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Analysis of processed food sustainable supply chain management in Karawang Regency

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Abstract

MSMEs are required to improve their supply chain performance. Sustainable supply chain management (SSCM) is needed in the development of MSMEs to improve their performance. Unfortunately, based on the results of Statistics Indonesia, MSMEs still have obstacles in managing their supply chains well and sustainably. This study aims to examine the modelling of sustainability dynamics in the supply chain management of processed food MSMEs in Karawang Regency. This study used secondary and primary data from expert interviews to confirm the systematic thinking of research models. The data analysis method used in this study is dynamic modelling. The results show that the dimensions of economic sustainability and social sustainability make a positive contribution to the economic turnover of Karawang Regency, while the environmental sustainability dimension still has a negative impact or reduces the economic turnover of Karawang Regency. The implication of the research results is as input for policy makers to improve sustainability in MSME supply chain management from economic, social, and environmental aspect.

Keywords

Sustainable, supply chain management, Processed food

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Introduction

Micro, small and medium enterprises (MSMEs) have indirectly become one of the pillars of the Indonesian economy [1]. Based on data from the Ministry of Cooperatives and SMEs (Kemenkopukm) of the Republic of Indonesia, MSMEs make a significant contribution to the economy, reaching 96.9% of labor absorption, 60.5% of GDP, and 60.0% of total national MSME investment. The development of MSMEs at the national level is in line with the increase in the number of MSMEs at the local level, as seen in Karawang Regency. According to data from data.jabarprov.go.id, the number of MSMEs in Karawang Regency has increased by 35% during the 2017-2021 period. In 2021, the

number of MSMEs in Karawang Regency will reach 315,388, with 60.8% of them focused on the food and beverage processing sector.

Entering the era of industry 4.0 and society 5.0, competition in the business world is becoming increasingly competitive. MSMEs are faced with demands to improve their supply chain performance [2]. This challenge is further complicated by the existence of the Sustainable Development Goals (SDGs), an agenda that aims to improve the welfare of global society, overcome poverty, reduce social inequality and deal with climate change. Therefore, supply chains are also starting to shift towards sustainability. Sustainable Supply Chain Management (SSCM) or sustainable supply chain management refers to three essential dimensions of sustainable development, namely social, environmental, and economic [3][4]. Industry is expected to consider sustainability aspects in its operations, especially in supply chain management, so that products can be viewed from an economic, social, and environmental perspective. The incorporation of sustainability into quality and supply chain management is identified as a rapidly growing field, with a multi-dimensional (financial, ecological, and social) approach urgently needed to create more sustainable supply chains [5].

Sustainable Supply Chain Management (SSCM) has a very crucial role in measuring organizational performance in various industrial sectors [6]. Coordination processes between key organizations in supply partners need to be improved. One study [7] emphasizes the importance of considering environmental impacts and supplier responsibilities. The existence of reciprocal considerations from economic, environmental, and social responsibility aspects encourages the need for transparency in the process and collaboration with other parties. This value chain is directed towards achieving collaborative excellence or shared excellence [8]. The results of [9] shows that supply chain management elements have a significant influence on performance.

Supply chain management practices have a positive impact on competitive advantage, while communication and information technology have a positive impact on supply chain management practices and competitive advantage. Competitive advantage, in turn, has a positive effect on overall company performance [10]. Sustainable Supply Chain Management (SSCM) covers three important aspects of sustainable development, namely social, environmental and economic [3][4]. Organizational performance is currently required to contribute to the welfare of society and strive to reduce environmental impacts to achieve sustainable profits [11]. In SSCM implementation, stakeholders play an important role in influencing the supply chain partners involved [12]. It is hoped that the SSCM approach can be an effective alternative in increasing the competitiveness of MSMEs, especially in the food processing sector in Karawang Regency.

Based on the previous explanation, it can be concluded that Sustainable Supply Chain Management (SSCM) is very important in developing MSMEs to improve their performance. However, unfortunately, based on results from Statistics Indonesia, previous research [2][13], and initial surveys, it appears that MSMEs still face obstacles

in managing their supply chains well and sustainably. MSMEs also still experience difficulties in terms of distribution and marketing, which in turn affects sales by creating low impact [14]. Therefore, this study aims to find the right SSCM model for the development of MSMEs, with the hope of overcoming the obstacles faced in the supply chain and helping to improve the overall performance of these MSMEs.

