.* (2000), established that logistics capabilities comprise operational capability and value-added service. They further revealed that both operational capability and value added service have positive effect on firm performance. The result is also supported by studies carried out Gong Feng-mei and Tang (2007) where they established that positive significant relationship exist between logistics information capabilities, distribution capabilities, flexibility capabilities, firm performance and supply chain performance.

The finding of hypothesis two revealed that physical distribution management has significant effect on profitability of livestock dealers in selected livestock markets in Ogun State ($\beta=0.839$, $p<0.05$, $t=41.453$). This result supports prior researches such as Coltman *et al.* (2011) which reported that physical distribution management create competitive advantages and improve firm profitability. This empirical finding is also in line with the research by Ernst *et al.* (2011) who empirically established that physical distribution management is connected to a new product

and firm performance. Their findings further established that physical distribution management strengthens new product performance which in return will enhance firm performance and new product performance is an important mediator of the customer relationship management and firm performance. This finding further concurs to that of Reinartz *et al.* (2004) who found that the physical distribution management is related with better firm performance in two of the three stages: the strongest effect is from relationship maintenance followed by relationship initiation. Relationship termination provided no significant effect on performance.

6. Conclusion and Recommendations

This study concluded that transportation management activities and physical distribution management have significant effect to increase the profitability of livestock dealers in the selected livestock (goats, sheep, rams and cattle) markets across the four divisions (Remo, Ijebu, Yewa and Egba) of Ogun State, Nigeria. Also, the finding from the study have some important implications for organizations and practitioners because organizations that practiced logistics management experienced reduced costs of production thus enhancing firm competitiveness. Furthermore, this study is an eye opener to these logistics providers by empirically showing them the importance of logistics information systems and the benefits of a well-managed logistics has it may create efficiency on quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments/cattle, and frequency with which shipments/cattle reach the owners within the scheduled time. It recommended that adequate livestock fleet and modern tracking/monitoring systems must be implemented by livestock dealers/ primary producers/livestock farmers to aid in scheduling of transportation operations. The livestock fleet must be managed and properly handle in transits by knowledgeable individuals so as to avoid death of livestock and other losses in the process. Livestock dealers should incorporate transport management in their operations processes such as procurement of livestock and distribution of livestock in order to increase overall cost efficiency, enhanced market share, and reduced lead time thereby impacting positively on their profitability.

The finding revealed that physical distribution has significant effect on the profitability of livestock dealers. A channel that enables faster distribution of livestock and at lower cost should be put in place. This is necessary because physical distribution of livestock is essential for livestock dealers to realize their potential revenue and achieve customer satisfaction.

