

# Analysis and Application of Green Supply Chain Management (GSCM) in Pempek Culinary SMEs in Palembang, South Sumatera

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**Abstract:** *The aim of the study is to find out and analyze the application of Green Supply Chain Management (hereafter GSCM) in culinary of pempek SMEs in Palembang. As a city that has diverse culinary, pempek SMEs are expected to participate in supporting continuous environmentally development. It is because the GSCM concept aims to minimize the negative impacts of an organization, and the environment related to climate change, pollution and non-renewable resources. In order to support GSCM, it is necessary to analyze and implement the GSCM that is applied by a special culinary of SME in Palembang. By doing analysis and application of GSCM, the constraints, and obstacles faced by Palembang Pempek entrepreneurs will be known. To answer the objectives of the research was conducted survey of 30 culinary SMEs that specialize Pempek, and found that in Palembang culinary have not fully implemented GSCM concepts. This can be seen from the 5 aspects of GSCM, reverse logistics: green procurement practices, design and packaging as a result of the answers from pempek businessmen stating that they still do not fully implement the GSCM concept. For this reason, there is a need for support from parties, which in this case is the government to give guidance and assistance in implementing GSCM.*

**Keywords:** Culinary SMEs, Green Supply Chain Management, Palembang pempek.

## 1. Introduction

The concept of Green Supply Chain Management (GSCM) refers to the efforts in minimizing the negative impacts of an organization and its supply chain on the environment related to climate change, pollution and non-renewable resources. GSCM integrates supply chain management with the aim of reducing the environmental impact caused by the product life cycle by harmonizing with the supply chain partner in order to take actions that support environmentally sound business processes. In realizing this, the activities related to it are cooperation of suppliers and customers, analysis of processes and operations internally, consideration of environmental factors in the process of product development and ongoing supervision between product life cycles [1].

According to [2] describes the purpose of GSCM as a concept to make the material flow in business processes have an added value by harmonizing and monitoring material, capital, information and work flow. The next goal is to provide quality products and appropriate services to consumers with minimal costs and environmental risks. The development of a study in the product life cycle also shows that the actions of a company at a certain stage of the product life cycle does not effectively reduce the environmental impact of the entire cycle. In this case the performance of environmental and ecological sustainability depends on the supplier's performance in the business cycle ([3];[4];[5]). There are three GSCM scopes that are important in modern ecological theory and for environmental management and sustainability in general. First, the inclusion of environmental aspects in an integrated management chain. Second, the integration of technological innovations that result in benefits to the environment through the industrial supply chain and thirdly to the participation of more industry actors for environmental management from industrial production

whose ultimate goal is to strengthen the capacity-building of environmental governance [6].

To participate in sustainable growth, GSCM must be implemented by all sectors and scale of business, including the Small and Medium Enterprises (SMEs) sector. By applying GSCM, SMEs have a large role in the country's economic sustainability while also playing a role in the natural balance caused by the production process which was carried out.

This study aims to analyze and apply the GSCM conducted at SME that specialize in pempek in the city of Palembang. This sector could be a sector that increase regional income and spur economic growth. There are 10 types of culinary that quite sought after by migrants today such as, namely are pempek, tekwan, laksan, celimpungan, martabak har, masubah cake, red bean ice, tempoyak, srikayo, lenggang.

SME is one of the sectors that is expected to be able to sustain the economy locally and nationally. In order for the SME sector to produce products that have quality are able to compete, and are not inferior to other products, a step is needed to produce green products starting from the production of these products. It should be able to implement a model of GSCM.

## 2. Research Methods

### 2.1. Research design

The research design used in this study is descriptive qualitative. According to [7] Sugiyono (2012), descriptive

research is used to collect information about a condition or situation with the ultimate goal of describing and interpreting, and comparing the results of interviews and findings from the results of research on food-based SME that specialize in pempek Palembang.

## 2.2. Population and Samples

The population in this study were as many as 30 pempek Palembang entrepreneurs. Because the population is below 100 people, all populations are sampled or also called censuses.

## 2.3. Data collection

In answering the research problems, primary data, that was collected with the help of a structured questionnaire, was used of primary data for the purpose of knowing GSCM practices in culinary SME in Palembang City.

