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The relationship between supply chain management and environmental sustainability: The mediating role of eco culinary product

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Betawi Ora is an indigenous tribe that lives in Bekasi which is a region of West Java. In terms of cultural distribution, Betawi itself is a tribe originating from Jakarta, but geographically it spreads to the West Java region. The existence of Eco-culinary products cannot be separated from the supply chain management system and environmental sustainability because Eco-culinary is a food that represents the existence of raw materials provided by the environment where the community exists. Based on the background and urgency of this research, the purpose of this research is to find out the relationship between Supply Chain Management, Eco-culinary Product and Environmental Sustainability both directly and indirectly where Eco-culinaru Product mediates the relationship between Supply Chain variables Management and Environmental Sustainability variables. The respondents in this study were 210 managers of Betawi Ora restaurants in Bekasi West Java, Indonesia and employees who maintain supply chain management in that restaurant. Data collection and processing were carried out using the Generalized Structured Component Analysis (GSCA) method. The analytical approach uses the least squares method in the parameter estimation process. The research method is a quantitative survey, analysis of research data is performed using structural equation modeling partial least squares (SEM-PLS) with statistical data processing tools, namely Smart PLS 4.0 software. Results of this research show that supply chain management had a significant effect on environmental sustainability which is mediated by eco-culinary products. Thus, it can be concluded that good quality of supply chain management will be able to produce quality products, and it must be an important consideration that the goal of everything is to create and maintain Environmental Sustainability.

1. Introduction

Eco-culinary product development, based on local values has a very strategic value in intercultural dialogue, protection, and promotion of both tangible and intangible cultural wealth (Untari & Satria, 2021). On the other hand, eco-culinary development has a high multiplier effect for the community. Eco-culinary development involves various stakeholders and has a positive impact on the community through the absorption of its workforce (Untari & Satria, 2019; Untari, 2019), as well as a positive impact on the ecology of both human and environmental ecology (Marten, 2001). The high eco-culinary potential to support social activities; not only because of its function as fulfilling basic needs but furthermore eco-culinary can be used as a tool in introducing culture to the wider community (Untari, 2019). The diversity of human needs for eco-culinary is currently growing, not only to meet biological needs, but currently eco-culinary also shows the position of a person's economic status. Furthermore, eco-culinary reflects culture and the relationship that occurs between humans and their ecological environment (Untari, 2020). The enormous potential for eco-culinary development has not yet been accompanied by massive policies; which determines the direction of the development of the eco-culinary market (Parys, 2013). So that the eco-culinary

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market is currently controlled by large investors with high resources (Untari et al., 2017). Eco-culinary reflects the culture of a society and reflects the results of interactions between individuals in a community and interactions between communities. Even further, eco-culinary can reflect the ecological relationship between humans and their environment, both the biotic environment and the abiotic environment (Untari et al., 2020). The high value of indigenous eco-culinary is often degraded by the concept of modernization which brings people to a xenozentrism model of life and causes the position of indigenous eco-culinary to begin to shift and be replaced with eco-culinary western and fussion.

The shift in the function of a region from rural to urban and urban to metropolitan areas has a huge impact on the sociology of society and will change people's mindset in eco-culinary consumption patterns (Untari, 2019). This also happened to the people in Bekasi City. Bekasi is one of the buffer zones, where the City of Bekasi is growing rapidly with the high activity of the commuter community, so that cultural interaction in the City of Bekasi is very high (Singh & Chaudhary, 2023). Based on this background, it is important to study and research further about the indigenous eco-culinary Betawi Ora so that the positioning of the indigenous eco-culinary Betawi Ora can be optimal and become the host in his own home. The expected impact is that, in addition to restoring the Betawi Ora indigenous eco-culinary position in the cultural frame, repositioning the Betawi Ora indigenous eco-culinary will also be able to open space for entrepreneurs and Betawi Ora eco-culinary artisans to compete in the global market (Rostini et al., 2021)

To maintain the existence of eco-culinary products in restaurants that provide Betawi Ora culinary variations, the main problem was found, namely the sustainability of the supply of raw materials. Raw materials become a problem when the sustainability and availability of raw materials which are the core of Betawi Ora cuisine are difficult or even non-existent. An example is the vegetable "Duren Flower", when the existence of Durian trees and Durian flowers is hard to find, then the sustainability of this type of culinary will be difficult to maintain. Thus, in maintaining the Sustainability Performance of Betawi Ora Restaurant in Bekasi, the quality of Eco Culinary Products is important, supported by a sustainable supply of raw materials.

