

## ENHANCING SUSTAINABILITY: THE IMPACT OF GREEN ACCOUNTING USING GREEN RESTAURANT INDICATORS

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### Abstract:

Indonesia currently ranks fourth in the world's food waste production, with food waste accounting for 41.2% of total waste. This study evaluates the impact of implementing green accounting on the environmental performance of restaurants. Green accounting considers environmental aspects in financial statements, including a business's environmental impact, use of natural resources, and mitigation efforts. It includes using environmentally friendly materials, efficient waste management, and renewable energy in restaurants. The research was conducted at AE Kitchen & Dessert Restaurant in Pontianak using qualitative data from observation, interviews with the restaurant owner and four customers, and documentation. This restaurant has implemented green accounting well, and many green restaurant indicators have been implemented. The results showed that green accounting is essential in the restaurant industry to effectively manage environmental costs, reduce negative impacts, support sustainability, increase efficiency, and improve long-term business reputation. This research confirms that adopting green accounting is an important strategic step for the restaurant industry to reduce environmental impacts and ensure the sustainability of ecologically responsible operations.

**Keywords:** Green Accounting, Green Restaurant, Restaurant

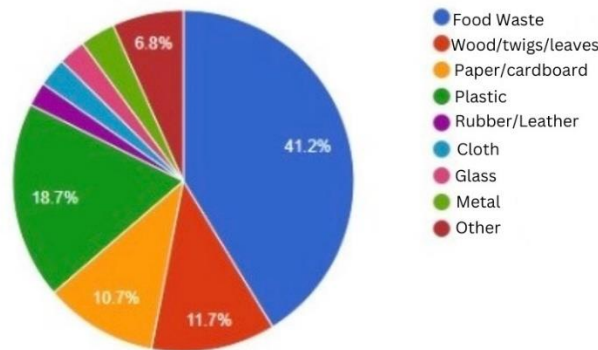
## INTRODUCTION

Green Accounting is an accounting practice that considers and records all costs associated with prevention efforts and the environmental and social impacts of a company's operations. In other words, companies must allocate additional funds to manage waste, which in turn will reduce their profits. However, implementing green accounting can also improve the company's reputation in the eyes of society (Tapaningsih et al., 2022).

The high demand for food outside the home and the growing number of restaurants have significantly increased food production. All stages in the provision of food services carry an enormous financial and environmental burden, so it is necessary to reconsider, especially in the context of environmental factors. This phenomenon is due to the increasing volume of waste generated and the increasing use of various natural resources. Food production, for example, is responsible for 80% of deforestation, 70% of freshwater consumption and 30% of greenhouse gas emissions, making it one of the leading causes of biodiversity decline on the planet (da Costa Maynard et al., 2020). Worldwide, the food service sector is considered the least sustainable among other economic sectors (Wang et al., 2013).



**Waste Composition Based on the Type of Waste**



Source: (SIPSN - National Waste Management Information System, 2023)

**Figure 1.** Percentage of Waste Types

Food waste is wasted and uneaten food that cannot be processed because it contains substances harmful to the environment. It occurs at every stage, from production to consumption. Food waste is divided into two categories: food waste due to over-serving, known as "leftover," and food waste due to planning and management errors, called "food waste." Both are harmful to the environment as they contain chemical compositions that cannot be recycled. As food waste decomposes, it releases significant greenhouse gas emissions, mainly methane, which has a global warming potential that is 25 times higher than carbon dioxide. According to the World Resources Institute (WRI), greenhouse gas emissions from food waste account for 8% of global emissions, making it the third largest contributor after China and the US (Humasfe Universitas Negeri Semarang, 2024)

Indonesia currently ranks fourth in terms of food waste generation in the world (Pristiandaru, 2023). The United Nations Organization estimates that the carbon footprint of food produced and not consumed globally is 3.3 gigatons of carbon dioxide. It ranks food waste as the world's third-largest emitter of CO<sub>2</sub>. Therefore, reducing waste is one method to reduce the negative impact on the environment. Food service companies must commit to food quality, profitability, social responsibility, and sustainability (da Costa Maynard et al., 2020).

