

Factors Affecting the Performance of Distribution Logistics among Production Firms in Kenya: A Case Study of Bata Shoe Company (K) Limited

**Kahia George
Dr. Mike Iravo**

Jomo Kenyatta University of Agriculture and Technology P.O Box 62000-00200 Nairobi, Kenya
School of Human Resource Development, Jomo Kenyatta University of Agriculture and
Technology P.O Box 62000-00200 Nairobi, Kenya
Email: georkag@gmail.com

DOI: 10.6007/IJARBS/v4-i10/1227 URL: <http://dx.doi.org/10.6007/IJARBS/v4-i10/1227>

Abstract

For any production firm to be successful, it must be able to produce quality products and also ensure the products get to the consumer in time, in good condition and at the minimum cost possible. For this to be achieved there is need for an efficient and effective distribution logistics structure in place. Despite much effort by manufacturing firms to ensure that their distribution systems are efficient, many customers still experience delays for deliveries, which show that distribution logistics performance performs short of customer expectations in most companies.

Various factors may cause adverse effect on the expected performance of distribution logistics system. This research project seeks to identify these factors and also determine in what way they may influence distribution logistics performance. The research was carried out in Bata Shoe Company Kenya limited where questionnaires were used to collect primary data to determine whether there are factors that affect the performance of distribution logistics. The data collected was then analysed and presented in frequency distribution tables.

Introduction

Since logistics advanced from 1950s, due to the trend of nationalization and Globalization in recent decades, the importance of logistics management has been growing in various areas. For industries, logistics helps to optimize the existing production and distribution processes based on the same resources through management techniques for promoting the efficiency and competitiveness of enterprises. Distribution logistics makes goods and products movable and provides timely and regional efficacy to promote value-added under the least cost principle. Distribution affects the results of SCM 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 distribution varies with different industries. According to Knemeyer & Murphy, (2004) for those products with small volume, low weight and high value, distribution cost simply occupies a very small part of sale and is less regarded; for those big, heavy and low-

valued products, distribution occupies a very big part of sale and affects profits more, and therefore it is more regarded. The demand for products can only be satisfied through the proper and cost-effective delivery of goods and services.

Distribution logistics is the link between a company and its customers (Skjoett, 2002; it comprises all activities related to the provision of finished products and merchandise to a customer. The products can be delivered directly from the production process or from the trader's stock located close to the production site or, possibly, via additional regional distribution warehouses. Like procurement logistics, distribution logistics is a market-linked logistics system. It links a company's production logistics with the customer's procurement logistics. In distribution logistics, customer orientation plays a special role because of the close link to the customer. According to Zheng and Zhang (2010) distribution logistics is the management activities to pursue customer satisfaction and order fulfilment, connecting the main body of supply and demand, overcoming space and time obstacles to achieve efficient and rapid movement of goods. It also involves conveying of information related to the distribution of physical goods thus making it slightly distinct from physical distribution.

Statement of the Problem

The performance of distribution logistics impacts tremendously on the performance of an entire organization (Paulraj and Chen, 2007); this is mainly because it links the organization to the customers and thereby has much influence on customer satisfaction which influences customer loyalty, arguably the single most important asset of an organization. However, despite distribution logistics being very vital, many production organizations perform short of customer expectations in this area. In a logistics workshop attended by store managers of Bata shoe Company (K) limited at their training centre in limuru in September 2012, the main distribution challenges identified by the store managers was lack of delivery of the right products in time and in good condition (Bata world news, 2012).

Objectives

The general objective of the research project will be to investigate whether there are factors that affect the performance of distribution logistics among production firms in Kenya. The specific objectives of the study were as follows

- i. To establish whether nature of product has effect on the performance of distribution logistics.
- ii. To establish whether distribution structure has effect on the performance of distribution logistics.

Literature Review

In this chapter the researcher reviews the findings of research done in this area in order to identify the gap that needs to be filled. The purpose of literature review is to acquaint the researcher with the history of distribution logistics skill that has been adopted by other researchers. It establishes various principals adopted by previous researchers in related fields

and at the same time acknowledging their contribution to management training in what firms do not regard as a fundamental aspect in management of a firm.

