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RESEARCH ARTICLE

OPTIMISING LOGISTICS COSTING IN MALAYSIAN SMALL AND MEDIUM ENTERPRISES: A CASE STUDY OF GARMENT MANUFACTURER

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ABSTRACT - This paper addresses the critical issue of inefficient logistics costing practices within garment manufacturing small and medium enterprises (SMEs) in Malaysia, which often leads to suboptimal cost management and competitive disadvantage. It investigates the current practices of logistics costing in local garment manufacturing SMEs and examines the challenges posed by emerging trends in logistics costing. The study also aims to identify prevalent practices in logistics management, ascertain the factors influencing logistics costs, and recommend effective strategies for optimising these costs. A qualitative method via semi-structured interview was employed to gather the data. The findings reveal that logistics costs are predominantly calculated based on transportation fees alone. Significant factors affecting logistics costs include currency exchange rates and labour expenses. The recommended best practices for managing logistics costs effectively include outsourcing logistics functions and opting for smaller vehicles, such as cars or vans, instead of larger lorries.

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1. INTRODUCTION

Small and medium enterprises (SMEs) are the backbones of a country that contribute significantly to the national economy (Bhoganadam et al., 2017). According to the Department of Statistics Malaysia (2023), SMEs contributed 38.4% to the country's gross domestic product (GDP) and recorded a growth of 11.6% in 2022.

Table 1. Contribution of SMEs to Malaysia's GDP

Year	Contribution of SMEs to the GDP	Growth (%)
2022	38.4	1.0
2021	37.4	-0.7
2020	38.1	-0.8
2019	38.9	0.6
2018	38.3	0.5
2017	37.8	0.5

Source: Department of Statistics Malaysia

The rapid growth of the local manufacturing industry can be dated back to the 1980s when Malaysia decided to change from an agricultural to an industrial economy (Lee et al., 2022). The manufacturing sector, in particular, has demonstrated a relatively stable performance across all SME sectors and plays an important role in supporting and contributing to Malaysia's GDP. To remain competitive in the global market, it is important for local manufacturing SMEs to adopt and work towards Industry 4.0. However, such adoption remains in the infancy stage (Zhang & Mia, 2023).

The manufacturing industry can greatly improve the economic performance of Malaysia, with existing evidence suggesting the close relationship between labour productivity and export intensity (Zhang & Mia, 2023). Following the continual increase in local export activities, supply chain and logistics have become major concerns for many companies and businesses. However, rapid globalisation in the 21st century and the sudden outbreak of infectious disease (i.e., COVID-19) in 2019 significantly affected the mode of logistics and supply chain management (Zhang et al., 2022). SMEs nowadays have more opportunities and channels to explore and penetrate the foreign market because the limitation of geographical factors is overcome by technological advancement (Upadhye et al., 2010). While such development is beneficial, the logistics costs become gradually significant along with the process as companies must transfer the goods from one place to another (Cempírek et al., 2016). New technologies and strategies are also implemented by SMEs to

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increase their competitiveness in the market (Pansare et al., 2024). Blockchain technology and the Internet of Things (IoT) are commonly applied technologies in supply chain and logistics that can improve organisational performance; however, most manufacturing companies are fixated on the challenges of applying these new technologies rather than their benefits (Lee et al., 2022). Another issue that may arise in this context is the supply chain cost control (Sun et al., 2022).

Table 2. Contribution of the manufacturing sector of MSMEs to Malaysia's GDP

Year	Contribution of manufacturing MSMEs to Malaysia's GDP
2022	33.5
2021	34.2
2020	34.5
2019	34.6
2018	34.4
2017	34.6

Source: Department of Statistics Malaysia

Third-party logistics enterprises have been developing rapidly due to globalisation and the high demand for transportation services to meet client's requirements (Jin & Li, 2020). Meanwhile, logistics costs are calculated during the pricing process and passed on to the consumers. Hence, companies must use the proper costing method to determine the cost of products during the pricing process (Everaert et al., 2008). The lack of attention and understanding of the real cost can raise various issues in the costing method and process (Khem & Kritchanchai, 2021). Therefore, it is crucial to identify the logistics component.

