

The Effects of Global Sourcing on Supply Chain Performance in Dairy Manufacturing Companies in Zimbabwe

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Abstract: This study aimed to determine the effects of global sourcing on supply chain performance in dairy manufacturing companies in Zimbabwe. A mixed-method approach was used and a sample size of 24 procurement staff for the questionnaire was selected from a population of 25 procurement professionals in dairy manufacturing companies. Interviews were carried out with procurement professionals from dairy manufacturing companies. The Statistical Package for Social Sciences (SPSS) version 16 was used to analyze quantitative data whilst thematic analysis was used to analyze qualitative data. The findings of the study show that global sourcing practices had a significant positive effect on the quality of purchased materials, an insignificant positive effect on landing cost of materials, and a significant negative effect on stock availability of materials. The study concluded that the adoption of global sourcing may not guarantee improved supply chain performance in dairy manufacturing companies. This means that the effectiveness of global sourcing may depend on the sector and context in which it is applied. Therefore, it was recommended that dairy manufacturing companies need to consider adopting global sourcing practices and other supportive local sourcing strategies to improve their supply chain performance in the context of developing countries.

Keywords: dairy, dairy manufacturing, global sourcing, supply chain performance

I. INTRODUCTION

The shortage of milk and other critical inputs that are used to produce dairy products on the local market is affecting dairy manufacturing companies that are operating way below full capacity utilization. According to Njarui et al., (2019), in Africa, dairy manufacturing companies face the challenges of excessive power cuts, lack of production equipment, erratic supplies of milk from dairy farms, and the deficiency in skills which are required to produce milk products. On the other hand, the economic crisis in most African countries compels dairy farmers and producers to operate below normal capacity which causes low milk output (Chari and Ngcamu, 2017). The dairy manufacturing industry in Zimbabwe is not spared from the aforementioned challenges that the country is failing to become self-sufficient in terms of producing adequate milk and milk products.

Significantly, the dairy manufacturing industry plays a vital role in a country since it provides nutrition to people while concurrently creating employment and earning the country

much-needed foreign currency from exports of milk and milk products. However, there has been a general decrease in the production of milk and milk products in the local market and this has created serious shortages of milk and milk products. Also, the operations of dairy manufacturing companies have been interrupted by the severe shortages of milk and other inputs which are used to produce dairy products that many employees lost their jobs. This problem dates back to the year 2008 when the country started to experience serious economic challenges which affected local dairy farmers that they could not sustain their dairy farming activities. According to Phiri (2014), a repeated sharp decrease in the production of 50 million liters of milk as opposed to the annual demand of 120 million liters was recorded from the year 2008 to the year 2014. Furthermore, Nyamwanza et al., (2015) put forward that both the shortage of milk and the high prices of inputs that are used to produce milk products on the local market have led to low levels of capacity utilization by the dairy manufacturing industry. Presently, the aforementioned challenges have worsened that dairy manufacturing companies find it difficult to carry on with their operations and contain operating costs whilst at the same time satisfying the demand of the market.

As there are serious shortages and high prices of milk and critical inputs that are used to produce milk products on the local market, many dairy manufacturing companies have adopted global sourcing to obtain adequate supplies of milk and inputs from foreign markets at inexpensive prices. Therefore, this study intends to investigate the extent to which global sourcing has influenced performance variables of supply chain performance of dairy manufacturing companies in Zimbabwe.

II. LITERATURE REVIEW

2.1 Global sourcing

Global sourcing refers to the practice of purchasing materials and components from suppliers located outside the national borders (Nassimbeni, 2006). As well, global sourcing is the integration and coordination of procurement requirements across worldwide business units, looking at common items, processes, technologies, and suppliers (Monczka and Trent, 1991). Many terms are used interchangeably to mean global sourcing and these terms are international purchasing, worldwide sourcing, import sourcing, and offshore sourcing

(Matthyssens et al., 2006). The increase in the growth of globalization of trade has opened opportunities for manufacturing companies in developing countries to shift focus towards sourcing from low-cost countries. According to Byrne (2002), there is a clear trend towards increased global sourcing because of the growth in the globalization of trade. However, for firms to successfully practice global sourcing, they must have enough information, organizational infrastructures, effective coordination mechanisms, and logistic capabilities (Scully and Fawcett, 1994).

2.2 Global sourcing practices

Firstly, off-shoring is one of the global sourcing practices that are used by dairy manufacturing firms operating in developing countries. According to Duening and Click (2005), off-shoring is a type of business process outsourcing where the vendor's work location is in a country that is at a considerable distance from the client. For instance, off-shoring can be vendors from neighboring or overseas markets like South Africa and China servicing clients from Zimbabwe. It is very important to understand that off-shoring occurs when a company performs a production or service function in another country. The basic driving force of off-shoring is the growth and technological improvements in information and communication technology.