Theoretical Framework

Having a strong distribution and warehousing strategy is critical to your success in today's global environment as a production firm (Londe et al., 1998). This is because it is paramount to be able to deliver quality products to its customers. Meeting specific customer service requirements around products and services can help grow market share by maintaining strong existing relationships and growing new ones. According to Christopher & Towill, (2001) the ability to plan and execute the movement of the right product to the right place at the right time can also make the supply chain more efficient by significantly reducing expedited freight and the production and repositioning of unneeded inventory. The best plans are only as effective as their execution. Many manufacturing firms have structured some of the best distribution logistics plans, however many still falls short of customer expectations when it comes to delivery of the right goods in time, in good condition and under minimum costs possible. The efficiency and effectiveness of the logistics operation has a considerable influence not only on the business performance of manufacturers but also on the customer's perception of the quality of the products and services provided by the plant.

Essentially there are two structures that can be used for distribution system design. First of them is the echeloned structure where warehouses are used to create inventory assortments and consolidation is applied to gain economies of scale (Bowersox, 2010). Second design has a direct system which implies that goods are shipped directly to customers' destination. In situations where it is economically reasonable the direct setups are preferred as they lower the amount of intermediate inventory and product handling (Bowersox, 2010).

Review of Variables

Nature Of Product And DL Performance

The nature of a product may have some effect on the performance of distribution logistics. Various aspects of the product may enhance or diminish the ability of DL to meet customer expectations. The aspects may include the weight of the product, shape, unitization of product, product range, perish ability, and form of the product.

The weight and shape of a product has effect on vehicle capacity utilization as well as the equipments required for its handling during the distribution process. Light products are easier for human handling when loading and offloading delivery trucks. Where specialised handling is required, the cost of distribution may go up since machinery for the handling is required. The unavailability of the necessary equipments may also lead to delays in delivery. In products where human handling is possible, the number of people involved in the task may also determine whether there will be delays or not.

Unitization of products pertains to the batches in which a product is packaged. For units distributed to the customers in homogeneous packages, the time required for the verification of the quantities dispatched or received is much easier. This in turn reduces the delivery time as picking, order assembly and dispatch time is reduced. Proper unitization may also reduce exposure to destruction or pilferage of goods in transit.

Perish ability of a product pertains to whether a product is perishable or not, for some perishable goods, specialised handling during storage and transport is required. This may in turn increase the cost of distribution and lack of the recommended handling may result in destruction of the products.

Product range refers to the number of differentiated products available for distribution to customers. The range of products may also have impact on the performance of DL, as it has great effect on the time required for material handling which involved receiving, stacking, picking, order assembly and even dispatch. It may also have some effect on vehicle capacity utilization since different products may be of different shape and sizes thus making it difficult to stack well in the delivery trucks.

The form of a product pertains to the state in which the product appears, such as solid, liquid or gas form. The form of a product has several aspects which may affect the performance of DL sine some form of products may require specialized handling when loading, off-loading and even storage.

Distribution Structure and DL Performance

Distribution structure pertains to how the distribution processes are set up. The distribution structure used by a manufacturing firm may also have impact on the ability of its DL to perform. The various aspects of distribution structure that can positively or negatively impact on the performance of the firm's DL include availability of regional depots, route planning, mode of transport used.

Availability of regional depots refers to whether a manufacturing firm has set up depots in various regions so as to bring distribution near the customers. Regional depots may allow for proper capacity utilization of transport over long distances as this is not dependent on individual customer orders. Regional depots also ensure that the products are in close proximity to the customer thus making it possible for deliveries under short notice.

Route planning pertains to matters of route selection, vehicle capacity utilization as well as panning for dispatches. In route selection, the route selected may impact highly on the ability to deliver goods in time as trucks can avoid traffic congestions or use the shortest routes available, the route selected may also have impact on the cost of delivery.

The mode of transport used is another aspect that may have effect on the performance of DL. The mode of transport will determine the flexibility and also whether door to door deliveries are possible. Inflexible modes such as rail or air may not be suitable over short distances while they may be economical over long distance. Road transport may also lead to delays due to traffic congestion and unpredictable weather which may result in some roads becoming impassable.

Research Methodology

The research design adopted for the study was a case study. This design was adopted because the case selected can generalized for similar cases. The design also gives an in-depth study into the case in order to gain insight into large cases. It also describes and explains rather than predict. The study did target population will be all the permanent staff working in the

distribution function of Bata shoe company. This includes departmental managers in the sales, marketing and distribution centre 122 store managers, 11 distribution centre supervisors and 7 clerks, 21 sales representatives, 9 distributors, and 13 marketing executives. This brings the target population to 186 respondents.

