

Improvement Strategy for Supply Chain Performance of the Garment Industry to Decrease Logistics Costs and Enhance Competitiveness

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Abstract—The competitiveness of Indonesian product is low due to high logistics cost. The other emerging problem related to logistic is delivery time. Those are affected by conventional logistics facilities such as port and connectivity that relating between production center and consumption center. Textile Industry is national priority industry which is prospecting to develop. The aims of this study are (1) Knowing SME garment profile, (2) Identifying logistics cost (3) Identifying logistics activities (4) Knowing the barrier factors on supply chain (5) Defining the strategy to increase supply chain performance of SME's Garment. This study was undertaken to SME garment in Bandung City, Bandung Regency and Cimahi City. The number of sample are 72 respondent. The results of this study are (1) The logistics cost is in range 22%-32%, (2) The highest cost are warehousing cost included rent cost, security and logging service, (3) The barrier factors are raw material availability, human resources restriction, expensive transportation cost, road damaged and traffic jam. Recommendation to reduce logistics cost are (1) Providing cheap warehousing and transportation facilities, (2) Providing logistics services for SME garment industry (3) Improving infrastructure and connectivity by local government (4) Improving on planning activities to determine target and supplier management.

Index Terms—SMEs, garment industry, logistics, supply chain management

I. INTRODUCTION

Despite the decline due to the global crisis in 2008 and 2010, Indonesian textile products still sufficiently taken into account in the global market. In 2006, Indonesia was included into the top 10 countries as the world's largest exporter of textiles and textile products. Indonesian textile products are facing tough competition in the global market from several countries such as Vietnam, China, and India. Textiles and textile products (TPT) is a national priority of the Indonesian industry in which they have a good prospective to be developed. With a population of over 240 million, the Indonesia textile exports are included in the top 10 export of Indonesia commodities to US [1], [2]. The textile industry is a labor-intensive industry, which has absorbed at least 1.8 million workers [3]-[5].

Nevertheless, the textile industry is currently facing a variety of obstacles and constraints, particularly among other infrastructure problems and abundance of imported products, especially from China, both legally and illegally entering and suppresses the development of domestic industries [6]. The smooth and efficient flow of textile commodities remains a logistical problem unsolved. Garment is one which the proportion of textile products labor absorption is highest (almost 50%) of all textile products (textile products consisting of fibers, yarns, weaving and garment). Noting that it is to restore the absorbing performance of the textile industry workforce in large numbers in order to be able to continue to withstand competition in the era of trade liberalization, it is necessary to immediately note the real barriers that exist for this including the costs to be borne along the supply chain. Some of the objectives to be achieved is to know the profile of SMEs Garments respondents, identifying logistics costs incurred by SMEs garment, identifying the logistics activity in the SMEs garment, what factors inhibiting the SMEs garment supply chain, and what kind of strategies that can improve performance garment industry supply chain logistics to reduce costs and improve competitiveness.

II. LITERATURE REVIEW

The concept of the supply chain is a new concept in view of logistical problems. The old concept see logistics as an internal issue of each company, and the solution focused on solving internally in the company respectively. In this new concept, logistical problems are seen as broader issues that lie very long since the basic materials to finished goods used by end consumers, which is the chain of supply of goods. The supply chain is a network of organizations that interdependence and cooperation to control, regulate and improve the flow of materials and information from the supplier to the end user [7]. The supply chain is defined as well as logistics network consisting of suppliers, manufacturers, warehouses, distribution centers, and retail outlets, where the raw materials, semi-finished goods and finished goods flowing between these facilities [8].

In the context of SMEs, the characters are very different businesses with large companies [9].