The benefits of offshoring to dairy manufacturing companies operating in Zimbabwe can be explained from the theoretical point of view. According to Leiblein et al, (2002), using the Transaction Cost Economics (TCE), offshoring has cost-saving advantages. The theory views offshoring as an opportunity to reduce total transaction costs and production costs by carrying out certain business roles at offshore locations at a lower cost. This happens because in offshore locations there is a larger choice of suppliers as well as advances in information and communication technologies that lower transaction costs (Ellram et al, 2008). Therefore, given the high costs of producing dairy products in Zimbabwe, offshoring is of great importance to dairy manufacturing companies as it helps them to save on production costs.

Also, the resource-based view theory can be used to explain the advantages of offshoring to dairy manufacturing companies operating in Zimbabwe. Barney (1991) put forward that, the resources and capabilities possessed by a company are the main sources of its competitive advantage when they are valuable, rare, imperfectly imitable, and non-substitutable. Therefore, for dairy manufacturing companies, offshoring provides them access to such valuable resources, including capabilities or innovation, advanced manufacturing equipment, and other inputs.

Secondly, dairy manufacturing companies in Zimbabwe carry out international sourcing to acquire dairy manufacturing inputs, raw materials, spare parts, machinery, and other important supplies from foreign markets. Thus, dairy manufacturing firms in developing countries are now giving more attention to the management of international sourcing.

International sourcing refers to material and component purchases from suppliers located outside the national borders (Nassimbeni, 2006). The major reasons driving dairy manufacturing companies in Zimbabwe to pursue international sourcing include domestic unavailability of some raw materials, poor-quality materials available on the local market, higher local prices, and low domestic technological standards (Stevens, 1995). However, international sourcing poses problems such as cultural and communication barriers, longer lead times, higher transport costs, risks associated with transactions involving distant interlocutors, and different normative systems to local dairy manufacturing companies.

2.3 Supply Chain Performance

Supply chain performance refers to the activities of the extended supply chain to meet end-customer needs, including product availability, on-time delivery, and all the necessary supplies and capacity in the supply chain to provide these services in a responsive manner (Najmi et al., 2013). Several metrics are used to measure supply chain performance. The most commonly used by practitioners and most cited in research are quality of purchased materials, materials landing cost, and stock availability. These metrics are described in more detail below.

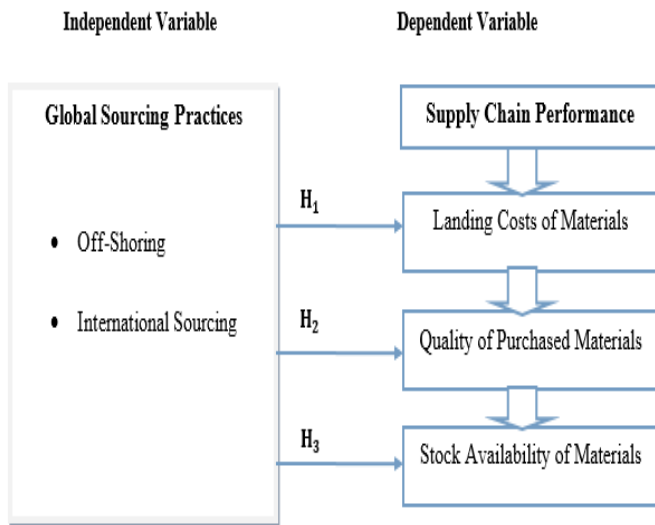
The quality of purchased inputs is an important measure of supply chain performance (Christopher and Towill, 2001). One of the reasons why companies do not compete in terms of quality is because it has not been made clear which dimension of quality will produce the best results in certain markets. However, the term's material or product quality can be classified based on perceived quality, i.e. how a customer views the product. Product quality is aimed at the user of the materials, products, or services. The user can be a manufacturing company or an individual, not necessarily the end customer but a customer within the supply chain. Sourcing milk and inputs of high quality from global markets is a key performance indicator in supply chain departments of dairy manufacturing companies as this helps in the production of the high-quality output of milk products at dairy manufacturing companies.

Many companies endeavor to maintain optimum inventory levels to control both costs of holding stocks and ordering costs but at the same time ensure uninterrupted production processes which are oftentimes caused by inadequate inventories of raw materials. Niemann et al, (2018) put forward that, companies normally protect themselves from supply variability and disruption using keeping higher inventory and capacity levels. According to the most consolidated inventory management models which are the economic order quantity and safety stock assessment, the average stock depends on the supply lead-time and its variability. Sourcing strategies used by a company determine whether it will keep an adequate amount of stock of materials. This is supported by Manzione et al (2017) who opine that a sourcing strategy such as global sourcing is usually associated with the problem of long lead time and high purchasing costs

which cause stock unavailability. Therefore, the choice of a sourcing strategy will determine whether dairy manufacturing will keep an adequate amount of stock to avoid interrupting the production process.