Methods

This study uses a mixed method approach. The data used consists of primary data and secondary data. Primary data was obtained through interviews with experts to confirm the systematic thinking in forming the research model. Expert respondents in this study included academics, associations and government representatives. Meanwhile, secondary data was obtained from journals, books and other data sources relevant to the research. System dynamic analysis is used in this study to create a Sustainable Supply Chain Management (SSCM) model for MSMEs in the food processing sector in Karawang Regency. The stages in system dynamic analysis refer to the framework described by [15], which involves problem formulation and definition, conceptual system preparation, model formulation, simulation, and model validation.

Results and Discussion

Initial research results show a literature study that details the variables and valuations used in this research. According to [16], Sustainable Supply Chain Management (SSCM) is seen from a triple bottom line perspective, which includes economic sustainability, social sustainability, and environmental sustainability. This literature study is then combined with the results of interviews, so that indicator mapping and valuation can be confirmed as depicted in Figure 1.

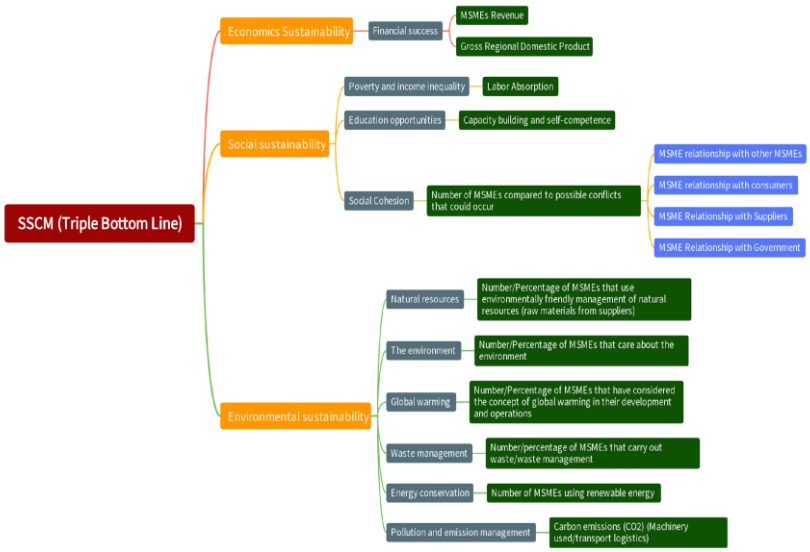

Figure 1. Indicator mapping and model valuation

Based on Figure 1, in the economic sustainability aspect, financial success indicators are used with MSMEs Revenue and Gross Regional Domestic Gross valuations. In the social

sustainability aspect, the indicators used are poverty and income inequality with labor absorption valuations. Education Opportunities Indicator with a valuation of increasing personal capacity and competence. Meanwhile, social cohesion indicators are evaluated by the number of MSMEs compared to the potential for conflict between MSMEs and MSMEs, MSMEs and consumers, MSMEs and suppliers, and MSMEs and the government. In the environmental sustainability aspect, there are six indicators, namely: natural resources. Environment, global warming, waste management, energy conservation, and pollution and emissions management. From these indicators, a causal-loop diagram is then drawn up to describe the relationship between variables. The Causal loop diagram can be seen in Figure 2.