According to Glass & Hopkins (2002) argues that a sample 20% and above is appropriate representative of the target population. From a target population of 186 employees using stratified random sampling technique that divide the population into two or more groups with similar characteristics and selects the samples from each stratum that constitute a sample, the study will use a sample 62 respondents which is 30% collected from each of the identified strata to make a representative sample of the 186 target population.

Results of the Study

What are the product nature related factors that influence the performance of distribution logistics?

| | Strongly agree | | agree | | neutral | | disagree | | Strongly disagree | |
|---------------|----------------|-----|-------|-----|---------|-----|----------|-----|-------------------|-----|
| | No. | %ge | No. | %ge | No. | %ge | No. | %ge | No. | %ge |
| weight | 31 | 50% | 24 | 39% | 6 | 10% | 1 | 2% | 0 | 0% |
| shape | 29 | 47% | 17 | 27% | 10 | 16% | 2 | 3% | 4 | 6% |
| unitization | 23 | 37% | 16 | 26% | 22 | 35% | 0 | 0% | 1 | 2% |
| product range | 41 | 66% | 20 | 32% | 1 | 2% | 0 | 0% | 0 | 0% |
| perishability | 25 | 40% | 25 | 40% | 4 | 6% | 3 | 5% | 5 | 8% |
| product form | 27 | 44% | 26 | 42% | 2 | 3% | 4 | 6% | 3 | 5% |

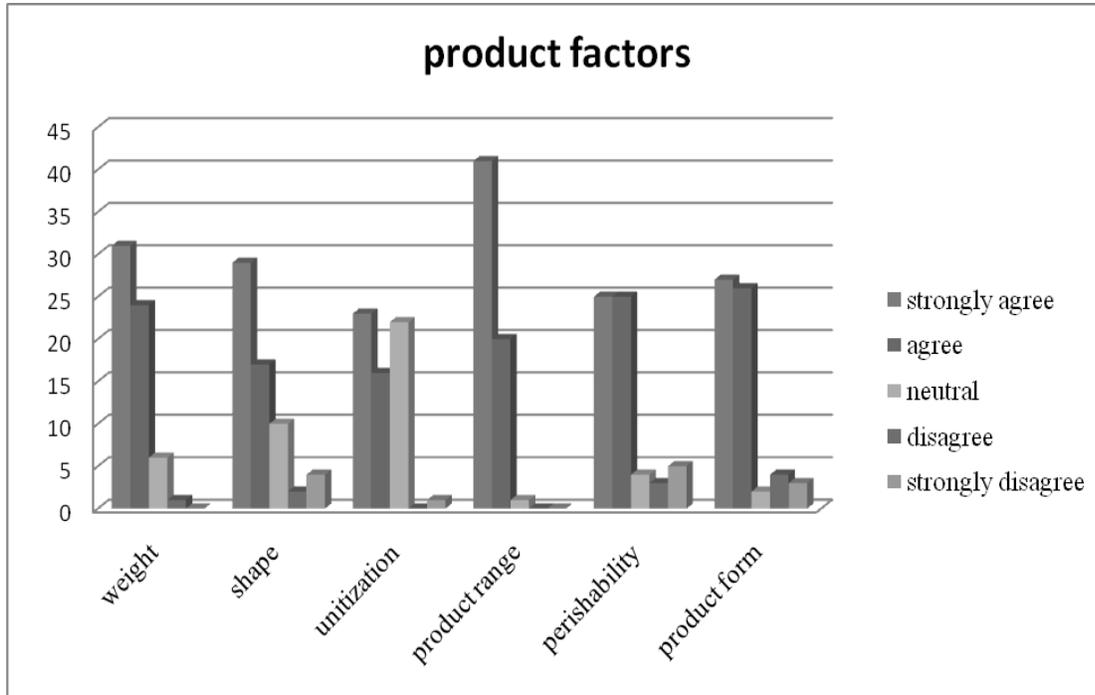


Figure 4.8: factors affecting DL performance

On product related factors which may have effect on distribution logistics performance 31 respondents representing 50% strongly agreed, 24 respondents representing 39% agreed, 6 respondents representing 10% were neutral, 1 respondent representing 2% disagreed while none of the respondent strongly disagreed that product weight has effect of distribution logistics performance.