Reference

- Abdallah, H. (2004). *Guidelines for assessing costs in a logistics system: An example transport cost analysis*. John Show, Inc: Arlington.
- Ahimbisibwe, G. M. and Abaho, E. (2013). Export entrepreneurial orientation and export performance of SMEs in Uganda. *Global Advanced Research Journal of Management and Business Studies*, 2(1): 56- 62.
- Balunywa, G. (1992). *A handbook in management*. The Business Publishing Group: Kampala.
- Barney, J. (1986). Strategic factors markets: expectations luck, and business strategy. *Management Science*, 32(10): 1231-41.
- Bordens, K. S. and Abbott, B. B. (2014). *Research design and methods: A process approach*. 9th ed edn: McGraw Hill: San Francisco.
- Boyson, S., Corsi, T., Dresner, M. and Rabinovich, E. (2009). Managing effective third party logistics partnerships: What does it take? *Journal of Business Logistics*, 20(1): 73-100.
- Bryman, A. (2012). *Social research methods*. 4th ed edn: Oxford University Press: New York.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Lawrence Erlbaum Associates, Inc.: Mahwah, NJ.
- Cao, M. and Zhang, Q. (2011). Supply chain collaboration. Impact on collaborative advantage and firm performance. *Journal of Operations Management*, 29(3): 163-80.
- Carbone, L. and Soifer, D. (2009). *Third-party logistics: Keeping American's economy moving*. Lexington Institute.
- Chin, W. W. (1998). *The partial least squares approach for structural equation modeling*. In George A. Marcoulides (Ed.), *modern methods for business research*. Lawrence Erlbaum Associates. 295-336.
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. 2nd ed edn Hillsdale.
- Collis, D. J. and Montgomery, C. A. (1995). Competing on resources: Strategy in the 1990s. *Harvard Business Review*, 73(4): 118–28.
- Coltman, T., Divinney, T. M. and Midgley, D. F. (2011). Customer relationship management and firm performance. *Journal of Information Technology*, 25(3): 205-19.
- Cooper, R. D. and Schindler, S. P. (2011). *Business research methods*. 10th ed edn: Mc Graw Hill: New York.
- Desarbo, W. S., Benedetto, D. I. A., Song, M. and Sinha, I. (2005). Revisiting the miles and snow strategies framework: Uncovering interrelationships between strategic types, Capabilities, environmental uncertainty, and firm performance. *Strategic Management Journal*, 26(1): 47-74.
- Domschke, W. and Schild, B. (2004). *Standortentscheidungen in distributionssystemen*, in Issermann, H. (HRSG). Verlag Moderne Industrie: Landsbergamlech.
- Ernst, H., Hoyer, W. D., Kraft, M. and Krieger, K. (2011). Customer relationship management and company performance-the mediating role of new product. *Journal of Academy of Marketing Science*, 39(2): 290-306.
- Esposito, V. V., Trinchera, L. and Amato, S. (2010). *Pls path modeling: From foundations to recent developments and open issues for model assessment and mprovement*. In. V. Esposito vinzi, W.W. Chin, J. Henseler and