In addition to organic food waste, about 40 billion units of plastic forks, spoons and other cutlery end up in landfills and oceans yearly (Tenenbaum, 2019). At the same time, consumers' awareness of the impact on the environment and their role in minimizing the impact of such restaurant operations (Arun et al., 2021). Although green practices and sustainability are essential for the environment, implementing green practices and sustainability in restaurants requires much capital and is consequently costly for guests (Baloglu et al., 2022).

Companies in all sectors are developing new products and processes to minimize environmental negative impacts. These developments are overwhelmingly driven by socially responsible goals, although it is argued that the underlying stimulus for such actions remains economically motivated (Choi & Parsa, 2007). Some companies realize the marketing potential of introducing 'green' initiatives and seek to position themselves in a new niche for environmentally concerned consumers (Schubert et al., 2010).

Green restaurants refer to restaurants built or run environmentally friendly to reduce the impact of their operations on the environment (Arun et al., 2021). Existing research shows that restaurant operations involve several food-related environmental issues, such as cooking, serving,



food waste, and non-food issues, such as energy and water wastage (Filimonau & De Coteau, 2019). Restaurants can benefit from adopting green practices, primarily through direct savings on operating costs (Schubert et al., 2010).

This study investigates the impact or consequences of green accounting on a restaurant's environmental performance. Green accounting is an approach that considers environmental aspects in the financial recording and reporting process, such as the environmental impact of business activities, the use of natural resources, and efforts to mitigate or protect the environment. In the context of restaurants, green accounting may involve using environmentally friendly materials, more efficient waste management, or renewable energy.

Green Restaurant refers to restaurants that are designed or run on environmentally sustainable principles, aiming to reduce the negative impact of their operations on the environment. This phenomenon reflects the public's growing interest in restaurants committed to environmentally-based practices. In Indonesia, awareness of the importance of environmental management in restaurant management continues to grow. Restaurants that adopt environmentally friendly principles implement green practices in their operations (Dikara et al., 2022). Schubert (2008), in his research, identified that green practice is an effort to preserve and protect the environment, which includes three main dimensions: green action, green food, and green donation.

Indicators of the basic principles of green restaurants are described as follows: Schubert (2008) and Leonardo et al. (2014).

#### **Green Action.**

1. Energy and water savings:
  - Stop using lights and water faucets when not in use.
  - Use of energy-efficient LED lights.
  - Conducting regular checks on electricity, water and gas consumption.
  - Installing automatic water taps to reduce the risk of leakage.
  - Install water and energy-saving signs around the restaurant area.
2. Using environmentally friendly products:
  - Use packaging products that can be recycled.
  - Using biodegradable packaging.
  - Using environmentally friendly cleaning materials.
3. Recycling and composting:
  - Sorting waste according to its type.
  - Recycling existing materials such as glass, plastic, iron, cardboard, and paper.
  - Perform composting process for food waste materials.
4. Pollution prevention:
  - Using reusable tableware instead of disposable.
  - Use durable kitchen utensils and equipment.
  - Regular maintenance of sewage lines.
  - Buying ingredients in large packs to reduce waste from excessive small packs.

#### **Green Food.**

1. Using organic products:
  - Using organic food and beverages.
  - Use of vacant land to grow plants that can be used as spices.
2. Serving food made from local or seasonal ingredients:





- Using locally produced ingredients.
  - Collaborate with local farmers to provide local ingredients. I
  - Provide food menus that utilize seasonal raw materials.
3. Annotating menu items that have unique characteristics:
- Annotate menu items with particular characteristics (e.g., organic, low-fat, seasonal).