Based on the background and urgency of this research, the purpose of this research is to find out the relationship between Supply Chain Management, Eco-culinary Product and Environmental Sustainability both directly and indirectly (in this case, Eco-culinaru Product mediates the relationship between Supply Chain variables Management and Environmental Sustainability variables).

2. Literature Review

2.1 Supply Chain Management (SCM)

In general, supply chain management examines logistics issues. In this case, logistics is a problem that spans a long distance from basic materials to finished goods that are used by end consumers and is organized as a supply chain of goods (Agus, 2015). SCM is an approach that is used efficiently to integrate suppliers, factories, warehouses, and stores so that products are produced and distributed in the right quantity, location, and time (Khayer et al., 2022). All of this is done with the aim of minimizing the costs incurred by the overall system while maximizing customer satisfaction. In managing the supply chain, it is necessary to consider the costs and roles of each component in the manufacture and distribution of products according to customer wishes (Harwick, 2017). The primary objective of SCM is to have an efficient system having low costs across the entire system. This includes all activities and elements such as transportation, distribution, raw material, final products, etc. Integrated Supply Chain from suppliers, manufacturers, warehouses and stores. This includes activities at every level in the company, starting from strategic planning to operational implementation (Al-Doori et al., 2019). In the SCM concept, all functions related to fulfilling customer demands are always involved. These functions are new product development, marketing, operations, distribution, finance, and service. The Council of Logistics Management defines logistics as: Logistics is that part of the supply chain process through appropriate planning, handling, and monitoring the efficient, effective flow and storage of goods, services, and related data from point-of-origin to point-of-consumption to reach customer requirements, this definition implies that logistics is part of SCM (Abu Zaid et al., 2016).

2.2 Eco-culinary Product (ECP)

Culinary is one of the primary human needs. Culinary food used by humans is suggested to contain nutrients based on the body’s needs. Indonesia, which is famous for its cultural diversity, also has diversity in its food. Every tribe in Indonesia has different specialties with different tastes. If processed professionally into special dishes and delicious culinary offerings, Indonesian culinary can increase people's economic income and become a national identity. Culinary is very important as a nation's culture. Indonesia has a wide variety of foods that differ from region to region, it must be guarded against being claimed by other countries. Like dance, culinary is part of Indonesian cultural identity (Ali et al., 2019). Culinary in a community represents the ecological state in which the community lives. Whatever culinary ingredients are ingredients that are provided by nature in their environment. So that Eco-culinary Product is a culinary that represents the ecological state of its environment (Agyabeng-Mensah et al., 2020).

2.3 Environmental Sustainability (ES)

Human survival is closely related to environmental health. Humans need clean air to breathe, fresh water to drink, and a place to shelter from danger. Environmental sustainability is the answer to all problems related to the environment, while saving the future. Along with the exploitation of nature to meet industrial developments, humans should protect it by implementing environmentally friendly living practices (Cetindamar & Kilitcioglu, 2013). The basic idea of environmental sustainability is intended to protect nature so that future generations can enjoy the same, or even better, environment (Redjeki et al., 2020). Referring to this concept, environmental sustainability means the responsibility to protect natural resources and protect global ecosystems to support survival for now and in the future. That means, the process of meeting current needs should not interfere with the ability of future generations to meet their needs (Syarief et al., 2021). That is why many decisions related to environmental sustainability are not felt at this time, but for the future. Environmental sustainability focuses on improving the quality of human life without placing harm to ecosystems, and it is more about methods for balancing human needs and the level of availability of existing resources (Retnoningsih et al., 2020).

3. Method

This research begins with conducting field studies and literature studies so that problems can be identified. After the problem is identified, then the research objectives are determined. Then a literature review was carried out from several previous literature and research, then data collection and processing were carried out using the Generalized Structured Component Analysis (GSCA) method. The goal is to replace factors with linear combinations of indicators (manifest variables). This analytical approach uses the least squares method in the parameter estimation process. This research method is a quantitative survey, analysis of research data is performed using structural equation modeling partial least squares (SEM-PLS) with statistical data processing tools, namely Smart PLS 4.0 software.

The use of this method has several underlying assumptions in its use. The GSCA assumptions are only related to structural modeling, and are not related to hypothesis testing, namely: (1) the relationship between latent variables is linear and additive, testing can be done with SPSS software through the Ramsey test/curve fit approach, and (2) sample size in GSCA based on resampling (bootstrapping) does not require large samples and can be non-probability sampling techniques. The research data was obtained by distributing online questionnaires through google forms which were designed using a Likert scale of 5. The respondents in this study were 210 managers of Betawi Ora restaurants in Bekasi West Java, Indonesia and employees who maintain supply chain management in that restaurant. Fig. 1 shows the structure of the proposed study.