1.1 Research Problem

This paper aims to explore the current logistics costing practices in one of the manufacturing SMEs in Malaysia. It focuses on identifying the obstacles and difficulties faced by SMEs in controlling and managing logistics costs and proposing a solution to address the problem (Muha, 2019; Zakariah & Pyeman, 2013). High logistics costs are a prominent issue in the industry due to the high number of materials and goods movement. This, in turn, affects the sales performance because consumers will have to bear the high cost. Many SMEs are also facing problems in resolving the problem of high logistics costs. This highlights the necessity to identify the challenges and factors contributing to the increasing logistics costs.

1.2 Research Gap

Research on logistics costs remains insufficient due to its complexity and difficulties, with existing studies mainly focused on the logistic costing method and modelling. There is a gap in the current practices of logistic costing and its trends alongside the factors contributing to high logistics costs. This subsequently prompts the need for further in-depth research.

1.3 Research Questions

a) What are the current practices of logistics management in a garment manufacturing SME in Malaysia?

b) What are the factors affecting the logistics costs in a garment manufacturing SME in Malaysia?

c) How do good practices of logistics cost management optimise the logistics costs of a garment manufacturing SME in Malaysia?

1.5 Research Objectives

a) To identify the current practices of logistics management in a garment manufacturing SME in Malaysia.

b) To determine the factors affecting the logistics costs in a garment manufacturing SME in Malaysia.

c) To propose good practices of logistics cost management for optimising the logistics costs of a garment manufacturing SME in Malaysia.

1.6 Scope of Study

This study adopted a qualitative research design to explore the logistics costing practices of Malaysian SMEs in the manufacturing sector. The case company is a garment manufacturing SME in Malaysia. The data was gathered using semi-structured interviews and further analysis was done to identify the current practices of logistics management and the factors affecting logistics costs. Several recommendations of good practices were also offered to optimise logistics costs in a garment manufacturing SME in Malaysia.

1.7 Significance of Study

This research outlines a basic concept regarding the current practices of logistics costing in Malaysian manufacturing SMEs. It also discusses the problems that other logistics SMEs may face and how they can be solved to boost organisational performance and efficiency. The findings hope to contribute to the body of knowledge regarding the factors influencing high logistics costs.

1.8 The Case Company

The case company is a clothing manufacturing SME located in Johor, Malaysia. It was incorporated on 2 August 2016 and manufactures high-quality yet affordable cotton garments to fulfil the market's demand. The company has a simple organisational structure consisting of the administrative level, office admin, and workers in the production line. The company expands its business across the nation and exports its goods to Singapore. Its main manufacturing factory and warehouse are situated in Johor and Melaka, respectively. The company has extensive goods movement as they outsource some work processes to external parties. They also transfer their goods from the factory in Johor to the warehouse in Melaka before distributing them across the nation. All matters regarding the delivery and transportation of goods are outsourced to a third-party logistics company. This forms a strong connection between the company with other parties to support their manufacturing process and supply chain system.

2. LITERATURE REVIEW

2.1 Logistics Costs

Table 3 summarises the different points of view regarding the components of logistics costs.

Table 3. Identification of logistics costs

Author	Components of Logistics Costs
Engblom et al. (2012)	Transport, warehousing, inventory carrying, (logistics) administration, (transport) packaging, and indirect cost of logistics.
Stępień et al. (2016)	Related purchasing, production, sales, marketing, accounting, and general administrative.
Muha (2019)	Administration costs, warehouse costs, distribution costs, and part of capital costs.
Kucera (2019)	Transport, warehousing, inventory management, administration of logistics packaging, and indirect cost of logistics.
Di (2020)	Supply logistics fee, production logistics fee, sales logistics fee, and reverse logistics fee.
Santoso et al. (2021)	Transportation costs, inventory costs, and administration costs.
Banomyong et al. (2022)	Transportation cost, warehousing cost, inventory-carrying cost, and logistic administration cost.

Logistics costs are complex and challenging to define as they have a wide range of different points of view and aspects. A similarity shared between these varied definitions is that logistics costs refer to any direct and indirect costs related to moving goods from one place to another. Administrative costs for logistics and transportation costs are frequently classified as the components of logistics costs. The Activity-Based Costing (ABC) method is commonly used to calculate logistics costs (Jin & Li, 2020). Determining and choosing cost driver is key when implementing this method in logistics practice. A prominent advantage of the ABC method is that it identifies all functions in the value-added process and assigns the cost to each activity. This ensures that all the processes and operations are effective, efficient, and worthy (Asjanti et al., 2021). Another method to allocate accounting costs directly to specific unit departments is Time Driven Activity-Based-Costing (TD-ABC) (Everaert et al., 2008). A comparison of both methods indicates that the TD-ABC method provides a better result that correctly grasps the logistics components, determines the inefficient and non-value-added process, examines department efficiency, and proves the effectiveness of the logistics costing model.

