



**CONSUMER ATTITUDES AND WILINGNESS TO PAY FOR SUSTAINABLE
FOOD PACKAGING AMONG SMES IN MALAYSIA: A QUANTITATIVE
STUDY**

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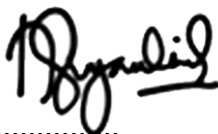
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DECLARATION

I certify that this report titled as Consumer Attitudes and Willingness to pay Sustainable Food Packaging Among SMEs in Malaysia: A quantitative study is my own work except quotations and summary which have been properly cited.

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DEDICATION

The project I am carrying out is fully dedicated to the family that I love dearly my parents, who have been the source of strength to me and my inspiration all through my study period. To my friends and colleagues, I am grateful to you for supporting and encouraging me all the time. Special thanks to my supervisor, Associate Professor Ts. Dr. Haslinda binti Musa to guide and have the patience. Finally, to everyone who is making the efforts to achieve sustainability everywhere, here we hope that this work will help us make the future a better and greener world.

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ABSTRACT

This paper sheds light on consumer behaviour and the willingness to pay (WTP) sustainable food packaging by SMEs in Malaysia. As issues of concern about the environment are raised, consumers are being more into consideration of what they consume and particularly the packaging material. Nonetheless, sustainable packaging adoption in the SME sector is low because of the perceived cost, uncertainty consumer demand and scanty research evidence.

A sample size of consumers aware of SME food products was used to carry out random sampling using structured questionnaires to gather data using a quantitative method of research. The relationship between the variables on consumer environmental attitudes, perceived packaging attributes, and willingness to pay on the choice of eco-friendly packaging option were studied using statistical tools.

The results indicate that the consumers have a positive attitude to sustainability, and they are willing to pay a premium of sustainable packaging at an average rating. WTP is greatly dependant on environmental concern, perceived usefulness, and sense of aesthetics in packaging. The research provides on-the-ground knowledge to help SMEs to synchronize the packaging practices with the ever-growing green consumer culture.

ABSTRAK

Kajian ini membincangkan predisposisi pengguna dan kesanggupan membayar (WTP) untuk sistem pembungkusan makanan mampan di kalangan perusahaan kecil dan sederhana (PKS) Malaysia. Ditengah menyedari isu alam sekitar, pengguna semakin peka terhadap pilihan mereka demi respons yaitu pengguna semakin peka sebagai insinyur antropologi di sini. Namun penggunaan bungkusan 'green' PKS masih terhad disebabkan adanya persepsi ke atas kos 'tinggi', ketidaksetiaan permintaan pengguna dan kekurangan bukti empirikal.

Pemahaman konsumen terhadap kemutakhiran label paket produk makanan Proses dimaksudkan untuk menambah wawasan pelaku PKS dalam memilih, memilih dan memproduksi makanan yang dapat dipercaya. Alat statistik digunakan untuk dapat mengetahui hubungan antara sikap alam sekitar konsumen, persepsi terhadap pembungkusan dan keiklan dan kemampuan mereka untuk menerima bayaran lebih daripada pilihan yang lebih ramah lingkungan.

Dalam dapatan pula menunjukkan pengguna mempunyai minda positif terhadap kelestarian dan nyata pernah bersedia membayar harga lebih untuk pembungkusan mampan. Kepekaan alam sekitar, WTP kegunaan, dan estetika packaging mempunyai pengaruh yang sangat berpengaruh terhadap WTP. Kajian ini menawarkan panduan langkah demi langkah kepada PKS tanpa merungut untuk menggantung strategi pembungkusan agar seimbang dengan harapan pengguna yang semakin mengecatkan kebajikan alam sekitar.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Sustainability momentum worldwide concentrates on green methods, particularly in food packaging operations. Environmental concerns in Malaysia compel both buyers and business entities to reassess their packaging strategies. Businesses in Malaysia's food sector that fall under the category of Small and Medium Enterprises (SMEs) act as key agents in this industry transformation. Modern Sustainable food packaging operations demand a complete understanding of consumer attitudes, together with how much they are willing to spend (WTP) for sustainable packaging solutions for effective alignment. The worldwide interest in sustainable packaging made from either degradable or recyclable materials has shown itself to be vital for solving the environmental damage from standard plastic waste production. The Malaysian Roadmap Towards Zero Single-Use Plastics (2018–2030) promotes sustainable behaviour among consumers, yet Malaysian enterprises struggle to understand how willing customers are to purchase sustainable packaging at higher prices.

1.2 Background of Study

As the world faces increased environmental degradation linked to traditional single-use plastics and non-renewable materials, sustainable food packaging has emerged as a critical strategy. Globally, apprehension over plastic pollution and waste management has heightened interest in academic and business circles for eco-friendly packaging to supplement environmental sustainability and circular economy principles. The change could not have been affected without active consumers who shape attitudes and a (WTP) willingness to pay that influences market demand and encourages SMEs to move toward greener practices.

Sustainability concerns have been gaining ground in Malaysia over the years, and consumer awareness of various issues linked to food systems and packaging has increased incrementally. Research works that have focused on the Malaysian consumers' behaviour with regards to green packaging reveal that attitude, environmental concern, and knowledge are the most impacting determinants of preferences and purchases for eco-friendly products. A study suggests that Malaysian consumers harbour positive attitudes towards green packaging and that perceived environmental benefits and nature or style of the packaging themselves are major factors in stimulating purchase intentions of consumers, according to the Theory of Planned Behaviour frameworks.

However, despite this increased interest, there is a clear attitude behaviour gap here because many consumers claim to have environmental concerns despite this concern not necessarily resulting in a level of willingness to pay more for such products relative to conventional packaging. Such a gap appears to be noted in the broader field of literature concerning sustainable consumption.

Although most literature reviews examine general consumer groups and particular sub-groups ranging from university students to young people living in cities, very few studies have dealt with SMEs and the Malaysian food industry. As a matter of fact, SMEs are a crucial part of Malaysia's economy and food value chain. Their ability to implement sustainable packaging depends heavily on consumer demand and financial viability. This understanding can aid SMEs in being able to defend the use of environmentally friendly packaging options and adjust their pricing structure accordingly.

With this background in mind, a quantitative study of the relationship between attitudes of consumers, environmental issues, value perception, and willingness to pay for eco-friendly packaging of foods in the Malaysian SME environment must be undertaken. The significance of this study will be to provide scientific insight into the matter and offer some guidance to policymakers and businessmen seeking to propagate eco-friendly practices in the vibrant environment of the Malaysian food packaging industry.

1.3 Problem Statement

In this regard, there is an increasing concern for the environment, particularly about single-use plastics and non-biodegradable materials associated with conventional food packaging. However, such sustainable food packaging adoption among SMEs in Malaysia is still very minimal. Consumer demand is one of the important factors that influences SMEs to adopt eco-friendly packaging; this is related to attitudes and WTP for sustainable packaging options.

Studies show that Malaysian consumers have positive attitudes towards green products; however, it reflects an attitude-behaviour gap, with expressed concern not necessarily translating into actual willingness to pay more for sustainable alternatives (Jain et al., 2021; Rajendran et al., 2019). It is price sensitivity, lack of awareness, and perceived value that generally prevents consumers from paying premiums, which in turn impacts SMEs' incentives to invest in sustainable packaging solutions. Moorthy et al. (2021), MDPI (2019).

In addition to which, current existing knowledge in Malaysia also shows that these studies have primarily concentrated on general consumer groups or urban areas, while neglecting issues regarding how consumer behaviour directly influences SMEs in relation to the food industry. Currently, this existing gap in localized quantitative knowledge raises challenges to policymakers, businessmen, as well as environmentally oriented parties that aim to influence consumers in adopting environmentally oriented behaviour. With these unclear factors regarding consumer behaviour and willingness to pay, SMEs are expected to further emphasize non-sustainable packaging materials.