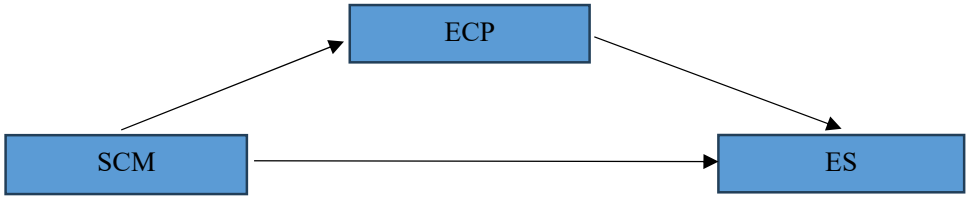

Fig. 1. Research Model

H₁: *SCM exerts a significant positive impact on ECP.*
H₂: *SCM exerts a significant positive impact on ES.*
H₃: *ECP exerts a significant positive impact on ES.*
H₄: *SCM has a significant effect on ES mediated by ECP.*

4. Result and discussion

The model tested in this study is said to be fit if it is supported by empirical data. GSCA provides a goodness-of-fit measure consisting of structural model fit and overall model which can be seen from the values of FIT, AFIT, GFI (Unweighted least-squares) and SRMR (Standardized root mean square residual). The computational results of this research data using the GSCA method obtained a fit model, which can be presented in Table 1 below,

Table 1
Goodness-of-fit Evaluation of the Structural Model and the Overall GSCA Model

Model Fit	
FIT	0.798
AFIT	0.771
GFI	0.981
SRMR	0.087
NPAR	88

Source : GSCA Processed

The results of the GSCA output in Table 1; goodness-of-fit evaluation of the structural model and the overall model of this research, can be described as follows:

1. The GSCA output results obtained a FIT value of 0.798 meaning that the model in the form of this study can explain all the variables analyzed by 79.8%. The diversity of Supply Chain Management, Eco-culinary Product and Environmental Sustainability variables can be explained by a model of 78.90%. It can be concluded that from the FIT value obtained by this research model it can be said to have good model accuracy because the value is greater than 60%.
2. AFIT of 0.771 is adjusted from FIT which is almost close to the FIT value. When viewed from the AFIT value, the diversity of Supply Chain Management, Eco-culinary Product and Environmental Sustainability variables can be explained by this research model of 77.10%. That is, the AFIT value obtained can be said that the model formed has good model accuracy because the value is > 60%.
3. GFI and SRMR, both are proportional to the difference between the sample covariance and the ovarian produced by the parameter estimation of GSCA. The results of data analysis show that the GFI value is 0.981 > the cut-off point of 0.90, so the model formed can be said to be appropriate or good. However, the SRMR value of 0.087 <0.1 can be said to be Good fit (appropriate model). It is possible that in this study it could still be tolerated because the SRMR value was close to zero.
4. The NPAR value of 88 indicates the number of independent parameters including the loading coefficient (c), weight coefficient (w), and path coefficient (b) of this study.

Based on the conceptual framework, testing the relationship model and hypothesis can be carried out in two parts, namely: (1) examining the path coefficient of direct effect, and (2) verifying the path coefficient of effect of the mediating variable. The explanation of the results of examining the relationship between the research variables are given in Table 2 as follows:

Table 2
Path Coefficient of Direct Influence and Hypothesis Testing

Hypothesis	Direct Influence	Path Coefficient	C.R (t test)	Conclusion	
H1	SCM exerts a significant positive impact on ECP	0,678	8.84*	Sig.	accepted
H2	SCM exerts a significant positive impact on ES	0,781	6,53	Sig.	accepted
H3	ECP exerts a significant positive impact on ES	0,515	4,21	Sig.	accepted

C.R on α = 0,05
Source: GSCA Processed

Based on the research results, the direct influence test and the research hypothesis aim to answer whether the proposed hypothesis can be accepted or rejected. The results of testing the direct effect hypothesis can be explained as follows:

4.1 The first hypothesis: The effect of SCM on ECP

Based on the results of data analysis, it was found that the estimated value of the path coefficient direct influence of Supply Chain Management integration on the Eco-culinary Product variable was 0.678 with a critical point value (CR) of 8.84* > α = 0.05. The test results can prove the reality that occurs to accept the hypothesis (H1) that the better the implementation of Supply Chain Management in culinary provider restaurants, the Eco-culinary quality of Betawi Ora products will increase. This means that the better the implementation of supply chain management, the better the Eco-culinary quality of Betawi Ora products.