2.2 Optimising Logistics Cost

The use of managerial tools and approaches not only optimises the logistics cost but will also cause a shift in the company organisation, innovation, and environmental sustainability (Teplická & Szalay, 2021). However, the conventional supply chain often faces difficulties in optimising the logistics cost, especially when the company needs to adapt to the emerging IoT and blockchain technology (Viriyasitavat et al., 2022). Optimising the logistics cost can also improve price competitiveness and enhance the brand image of the company (Volkov, 2023). In this context, determining the route stands as a crucial factor for optimising the logistics cost since an effective and efficient route can gradually decrease the logistics cost (Farizal et al., 2022). The vehicle control system is inseparable from the logistics cost and a company that optimises its logistics cost will also evaluate its power, economic, environmental, and reliability indicators (Konovalova et al., 2022).

2.3 Good Cost Management Practices in Logistics Service

A logistics manager manages costs by ensuring sufficient inventory, storage, and warehouse while also handling transportation and information (Ristovska et al., 2017). Experts believe that reverse logistics practices reduce the sourcing cost of materials (Pushpamali et al., 2021). Some companies outsource logistics work to other parties and perform mainly traditional activities (Jimenez-Franco & Gasparetto, 2020). Management commitment, skills and knowledge, and financial competency are some of the best practices for logistics performance (Makmor et al., 2019).

3. METHODOLOGY

This paper employed the qualitative research method to study the current practices of logistics costing in one of Malaysia's garment manufacturing SMEs. Such method offers an in-depth and detailed understanding of the topic by collecting the experiences and opinions of specialists and senior workers. It also provides a wider, more comprehensive framework for the subjects and topics under investigation. A detailed literature review was conducted to obtain a deeper and more holistic comprehension regarding the latest classification of logistics costs and the methods used to optimise logistics costs in the industry. The research gap and objectives were also determined, followed by determining the selected manufacturing SME as the case company to study its logistics practices. The company was chosen because it involves stock movement and logistics work as the warehouse and retail shops are located in different states. The data was collected through a semi-structured interview with the manager of the case company. The interview questions elicited the manager's responses regarding the company's current logistics costing practices and his experiences in handling the company's logistics field. All answers were recorded on a note for further analysis and interpretation.

4. FINDINGS AND DISCUSSION

4.1 Current Logistics Costing Practices

The current logistics costing practices of a garment manufacturing SME in Malaysia mainly concern transportation and fuel costs. Logistics cost is defined as the transportation fee used to move their stock from one place to another. The most common way to calculate the logistics cost is by summing the shipping fee of transferring goods from supplier to factory, factory to agents, agents to factory, and factory to retail shops. The calculation can be summed as:

$$Logistics\ Cost = x_1 + 2(l_1)(r_1) + x_2 \quad (1)$$

where:

x_1 = The shipping fee for transferring the goods from supplier to factory
l_1 = The distance between the factory and the agents
r_1 = The petrol fee per kilometre
x_2 = The shipping fee for transferring the goods from the factory to the retail shop

The case company outsources all goods-related logistics to a third-party logistics company and hires a worker to handle the process. It also uses the distribution service of a third-party logistics company whenever demanded by customers. Outsourcing is more beneficial in the long run as the company does not incur expenses and costs for vehicle servicing and maintenance. Other components, such as logistics administration costs, warehousing costs, and distribution costs, are excluded from calculating the logistics costs. Nevertheless, these costs are considered part of the administrative costs. The calculation of product cost is as follows:

$$Product\ Cost = C_{rm} + C_D + C_c + C_P + C_S + Logistics\ Cost + Salary\ expenses + Administrative\ expenses$$

where:

C_{rm} = Cost of raw materials
C_D = Cost of dyeing garments
C_c = Cost of cutting garments
C_P = Cost of printing on garments
C_S = Cost of sewing garments

Other SMEs in Malaysia are believed to have similar logistics costing practices as the case company. This situation could be attributed to the lack of logistics expertise and the complexity of determining logistics costs.