Accordingly, the research aims to fill the gaps by making a quantitative exploration of the relationship between consumer attitudes and the willingness to pay for sustainable packaging offered by SMEs in the Malaysian market.

1.4 Research Hypothesis

H1: Consumer attitudes positively influence willingness to pay for sustainable food packaging among Malaysian SMEs.

H2: Environmental concern positively affects willingness to pay for sustainable food packaging among Malaysian SMEs.

H3: Perceived value of sustainable food packaging positively influences willingness to pay among Malaysian SMEs.

1.5 Research Questions

The studies aim to understand the factors influencing Malaysian consumers' willingness to pay (WTP) for sustainable food packaging and how SMEs can respond to these preferences. The research questions are formulated to align directly with the hypotheses.

RQ1: What is the relationship between consumer attitudes and willingness to pay for sustainable food packaging among Malaysian SMEs?

RQ2: How does environmental concern influence consumers' willingness to pay for sustainable food packaging among Malaysian SMEs?

RQ3: What is the impact of perceived value on consumers' willingness to pay for sustainable food packaging among Malaysian SMEs?

1.6 Research Objectives

The main aim of this study is to investigate consumer attitudes and willingness to pay for sustainable food packaging among SMEs in Malaysia. To achieve this, the study has formulated the following specific research objectives.

RO1: To examine the relationship between consumer attitudes and willingness to pay for sustainable food packaging among Malaysian SMEs.

RO2: To investigate the influence of environmental concern on consumers' willingness to pay for sustainable food packaging among Malaysian SMEs.

RO3: To assess the impact of perceived value on consumers' willingness to pay for sustainable food packaging among Malaysian SMEs.

1.7 Scope of Research

The scope of the study determines the limitations of the study that ensures the study is relevant and within the objectives. The study specifically concentrates on the scope of the small medium enterprise in Melaka, along with the consumers specifically targeted who purchase food products from local restaurants, cafes, or food stalls. The scope being limited to the state of Melaka ensures that the study is achievable in the sense that the findings from the study would be relatable. The study aims to understand the influence of consumer attitudes, environmental value, or perceived value regarding the willingness to pay for sustainable food packaging. The scope being limited to the population of the consumers of Malaysia above the age of 18 encompasses that the study population would have adequate exposure to the food packaging.

It also employs a quantitative approach through structured questionnaires with Likert-scale items. Data will be analysed by using descriptive statistics, correlation, and regression analyses that test the relationships between variables. The focus of the study is on current consumer behaviour in 2025. Therefore, these results are relevant and actionable for SMEs in Melaka to enhance sustainable packaging strategies, pricing, and marketing initiatives. With these boundaries clearly set, the research will remain focused, feasible, and practically applicable to the local SME food sector.

1.8 Significant of the Study

This research is important as it allows the research to gain important insight regarding the attitudes and willingness to pay of consumers regarding sustainable food packaging among SMEs within the region of Melaka, which is an important aspect given the importance of small and medium food businesses to the region. In this case, the research will help SMEs to make informed decisions regarding the use of sustainable food packaging options. Additionally, the research will help SMEs to determine if the use of sustainable food packaging would be economically viable to the target customers. From a larger context, the research will help the

environment to achieve sustainability through the creation of awareness regarding the use of sustainable food packaging options.

Moreover, policymakers in Melaka can benefit from this study in creating programs or incentives for SMEs in Melaka to adopt sustainable practices. On an academic note, this study adds meaning to the body of knowledge pertaining to consumer behaviour, sustainability, and SMEs in the country. At its root, this study is both practical and social in nature, as it provides recommendations for readers who aim to enhance business performance while at the same time ensuring this is achieved in a manner which is favourable to Melaka's food industry.

1.9 Summary

Chapter 1 acts as the basis for conducting the research analysis regarding the consumer attitudes and willingness to pay for sustainable food packaging among SMEs located in Melaka. This chapter introduced the background description regarding the importance of environmental issues and the use of eco-friendly packaging, along with the problem statement regarding the attitude and implementation gaps found among SMEs to adopt sustainable packaging. Additionally, the research aims, research questions, and research hypotheses were also introduced. Therefore, this chapter creates an essential basis for the analyses to be found later in the subsequent chapters.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This literature review critically highlights previous studies and theories regarding consumer attitudes and willingness to pay in relation to sustainable food packaging, with a specific focus on SMEs. It looks at key concepts revolving around sustainable packaging, consumer behaviour, environmental concern, perceived value, and WTP, as well as their interlinkages and importance in the Malaysian context.

Sustainable food packaging is currently receiving global attention as organizations and individuals continue to understand and appreciate the effect of existing food packaging on the environment, especially single-use plastic packaging. However, findings suggest that consumer behaviour is one of the essential components that determines the adoption of sustainable packaging, as values and willingness to pay play a crucial role (Moorthy et al., 2021; Jain et al., 2021).

Despite the growing interest in environmental sustainability issues, studies related to Malaysia and, more precisely, to SMEs and regional consumer behaviour in areas like Melaka remain scant. The harmonization of the interaction between consumer attitudes and WTP is critical for SMEs to successfully implement sustainable packaging strategies. The purpose of this literature review is to synthesize relevant theoretical frameworks with related empirical findings, trace knowledge gaps, and set a basis for the current research.

2.2 Definition of Consumer Attitudes for Sustainable Food Packaging Among Sme's in Malaysia

Attitudes of consumers describe a person's global assessment, feeling, and tendency toward a specific product, service, and behaviour (Ajzen, 1991). In the usage of sustainable food packaging, consumer attitudes describe a consumer's assessment of and reaction to environmentally friendly packaging available from SMEs, including biodegradable, recyclable, and reuse packaging. When consumers hold positive attitudes toward sustainability, it implies that they favour environmentally responsible businesses. Conversely, negative attitudes might lead to indifference toward environmentally responsible businesses and a preference for non-environmental (traditional) packaging.

In Malaysia, studies indicate a strong influence of consumer attitude in purchasing behaviour for sustainable food packaging. Moorthy et al. (2021) stated that Malaysian consumers who exhibit a positive attitude toward sustainable packaging will result in a higher intention to purchase as well as a willingness to pay a premium for green packaging. Rajendran et al. (2019) explained that knowledge awareness and perception of benefits influence consumer attitudes toward sustainable packaging in Malaysia's food industry.

It is imperative for SMEs to have knowledge about consumer attitudes since it has a direct influence on market demand and profitability. By understanding positive consumer attitudes, SMEs can apply eco-friendly packaging strategies to cater to environmentally conscious consumers, while focusing on challenges such as price consciousness and awareness.

Conclusion in short, consumer attitudes towards eco-friendly packaging for their foods are an important contributing factor to consumer willingness to pay and purchase. Through measuring consumer attitudes, small and medium-scale businesses in Malaysia can improve packaging practices to meet consumer demands and be environmentally sustainable.

2.3 Definition of Willingness to Pay for Sustainable Food Packaging Among Sme's in Malaysia

Willingness to pay (WTP) is “the maximum amount a consumer is willing to pay rather than a market price” in goods and services, depending on perceived benefits and value (Hanemann, 1991). With respect to sustainable food packaging, WTP is essentially a measure of consumer readiness to pay additional premiums in favour of sustainable food packaging options like biodegradable, recyclable, or reusable packaging in comparison to conventional packaging.

