Chapter 1

Introduction

1.1 Background

There has been a growing concern globally regarding climate change, rapid increase in populations and severe pollutions to the environment. This causes the overexploitation of resources and therefore sustainability practices have been encouraged in mitigating the detrimental effects of these issues (Aguiar et al., 2022). There are three main pillars of sustainability, which are social, economic and environment. Overall, the term sustainability aims to ensure the fulfillment of the needs of current generation without compromising the ability of future generations to meet their needs (Damico et al., 2022). One of the main sustainability practices being done is the implementation of sustainable packaging.

Packaging is one of the most important aspect of a product as it offers many benefits such as protection of a product during its transport, delivering information, convenience and promotion. More specifically in a food packaging, it has essential functions like maintaining food safety, improving shelf life, and preventing food waste (Kan & Miller, 2022). However, production of packaging involves a high amount of energy and raw materials, which makes it a top contributor of waste worldwide, especially for non-ecofriendly packaging like plastics. These types of packaging are usually broken down by combustion or end up in landfills or water bodies and thus causing harmful effects to the environment.

There are a number of things that needs to be taken into consideration in order to minimize the harmful impacts of the packaging system. Packaging not only have to meet the basic requirement of functions such as preservation and protection of the product, but the whole lifecycle of the packaging has to be considered too. It is important to maximize the lifecycle of the packaging while optimizing the amount of energy and materials utilized to produce it. The materials should also be able to be recycled or disposed in a way that produces minimum to zero pollution (Versino et al., 2023). One of the most common types of alternative sustainable material being used in food packaging is paper. There have been numerous studies regarding paper-based packaging. A study on the consumer acceptability and sensory profile of sustainable paper-based packaging has been conducted by Lignou & Oloyede (2021), which has shown that there were no significant differences observed for the liking of any of the four dimensions (appearance, design, feel and overall liking) being assessed for the category biscuit packages and significant differences and preference were found for meat packages. The purchase intent was also low for both categories. However, study regarding consumer awareness and acceptability of sugarcane bagasse sustainable food packaging has not been done. This is the reason why further studies regarding sugarcane bagasse as an alternative material for sustainable food packaging needs to be conducted.

Sugarcane bagasse is a byproduct of extracting sugarcane juice. It contains cellulose, hemicellulose, lignin, ash and other components. It is usually produced in excess and research conducted by Alokika et al., (2021) and Hiranobe et al. (2024) have shown that sugarcane bagasse can be used as a biomass for the production of second generation biofuels, electricity, enzymes and so on. Its cellulose content also makes it a good alternative sustainable material for food packaging as it offers better moisture barrier properties, higher mechanical strength, flexible, transparency, antimicrobial properties and thermal stability (Gond & Gupta, 2020; Mahmud et al., 2023; Wani et al., 2023).

1.2 Research Questions

The research questions of this study are as follows :

1. What are the preferred characteristics of the food packaging?
2. What is the consumer acceptability towards sugarcane bagasse sustainable food packaging?
3. How familiar are the respondents towards the term sustainability, sustainable packaging and sugarcane bagasse sustainable food packaging?
4. What is the purchase intention of consumers towards sugarcane bagasse food packaging?

1.3 Objectives

The objectives of this study are as follows :

1. To investigate how the characteristics of the packaging affect consumer acceptability of sustainable food packaging that is made up of sugarcane bagasse
2. To investigate the awareness and purchase intention of sugarcane bagasse sustainable food packaging

1.4 Scope of Activity

The scope of work of this research are:

- Preferred characteristics of food packaging
- Consumer acceptability and awareness towards sugarcane bagasse sustainable food packaging

1.5 Expected Output (Outcome)

The expected outcomes of this research are:

- Thesis document for the completion of Master degree in Bio Management.
- Submission to National/International Indexed Journal for publication.