- H. Wang (eds) *handbook of partial least squares: Concepts, methods and applications*. Springer Berlin Heidelberg: Berlin, Germany. 47-82.
- Fair, M. L. and William, E. W. (2011). *Transportation and logistics*. Business publication, Inc.: USA.
- Fayezi, S., O'Loughlin, A. and Zutshi, A. (2012). Agency theory and supply chain management. A structured literature review. *Supply chain management. An International Journal of Production Management*, 17(5): 556-70.
- Filani, E. O. (2006). *Business education panacea for poverty amelioration*. Association of business education. Book of reading. 28-40.
- Fornell, C. G. and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1): 39-50.
- Fowler, F. J. J. (1984). *Survey research methods*. CA: Sage: Thousand Oaks.
- Gong Feng-mei, M. S. and Tang, Y. (2007). Empirical study on the influence between logistics advantage. *Academy of Management Executive*, 19(1): 31-45.
- Griffith, J. M. and Carrol, C. (2001). Free cash flow, leverage, and investment opportunities. *Quarterly Journal of Business and Economics*, 40(3): 141-53.
- Grigorjev, V. and Hogstrom, M. (2003). *Gaining Competitive Advantage through improved management of Information and material flows: a case study at Flextronics network services*. Master Thesis, Graduate Business and commercial law, Goteborg, University. https://gupea.gu.se/bitstream/2077/2334/1/inlaga.2003_6.pdf
- Hair, Ringle, C. M. and Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2): 139-51.
- Hair Jr, Black, W. C., Babin, B. J. and Anderson, R. E. (2010). *Multivariate data analysis*. 7th ed edn: NJ: Prentice-Hall: Upper Saddle River.
- Hakansson and Snehota, I. (1995). *Developing relationships in business networks*. 1st ed edn: Routledge: London.
- Hakansson and Ford, D. (2002). How should companies interact in business network? *Journal of Business Research*, 55(2): 133-39.
- Halldórsson, Á., Kotzab, H., Mikkola, J. H. and Skjøtt-Larsen, T. (2007). Complementary theories to supply chain management. *Supply Chain Management An International Journal*, 21(4): 284-96.
- Henseler, J., Ringle, C. M. and Sinkovics, R. R. (2009). The use of partial least squares path modeling in international market *Advances in International Market*, 20: 277-319. Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2176454
- Kaiser, H. E. (1974). An index of factorial simplicity. *Psychometrika*, 39(1): 31-36.
- Karibo, B. B. (2017). Integrating logistics management through warehousing and inventory management to spawn high market share and profitability. *Journal of Marketing and Consumer Research*, 39: 58-68. Available: <https://iiste.org/Journals/index.php/JMCR/article/view/38696/39795>
- Kohls, R. L. and Uhl, J. N. (2002). *Marketing of agricultural products*. 9th Ed edn: Prentice Hall: London.
- Li, L. and Dingti, L. (2014). Effects of logistics capabilities on performance in manufacturing firms. Available: <https://pdfs.semanticscholar.org...PDF>
- Lipsey, J., Kenneth, I., Carlaw, K. and Richard, G. (2003). Productivity, technology, and economic growth: What is the relationship? *Journal of Economic Review*, 17(3): 457-95.
- Lu, H. and Su, Y. (2002). *An approach towards overall supply chain efficiency*. Unpublished master thesis school of economics and commercial law. Goteborg University.
- Lynch, D., Keller, S. and Ozment, J. (2000). The effect of logistics capabilities and strategy on firm performance. *Journal of Business Logistics*, 21(2): 47-67.
- Madhoushi, M., Sadati, A. and Delavari, H. (2011). Entrepreneurial orientation and innovation performance: The mediating role of knowledge management. *Asian Journal of Business Management*, 3(4): 310-16.
- Mafimisebi, T. E. (2011). *Spatial price equilibrium and fish market integration in Nigeria: pricing contacts of spatially separated markets*. LAP Lambert publishing company: Germany.
- Mafimisibi, T. E. (2012). Spatial equilibrium integration and price exogeneity in dry fish market in Nigeria: A vector auto-regressive (var) approach. *Journal of Economic, Finance and Administrative Science*, 7(33): 31-37.
- National Livestock Project Division (1992). NLPD survey in Kaduna Nigeria.
- Ogbeide, O. A. (2015). Meat industry development in Nigeria: Implications of the consumers' Perspective. *Mayfair Journal of Agribusiness Management*, 1(1): 59-75.
- Oliver, C. (1990). Determinants of Inter-organizational relationships: Integration and future directions. *The Academy of Management Review*, 15(2): 241-65.
- Pallant, J. (2010). *SPSS survival manual. A step by step guide to data analysis using SPSS*. 4th ed edn: Open University Press: Melbourne.
- Patel, A. and Aran, H. (2005). *Outsourcing success: The management imperative*. Palgrave Macmillan: London.
- Phelan, J. T. (2009). *Guest colum: Knowing when a WMS OR WCS is right for your company*. Supply and Demand chain Executives Ecom, Incom, Inc.
- Reinartz, Kraft, M. and Hoyer, W. D. (2004). The Customer relationship management process: Its measurement and impact on performance. *Journal of Marketing Research*, 41(3): 293-304.
- Rumelt (1984). *Toward a strategic theory of the firm, in R. Lamb (eds), competitive strategic management*. Prentice Hall: Englewood Cliffs.

- Rumelt, Schendel and Teece (1991). Strategic management and economics. *Strategic Management Journal*, 12(Special Issue): 5-30.
- Segetlija, Z., Mesaric, J. and Dujak, D. (2010). Importance of distribution channels-Marketing channels for national economy. 785-809. Available: <https://www.semanticscholar.org/>
- Simatupang, M. T. and Scridharm, R. (2005). An integrative framework for supply chain collaboration. *International Journal of Logistics Management*, 16(2): 257-74.
- Tseng, Y. Y., Yue, W. L. and Taylor, M. A. P. (2005). The role of transportation in logistics Chain. *Proceedings From Eastern Asia Society For Transportation Studies*, 5: 1657-72. Available: https://www.researchgate.net/publication/281230908_The_role_of_transportation_in_logistics_chain
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2): 171-80.
- Zhao, M., Droge, C. and Stank, T. (2001). The effects of logistics capabilities on firm performance: customer-focused versus information-focused capabilities. *Journal of Business Logistics*, 22(2): 91-107.