WTP is one of the most important factors for the acceptance of sustainable packaging because it shows consumers' willingness to support environmentally responsible practices. When consumers have a higher willingness to pay, there will be more influence on SMEs to practice eco-friendly packaging practices to promote environmental sustainability instead of using non-biodegradable materials (Jain et al., 2021).

In Malaysia, it has been observed that WTP for sustainable products such as food packaging is moderately positive; however, it is often restricted by price concerns and awareness (Moorthy et al., 2021; Rajendran et al., 2019). This again reveals that there is a lack of awareness and understanding regarding this gap in behaviour and attitude and thus a lack in adopting sustainable behaviours to conserve the environment. In SMEs, it is important to keep in mind that awareness about WTP is crucial for making decisions regarding pricing and packaging to make sustainable initiatives feasible.

In conclusion, WTP for sustainable food packaging can be viewed as a financial expression of consumers' green behaviour and is one of the major determinants for SMEs in Malaysia to decide on adopting green food packaging solutions.

2.4 Independent Variables

In this study, the independent variables are the factors that are expected to influence consumers' willingness to pay (WTP) for sustainable food packaging among SMEs in Malaysia. The independent variables in this framework are Consumer Attitudes, Environmental Concern, and Perceived Value.

2.4.1 Consumer Attitudes

Attitudes of consumers play an integral role in comprehending how consumers can interpret and react to sustainably packed food products. In this regard, a study by Ajzen (1991) states that a customer's attitude is comprised of mainly three components: cognitive (beliefs and knowledge), affective (feelings and emotions), and behavioural (actions to be carried out). In other words, a customer's knowledge about environmental problems and his or her emotional response and intention to act in favour of the environment will define customer attitude about consuming sustainably packed food products.

The fact that consumers display positive attitudes towards sustainable packaging is an indication that they care about environmental conservation and are knowledgeable about the various gains associated with sustainable packaging options. For instance, a consumer who is aware that biodegradable packaging is helpful in reducing pollution (cognitive component), is concerned about environmental pollution (affective component), and decides to purchase merchandise that is packaged using biodegradable materials (behavioural component) has a high positive attitude.

Empirical analysis upholds the association of consumers with their attitudes and WTP for sustainable packaging. Moorthy et al. (2021) highlighted that in Malaysia, more favourable attitudes toward eco-friendly products are related to paying higher prices for their sustainable alternatives, which means positive attitude may support SMEs that adopt green packaging financially. Rajendran et al. (2019) indicated that attitudes of consumers, shaped by awareness, environmental knowledge, and perceived benefits, play an important role in changing consumer preferences toward sustainable packaging in the food sector of Malaysia.

Further, consumer attitudes are also influenced by cultural, social, and demographics. For example, young generations and people with high educational levels display positive

attitudes toward sustainability, and such a phenomenon increases their willingness to pay for sustainable food packaging. SMEs, in the Malaysian context, should utilize such knowledge to target environmentally aware people, create marketing programs to highlight the advantages associated with sustainable packaging, and determine pricing programs aligned with the positive attitude among the target group.

2.4.2 Environmental Concern

Environmental concern is a psychological and behavioural construct that reflects the degree of awareness about environmental issues, caring about their consequences, and feeling responsible for taking action to protect the environment. In this context, environmental concern in sustainable food packaging shapes the attitude, preference, and purchasing decision of consumers, especially on eco-friendly alternatives like biodegradable, recyclable, or reusable packaging materials.

Consumers who have a higher level of environmental concerns tend to be more conscious about the destructive effects associated with conventional packaging methods such as plastic waste, pollution, and degradation of resources. Such awareness can trigger a stronger intention towards adopting sustainable consumption behaviour, such as a desire to purchase food items that have environmentally friendly packaging. For instance, a particular consumer who cares about plastic waste that has been disposed into waterways may target SMEs that use biodegradable packaging and may be prepared to pay higher for such products.

There is empirical support for the connection between environmental consciousness and Willingness to Pay (WTP). Jain et al. (2021) observed that those consumers who were environmentally conscious were found to be significantly likely to pay additional for green products such as food packaging. Similarly, Rajendran et al. (2019) emphasized how environmental concern has been observed to have positive impacts on behaviour concerning eco-friendly food packaging in Malaysia, indicating that consumer awareness concerning environmental issues is an important factor in motivating green buying behaviour.

SMEs find it crucial to understand the value of environment concern, as it helps them understand motivations and market potential for sustainable packaging. Moreover, by addressing environmentally aware consumers and stressing the benefits of sustainable

packaging to the environment, SMEs could possibly promote more adoption and WTP levels among these people, leading to SME growth and sustainable environments as well.

In conclusion, environment-awareness is an essential driver for consumer behaviour as well as WTP. For example, those with high levels of environment awareness tend to contribute to environmentally sustainable activities, and it, therefore, becomes an essential variable to study the adoption rate for environmentally sustainable food packaging among SMEs in Malaysia.

2.4.3 Perceived Value

Perceived value is a consumer-driven concept that refers to the holistic evaluation that an individual makes about a product's overall worth, derived from perceptions of what they are giving up, in terms of money or effort, to get or use the product. According to Zeithaml (1988), in the context of sustainable food packaging, perceived value exceeds functional use; it entails environmental benefits, product quality, aesthetic appeal, convenience, and likely health benefits.

In the case where consumers perceive added value from sustainable packaging, such as reducing harm to the environment, maintaining food quality, or improving health safety, they are most likely to feel justified paying a premium price for those products. Such positive evaluation thus influences WTP and strengthens the consumers' purchase intention of eco-friendly products. For instance, a consumer might pay more for a certain food product packaged with biodegradable material because consumers perceive that this reduces plastic waste and maintains freshness, thereby symbolizing environmental and functional value.

Research suggests perceived value to be an important stimulator to encourage the purchase of sustainable products. Rajendran et al. (2019) pointed out the importance of customers' perceived value on the desire for sustainable packaging, as customers are willing to pay more for the greater perceived advantages. Moorthy et al. (2021) also pointed out the importance of perceived value, as customers with greater perceived advantages through the purchase of sustainable products exhibit greater readiness to pay higher costs to overcome the difference between attitudes and behaviours.

Conclusion in conclusion, perceived value is defined as the consumer assessment of the total benefits of sustainable food packaging over its price. Perceived value is a very

fundamental independent variable that determines WTP. When perceived value is high, there is a likelihood of achieving success through financial support of sustainable food packaging by SMEs in Malaysia.

2.5 Dependent Variables

In this study, the dependent variable is willingness to pay (WTP) for sustainable food packaging for SMEs in Malaysia. WTP is regarded as "the maximum price that a consumer is willing to pay for a product or service given its perceived attributes" (Hanemann, 1991). For sustainable food packaging, it is a measure that reveals the price that a person is prepared to pay for sustainable food packaging alternatives, such as biodegradable, recyclable, and re-use materials, for instance.