4.2 Factors Affecting the Logistics Costs

4.2.1 Currency

Currency is the most significant factor affecting logistics costs, especially for companies that import or export goods from other countries. Any changes in the currency rate can greatly impact their logistics costs. As the currency rate is dependent on a country's economic performance and policy, it is hard for an SME to improve its logistics cost. Moreover, any additional logistics costs inflicted by the currency exchange rate will eventually be transferred to consumers who will bear a higher cost in their purchase.

Table 4. Currency exchange rate of MYR

Year	Exchange Rate (1 MYR to USD)	Growth (%)
April 2024	0.2098	-0.0051
December 2023	0.2149	-0.0117
December 2022	0.2266	-0.0129
December 2021	0.2395	-0.0097
December 2020	0.2492	+0.0049
December 2019	0.2443	+0.0027

Source: Bank Negara Malaysia

The case company has experienced a significant increase in logistics costs over the past few years as a result of the continuous decrease in the currency exchange rate. While a small change in the fuel price does not affect logistics costs much, a small change in the currency exchange rate would have a greater impact on logistics costs.

4.2.2 Labour Costs

The increase in labour costs can become the main reason for higher logistics costs if the case company only transfers and moves its goods domestically within the nation. It has a tremendous impact on logistics costs compared to other factors like currency and fuel prices. The Malaysian government has increased the minimum wage several times in the past few years.

Table 5: Minimum wages in Malaysia

Year	Minimum Wages (RM)	Growth (%)
1 May 2022	1500	+25.00
1 January 2020	1200	+14.29
1 January 2019	1050	+5.00
1 July 2016	1000	+11.11
1 January 2013	900	-

The increase in minimum wage has definitely burdened many SMEs due to the rise in costs. The minimum wage of RM1500, which took effect on 1 May 2022, has increased the costs of the case company, particularly concerning the transportation to move their goods from the factory to the warehouse.

4.3 Good Logistics Costs Management Practices

4.3.1 Outsourcing

The case company reduces its logistics costs by outsourcing all transportation and logistics works to a third-party logistics company in large quantities, leaving it to only bear the cost of transportation. This strategy relieves the case company from risks associated with vehicle periodic servicing and maintenance, which are transferred to the third-party logistics company. Furthermore, the third-party logistics company is responsible for any damage and loss during goods movements. All goods are expected to arrive at the destination in good condition and in the right amount.

4.3.2 Using Vans and Cars Instead of Lorries

The case company purchases several vans and cars to move the goods in small quantities. This strategy is cost-effective compared to other methods as the servicing and maintenance costs of a car or van are lower and more affordable than a lorry. Another benefit of using cars and vans is the flexibility in arranging and managing time. Moving goods using their own cars and vans will avoid the lead time of waiting for the third-party logistics company to arrange the load and shipping time. The case company can also move their goods anytime to meet customers' demands. The comparison of good logistics cost management practices in the literature review and discussion revealed that outsourcing logistics work to third-party logistics companies is a common practice in many companies nowadays. It not only reduces logistics costs but also mitigates additional expenses like vehicle servicing and maintenance fees. Hiring logistics experts is another measure to improve logistics performance and increase the efficiency of logistics costs. Highly skilled and knowledgeable employees can also contribute towards efficient logistics costs.

5. CONCLUSION

The current logistics costing practices in garment manufacturing SMEs in Malaysia mainly revolve around transportation costs. Other logistics-related costs, such as administrative costs, warehousing costs, and inventory-carrying costs, should also be considered part of the logistics costs. Some of the factors affecting logistics costs include currency rate and labour costs. It is hypothesised that better economic performance of a country will result in higher currency rates

and lower logistics costs. This suggests a correlation between logistics costs with a country's economic performance and government policy. Good practices for optimising logistics costs include outsourcing and hiring logistics experts to manage them. Future research is recommended to quantitatively investigate the extent to which the currency rate and labour costs affect logistics costs.

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AUTHORS CONTRIBUTION

Each author was involved and contributed evenly to this manuscript. All authors read and approved the final manuscript.

AVAILABILITY OF DATA AND MATERIALS

All data and materials generated or analysed during this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

This study was conducted in accordance with ethical guidelines.

CONFLICT OF INTEREST

The authors, as noted, certify that they have NO affiliations with or involvement in any organisation or agency with any financial interest (e.g., honoraria, educational grants, participation in speakers' bureaus, membership, jobs, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements) or non-financial interest (e.g., personal or professional relationships, affiliations, expertise, or beliefs) in the subject matter or materials addressed in this manuscript.

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