4.2 The second hypothesis: The effect of SCM on ES

Based on the results of data analysis, it was found that the estimated value of the direct influence of the path coefficient of Supply Chain Management on Environmental Sustainability was 0.782 with a critical point value (CR) of 6.53* > α = 0.05. The test results can prove the reality that occurs to accept the hypothesis (H2) that the better the implementation of Supply Chain Management, the value of Environmental Sustainability will increase.

4.3 The third hypothesis: The effect of ECP on ES
The results of testing the direct effect of Eco-culinary Products on Environmental Sustainability obtained an estimated path coefficient value of 0.515 with a critical point value (CR) of 4.21*. The test results indicate that there is sufficient evidence in reality to accept the hypothesis (H3) which states that Eco-culinary Products have a significant effect on Environmental Sustainability.

4.4 The fourth hypothesis: The mediating effect of ECP on the relationship between SCM and ES

Testing the effect of mediation aims to detect the position of the intervening variable in the model. Mediation testing is carried out to determine the nature of the relationship between variables as complete mediation variables, partial mediation and not mediating variables. The GSCA approach to testing mediating variables can be done through the difference in coefficients.

The coefficient difference approach uses the inspection method by conducting an analysis without involving mediating variables (Fig. 2),

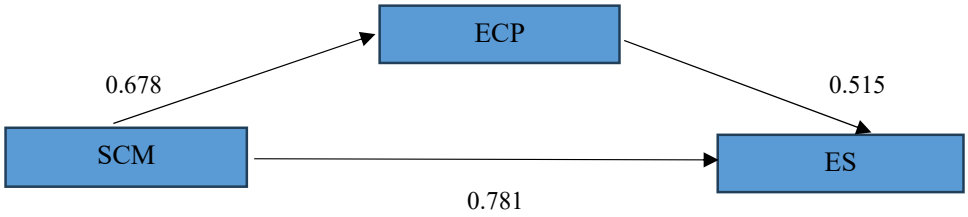

Fig. 2. The structural model involves a mediating variable

According to Fig. 2, the results of testing the effect of the Supply Chain Management variable on Environmental Sustainability in the initial model involving mediating variables show that Supply Chain Management directly has a significant effect on Eco-culinary Product of 0.678 and on the Environmental Sustainability variable of 0.781. Then the Eco-culinary Product variable also has a significant effect on Environmental Sustainability of 0.515. To conclude the conjecture on the mediating variable, a return analysis was carried out on the supply chain management variable and its relationship with Environmental Sustainability without involving the mediating variable (table 3).

Tabel 3
Indirect Influence of Path Coefficient

Path Coefficients	Estimate	SE	CR
SCM → ES	0,795	0.021	12,8*

Source: Data Processed

Table 3 can be seen that the value of the path coefficient and the significant direct relationship without mediating the Eco-culinary Product variable is 0.795, so that the mediating nature of the influence of Supply Chain Management on Environmental Sustainability through Eco-culinary Product is partial mediation. This result means that the relationship between Supply Chain Management variables can affect Environmental Sustainability variables, also through Eco-culinary Products. Efforts that need to be made by companies in order to be able to design efficiency in the Supply Chain process is to implement an e-supply chain system where the process of ordering raw materials can improve the process of ordering raw materials to be more effective and efficient due to integration between all related departments so as to create performance better company [29]. In addition, it is necessary to prioritize the use of raw materials for processing food products in order to maintain environmental sustainability.

5. Conclusion

Based on the results of the discussion and research findings, several conclusions can be put forward as follows:

1. Supply Chain Management has a significant effect on Eco-culinary Betawi Ora products. This proves that the implementation of Supply Chain Management in the Betawi Ora culinary restaurant industry has been going well, although it is not yet optimal so that the quality of the Eco-culinary product is moderate. So it is hoped that there will be seriousness from managers and improvements in implementing the process of procuring raw materials to culinary presentation to make it even better.
2. Supply chain management has a significant effect on Environmental Sustainability. This indicates that the better the process in Supply chain management, the better it can improve and maintain Environmental Sustainability. So that maintaining the quality of raw materials and serving materials using environmentally friendly materials will greatly support the sustainability of the environment. Apart from that, maintaining the pattern of disposal of leftover production waste is also important in efforts to maintain Environmental Sustainability.
3. Eco-culinary products have a significant effect on environmental sustainability variables. It is proven that the proper use of raw materials, processing and management of production residues will improve environmental quality and maintain environmental sustainability.
4. Supply chain management has a significant effect on Environmental Sustainability which is mediated by Eco-culinary Products. Thus, it can be concluded that good supply chain management will be able to produce quality products, and it must be an important consideration that the goal of everything is to create and maintain Environmental Sustainability.

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