Implementation of supply chain management is determined by four characters or factors: strategy, leadership, culture, and organizational capability [10]. Other studies also show that the integration of the supply chain management and supplier network management with customer order management and production planning and control are also neglected by SMEs [11], [12]. Logistics Management as part of the Supply Chain process that serves to plan, implement and control the efficient and effective flow of goods, storage of goods, services subscribers, and related information from point of origin to point of consumption in order to meet the needs of customers [13], [14]. Mission Logistics Management is delivering the right goods or services, in the right place, at the right time and at the desired quality, thus providing the greatest contribution to the company [15]-[17]. While the purpose of Logistics Management is delivering finished goods and an assortment of materials in the right quantity, at the required time, in a state that can be used, to the location where it is needed and at the lowest total cost.

III. RESEARCH METHODOLOGY

This research is descriptive analysis to provide a complete picture of the performance of the supply chain and logistics costs to be incurred by the garment industry, both upstream and downstream. Through the survey, the number of samples taken in the first year amounted to 90 entrepreneurs Garments in Bandung, Bandung and Cimahi regency which has not been exported but which can be processed only 72 questionnaires. This amount is considered to represent the population of the garment industry, which is approximately 1949 companies. Sampling was done by purposive random sampling and the snow-balling. In the first year, a survey carried out to companies who have not made the export and in the second year of the survey to companies that have been doing the export. Data collection using research instruments were questionnaires.

The necessary data in this study are primary and secondary data. Primary data needed to answer the research objectives primarily through descriptive statistical analysis and SWOT analysis. Field studies were carried out trying to obtain information about the strengths and weaknesses of the industry and macro environment faced by the garment entrepreneurs. Data collection instruments used are as follows (a) questionnaire, which is a structured list of questions addressed to the respondent in this case the garment entrepreneurs are selected as the sample, (b) Focus Group Discussion (FGD), is used as a support for the survey data collection with questionnaires and interviews, to strengthen the analysis results. FGD is done by the number of key persons between 12-20 which are a representation of all stakeholders that involved in the garment industry.

The approach used in this study is an approach that is the mix between quantitative and qualitative approaches. Quantitative approaches done by conducting a survey to entrepreneurs Garments in Bandung, Bandung and

Cimahi regency, given the amount of the highest in the textile industry these areas. In addition to descriptive analysis, it is also done crosstab to see the association between variables by using Creamer V test and Kendal's Tau Test. Meanwhile, a qualitative approach done by in-depth interviews and Focus Group Discussion (FGD). Furthermore, the data processing is done by using SAS or SPSS for calculation Through the logistics cost components are analyzed using univariate (frequency table) and bivariate (cross-tabulation), and supported by: (i) Situation Analysis, (ii) and SWOT Analysis; (iii) an analysis of Porter's strategy of using Generic Strategic / Strategic Clock.

IV. RESEARCH FINDING

Several research finding are as follows:

A. Business Performance for the Last 5 Years

Business performance illustrates the tendency of the garment SME businesses experienced the last 5 years. Some of them have increased, stable, but there are also decreased. Business performance profile of 72 SMEs surveyed garment illustrated in the following chart as can be seen on Fig. 1:

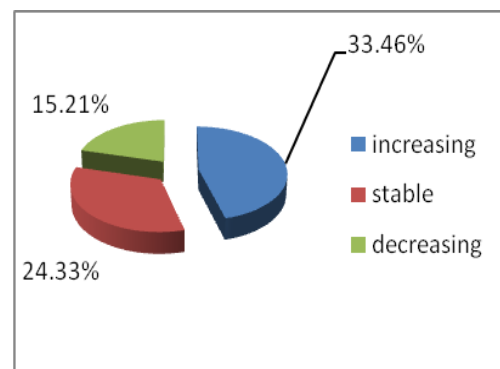


Figure 1. Business performances for the last 5 years.

B. Identification of the SME Garments Logistics Costs

Logistics costs incurred by SMEs garment in 1 year ranged between Rp 6.48 million – Rp 44.31 million or if monthly ranges between Rp 540,000 - Rp 3.6925 million. When associated with turnover, using the lowest mode, the highest ranges between Rp 20 million - USD 200 million, the percentage of logistics costs range between 22% - 32%, the larger the company, the smaller the cost of logistics for large volume. Calculation of logistic costs is shown in Table I as follow.

