

# SMEs' Eco-Friendly Food Packaging Critical Factors: An Empirical Study

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**Abstract.** SMEs are economic driver that need to have a more sustainable business development strategy. Issues arise in food packaging which has a direct impact on environmental damage and pollution. In addition, food packaging is one of the factors of business competitiveness and attractiveness for customers. This study aims to obtain a direct picture from SMEs in the field about whether there is awareness to use eco-friendly packaging, what is their current condition of food packaging, and what they need for the next development strategy. The method used in this study is a qualitative approach using a survey with open-ended questions on 49 SMEs. This study uses a coding approach, content and semantic analysis to explore the study. The findings obtained from this study are that there is awareness and knowledge about the importance of using environmentally friendly products. For the perpetrators, the current conditions are not yet ideal for total use, due to business considerations, access to materials, and high prices. In the future, SMEs actors will focus on their packaging development strategy on several aspects, namely material, design, and cost. SMEs need to increase their skills and knowledge regarding eco-friendly packaging and support from relevant stakeholders in order to become a sustainable business.

Keyword: eco-friendly packaging, food packaging, SMEs, food waste, sustainable, business

## INTRODUCTION

Small and medium-sized enterprises (SMEs) are the economic drivers of a country. Its role is important to be considered and guided to be better and can contribute not only from an economic perspective, but also from a social and environmental perspective. Food packaging is often an issue because it creates food waste that can have a negative impact on the environment. Food waste and its relation to packaging design need to be considered by relevant stakeholders, starting from product owners to policy makers regarding packaging for food producers [1].

The need for packaging concepts continues to increase. The demand for quality products requires manufacturers to ensure that the product has a shelf life and maintain food quality [2]. Packaging not only provides security but also ensures that the quality is maintained [3]. Innovation in the development of packaging that is more environmentally friendly continues. The aim is to increase shelf life, food safety and food quality. A serious consideration is the high cost due to the use of expensive technology. It takes a special approach from various parties to ensure the food industry can support a sustainable business [4].

Packaging plays a role in environmental sustainability. It is necessary to innovate in the development of packaging to be greener, have resilience and safety for food products [5]. The use of environmentally friendly materials such as recyclable and biodegradable has a good impact on business as a competitive advantage [6]. There is a positive impact from the use of green packaging and green advertising on business performance [7]. This is also a competitive advantage for the business that runs it. Therefore, it is necessary to know what factors are happening in the field at this time, then what strategies are needed to follow up on things that are in the field. Also, what is the future food packaging strategy with the involvement of SMEs and related stakeholders.

This research focuses on SMEs to see:

- Do they have awareness of eco-friendly packaging?
- What is the condition of their current food packaging strategies?
- What do they need and strategies for using more eco-friendly packaging?

## LITERATURE REVIEW

Packaging is responsible for protecting a product from external influences and threats. Product packaging focus on making consumer and industri satisfy, maintain food safety and eco-friendly [8,9]. Wood, glass, metal, plastics, paper are materials that are often used in the production process of making packaging [3]. The role of this packaging determines the quality of the product itself through its characteristics [10].

Food gets its quality protection with the help of packaging. Packaging can protect food from changes in aroma, nutritional content, and color. Packaging also has an important role in environmental sustainability [11]. In a study conducted by Konstantoglou, the results obtained are that consumers are aware of the important role of packaging in the safety and quality of food [12]. Another finding is that consumers understand the important role of information, production processes, forms and visuals in packaging. Consumers place how food is produced and packaging as important in their considerations in choosing a product [13].

Currently, food packaging continues to develop, one of which is active packaging. Currently, the active packaging manufacturing process focuses on physiological, chemical, physical, microbiological changes due to impacts of microorganisms, and infections caused by insects [2]. In addition, there is an alternative that can be done by SMEs players is to use traditional packages. Because besides being able to provide security, maintain taste, but can also protect environmental damage because the ingredients are sourced from nature [14].

As a protector of food and beverages, packaging must also pay attention to how the use and placement will be carried out by consumers later [15]. Waste from food packaging does not only focus on recycling, material selection and visual attributes. However, it is also necessary to consider how consumers can sort out the waste produced by food packaging [16]. The impact on the environment and user behavior must be considered in the food packaging production process [17].

Eco-friendly packaging is a competitive advantage to help entrepreneurs in business competition [18]. Aspects of disposal information such as recyclable, non-recyclable or biodegradable are factors that are quite important for consumers [19]. Green Packaging has important criteria in its development process. The first is minimizing hard to decompose packaging, the second is carrying out a production process that is low in energy consumption, and the third is using eco-friendly packaging [20]. In a study conducted by Koutsimanis, et al., [21], it shows that there is a focus from consumers on the environment from the impact produced by food packaging. Most studies show the willingness to pay from consumers for green packaging [22]. Based on the findings from these studies, eco-friendly packaging is important in the manufacturing process, paying attention to its impact, and can affect business performance.