#### **Green Donation.**

1. Funding and participating in environmental projects:
  - Donate to social organizations that focus on environmental conservation.
  - Engage in environmental conservation activities, such as reforestation or tree planting.
2. Educating the public about green practices:
  - Educate restaurant customers on the importance of environmental sustainability (such as through pamphlets, brochures, or short guides).
  - Educate restaurant staff or employees about the urgency of environmental conservation (such as through brief guides, training, or seminars).

This research uses legitimacy theory, explaining how companies can show their responsibility to the surrounding environment by paying attention to the community's needs because companies depend on community support. Therefore, paying attention to the interests of society is crucial for companies. Following the concept of the social contract, companies must consider the rights and obligations that follow the community's needs when carrying out their operational activities. This social commitment is a means for companies to carry out their responsibilities towards society (Tanti, 2023). In environmental accounting studies, legitimacy theory is an approach that is often used because of its focus on the social and environmental aspects that are at the core of environmental accounting. This theory effectively encourages companies to disclose environmental and social impact information voluntarily. The main objective of legitimacy theory is to gain support and trust from the public for the company's performance, thus encouraging researchers and the public to become more aware of the information submitted by companies about the environment (Tanti, 2023).

This research refers to Tapaningsih et al.'s (2022) "Analysis of Green Accounting in the Galoninaja Application to Realize SDGS." The difference in this study lies in the object used as research, namely restaurants. For green restaurant indicators, this research refers to Leonardo et al.'s (2014) research entitled "Exploration of Public Perceptions of Green Practices in Restaurants in Surabaya."

#### **METHODS**

This research uses qualitative research methods. According to Sugiyono (2013), qualitative research is a research method that naturally explores the condition of an object, with the researcher acting as the main instrument, using various triangulation techniques to collect data, conducting inductive data analysis, and emphasizing understanding meaning rather than generalization. This research is qualitative research with a descriptive approach. According to Sugiyono (2013), descriptive research aims to reveal the values of a single variable or combination (independent variables) without comparing or correlating with other variables. This research applies a structured qualitative approach to examine and investigate an object in its natural context without manipulation. The focus of this research is on actual problems that arise organically during the research process. This research is located in Pontianak City, which coincides with the AE Kitchen Dessert Restaurant at Jl. Parit Haji Husin 2, Kec. Pontianak Tenggara, Pontianak City, West



Kalimantan. This research uses primary data collection methods of observation, interviews, and documentation at AE Kitchen Dessert Restaurant. Interviews were conducted with the restaurant owner and four restaurant customers.

## RESULT AND DISCUSSION

**General Description of AE Kitchen Dessert Restaurant.** AE Kitchen & Dessert Restaurant is an initiative founded by Enny, a 45-year-old woman of Indonesian descent. She has a professional background as a chef in Hong Kong for more than 15 years before deciding to move to Indonesia and develop her restaurant in 2020. Enny's extensive experience in the international culinary industry, particularly in Hong Kong, has given her a deep insight into sustainable practices, including the principles underlying the green restaurant concept.

**The Role of Green Accounting in Reducing and Preventing Environmental Pollution.** In carrying out its business activities, it is natural for an entity to pay attention and consider the surrounding environmental conditions as an act of social responsibility. This accountability can increase public trust in the entity. Therefore, every business actor must pay attention to environmental impacts to obtain legitimate recognition from the surrounding community (Tanti, 2023). The results of interviews with Mrs. Enny, the Owner of the AE Kitchen & Dessert restaurant, said that the environment is an essential factor in building a business; this will also affect the smooth running of the business itself and for the future.

This restaurant has done very well protecting the environment, managing waste, water, energy efficiency, etc. Environmental costs are correctly recorded by AE Kitchen & Dessert restaurants even though they are still simple, such as garbage transportation costs, community service costs, electricity and water costs, and used oil transportation costs; this was revealed by the owner of the AE Kitchen & Dessert restaurant that the financial reporting prepared is still simple. Although the recording of financial statements is still simple, awareness of the environmental impact of business activities is reflected in routine costs incurred every month and good cost classification. So, the green accounting recording in this restaurant is quite sound.