The questionnaire was built using a Likert scale from a scale of 1 to 5, and consisted of 3 parts. The first part is the profile or demographics of SME. The second part covers information on GSCM practices in SME. The third part is the challenges and obstacles faced by SMEs in implementing GSCM practices.

## 2.4. Data analysis

The Data was analyzed using qualitative descriptive methods. In this case the questionnaire will be processed through qualitative descriptive analysis of the answers from the MSME entrepreneurs specifically the Palembang Pempek culinary from the questions related to the GSCM concept that they have done. According to [8], data analysis is a process of searching and systematically arranging data obtained from interviews, observations, and documentation, by organizing data into categories, describing them into units, synthesizing, compiling into in patterns, choosing which ones are important and will be learned, and making conclusions so that they are easily understood by ourselves and others. The data analysis technique used in this research is descriptive qualitative, which describes and interprets the meaning of the data that has been collected by giving attention and recording as much aspects as possible of the situation under study. The aim is to make a description, be factual and accurate facts, characteristics and relationships between phenomena investigated. Data analysis in qualitative research is carried out since before entering the field, whilst in the field and after completion.

Miles and Huberman in [8] suggest that data analysis in qualitative research is carried out when data collection takes place, and after data collection is completed in a certain period. At the time of the interview, the researcher had already analyzed the answers of the interviewees. If the answers of the interviewers are not satisfactory, the researcher will continue to a certain extent until the data that is deemed appropriate is obtained. In addition, the activities in qualitative data analysis are carried out interactively and take place continuously so that the data obtained is in accordance with what is desired.

## 3. Results and Discussion

### 3.1. Respondent Demographics

Based on the results of data collection, out of 30 culinary SMEs that specialized in pempek in the city of Palembang, the SMEs owners were 50 percent and above female while male owners were only 45 percent. This indicates that the ownership of Pempek culinary SMEs is dominated by women. Furthermore, out of 30 questionnaires, 97 percent are owners and only 3 percent are management and more than 47% have educational in Senior High Schools.

### 3.2. The Practice of Green Supply Chain Management in SMEs Culinary City of Palembang.

In this section we will explain the practices of GSCM in culinary SMEs specifically Pempek Palembang. Awareness of the importance of GSCM is the first indicator asked to the respondents. From the results of the questionnaire and questions, it is known that the majority of respondents are not aware of supply chain practices that are green. From the results of observations in the field, the average owner or manager understands the green concept but is unaware of the GSCM concept in the production process.

#### 3.2.1. Reverse Logistic

Reverse Logistic (hereafter RL) is a process of planning, implementing and supervising raw materials to be efficient and effective in the process of inventory, end products and information related to consumption by creating appropriate values at the final disposal.

It is very important for SMEs to build RL networks and their flow options with the aim of preventing consumer dissatisfaction. This involves the formation of rules to monitor the return process from both from the consumer's and supplier's side and create a framework matrix to build relationships with suppliers.

Based on the results of interviews in the field, the application of RL in culinary SMEs in Palembang has not been fully implemented. This can be seen from the average value of each indicator which tends to be low. Although in practice in the field the owner uses raw materials that have good quality, the owner has not been able to provide real guarantees of the use of raw materials to consumers. In addition, the owners or managers of SMEs do not have an average system to monitor environmental risks that occur to suppliers. The management of the packaging and distribution environment is also not considered by the owners or managers of SMEs. The packaging used in this case still uses ingredients that are hazardous to health such as Styrofoam and plastic, that are harmful to the environment.

#### 3.2.2. Green Procurement Practice

From the 30 Pempek SME informants in Palembang City that were studied, it can be concluded that the SMEs have used environmentally friendly raw materials and do not use preservatives, supplier selection has been considered, there

is a guarantee that the raw materials used are certified halal as seen from the sago pack they used.

They have not established received a halal certificate from the MUI except for pempek Rizky. They also have not minimized waste properly because the amount of waste produced is large and the waste is not reused. They have not saved resources and energy, and the condition of the environment where they sell pempek has been considered as environmentally conscious. The owners of Pempek SMEs simply throw away the waste produced by their Pempek without further processing.

