

Hong Kong Student Science Project Competition 2023

Template of Extended Abstract (Investigation)

(Word Limit: 1,600 words, Pages: 3 pages only)

Team Number: SBBC252

Project Title: Towards The Adoption of Sustainable Packaging Using Biodegradable Materials

Project Type: Investigation

*To our best knowledge, there **are** similar works in the field; (if there are,) related research links are as below:*

https://www.researchgate.net/publication/357767509_Sustainable_Packaging_A_Study_on_Consumer_Perception_on_Sustainable_Packaging_Options_in_E-Commerce_Industry

The enhancement our project made / the difference with related research are:

Our project uses a mix-method approach that involves interviews and a survey to identify strategies for promoting the adoption of sustainable materials. The related research cited uses a survey-based approach only to collect data on consumer perceptions of sustainable packaging options. Our investigation is on Chinese consumers.

**Please delete if not applicable. The competition values the originality of works. Students must do enough literature research to ensure that their works are unique and list relevant reference materials before starting research or invention.*

I. Background

Background:

Sustainable materials have gained significant attention in recent years due to the adverse environmental impacts of traditional materials. The adoption of sustainable materials is essential for achieving the Sustainable Development Goals (SDGs) set by the United Nations, including responsible consumption and production, climate action, and affordable and clean energy. However, despite the benefits of sustainable materials, their adoption still faces several challenges. Therefore, this project aims to examine the concept of sustainable materials, their benefits, challenges, and strategies for promoting their adoption.

Literature review:

The literature review highlights the benefits of sustainable materials, including reduced environmental impact, improved energy efficiency, and reduced waste generation. Sustainable materials are also critical for achieving SDGs, such as responsible consumption and production.

Overview and research gap:

This project includes a literature review, interviews, and a survey. The literature review covers sustainable materials, including benefits, challenges, and promotion strategies. The survey assesses consumer awareness and attitudes. The stakeholder interviews gather insights on adoption from interviewees.

II. Objectives

Aims:

This project aims to explore the concept of sustainable materials, including their advantages, difficulties, and strategies to encourage their implementation. The goal is to gain a better understanding of the current status of sustainable materials adoption and recognize possibilities to promote their use.

III. Hypothesis

- Propose an explanation for a phenomenon and state how the **hypothesis** can be tested by experiments

Hypothesis: Consumers who are more aware of sustainable packaging are more likely to purchase sustainable packaging products

IV. Methodology

This study adopted a mixed-methods research design, combining both quantitative and qualitative methods. The research will be conducted in three stages: A literature review, interviews, and a survey.

Qualitative Study through Interview

The research team interviewed 4 participants as representatives from various stakeholders. The interviews with stakeholders identified several challenges and strategies for promoting the adoption of sustainable materials. The challenges included the need for increased collaboration and communication between stakeholders, the need for more research and development on sustainable materials, and the need for more government support and incentives for sustainable practices. However, the interviews revealed several challenges to adopting sustainable materials, including high production costs, limited availability, and lack of consumer demand.

The strategies for promoting sustainable materials adoption included the need for more education and awareness campaigns targeted at both manufacturers and consumers, the need for more sustainable product design and development, and the need for more sustainable supply chains and distribution networks.

Quantitative Study through Survey

After doing literature reviews, we designed a questionnaire. The survey questions were designed based on previous literature on sustainable packaging (James and Kurian 2021; Zailani et al. 2012). Questions were designed to ask about consumer attitudes toward eco-friendly packaged products (Ahmed et al., 2011; Limbu et al., 2012); environmental concern as one of the primary motivators for environmentally friendly behavior; consumer willingness to pay for sustainable packaging. The questionnaire was distributed offline in MTR stations to ask people to fill in a Google Form, which is an efficient and environment-friendly way to do data collection. Our target was to collect more than 30 responses because at least 30 are required before we can reasonably expect an analysis based on the normal distribution.

V. Results

Ultimately, 48 responses were collected in our survey concerning the awareness of consumers towards sustainable materials. People were randomly selected to fill in the questionnaire in order to keep the results random and unbiased.

Overall, the survey found that attitudes towards sustainable materials were generally positive, with most respondents agreeing that sustainable materials are important for reducing environmental impact and

promoting sustainable practices. The survey also found that most consumers were willing to pay for sustainable materials if the costs were reasonable.

Surprisingly, all of the respondents made the claim that they think environmental awareness is important. As shown in Figures 1 and 4 respectively, among the 49 participants (64% female, 36% male), more than 89% of participants were aware of sustainable packaging, and most of them said they heard about it from the internet.

However, the majority of respondents said that they only looked at the date of production instead of sustainable packaging indicators when purchasing items. Even so, none of the respondents said that sustainable materials should not be used.

VI. If your team will compete for the Sustainable Development Award, please indicate the specific sustainable development goal the project is related to, and provide justification for competing for this award. (Word limit: 300 words)

Our project aligns with SDG 12: Responsible Consumption and Production, which aims to promote sustainable patterns of consumption and production by minimizing waste and hazardous chemicals. Our focus is on promoting sustainable materials, which can improve energy efficiency and reduce environmental impact. Our efforts also contribute to SDG 9: Industry, Innovation, and Infrastructure, by encouraging research and development of sustainable materials, and SDG 13: Climate Action, by reducing carbon footprint. We believe that competing for the Sustainable Development Award is an appropriate recognition of our contribution towards a sustainable future. By raising awareness about responsible consumption and production, we hope to inspire others to take similar action in their communities and industries.

VII. If your team will compete for the Social Innovation Award, please list the target group or social issue the project focuses on, and provide justification for competing for this award. (Word limit: 300 words)

VIII. Conclusion

From our survey, we found that attitudes towards sustainable materials were generally positive, with most respondents agreeing that sustainable materials are important for reducing environmental impact and promoting sustainable practices. The survey also found that most consumers were willing to pay for sustainable materials if the costs were reasonable. We would like to say that this project has met our objectives, since we were able to make suggestions on how future promotion of using sustainable materials should be carried out, with us 1. Investigating the attitudes of consumers towards sustainable materials by a survey and 2. Identifying the challenges and benefits of using sustainable materials by our literature review.

□ Our project is developed based on the previous project and the enhancement is below:

N.A.