C. Dominant Cost Factor

Based on the results of the analysis are addressed four dominant factor in determining the cost of logistics, namely Rental Building, Communication Costs Order, logging fee, and the cost of building security. From all the data collected showed the rental cost of the building is the most dominant cost factor, reaching 63.74% of all costs incurred for the activity of the supply chain. The next factor is the cost of communication cost, which reached 25.19% reservations. whereas only 5.06% logging costs

and the cost of building security 4.82%. Detail about dominant cost factors can be seen on Fig. 2.

TABLE I. LOGISTIC COST OF SME GARMENT INDUSTRY

Logistic Cost	Remark	Value (IDR)	
		Least	Highest
Delivery	Fuel	360,000	9,600,000
	Driver	250,000	1,500,000
Maintenance		600,000	3,600,000
Retribution		300,000	1,000,000
Highway Toll		100,000	1,000,000
Parking		240,000	2,750,000
Warehouse	Rent	4,000,000	15,000,000
	Security	90,000	3,600,000
	Service	120,000	4,500,000
Ordering cost		300,000	360,000
Tipping		120,000	1,400,000
Total logistic cost/year		6,480,000	44,310,000
logistic cost/month		540,000	3,692,500
revenue/year		20,000,000	200,000,000
logistic cost percentage to revenue		0.324	0.22155

Source: Research Competency, 2013

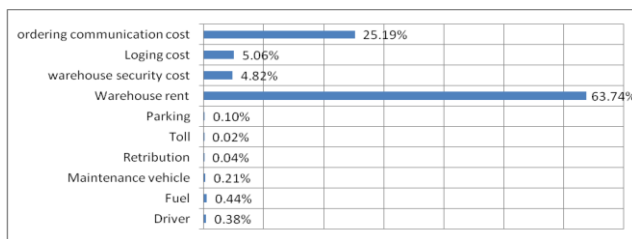


Figure 2. Dominant cost factors.

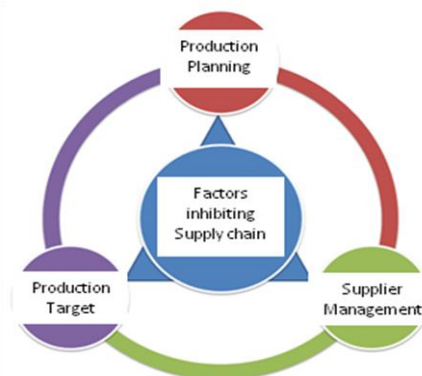


Figure 3. Factors inhibiting supply chain garment industry SMEs.

As is shown in Fig. 3, in analyzing the factors inhibiting SME garment supply chain, the study offers some factors such as whether the company's management factor in managing the supply chain, planning or production targets are weak, weak distribution strategies, supplier management is weak, there is no sales planning,

not have the same information in the supply chain or because the bureaucracy is weak. Based on the results of data collection more addressing that factor is to not have a mature sales planning, production targets are clear and supplier management are weak it can be mapped as a triangular barrier in SME garment supply chain as follows:

From the foregoing description, the strategy adopted can be grouped into 4 groups: Market Expansion Strategy; Quality improvement to enter a wider market and market diversification. Then strategies availability of raw materials; develop collaborations with great effort to avoid shortages of raw materials and encourage the growth of businesses by providing logistics services for SMEs. Next is the strategy of Infrastructure Provision (Task government); Encourage the government to provide warehouse and cheap transportation means as well as reduce the cost of logistics in the range between 22% - 32% with improvements in infrastructure and connectivity by local authorities. The other is the Human Resources Development Strategy; Improve the skills of the workforce, Encouraging governments to provide ease in licensing for open jobs and Encouraging improvements in planning, target setting and management of suppliers.