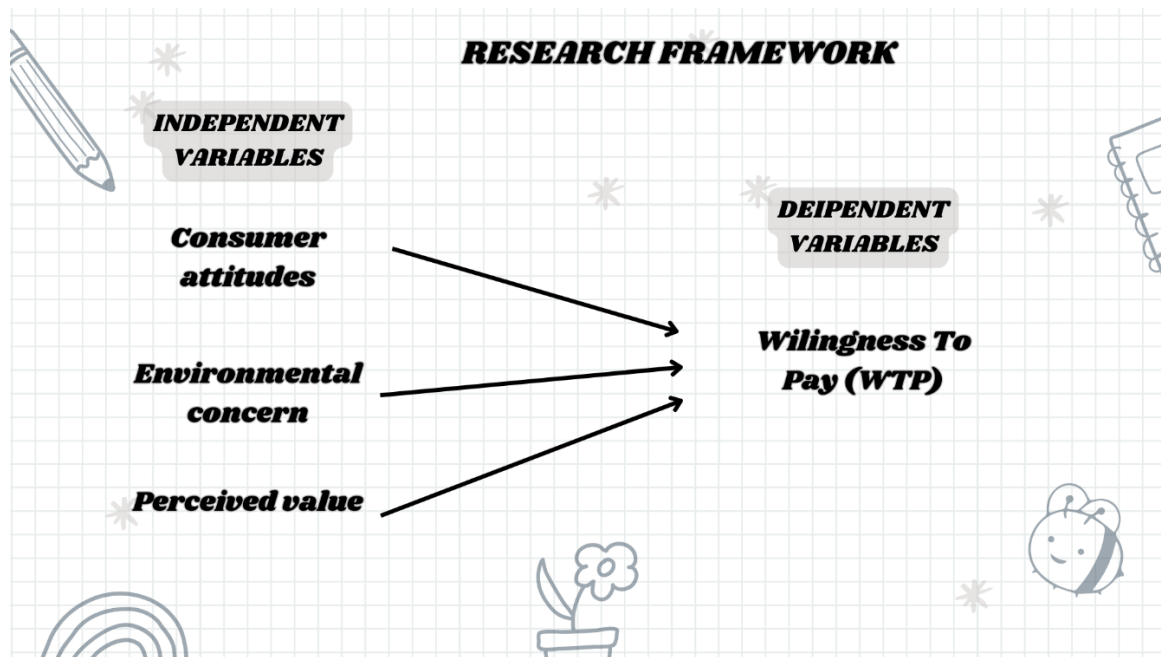
WTP is one of the most significant indicators of market acceptance for sustainable packaging. Even while consumers appear to be concerned about the environment, their attitudes may not always be translated into financial support. Therefore, measuring WTP enables researchers and SMEs to quantify the economic feasibility of the implementation of sustainable packaging strategies. For example, SMEs operating in Malaysia may gauge active consumer willingness to pay more than what the current packaging costs for reduced plastic waste, increased food quality, or evidence of environmental concern.

Empirical studies also underscore that WTP may be determined by such factors as consumer attitude, environmental concern, perceived value, income level, and demographic characteristics. Moorthy et al. (2021) indicated that positive attitude and environmental awareness notably raise the WTP of consumers for green products. Rajendran et al. (2019) also reported perceived value enhances WTP because of perceived tangible and intangible benefits from sustainable packaging.

For SMEs, WTP is critical to pricing, marketing, and the adoption of sustainable packaging practices. It enables SMEs to make decisions based on weighing the pros and cons, ensuring that the adoption of sustainable packaging practices remains financially sustainable and attractive to environmentally conscious consumers. WTP, in a way, is the result variable, representing the level of the success of acceptance and market readiness for sustainable

packaging practices among SMEs in the region of Melaka, among other regions, within Malaysia.

2.6 Research Framework



2.7 Diffusion of Consumer Attitudes and Willingness to Pay for Sustainable Food Packaging Among Sme's in Malaysia Theory

The Diffusion of Innovation (DOI) Theory offered by Rogers (2003) is a relevant concept for understanding how and when consumers finally adopt and are willing to pay for new products and ideas. In the context of this study, the concept of sustainable packaging is placed within the arena of innovation offered by the SMEs operating within Malaysia and how the consumers choose to adopt and pay for a greener solution. The five characteristics for adoption according to the Diffusion of Innovation Theory are relative advantage, relative advantage, compatibility, complexity, and trials.

In sustainable packaging, consumers are willing to pay for it when they feel that it has benefits to them. When the packaging is consistent with consumer values and lifestyles

(compatibility), is easy to use (low complexity), and when it is triable or observable (trialability and observability), it assists in contributing to consumer acceptance.

In the current study, the linkage between the independent variables, consumer attitudes (ATT), environmental concern (EC), and perceived value (PV), and the DOI model is possible because positive consumer attitudes indicate the compatibility and relative advantage associated with sustainable packaging, whereas a moral/social motive, such as environmental concerns, drives sustainable practice support, and perceived value is associated with the intangible benefits associated with sustainable packaging, resulting in an increase in willingness to pay (WTP).

Applying DOI theory, this research indicates why and how small businesses can persuade consumers to switch to sustainable food packaging and why such groups of people are willing to pay more for eco-friendly packaging. In summary, it seems DOI theory has a good basis for interpreting the relationship between consumer perception, environmental concerns, perceived value, and WTP for sustainable packaging.

2.8 Summary

In conclusion, the literature review has identified some of the key elements which will influence the intention to pay for sustainable food packaging in Malaysian SMEs. Research highlights that having a positive attitude, a concern for the environment, and perceived value will influence consumers in being willing to pay a higher price for sustainable packaging (Moorthy et al., 2021; Rajendran et al., 2019; Jain et al., 2021). The Theory of Diffusion of Innovation will help to interpret consumer behaviour when it comes to sustainable food packaging. Although literature still indicates there are many areas which need to be acknowledged pertaining to the topic of sustainable food packaging in Malaysia, very few pieces of literature are specific to Malaysian SMEs.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The methodology for this research provides explanations about how the aims for this study will be fulfilled to answer the questions for this research concerning the consumer attitudes and willingness to pay for sustainable food packaging for SMEs in Melaka, Malaysia. This chapter will describe in detail how this study will be designed, who will be involved in this study, how this study will analyse its findings, and what tools will be used in this study. The methodology for this study uses a quantitative approach because it provides an ability to measure relationships for independent variables, including consumer attitudes, environmental concerns, and value in paying for dependent variables. These concerns include consumer willingness to pay for sustainable packaging.

The methodology is also helpful in ensuring that results for the study are well representative of the target population, allowing SMEs, as well as policymakers, to make well-informed decisions about adopting sustainable packaging practices. Issues of ethics in relation to study limitations are also raised to ensure credibility in the process of carrying out research work.

3.2 Research Design

In this study, the research design adopted is the quantitative method to examine the relationship between consumer attitudes, environmental concerns, perceived values, and willingness to pay (WTP) for the use of sustainable food packaging amongst the SMEs in Melaka, Malaysia. The quantitative method is appropriate for the study because it enables the researcher to generate numerical information that will allow for statistical analyses to establish the strength of the relationship between variables.

In this study, the research design is descriptive and correlational in nature. The descriptive part enables the scope to be defined concerning consumers' profile, attitudes, and

concern for the environment. The other part is the correlational design that determines the relationship between the independent variables and the dependent variable.

Through this design, the researcher will be able to produce empirical evidence of consumer behavioural patterns, measure the effect of attitudes and environmental concern on WTP, and make recommendations for SMEs in Malaysia. Another advantage of this design is that the information will be gathered systematically.

3.2.1 Explanatory research

The present study adopts an explanatory research approach that focuses on exploring the cause-and-effect relationship between the variables. It tries to explore the role played by consumer attitudes (ATT), environmental concern (EC), and perceived value (PV) in explaining the impact on the willingness to pay (WTP) for sustainable food packaging in the case of SMEs in Melaka, Malaysia. The reasons why this is the best approach for the paper are that it does not only describe the consumer behaviours but also explores the impact played by the independent variables on the dependent variable.

In using this approach, it will be possible for this study to test its research hypotheses quantitatively and to assess the strength and significance of relationships between variables. For SMEs in general, it is imperative to have these insights based on evidence from this study about what really influences consumers' WP for green packaging. Finally, conducting an explanatory study means it will be possible for this researcher to go beyond observation to develop causal inferences useful for recommendations.