29 respondents representing 47% strongly agreed 17 respondents representing 27% agreed, 10 respondents representing 16% were neutral, 2 respondents representing 3% disagreed while 4 respondent representing 6% strongly disagreed that product shape has effect of distribution logistics performance.

23 respondents representing 37% strongly agreed 16 respondents representing 26% agreed, 22 respondents representing 35% were neutral, none of the respondents disagreed while 1 respondent representing 2% strongly disagreed that product unitization has effect of distribution logistics performance.

41 respondents representing 66% strongly agreed 20 respondents representing 32% agreed, 1 respondent representing 2% was neutral, while none either disagreed or strongly disagreed that product range has effect of distribution logistics performance.

25 respondents representing 40% strongly agreed 25 respondents representing 40% agreed, 4 respondents representing 6% were neutral, 3 respondents representing 5% disagreed while 5 respondent representing 8% strongly disagreed that perishability of a product has effect of distribution logistics performance.

27 respondents representing 44% strongly agreed 26 respondents representing 42% agreed, 2 respondents representing 3% were neutral, 4 respondents representing 6% disagreed while 3 respondent representing 5% strongly disagreed that product form has effect of distribution logistics performance.

What are the distribution structure related factors that influence the performance of distribution logistics?

| | Strongly agree | | agree | | neutral | | disagree | | Strongly disagree | |
|---------------------------------|----------------|-----|-------|-----|---------|-----|----------|-----|-------------------|-----|
| | No. | %ge | No. | %ge | No. | %ge | No. | %ge | No. | %ge |
| availability of regional depots | 17 | 27% | 21 | 34% | 1 | 2% | 13 | 21% | 10 | 16% |
| route planning | 13 | 21% | 10 | 16% | 20 | 32% | 8 | 13% | 11 | 18% |
| mode of transport | 49 | 79% | 10 | 16% | 3 | 5% | 0 | 0% | 0 | 0% |

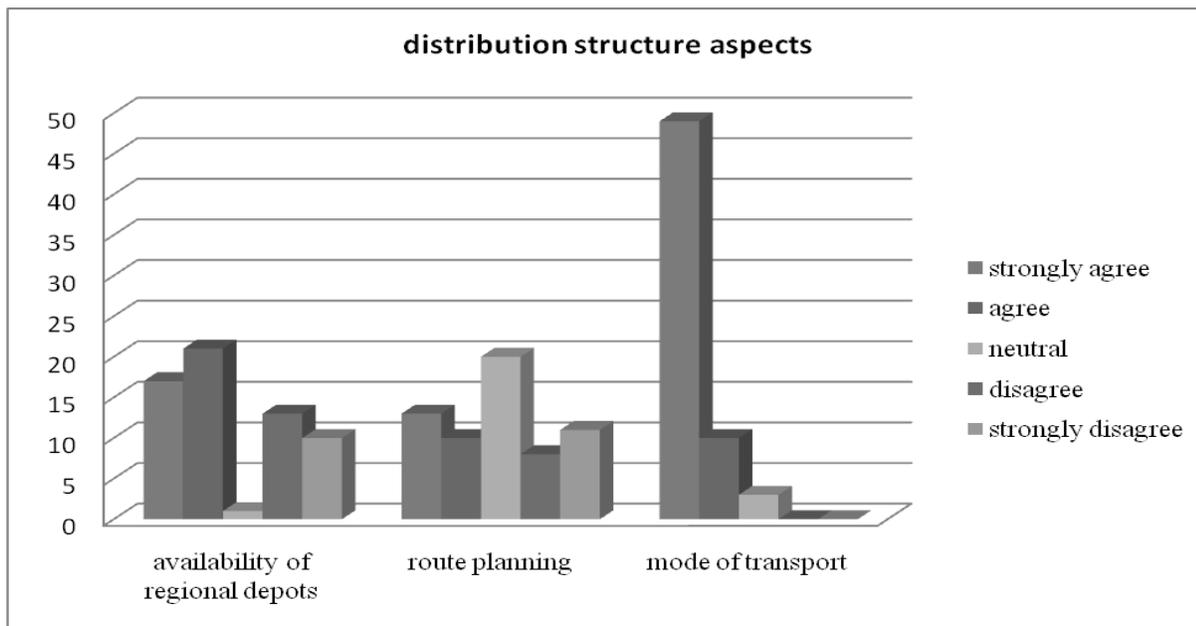


Figure 4.10: factors affecting DL performance

According to the research findings 17 respondents representing 27% strongly agreed 21 respondents representing 34% agreed, 1 respondent representing 2% was neutral, 13 respondents representing 21% disagreed while 10 respondent representing 16% strongly disagreed that availability of regional depots has effect of distribution logistics performance.