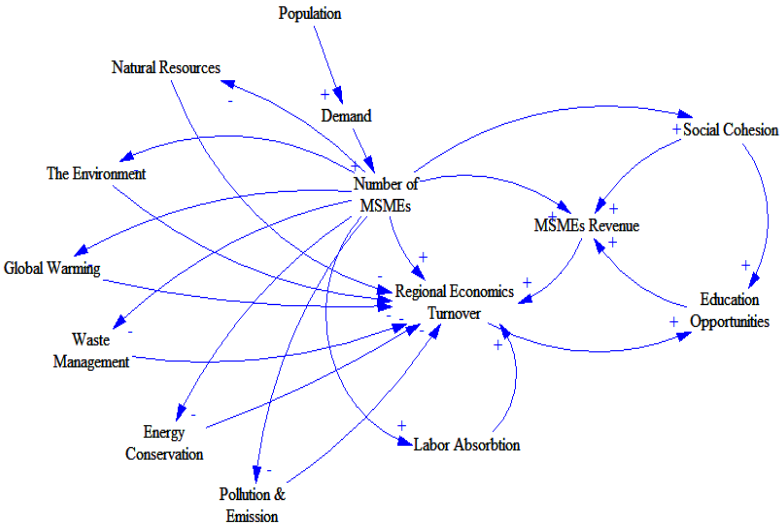

Figure 2. Causal loop diagram

Based on Figure 2, economic and social aspects currently show a positive relationship to MSME income and GRDP in Karawang Regency. However, on the environmental aspect, the relationship is negative. The cause can be attributed to the conclusions from the results of in-depth interviews, which show that food processed MSMEs in Karawang Regency currently still pay little attention to environmental aspects in their business operations. On the other hand, social cohesion has begun to form with the existence of MSME communities in Karawang Regency. In the next stage, a dynamic system simulation is carried out using the previously identified valuation. The results of the dynamic system simulation can be seen in Figure 3.

Based on Figure 3, it can be seen that population growth in Karawang Regency has contributed to an increase in the number of Micro, Small and Medium Enterprises (MSMEs), especially in the food sector. This increase in the number of MSMEs plays a role in increasing market potential, especially in the food sector. The number of MSMEs also has a positive impact on labor absorption and social cohesion, which will ultimately support MSME incomes. However, it is unfortunate that until now there has been no sustainable management of environmental aspects, resulting in environmental costs that can reduce MSME income. In general, almost all indicators reflect a picture of the supply chain management (SSCM) system in food processing MSMEs in Karawang

Regency, starting from upstream, internal to MSMEs, to downstream. Only educational opportunities that exist upstream and internally, without involving the downstream sector. The results of the dynamic system simulation can be seen in Figure 4.

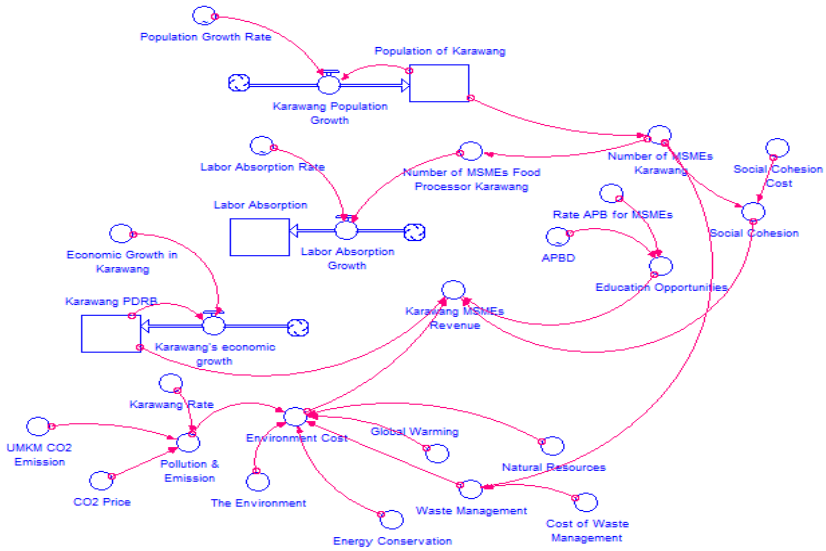

Figure 3. Dynamic simulation of SSCM MSMEs in Karawang Regency

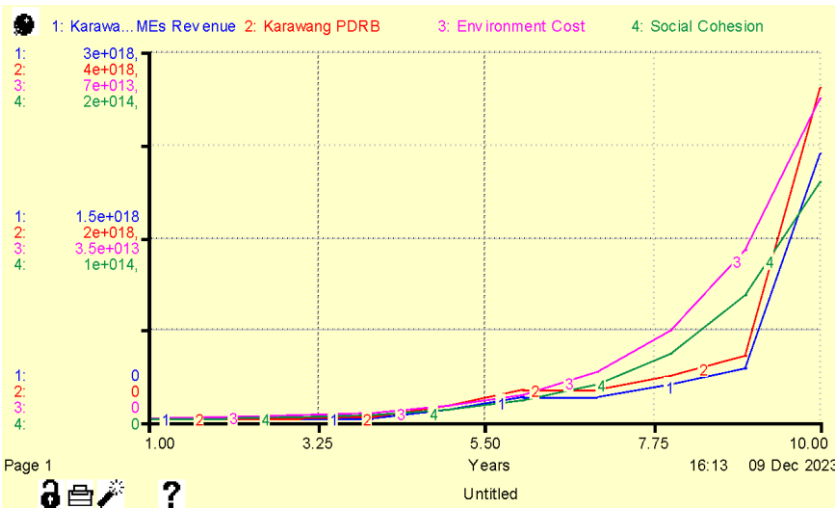

Figure 4. Dynamic system simulation results

Based on Figure 4, we can see an increasing trend in MSME income, Karawang Regency GRDP, Environmental Costs and Social Cohesion. The simulation results show that these four indicators have increased, but environmental costs are still a reducing factor in economic profits. This is caused by the lack of awareness of MSME actors regarding environmental sustainability as an impact of their business activities. To overcome this, efforts are needed to increase the awareness of MSME players so that they are able to produce products with sustainable supply chain management from an economic, social, and environmental perspective.