3.3 Methodology Choices

The paper will use a Quantitative Methodology because it is more concerned with the collection of numerical data to use statistical methods of analysing interactive relationships for the variables. This is because the study will enable the researcher to measure the effect of the independent variables, which comprise Consumer Attitudes (ATT), Environmental Concerns (EC), and Perceived Value (PV), on the dependent variable, Willingness to Pay (WTP).

The quantitative approach is thus selected for this study, and the survey-based method serves as a primary source of data collection. Surveys are particularly useful in garnering data

from a substantial sample of consumers in Melaka that enable generalisable findings about attitudes, perceptions, and behaviour. In order to ensure consistency in responses and to make sure statistical analysis can be easily conducted, structured questionnaires using Likert-scale questions are employed.

The choice of this methodology is also informed by the objectives of the study, which are to determine influential factors of WTP and to test the hypotheses of the study. Through a quantitative method of carrying out a study, it is ensured that information collected is credible, valid, and amenable to analysis of correlation and regression, which will enable SMEs to make sound judgment on sustainable food packaging adoption as well as pricing.

3.4 Data Sources

A data source is the location from where the data that is being used originates. Primary data sources and secondary data sources were the two sorts of data and information to be acquired. This is where research data is gathered and categorised based on statistics, observations, and figures. The researcher used both data sources to conduct the investigation in this study.

3.4.1 Primary Data

Primary data is considered the information gathered by an investigator for a specific aim of the study. This is the first-hand info and the initial sources of the data gathered. For collecting primary data, the strategies used were surveys, interviews, or experiments. It is gathered expressly for the research purpose from primary sources. Primary data are essential in this study.

Furthermore, secondary data sources were necessary for the investigation. Secondary data come from journals, books, notes, and related articles. The primary data was gathered via distributing the questionnaire to the respondents. The method of distributing the data is via the questionnaires online and face to face interviews. Saunders et al. (2019) mentioned that the means for obtaining primary data is the Internet, which results in specific issues and dilemmas for ethical principles. Saunders et al. (2019) also stated that to guarantee that primary data collection is carried out ethically, potential respondents must be allowed to make an educated decision about participating. Furthermore, the primary data should not be manipulated or fabricated, and findings should not be falsified.

3.4.2 Secondary Data

Saunders et al. (2019) stated that the secondary data include raw data and published summaries. Over the last decade, the number of potential secondary data sources has increased quickly, as has the ease of access. Secondary survey data refer to existing data initially collected for another reason, using a survey approach, typically questionnaires. Secondary data is inquired about information that has already been gathered and can be accessed by researchers. Secondary data may be the data used in the previous literature. The secondary data was essential to support the primary data to attain the research objective.

Furthermore, document secondary data are defined as data that, unlike spoken words, endure physically and digitally as proof, allowing data to be transposed across time and space and reanalysed for another reason than the one for which they were first gathered. As a result, they include text, audio, and visual information. Saunders et al. (2019) also mentioned that although books, articles, journals, and reports are traditional storage mediums for collated secondary data, the text itself can be valuable raw secondary data. By using secondary data, most scholars may gather numerous info and gain knowledge over that.

This secondary research data is gained from Google Scholar and Scopus to support the research objective. These data are existing data that has been published and to be used as references. This secondary data is used to prove and support evidence from the previous scholar's research and findings.

3.5 Research Strategy

Saunders et al. (2019) define research strategies generally to achieve the desired objective. It could be further enforced by Denzin et al. (2018), who defined a research strategy as a plan for how a researcher will address her or his research topic. Generally, the research strategy is the plan for conducting the research study by helping the researchers plan, execute, and monitor the study performed. Furthermore, it is the methodological relationship between your philosophy and your methods to collect and analyse facts. Besides that, the research techniques

are essentially concerned with the relationship between the researcher's philosophy and the subsequent obtaining and evaluating data.

Experiment, survey, archival and documentary research, and case study are among the methodologies listed by Saunders et al. (2019) such as ethnography, narrative inquiry, action research, and finally, grounded theory are all examples of research methods.

3.5.1 Survey Strategy

Saunders et al. (2019) stated that the survey strategy is usually associated with a deductive research approach. To obtain data to answer the research question, the researcher has decided to use the survey as the data collection tool. Furthermore, the public view the survey approach as authoritative and relatively simple to explain and grasp. A survey through a questionnaire is widely used because of its ability to obtain data from the population efficiently and enables the researcher to easily compare answers. Furthermore, data collection could be evaluated quantitatively through inferential and descriptive statistics.

3.5.2 Pilot Test

A pilot test is always carried out to determine the reliability, clarity, and validity of the research instrument before the actual data collection. The pilot test in this study involves the administration of a structured questionnaire to a small sample of respondents, typically 30–50 participants that share characteristics like that of the target population (consumers of food products by SMEs in Melaka).

The basic aim of the pilot test is to assess if there are any ambiguity, unclear, and technical issues in the questions of the proposed study. It will help the researcher to assess the reliability of the dimensions used for assessing the attitude of the customer (ATT), environmental concerns (EC), value perception (PV), as well as the willingness-to-pay (WTP). The reliability metric is generally calculated for Cronbach's Alpha, which is above 0.7, which is a standard measure for the items of the study.

Findings from pilot testing may provide room for improvements in wording, design, and scale of questioning to ensure capture of perceptions and behaviour accurately by the tool. Through pilot testing, the study will ensure high levels of validity, precision, and error prevention in the final study, making it effective in measuring what it is intended to.

3.6 Location of Research

This study takes place in Melaka, Malaysia, and targets consumers who purchase food goods from Small and Medium Enterprises (SMEs), including local eateries and food vendors. Melaka is selected for conducting research due to its dynamic food sector and increased consumer concern and awareness regarding sustainability issues.

To ensure data integrity and relevance, the study chooses to target Melaka, ensuring that data collection is not impractical and unconnected to regional market trends and consumer behaviours. The case also allows the researcher to assess sustainable packaging trends among SMEs within a culturally diverse and urbanized region and determine the attitude and WTP among the responding group.

Further, choosing Melaka will allow the researcher to collect primary data efficiently from a representative sample of consumers to ensure the results are informative for SMEs in that region as well as help in the development of knowledge on sustainable packaging adoption in Malaysia.

3.7 Population

The population for this study encompasses consumers who have bought food products from SMEs in Melaka, Malaysia. This would include people of all age groups, both genders, and from all economic backgrounds who have purchase experience with food products packaged by small and medium-sized enterprises such as restaurants and cafes.

The reason for focusing on this group is because these consumers play a major role as decisions-makers regarding the use of sustainable packaging for the products they buy. Their attitudes, values, and perception of the environment play a direct role in determining their willingness to pay (WTP) for sustainable packaging alternatives. The study targets these people to ensure the results are practical and useful to SMEs wanting to adopt sustainable packaging practices in Melaka.

Moreover, the data collected from this population will allow for the understanding of the consumer behaviour patterns in the area, which could be different from the rest of the country due to social and economic factors. It will be helpful in getting data for SMEs in Melaka and for sustainable packaging in the country.

3.8 Sampling Design

The study uses a non-probability sampling technique, namely purposive sampling. This is appropriate as it enables the researcher to focus on consumers who have prior experience with procuring food items from SMEs in Melaka. This will help create relevant data for study.

The sample size is calculated taking into consideration the size of the food consumer population in Melaka, as well as principles for conducting quantitative study methodologies involving Structural Equation Modelling or Regression Analysis. For most cases, it is ideal to have at least 200 or 300 respondents involved in helping to provide reliable and significant findings (Hair et al., 2019). The bigger the sample size, the better the accuracy, generalization, and validity.