The green procurement process can be defined as a process that formally introduces and integrates environmental problems in the purchasing process which in this case the raw materials or goods purchased for the production process have minimal environmental influences. In other words, raw materials or inputs purchased for the production process are environmentally friendly and the output produced is also environmentally friendly.

Specifically, to minimize the environmental impact of the supply chain process related to procurement points, the approach includes purchasing eco-labeled materials or inputs, adopting environmental criteria for suppliers involved in the production process, and collaborating to apply a green-minded guardianship process with involved leaders [9]. For the procurement or procurement process, based on the results of interviews with 30 SME owners, most of the entrepreneurs have not applied the concept of Green Procurement.

### 3.2.3. Design and Packaging

The analysis show that the informants have not paid attention to the importance of economical and environmentally friendly design and packaging (GSCM) to pempek production due to the lack of SMEs knowledge in harmful of plastic.

From the 30 SMEs pempek who became informants in this study, there was only one that had SNI and LPPOM standards, namely pempek Rizky. While 29 SMEs did not have SNI and the LPPOM MUI halal award. Halal award label had not become priority of UKM pempek in Palembang.

The packing of pempek for distant shipping is still using the manual method, which is sprinkled with oil and sago so that the pempek is durable and the packaging of pempek is not easily damaged when shipping away. It protects the pempek from the stench by packing it in plastic, cardboard and plastic wrap.

Overall, the Analysis of Eco Design and Packaging according to term of GSCM in Pempek Palembang SMEs are: (1) there are many owners Pempek SME have not known the environmentally friendly packaging and hazardous substances used and the reuse of waste from the production process, and (2) the design and packaging of SMEs pempek in Palembang which consists of 30 informants are not support GSCM yet.

### 3.2.4. Waste Management

The Analysis of GSCM in the SMEs pempek Palembang in term of Reverse Logistic (RL) cannot be said as GSCM because unsold pempek cannot resold at the next day, and must immediately discarded just like that without being reused. For Waste Management Analysis of GSCM, It can be concluded that there are still many SMEs owners who do not know about the benefits of liquid waste from the remaining boiling water and the benefits solid waste such as fish bones if they manage their own milled fish at home as well as their ignorance of the dangers of waste thrown away on the environment. It is due to the lack of attention from government in the dissemination of waste management. It is also not GSCM yet.

### 3.2.5. Management of The Environment

#### A. The Role of The Government in Making Regulations of Environmental Management

From the 30 of SMEs informants who answered the question in term of the government in environmental management (environmental quality standards) can be concluded that there is no government support regarding environmental management yet. They did not know about the existence of government support in making regulations such as local regulations on environmental management as well.

#### B. Pempek Labeling with eco products

From 30 Pempek UKM informants in Palembang labeled as eco-friendly pempek, almost all of them did not yet have a valid Indonesian National Standard (SNI) label. SNI is still just a knowledge that has not been able to be practiced. Socialization is still needed regarding the importance of standards that must be met as a tool to win business competition

## 4. Conclusion

Results of the questionnaires show that the majority of respondents are not aware of GSCM practices that are green in perspective. On the average, owner or manager understands the green concept but most of them are not aware of the GSCM concept in the production process, in terms of practice in regarding Reverse Logistics (RL). Based on interview, the application of RL in pempek SMEs has not fully implemented. Although in practice the owner uses raw materials that have good quality, but the owner has not been able to provide a halal guarantee of the use of raw materials to consumers. In addition, most of the owner or manager of SMEs does not yet have a system to monitor environmental risks that probably occur. While the management of the environment packaging and distributions are also not considered in GSCM practice by the owner or manager of SMEs.

The packaging used in this case still uses materials that are hazardous to health such as Styrofoam and plastic which are harmful to the environment. Each indicator in the

procurement process that has a green perspective is still low. Whereas Green Procurement Practices in SMEs from the analysis of 4 aspects: Adopting environmental criteria in assessing supplier systems, Environmental collaboration with suppliers, Purchasing materials labeled Eco (Eco-labeled products), Requirements for environmental certification for suppliers, In line with the previous GSCM results. Government support is needed; both local and central government for SMEs can apply the GSC Concept in the pempek SMEs.

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