The obstacle for SMEs to become a more sustainable or green business often lies in the lack of funding and support from relevant stakeholders [23]. When innovating, resources are often a limitation in the process at SMEs. However,

this is often one of the important things in business development. Innovating still needs to be done to improve business performance [24]. It is important for SMEs and other business actors to develop environmentally friendly packaging properly because it will influence consumer decision making. Technology sharing support and training from relevant stakeholders so that SMEs can increase their capacity and overcome capital and network problems [25].

Based on research that has been carried out by other researchers, there is a concern in food packaging. What is the role of food packaging on environmental impacts. This study reviews SMEs to see their strategy in using eco-friendly packaging. What factors are important in their current business conditions, what are the future strategies, and what are the critical factors that stakeholders related to SMEs need to pay attention to to support sustainable business through eco-friendly food packaging.

## METHODOLOGY

This research is an empirical study using a qualitative method approach. The data collection was collected through an online survey, using open ended questions for SMEs. The sample was selected using a purposive sampling technique. Respondents from this study amounted to 49 SMEs located in West Java Province, Indonesia. This study uses content and semantic analysis to obtain an overview of the respondent's data. Coding is done to determine the themes that are formed. This study uses qualitative data management software for the coding and analysis process.

## RESULTS AND DISCUSSION

After the data is collected and analyzed. The distribution of the results of this research data is divided into 3. The first is the respondent profile, the second is the present condition, and the third is future strategies.

**TABLE 1.** Respondent Profile

<b>Dimension</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>	Male	16	34.78%
	Female	30	65.22%
<b>Business Category</b>	Food	35	76.08%
	Drink	11	23.92%
<b>Duration</b>	<12 Months	18	39.13%
	12–24 Months	19	41.30%
	>24 Months	9	19.57%
<b>Type of Business</b>	New Business	5	10.86%
	Early Development	14	30.43%
	Stable Revenue	27	48.71%
<b>Using Eco-Friendly Packaging</b>	Yes	7	15,22%
	No	19	41,30%
	Mix	20	43,48%

This study involved SMEs, with various categorizations. Female dominates compared to male in this study. Food and drink is a focused business category, with a large portion of SMEs engaged in the food sector. The respondent's profile is also divided into the duration of running the business, the type of business stage that is being undertaken. Mapping is also carried out whether SMEs use eco-friendly packaging as an illustration of the current condition of their business.

## PRESENT CONDITION

**TABLE 2.** Respondent's Awareness About Eco-Friendly Packaging

Dimension	Detail
Material	Recycle
	Decomposed
	Plastic free
	Natural
Impact	Environmental damage
	Environmental pollution
	Hazardous

The results show that entrepreneurs in SMEs already have awareness of green packaging and sustainable business. From the coding findings, there are 2 major themes, namely material and impact. In the material section, respondents focused on 4 things, how materials can be recycled, decomposed, plastic free, and using natural materials. In addition, from the impact, respondents focused on environmental damage and pollution caused by the use of non-green materials. Another impact that is the focus is how this product packaging is not harmful to food and the environment.

From the research results, SMEs' awareness of the importance of using Eco-Friendly Packaging already exists. There are 2 dimensions that are the main focus, namely the material of the packaging, and also the impact of the use of packaging. As stated by respondent 1 that there is an impact on the environment, "*It is important not to pollute the surrounding environment and maintain and preserve the surrounding environment for the continuation of the next life*". Respondent 7 also considered that awareness can be seen from their actions in determining materials of packaging. "I think it's very important. Because in this case, most business actors still use plastic-based packaging, which if you get used to it, it will make plastic waste in Indonesia more and more day by day and of course it will have a bad impact on the environment or ecosystem in Indonesia."

**TABLE 3.** Ideal Packaging Factors (Respondent's Perspectives)

Focus	Key Aspects	Other Considerations
Design	Unique	Color
	Material	Simple
	Easy to use	Aesthetic
	Eco-Friendly	
	Functionality	
Quality	Food grade	
	Endurance	
Safety	Food safety	
Cost	Value for money	

Every business owner has an indicator to determine the ideal packaging. According to respondents, several main factors in determining that this packaging is good for business and customers are design, quality, safety, and cost. Unique and attractive designs are the main considerations, ease of obtaining packaging materials, and ease of use. Another factor is the quality of the packaging to protect food both in terms of food grade as well as the resilience to maintain the condition of the food to the buyer. In addition, cost is an important factor in packaging and selling.

Currently, respondents said that they still use plastic dominantly in the sales process. Most of the respondents have used paper material, but plastic is still a complement to protect the quality and durability of the product. Consideration of using plastic material because of its availability that is easily accessible and obtainable, as well as low-cost

considerations. In contrast to eco-friendly packaging materials, which are still difficult to obtain and also very expensive. Another consideration is the suitability of the product with the available packaging, and the current business conditions are still in the early stages and are trying to get feedback from the market first.