This is ensured through this sampling design, ensuring that this study is carried out among representative participants who can shed light about their attitude, environmental concern, perceived value, and willingness to pay for sustainable food packaging. This is achieved using purposive sampling techniques that have a relevance to this study within time and resource constraints. A calculation method is used to determine the sample size for the population so that the research can be conducted. The sample size for the study was computed using the equation below.

$$s = \frac{z^2 \times P(1 - P)}{m^2}$$

Were,

S = Sample size for infinite population

Z = Z-score (assumed confidence level at 95% = 0.95)

P = Population proportion (assumed to be 50% = 0.5)

M = Margin of error (5% = 0.05)

Since the Z-score of confidence level at 95% is 1.960.

3.9 Questionnaire Design

Primary data are retrieved in this present study using a structured questionnaire designed to measure the consumer attitude of ATT, environmental concern of EC, perceived value of PV, and willingness to pay of WTP for sustainable food packaging among SMEs in Melaka, Malaysia. This set of questionnaires is developed based on validated scales from previous studies to ensure that they are reliable and relevant.

The questionnaires will be made as clear, concise, and easy to understand, taking just 10 minutes for the participants to respond. Structured questions help in making the responses comparable, which is essential for the data analysis in the study. The questionnaires will also undergo a pre-test to find any areas of ambiguity.

Table 3.1: Questionnaire Design

SECTION	CONTENT
A	Background Profile • Gender • Age • Race • Occupation
B	Questions are related to the independent variables
C	Questions are related to the dependent variables

Table 3.2: Likert-scale survey

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

3.9.1 Construct of Measurements

A construct is the abstract notion, underlying topic, or subject matter that one desires to evaluate using survey questions in the context of survey research. Besides that, the relationships between abstract constructs include theoretical assertions. Furthermore, before the strength of these correlations can be assessed, these constructs must be measured precisely, appropriately, and scientifically. The table below indicate the construct of measurements for the independent and dependent variable.

Table 3.3: Construct of Measurement

CONSTRUCT	MEASUREMENT ITEMS	SOURCE (JOURNAL OR BOOK, YEAR)	COMMENTS
Consumer Attitudes (ATT)	1. I believe sustainable packaging is important for the environment. 2. I feel positive about buying food with eco-friendly packaging. 3. I am willing to support SMEs that use sustainable packaging. 4. I consider sustainable packaging when purchasing food products.	Ajzen (1991); Moorthy et al. (2021)	Measured on 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Captures cognitive, affective, and behavioural components of attitudes.
Environmental Concern (EC)	1. I am concerned about environmental issues such as plastic pollution.	Schlegelmilch et al. (1996); Rajendran et al. (2019)	Measured on 5-point Likert scale . Evaluates the

	2. I actively seek products that reduce environmental impact. 3. I feel responsible for supporting sustainable practices. 4. I am motivated to choose eco-friendly packaging.		awareness, motivation, and responsibility toward environmental issues.
Perceived Value (PV)	1. Sustainable packaging offers benefits worth paying extra for. 2. Eco-friendly packaging ensures better food quality. 3. Sustainable packaging provides environmental and social value. 4. I feel the price of sustainable packaging is justified by its benefits.	Zeithaml (1988); Moorthy et al. (2021)	Measured on 5-point Likert scale. Assesses perceived trade-off between benefits and cost, including environmental and functional advantages.
Willingness to Pay (WTP)	1. I am willing to pay more for food products with sustainable packaging. 2. I would choose eco-friendly packaged food even if it costs higher. 3. I consider it important to financially support sustainable practices. 4. I am likely to recommend eco-friendly	Hanemann (1991); Jain et al. (2021)	Measured on 5-point Likert scale. Reflects financial commitment and actual intention to pay premium for sustainable packaging.

	packaged products to others.		
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3.10 Reliability

By measuring a phenomenon, reliability can produce a steady and consistent outcome. There are a few approaches for measuring dependability. The Cronbach Alpha coefficient is the most often used technique for analysing data dependability. It is a statistic used to demonstrate the appropriateness of test and sales used for study. Cronbach Alpha is the most appropriate test of reliability when utilizing Likert Scale in survey (Statistics Solution, 2018). Cronbach Alpha will be used in this study to determine the reliability of both the independent and dependent variables.

The alpha coefficient represents a number or value between 0 and 1. Cronbach's Alpha Index was used in this study for the consistency experiment by applying the most basic concept due to the understanding of the coefficient that it has. Cronbach's Alpha is used in finding the measurements of several variables used for the research in interior consistency. The following table show the Cronbach's Alpha Values and the important rule in interpreting a question that have two possible outcomes.

Table 3.4: Cronbach's Alpha Values

No	Coefficient of Cronbach's Alpha	Reliability Level
1	More than 0.90	Excellent
2	0.80-0.89	Good
3	0.70-0.79	Acceptable
4	0.6-.69	Questionable
5	0.5-0.59	Poor
6	Less than 0.59	Unacceptable

According to the data above, a Cronbach's Alpha of equal to or greater than 0.7 was regarded acceptable. It is regarded good if the Cronbach's Alpha is greater than 0.8, while those with 0.9 or higher are considered outstanding. While it was regarded bad if the Cronbach's Alpha was less than 0.6 and unsatisfactory if the Cronbach's Alpha was less than 0.5.

Besides that, the amount to which a notion is correctly quantified in quantitative research is characterized as validity. Furthermore, Saunders et. al. (2019) stated that the suitability of the measurements utilized, as well as the correctness of the interpretation of the data, are examples of validity. A high validity rating would suggest that the study yielded a high level of confidence.

3.11 Data Analysis

The gathered information from the questionnaire shall then undergo rigorous quantitative statistical analysis to test for the relationship between consumer attitude (ATT), environmental concern (EC), perceived value (PV), and willingness to pay (WTP) for sustainable food packaging from SMEs in Melaka. The distribution shall first be reviewed and cleaned to eliminate those with missing and/or inconsistent answers. Information descriptive statistical analysis involving frequency, mean, and standard deviations shall be employed to describe the demographic and questionnaires submitted by the respondents. The constructs would have their reliability tested using Cronbach's Alpha, which suggests those above 0.7 are acceptable, and content and construct validity would also require expert feedback to ensure relevance from past studies.

The hypothesised testing for these tests will be done by the Pearson correlation, which will verify both the intensity and direction of relationships among the variables, and multiple regression analysis to establish how independent variables-ATT, EC, and PV-influence WTP. Lastly, the results will be interpreted and presented using tables and charts that will clearly provide factors affecting consumers' willingness to pay for sustainable food packaging, therefore giving practical guidance to SMEs and policy makers.

3.11.1 Statistical Package for the Social Sciences (SPSS)

After the data collection process is completed, the researcher used the Statistical Package for Social Sciences (SPSS) software version 26.0 in this study. SPSS is a software program that allows the researcher to apply advanced statistical analysis to the data obtained to answer the research objectives. In addition, SPSS would be used to scale the proposed model's relationship. This is based on the study's assumption. SPSS is the computer software that is used to organize complex data into large pie charts or graphs and to discover questionnaire answers

3.11.2 Multiple Regression Analysis

Following correlation, the next stage is multiple regression analysis. When the researcher wanted to anticipate the value of one variable based on the value of another, they utilize it. The variable which the researcher wanted to forecast is referred to as the dependent variable or the outcome variable. The regression analysis generates a 33 equation that connects the independent variable (X) to the dependent variable (Y). The regression equation contains a regression coefficient as well as an additive constant.