V. CONCLUSION AND RECOMMENDATION

From this study, there are several conclusions that can be seen: the first, logistic costs borne by SMEs garment by 22% - 32% depending on the size of the company. The bigger the company gets smaller logistics costs incurred, due to a large volume, and lower cost per unit. Second, the largest costs are borne by the SME garment warehouse costs, which include rent warehouse, security and logging services. The third is inhibiting factors faced by SMEs garment are the availability of raw materials, limited human resources, high cost of transportation which occupied the top spot followed by damaged roads and road congestion. To reduce the cost of logistics, several things to do are to push the government to provide cheap of warehouse and transportation. Next is to encourage the growth of businesses providing logistics services for SMEs and reduce the cost of logistics in the range between 22% - 32% with improvements in infrastructure and connectivity by local authorities. Then the government is expected to provide ease of licensing. Finally, encourage improvements in the planning, target setting and management of suppliers.

REFERENCES

- [1] BPS/ Central Agency on Statistics, *Jumlah Perusahaan Menurut Sub Sektor, 2001-2010*, Jakarta: Badan Pusat Statistik, 2011.
- [2] BPS/Central Agency on Statistics, "Perkembangan beberapa indikator utama sosial-ekonomi," *Booklet Triwulan*, pp. 1-153, 2011.
- [3] API, *The Indonesian Textile and Clothing Outlook*, Jakarta: Asosiasi Pertekstilan Indonesia, 2007.
- [4] WB&IFC, *Doing Business in Indonesia 2011*, Washington, D.C.: The World Bank and the International Financial Corporation, 2011.
- [5] WEF, *The Global Competitiveness Report 2011-2012*, Geneva: The World Economic Forum, 2011.
- [6] UNESCAP, *Logistics Performance Index-Connecting to Compete 201*, Washington: World Bank Group, 2011.

- [7] Frazelle, *Supply Chain Strategy: The Logistics of Supply Chain Management*, McGraw-Hill, 2001.
- [8] M. Tracey, "A holistic approach to new product development: New insights," *Journal of Supply Chain Management: A Global Review of Purchasing & Supply*, vol. 40, no. 4, pp. 37-55, 2004.
- [9] M. T. Frohlich and R. Westbrook, "Arcs of integration: An international study of supply chain strategies," *Journal of Operations Management*, pp. 185-200, 2001.
- [10] M. Barratt and A. Oliveira, "Exploring the experiences of collaborative planning initiatives," *International Journal of Physical Distribution & Logistics Management*, vol. 31, no. 4, pp. 22, 2001.
- [11] A. Das and R. Handfield, "Just-in-time and logistics in global sourcing: An empirical study," *International Journal of Physical Distribution & Logistics Management*, vol. 3, no. 27, pp. 244-259, 1997.
- [12] D. Kartini, Y. Azis, and I. Solihin, "Will Indonesia still sustain? An assesment of integrated sustainable development strategic, target, and implementation in Indonesia," *Journal of Economics, Business, and Management*, vol. 1, no. 1, 2013.
- [13] A. M. Azis and Y. Azis, "Foundation and basic information in designing performance management system," *International Journal of Innovation in Business*, vol. 2, no. 4, pp. 327-349, 2013.
- [14] S. Jin, et al., "Strategic sourcing and supplier selection in the U.S. textile-apparel-retail supply network," *Clothing & Textiles Research Journal*, vol. 27, no. 2, pp. 83-97, 2009.
- [15] M. A. Lejeune and N. Yakova, *On Characterizing the 4 C's in Supply Chain*, 2005.
- [16] R. Spekman, J. Kamauff, and N. Myhr, "An empirical investigation into supply chain management — A perspective on partnerships," *International Journal of Distribution and Logistics*, vol. 28, no. 8, pp. 630-650, 1998.
- [17] J. Tongzon, "Determinant of competitiveness in logistics: Implications for region," in *Proc. International Conference on Competitiveness: Challenges and Opportunities for Asian Countries*, Bangkok: Thailand's National Competitiveness Committee, 2004, pp. 1-16.



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