Green accounting includes identifying, measuring, valuing, and disclosing costs associated with company activities that impact the environment (Aniela, 2012). Green accounting provides environmental information used to assess performance in achieving environmental goals. An organization's environmental performance reflects its commitment and seriousness in managing natural resources effectively and efficiently. It is essential because organizations have obligations and responsibilities to society, known as the concept of legitimacy (Herawati et al., 2022). Thus, disclosure through green accounting can help companies fulfill their environmental responsibilities and accountability to stakeholders and provide a comprehensive assessment of their environmental conservation efforts (Tanti, 2023).

**Implementation of Green Restaurant Indicators.** The first step in implementing Green Restaurant indicators is to conduct a comprehensive audit of all aspects of restaurant operations. It includes evaluating organic raw materials, renewable energy utilization, water use efficiency, and waste management. After that, it is necessary to formulate a clear strategy and action plan to implement the necessary changes to achieve higher environmental standards. This initial step is essential for building a solid foundation for success as an eco-friendly restaurant.

As the indicators above have been described, I conducted in-depth interviews with the owner of the AE Kitchen & Dessert restaurant. I observed whether the AE Kitchen & Dessert restaurant had implemented green restaurant indicators. In my observations, the AE Kitchen & Dessert restaurant has implemented indicators that indicate it is quite worthy of the title "Green Restaurant."



Green Action is an operational initiative prepared and implemented by the restaurant to create a safe environment for the environment and the local community (Leonardo et al., 2014). As has been described regarding green action indicators, the implementation of green action in AE Kitchen & Dessert restaurants in terms of implementing energy and water savings, adopting environmentally friendly products and preventing pollution this restaurant has done it well. However, in terms of recycling plastic waste, this restaurant has yet to be able to recycle correctly. It is supported by the statement of the owner of AE Kitchen & Dessert: "For plastic waste, we have not separated it so that the waste is put together and later it will be taken by the garbage collector." the following statement can be concluded that this restaurant has not processed plastic waste recycling correctly. However, the AE Kitchen & Dessert restaurant has done things to reduce food waste and waste from activities generated by the restaurant, and this is supported by the statement, "For food waste, I subscribe to one of the food waste collectors where the waste from food waste is processed into feed for stars such as for maggot" and the results of my observations that went directly to the AE Kitchen & Dessert restaurant I saw that in the plant pots in the restaurant there were fish scales where the fish scales were not thrown away but processed into plant fertilizer.

Green Food is the practice of using food ingredients that contribute to the sustainability of environmental ecosystems in the long term. It includes using organic and local foods (Leonardo et al., 2014). After interviewing the owner of AE Kitchen & Dessert, it was discovered that the restaurant consistently uses certified organic food and beverage ingredients. In addition, the restaurant also works closely with local raw material sellers located around the restaurant. To confirm the veracity of this information, I conducted in-depth observations of several stalls and markets around the restaurant. The results of these observations showed that the restaurant does work closely with the local vendors in question. During the observation process at AE Kitchen & Dessert restaurant, I noticed they effectively utilize the empty land around the restaurant. The land is used to grow various types of plants that are needed as ingredients in the kitchen. Some of the plants include basil, ginger, turmeric, and lemongrass. This use of vacant land supports environmental sustainability and ensures that the ingredients are always fresh and high-quality.

Green Donation contributes to community activities, provide funds to support environmental issues and educate the public about the consequences of environmental damage caused by restaurant industry activities and efforts to overcome these problems (Leonardo et al., 2014). After conducting in-depth interviews and observations of AE Kitchen & Dessert restaurant, it can be concluded that this restaurant has significant contributions in various social and environmental aspects. AE Kitchen & Dessert actively makes donations to social organizations, such as donating food to children in orphanages, which shows their concern for the welfare of the surrounding community (Asrunputri et al., 2024). In addition, AE Kitchen & Dessert restaurant also plants various ornamental plants in the restaurant area, beautifying the environment and supporting the preservation of nature. This effort reflects the restaurant's commitment to environmental conservation.