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3$$

Where,

Y = Dynamic pricing strategy in E-Commerce

b₀ = Regression Constant

X₁ = Product range and availability

X₂ = Competitiveness pricing

X₃ = Consumer segmentation

b₁, b₂, b₃ = Regression Coefficient

3.11.3 Pearson's Correlation Coefficient

Pearson's correlation coefficient was a technique used to investigate the strength relationship between the dependent and dependent variables in data analysis of respondent. Saunders et. al. (2019) defined that a correlation coefficient quantifies the strength of a linear link between two ranking or numerical variables. The sample correlation coefficient, r, is used to determine the population correlation. From this research, the analysis goal is to find a positive association.

Saunders et. al. (2019) also stated that the correlation coefficient, r , ranges from +1 to -1 and a score of +1 indicates that there is a perfect positive correlation. This indicates that the variables are inextricably linked, and that if the value of one variable rises, so will the value of the other. A value of -1, on the other hand, shows a perfect negative correlation.

The following table show the Pearson's Correlations Coefficient.

Table 3.5: Pearson's Correlations Coefficient Scale

Scale of correlation coefficient	Value
$0 < r \leq 0.19$	Very Low Correlation
$0.2 \leq r \leq 0.39$	Low Correlation
$0.4 \leq r \leq 0.59$	Moderate Correlation
$0.6 \leq r \leq 0.79$	High Correlation
$0.8 \leq r \leq 1.0$	Very High Correlation

3.12 Time Horizon

A time horizon, also known as a planning horizon, is a set point in the future at which procedures will be reviewed or considered to be completed. Saunders et. al. (2019) stated that the horizon is the time duration which the study can take and the 'snapshot' temporal horizon is referred to as cross-sectional, whereas the 'diary' view is referred to as longitudinal. Furthermore, the selection of a research approach or strategies will be linked to the choice of an acceptable time horizon.

According to Chat (2016) categorized time horizon into longitudinal studies and cross-sectional studies. Due to time constraints, cross-sectional studies were used in this study to investigate small online business use social media as marketing tools. The researcher already finished the research within the time range of March 2025 until January 2026 by conducting cross-sectional investigations (two semesters).

3.13 Summary

In a nutshell, the research methodology that has been described in this chapter has been used to explore the role of consumer attitudes, environmental worries, and value perceived in influencing the willingness to pay for sustainable food packaging in the SME sector of Melaka, Malaysia. A quantitative approach to the study has been used, where a structured questionnaire method has been adopted. In the study, a purposive sampling approach has also been used. The design of the study was used to ensure that the study yields valid findings. From the findings, the variables that influence the variables that affect the study hypotheses will be established. The findings from the study have a high validity level since the methodology used aims at ensuring the study yields reliable findings. The findings will be discussed in the next chapters.

CHAPTER 4

ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter is the report of the questionnaire survey composed in taking up this study, which focuses on consumer attitudes and their willingness to pay on sustainable food packaging to the SMEs in Malaysia. A quantitative study was used in the analysis of the effect of consumer attitudes, environmental concerns, and perceived value on their willingness to pay sustainable food packaging.

All the information of the questionnaires was coded and analysed with Statistical Package of the Social Sciences (SPSS) version 29.0. A pilot test was done before the actual data collection to minimize any uncertainty concerning the reliability of the measurement tools and their clarity. Once the questionnaire was able to be found trustworthy, the actual survey was carried out to the targeted respondents.

The respondents filled all the questionnaire items with no missing values, which guaranteed the completeness and precision of the data. Systematic interpretation and analysis of the data was then done in relation to the research objectives and hypotheses of the study. General analysis and discussion were conducted to give meaningful insights on the attitudes of the Malaysian consumers and their readiness to pay sustainable food packaging among SMEs.

4.2 Pilot Test

Before the actual data collection, a pilot test was done to determine the reliability and the clarity of the questionnaire. In the pilot testing, 50 respondents who had previous experience in the purchase of food products in SMEs in Malaysia were sampled to take part in the survey. The pilot test was done to validate the questionnaire items as readable by a respondent as well as to gauge the kind of information that was required to measure consumer attitudes, environmental concerns, perceived value, and readiness to pay a sustainable food packaging.

Statistical Package of the Social Sciences (SPSS) version 29.0 was used to analyze the data obtained during the pilot test to determine the reliability of the measurement scales. Cronbachs Alpha was used to perform a Liability analysis to establish the internal consistent nature of each construct. According to the results of the pilot test, all constructs have reached the acceptable level of reliability which is above the minimum level of 0.70.

According to the pilot test, the questionnaire was considered reliable and can be used in the actual data collection. There were minor wording changes that were done to enhance clarity and distribute the final questionnaire to the targeted respondents. The pilot test yields result in terms of reliability as shown in Table 4.1.

Table 4.1, there is 16 items consist in the questionnaire. Besides that, the value of the Cronbach's Alpha is 0.646 which is greater than 0.7. The value can be categorized for having an excellent internal consistency. Therefore, the analysis from the pilot test indicates that it has strong reliability, and the questionnaire was reliable.

Table 4.1: Reliability Statistics for Pilot Test

(Sources: SPSS Output)

Cronbach's Alpha	N of Items
0.646	12

4.3 Respondent Rate

Online platform was used to distribute the questionnaires starting from 25th October 2025 until 31st December 2025. A total of 200 sample is needed for the study. There was a total of 200 respondents that answered the questionnaire. This shows that all 100% of the sample were willing to participate in the completion of the questionnaire.

4.4 Descriptive Statistics Analysis

The following section provides the descriptive statistics analysis of the demographic profile of the respondents such as gender, age, race and occupation. Also, this section outlines the perception of the respondents on consumer attitudes, environmental issues, perceived value, and their readiness to pay sustainable food packaging in relation to the SMEs in Malaysia.

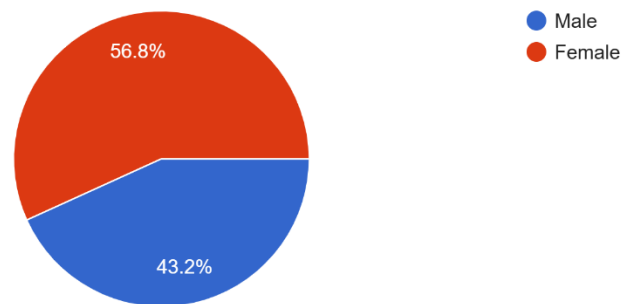
The summary and description of the nature of the respondents and their reaction to the questionnaire items were done using descriptive statistics. The analysis presents a description on the distribution, frequency, mean, and standard deviation of variables. This data is helpful in knowing a bit more about the background of the respondents and their overall views on sustainable food packaging to continue with the further inferential analysis.

4.4.1 Gender

Figure 4.1 shows that there were 86 male respondents (43.2%) and 113 female respondents (56.8%). When compared to men, women have the highest response rate. According to the data analysis of 200 respondents, more female respondents took part. Greater than the proportion of respondents who were men. Nonetheless, the distribution of the questionnaire for this study was done at random, and there was no bias or gender selection. The table essentially shows a slightly higher percentage of females than males, indicating a balanced but marginally female-dominated gender distribution in the dataset.

1. Gender / Jantina

199 jawapan



@1. GenderJantina

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	86	43.0	43.0	43.0
	2	114	57.0	57.0	100.0
	Total	200	100.0	100.0	

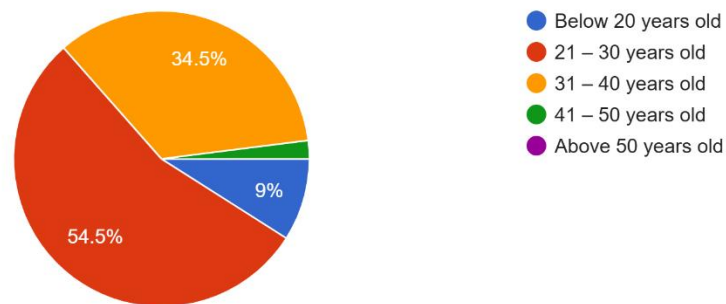
Figure 4.1: Respondent Gender

4.4.2 Age

From figure 4.2, there are 109 respondents age of 21 to 30 with 54.5%, 69 respondents age of 31 to 40 with 34.5%, 18 respondents age that are below 20 years old with 9%. The highest respondent rate is from the age of 21 to 30 with 109 respondents and the least is from the age below 20 years old with 18 respondents. This data indicates that most respondents belong to 21 – 30 years old, suggesting it represents the most common age range in the sample. As the cumulative percentages show, the dataset includes all 200 respondents with no missing cases.