13 respondents representing 21% strongly agreed 10 respondents representing 16% agreed, 20 respondents representing 32% was neutral, 8 respondents representing 13% disagreed while 11 respondent representing 18% strongly disagreed that route planning has effect of distribution logistics performance. 49 respondents representing 79% strongly agreed 10 respondents representing 16% agreed, 3 respondent representing 5% was neutral, none of the respondents neither disagreed nor strongly disagreed that availability of regional depots has effect of distribution logistics performance.

Conclusion

The research was aimed at identifying the various factors that affect the performance of distribution logistics. According to the research findings it is clear that the customer, the product, technology and distribution structure are all factors that affect the performance of distribution logistics. The research also determined that customers' location, ordered quantities, customer requirements and the number of customers are all customer aspects that affect the performance of distribution logistics.

On product related factors affecting DL performance, majority of the respondents were agreeable that the weight of products, product shape, unitization of product and product range are all factors that affect DL performance with most respondents strongly agreeing on all the four factors.

Majority of the respondents do not agree that information systems affect DL performance, on the other hand majority are agreeable that material handling technology is a factor affecting DL performance while a majority of the respondents are neutral on tracking of transit goods and communication as technology related factors affecting DL performance.

According to the research findings, availability of regional depots and the mode of transport as factors affecting DL performance, majority of the respondents were agreeable that they are. On route planning respondents who were agreeable, those neutral and those disagreeable were almost at per.

Recommendations

Based on the findings from this study, the following recommendations were proposed. More research should be conducted in production firms in Kenya so as to determine how the factors identified can be used to promote rather than hinder distribution logistics performance. Bata Shoe Company should assess their distribution logistics function to determine which of the identified factors has led to the company's distribution logistics function performing below customer expectations as highlighted in the problem statement. Bata Shoe Company should assess their distribution logistics function to determine how each of the factors identified has been affecting its distribution logistics performance.

Acknowledgements

First of all, I would like to thank my girlfriend Carolyne. Her constant patience and unselfish support are invaluable to both me and the project writing. This project definitely couldn't have been what it is without her.

Second, I want to thank my project supervisor Dr Amuhaya Iravo (PhD) for always being there when I need help. His valuable advice gave me many ideas to apply to my project.

Last but not least, I would like to thank my parents for giving me the opportunity to make the most out of my student life. Their constant support during these years is invaluable to me.

References

- Bataworldnewsteam. (2012). distribution logistics structure. Retrieved August 14, 2013, from bata-world-news:...http://www.world.bata.com/cn/en/virtual_library/distribution_Infrastructure/Logistics.pdf
- Bowersox, Closs, & Cooper. (2010). Supply Chain Logistics Management. Boston: McGraw-Hil.
- Glass & Hopkins, (2002). Qualitative Methods for Intervention Research, 4th Edition Pearson publishers India.
- Knemeyer, A. M., & Murphy, P. R. (2004). Evaluating the performance of third-party logistics arrangements: A relationships marketing perspective. *Journal of Supply Chain Management*, 40(1), 35-51
- La-Londe, Martha, Cooper, & Noordewier. (1998). A management perspective:. Customer service , 51-56.
- M.Christopher, & D.Towill. (2001). An integrated model for the design of agile supply chains. *International Journal of Physical distribution & Logistics Management* , 235-246.
- Paulraj, & Chen. (2007). "Strategic Buyer-Supplier Relationships. *Journal of Supply chain Management* , 2-14.
- Skjoett-Larsen, T. (2002). Third party logistics - from an inter-organizational point of view. *international Journal of Physical Distribution & Logistics Management*, 30(2), 112-127.
- Zheng, L., & Zhang, J. (2010). Research on Green Logistics System Based on Circular Economy. Beijin: xinum press.