Furthermore, AE Kitchen & Dessert restaurant educates consumers about maintaining environmental sustainability. This education is delivered through brochures in various strategic places in the restaurant, with messages such as the importance of turning off water after use and lights when not needed. These steps demonstrate the restaurant's dedication to educating and inspiring its customers to participate in environmental conservation efforts.

### **Can Restaurants That Implement Green Restaurants Well Retain and Even Add Customers?**

Green restaurants mainly use differentiation business strategies and expect to collect premium prices from their customers. To capture the overall consumer adoption behavior, I adopt a broader



definition and consider all types of adoption behavior, including visit intention, willingness to pay and pay a premium, and willingness to engage in word of mouth (Arun et al., 2021).

Interviews were conducted with four customers of AE Kitchen & Dessert restaurant. One of the four customers is a regular customer who often holds events at the restaurant. This customer, Febri, frequently visits AE Kitchen & Dessert restaurant to organize educational events. "In a month, I can do 2-3 educational events at this AE Kitchen & Dessert restaurant". I have conducted in-depth interviews with the four customers regarding the green restaurant concept implemented by this restaurant. The interview revealed that the customers began to realize that AE Kitchen & Dessert restaurant carries the green restaurant concept through brochures and pamphlets posted in various corners of the restaurant. The brochures and pamphlets contain information about saving water and electricity and protecting the environment and the earth. In addition, the decoration of AE Kitchen & Dessert restaurant, which uses environmentally friendly materials such as bamboo, corn husk, and many ornamental plants, also supports the impression of a green restaurant (Hermawan et al., 2023). The conclusion of this interview shows that applying green restaurant principles can attract customer attention because it provides a unique characteristic. The reviews from customers of AE Kitchen & Dessert restaurant mentioned that the food served at AE Kitchen & Dessert restaurant is delicious and affordable. The price offered is considered commensurate with the quality and comfort provided by this restaurant.

**Community Involvement.** Over time, people increasingly realize that global economic development threatens the environment and can adversely impact society (Schubert et al., 2010). Freeman (2011) and Leonardo et al. (2014) explained that operational activities in the industrial sector, particularly in the hospitality industry encompassing hotels and restaurants, have been found to have a significant impact on the environment. Activities such as opening new land for restaurants, using hazardous chemicals, and the restaurant industry's lack of attention to resource management have become significant factors in environmental damage.

The restaurant was established in a strategic location close to schools and residential areas, so the support of the surrounding community is a critical factor for the sustainability and success of this restaurant. In addition, the restaurant regularly organizes social activities by distributing food on Fridays, sharing takjil during Ramadan, and providing food assistance to orphanages around the restaurant. These social activities are reinforced by the restaurant owner's statement, "When profits are high, we often give a large amount of food to children in orphanages." This initiative shows the restaurant's concern for the local community and reflects the restaurant's commitment to contribute positively to the surrounding community. Thus, the restaurant is not only focused on the business aspect but also plays an active role in strengthening social ties and positively impacting the surrounding environment.

## CONCLUSION

This study explains that green accounting has a significant role in the restaurant industry because it is one of the largest business sectors in the world and has a significant impact on the results of its operational activities. As one of the largest sectors, this sector is more responsible for environmental issues. By using green accounting, restaurants can effectively classify and manage the costs incurred to protect the environment. As recommended, restaurants can implement various actions that can minimize negative impacts on the environment by applying green restaurant indicators, which not only support environmental sustainability but also improve operational efficiency and the reputation of the sustainability business. This study confirms that adopting green



accounting practices is an important strategic step for the restaurant industry to reduce its environmental impact and ensure the sustainability of ecologically responsible operations.

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