To create packaging that sells, currently, respondents focus on design, quality, safety and cost. There are various responses from respondents who have implemented eco-friendly packaging or those who have not. Respondent 45 expressed his opinion on the use of eco-friendly packaging, *"Using environmentally friendly packaging such as bagasse boxes made from sugarcane waste, and as much as possible to minimize the use of plastic in the packaging. The packaging used has a variety of sizes that can accommodate various quantities of products."* On the one hand, apart from the difficulty in finding eco-friendly packaging materials, there are also concerns about cost, food safety, food grade, and the absence of a suitable substitute to replace the packaging currently used. The following is the response from 20 respondents to the use of packaging that they currently use. *"Usually the price is quite expensive, it is still difficult to find environmentally friendly packaging, and usually the durability of environmentally friendly packaging is not too strong compared to packaging that uses plastic."* There are other opinions from respondent 24, *"Expensive, not food grade, not heat resistant."* and the opinion from respondent 5 about the absence of a substitute for the packaging that he usually uses. *"There is no packaging that can replace packaging that is similar in function to vacuum plastic."*

## FUTURE PREPARATION

**TABLE 4.** Need for Eco-Friendly Packaging Skill and Knowledge

Focus	Content
Material	Organic
	Safety
	Food grade
	Design Process
Impact	Damage
	Prevention
Education	Theory
	Case Studies
	Production Process
	Product Review
	Pricing

In preparing for a more comprehensive use of eco-friendly packaging, respondents said that there are several focuses that must be considered in its preparation. The provision of skills and knowledge needs to sharpen several aspects such as material, impact, and content of the information to be provided. Business owners need to know what ingredients are available, their quality for food and how to process them. In addition, entrepreneurs need to know all the positive and negative consequences of using or not using eco-friendly packaging. Then, in-depth content, ranging from theory, best practices, production processes, field reviews, to price quotes.

Currently, respondents have realized the importance of using eco-friendly packaging. However, there are still many obstacles in the field. Starting from the socialization of its use, the availability of eco-friendly packaging at affordable prices, to how it is implemented in business processes. Several opinions emerged from respondents regarding the need for knowledge and assistance from relevant stakeholders. In terms of materials and their impact on the environment, Respondent 19 gave his opinion, *"Knowing which materials are environmentally friendly and whether they are safe for the product or not."* In terms of the expected knowledge transfer process, respondent 2 requires learning from case studies and videos. *"Learning from brands and videos."*

**TABLE 5.** Future Strategy

Focus	Key Aspects	Other Considerations
Material	Eco-friendly	Premium
	Paper	Supplier
	Cardboard	Easy to get
	Easy to decompose	
Design	Reduce Plastic	
	Unique Design	Practical
	Custom Design	Campaign
	Food Quality	Ergonomic
	Food Safety	Aesthetic
Cost	Branding	
	Affordable	

Respondents gave their opinion on the packaging innovation development strategy that will be carried out in the future. The first focus is material, how the use of materials can be eco-friendly. The next focus is design, although the product packaging will be made of eco-friendly materials, it will not reduce the interest of SMEs to create unique designs, have brand characters, and pay attention to food quality and safety. Awareness of the use of Eco-Friendly Packaging already exists, there are several strategies that will be carried out by SMEs in the future to make product packaging that is more environmentally friendly. Respondent 43 said, *"My future strategy will be to use packaging with a more attractive design and can become a hallmark of my brand and I will consider using environmentally friendly packaging."* Also added from respondent 1, *"Using environmentally friendly packaging with a unique design that also has appropriate uses to maintain the quality of the product."*

## CONCLUSION

In this study, the results have shown the awareness of SMEs in using environmentally friendly packaging. However, there are still many aspects that need to be considered to support the full use of eco-friendly packaging. For the perpetrators, the current conditions are not yet ideal for total use, due to business considerations, access to materials, and high prices. In the future, SMEs players will focus on their packaging development strategy on several aspects, namely material, design, and cost. In addition, support from relevant stakeholders is needed to provide the skills and knowledge needs of SMEs actors through socialization and assistance. An important aspect that needs to be strengthened is knowledge about the use of materials, their positive and negative impacts, and the focus of their content.

The benefit of this research is to help SMEs map out strategies for developing their packaging innovations and focus on things that need to be prepared. In addition, this research is useful for stakeholders (government, universities, etc.) who support SMEs in the business ecosystem. The important points are policy support, R&D, availability of materials, suitability of prices, and assistance to help SMEs become sustainable businesses and have eco-friendly packaging. Further research is on how to assist SMEs to become a sustainable business. Then what materials are already available, how to produce them and who are the actors in this ecosystem in Indonesia.

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