Conclusion

Aspects of economic and social sustainability provide a positive contribution to the economic turnaround of Karawang Regency, especially in increasing MSME income. The

environmental sustainability dimension still has a negative impact or reduces the economic turnover of Karawang Regency, especially on MSME income. The implications of this study's findings can provide policymakers with information to enhance the environmental, social, and economic sustainability of MSME supply chain management. Specifically for environmental aspects, it is necessary to increase awareness of MSME actors regarding environmental aspects in managing their supply chains. This aims to reduce the negative impact on economic turnover, especially MSME income.

References

[1] Victoria J, Haryanto A, Santoso W (2022) Pengaruh Strategi Manajemen Rantai Pasok Terhadap Kinerja Operasional Pada Umkm. Jbee 4:2022
[2] Sidoarjo DI, Ambarwati T, Aprilia B, Rozi B, Ni N, Putro SB (2019) Aplikasi Supply Chain Management Pada Umkm Kering- Kering Bu Ameni. 2:
[3] Ortas E, Moneva JM, Álvarez I (2014) Sustainable supply chain and company performance: A global examination. Supply Chain Management 19:332–350
[4] Touboulic A, Walker H (2018) Theories in sustainable supply chain management. The Eletronic Library 34:1–5
[5] Bastas A, Liyanage K (2018) Sustainable supply chain quality management: A systematic review. Journal of Cleaner Production 181:726–744
[6] Seuring S (2013) A review of modeling approaches for sustainable supply chain management. Decision Support Systems 54:1513–1520
[7] Sarkis J, Dhavale DG (2015) Supplier selection for sustainable operations: A triple-bottom-line approach using a Bayesian framework. International Journal of Production Economics 166:177–191
[8] Glavas A, Mish J (2015) Resources and Capabilities of Triple Bottom Line Firms: Going Over Old or Breaking New Ground? Journal of Business Ethics 127:623–642
[9] Amaruddin H, Saptatmantya K, Arini I (2021) Pengaruh Manajemen Rantai Pasokan terhadap Kinerja UKM Pecel Lele di Cikarang. MASTER: Jurnal Manajemen Strategik Kewirausahaan 1:47–56
[10] Sinaga J, Anggraeni E, Slamet AS (2021) THE EFFECT OF SUPPLY CHAIN MANAGEMENT PRACTICES AND INFORMATION AND COMMUNICATION TECHNOLOGY ON COMPETITIVE ADVANTAGE AND FIRM PERFORMANCE (CASE STUDY: SMEs OF PROCESSED FOOD IN JAKARTA). Indonesian Journal of Business and Entrepreneurship 7:91–101
[11] Mcwilliams A, Parhankangas A, Coupet J, Welch E, Barnum DT (2016) Strategic Decision Making for the Triple Bottom Line. Business Strategy and the Environment 25:193–204
[12] Brean A (2017) Å Måle Og Veie. Tidsskrift for den Norske Laegeforening 137:333
[13] Maisaroh M (2021) Dampak Penerapan Rantai Pasokan Berkelanjutan Terhadap Keunggulan Kompetitif Pada UMKM Konveksi di Desa Nogotirto. Matrik 22:85
[14] Latifah SW (2017) Analisis Faktor-Faktor Yang Mempengaruhi Rantai Pasokan Umkm Berbasis Apel Di Malang. Seminar Nasional dan Gelar Produk | SENASPRO 2017 1041–1049
[15] Widodo KH, Pramudya K & AA (2011) Suply Chain Management Agroindustri yang Berkelanjutan.
[16] Khoja F, Adams J, Kauffman RG, ... (2019) Supply chain sustainability in SMEs: an application of the Hayes and Wheelwright model and identifying stages of development using cluster analysis. ... of Integrated Supply https://doi.org/10.1504/IJISM.2019.103178