In supply chain management, cost reduction both externally and internally is essential to improve productivity. According to Hill (2000), many manufacturing organizations do not focus their efforts to source from markets with the highest costs. Instead, they focus on reducing sourcing and purchasing costs. Furthermore, Hill (2000) put forward that price is becoming an increasingly important order-winning criterion, especially in the growth, maturity, and saturation phases of the product life cycle. The task of manufacturing companies is to achieve the low costs required for price sensitivity in the market. This measure is strongly linked to suppliers, i.e., purchased items, as well as to the production organization's staff. Therefore, for manufacturing organizations to realize desirable supply chain performance, the costs of purchased materials must be minimal.

2.4 Conceptual framework



Source: Authors (2022)

III. RESEARCH METHODOLOGY

This study has followed a pragmatic philosophy to enable the researcher to use both quantitative and qualitative research methods to gain meaningful and realistic insights into disaster risk reduction as it occurs in the real world (Creswell 2014). The study’s target population was made up of 25 procurement professionals from five dairy manufacturing companies in Zimbabwe and the sample size used was 24. The sample size was determined using the Krejcie and Morgan (1970) model. A structured questionnaire was used to collect data whilst telephone interviews were conducted with key informants in dairy manufacturing companies. The Statistical Package for Social Sciences (SPSS) software, IBM version 16 was used to analyze quantitative data whilst qualitative data was analyzed

based on themes that emerged from the objectives of the study.

IV. RESULTS AND THEIR DISCUSSION

This section present interprets and discusses the findings of this study. The results will show the effects of global sourcing on supply chain performance in dairy manufacturing companies operating in Zimbabwe.

Table 4.1 Coefficients of Determination

Model	Unstandardize d Coefficients		Standar dized Coeffi cients	T	Sig.
	B	Std. Error	Beta		
Global sourcing practices and landing cost of materials	.014	.208	.011	.070	.945
Global Sourcing practices and quality of materials	.725	.321	.579	2.255	.036
Global sourcing practices and stock availability	-.580	.228	-.422	- 2.540	.020
a. Dependent Variable: Landing costs of materials					

n=24, Source: Primary data (2022)

IBM version 16

The results in table 4.1 above show a positive and insignificant relationship between global sourcing practices and landing costs of materials (Beta =0.014, Alpha =0.945). The interview responses also confirmed that the adoption of global sourcing practices by dairy manufacturing companies had an insignificant impact on landing costs of materials. The findings from both interview and questionnaire responses concur with the findings in a study by Holweg et al (2011) that the practice of global sourcing may not significantly reduce the landing cost of materials. Therefore, the findings show that adopting global sourcing to reduce the landing cost of materials to enhance the supply chain performance of firms may not be effective.

Moreover, the results in table 4.1 above show a positive and significant relationship between global sourcing practices and the quality of purchased materials in dairy manufacturing companies in Zimbabwe (Beta =0.725 p-value =0.036). This shows that global sourcing practices have a positive effect on the quality of purchased materials in the dairy manufacturing industry in Zimbabwe. These findings are in line with those of Niemann et al, (2018) that the practice of global sourcing gives firms opportunities to obtain high-quality products from competitive markets with advanced technology in production. The findings also corroborate with the findings in a study by Landy (2014) that there is a positive and strong coefficient value in global sourcing, this improves the quality of purchased products. More so, this is supported by the findings from the interviews which were carried out where it was indicated that global sourcing has brought high-quality materials into the dairy manufacturing industry mainly due to stiff competition from the manufacturers of dairy materials in foreign markets.

Furthermore, table 4.1 above shows that global sourcing practices have a negative and significant effect on stock availability of materials in the dairy manufacturing industry, ($\beta = -0.580$, $p = 0.020$). This means that there are some factors not covered by this study that affects global sourcing practices. The findings from the interview show that there is a negative and significant relationship between global sourcing practices and stock availability in dairy manufacturing companies in Zimbabwe. Therefore, the findings imply that in as much as global sourcing practices help enhance the performance of dairy supply chains, there are also some disadvantages dairy manufacturing companies suffer through global sourcing.

V. CONCLUSIONS AND RECOMMENDATIONS

Based on the presentation and discussion of results, it can be concluded that global sourcing practices may not improve the overall performance of the dairy supply chains in Zimbabwe. This is based on the fact that, of the three supply chain performance indicators used in this study, the quality of purchased materials is the only indicator that can be influenced positively and significantly by global sourcing practices. On the other hand, stock availability is influenced negatively and significantly by global sourcing practices whilst the landing cost of materials is influenced positively and insignificantly by global sourcing practices. This means the model can lead to a decline in the overall supply chain performance of dairy manufacturing companies in Zimbabwe. Given this conclusion, it is recommended that firms operating in the dairy manufacturing industry must not rely solely on global but must consider sourcing both locally and globally to enhance their supply chain performances.

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