2. Age / Umur

200 jawapan



@2.AgeUmur

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	18	9.0	9.0	9.0
	2	109	54.5	54.5	63.5
	3	69	34.5	34.5	98.0
	4	4	2.0	2.0	100.0
	Total	200	100.0	100.0	

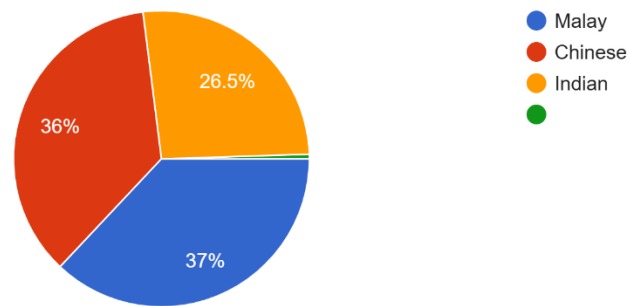
Figure 2: Respondents Age

4.4.3 Race

From figure 4.3, there are 74 respondents from Malay with 37%, 72 respondents from Chinese with 36%, 53 respondents from Indian with 26.5. The highest respondent rate is from Malay with 74 respondents and the lower is from another race with 53 respondents. The distribution shows that the population is primarily concentrated in Malay and Chinese, making up nearly 73% of the sample. Indian also holds a significant share, while others appear as an outlier with minimal representation. This reflects a diverse sample with varying levels of representation across groups.

3. Race

200 jawapan



@3.Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	74	37.0	37.0	37.0
	2	72	36.0	36.0	73.0
	3	53	26.5	26.5	99.5
	5	1	.5	.5	100.0
	Total	200	100.0	100.0	

Figure 3: Respondents Race

4.4.4 Occupation

From figure 4, there are 129 respondents with 64.5% from student and 71 respondents with 35.5% from employee. However, this research is randomly distributed and there is no biased selection during the process of distributing the questionnaire.

4. Occupation

200 jawapan

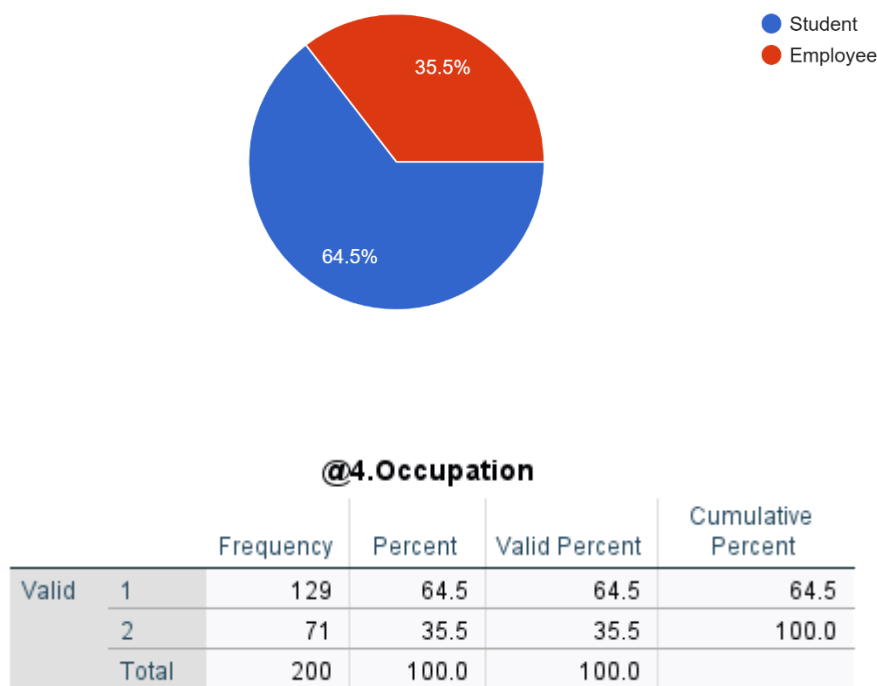


Figure 4: Respondents Occupation

4.5 Descriptive Statistics of Independent Variables and Dependent Variables

Table 4.2 shows the summary for descriptive statistics mean and standard deviation for independent variables and dependent variables. Descriptive statistics was done to investigate the overall tendencies of the study variables, which are consumer attitudes, environmental issues, perceived value and willingness to pay sustainable food packaging among Malaysian SMEs. The findings indicate that willingness to pay (DV) had a mean of 4.5583 and a standard deviation of 0.4199 which means that the respondents in general are willing to pay a lot of money to have sustainable food packaging with a relatively low range of variation in the responses. Consumer attitudes (M1) had 4.2017 mean and a standard deviation of 0.4737 with a high tendency indicating the expected positive attitude towards sustainable food packaging among the respondents. Environmental issues (M2) had the highest mean value of 4.6300 and standard deviation of 0.4342, which means that the respondents were highly aware of the environment. In the meantime, the perceived value (M3) received a mean score of 4.3483 and a standard of 0.4322, which indicates that the respondents tend to view sustainable food

packaging as an important one. In general, the descriptive outcomes show that the perceptions of all variables are positive, which is an initial indication in favor of farther inferential analysis.

Table 4.2: Descriptive Statistics for Independent Variables and Dependent Variable

(Sources: SPSS Output

Descriptive Statistics			
	Mean	Std. Deviation	N
DV	4.5583	.44199	200
IV1	4.2017	.47365	200
IV2	4.6300	.43415	200
IV3	4.3483	.43223	200

4.6 Inferential Analysis.

This section gave the researcher to observe and identify the answer from the independent and dependent variables for the research objectives to be reach. The regression and Pearson's Correlations analysis is used to reach the research objectives. All sources of output are from the SPSS software which is used to analyse the data.

4.6.1 Multiple Regression Analysis

Table 4.3 above shows the model summary made by SPSS. The effects resulting in the consumer attitude, environmental concerns, and perceived value were combined and analysed using multiple regression analysis to conclude on willingness to pay to sustain food packaging. The model summary shows that there is a moderate relationship between the independent variables and the dependent variable as it gives an R value of 0.478. The value of R-squared of 0.229 means that consumer attitudes, environmental concerns, and perceived value explain 22.9 per cent of the variance in willingness to pay. The adjusted R-squared of 0.217 also confirms the same that the model is reliable even after the number of predictors have been adjusted. These findings confirm that the regression model is suitable and that the variables selected are in totality explaining the willingness to pay on sustainable food packaging across Malaysia SMEs.

Table 4.3: Multiple Regression Analysis (Model Summary)

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.478 ^a	.229	.217	.39110

a. Predictors: (Constant), IV3, IV2, IV1

b. Dependent Variable: DV

4.6.2 Regression Coefficients

The coefficients analysis shows the individual contribution made by each of the independent variables to willingness to pay. Consumer attitudes demonstrate positive coefficient (= 0.135); it is not statistically significant (= 0.052). This means that consumer attitude does not have a big effect on willingness to pay considering that other factors are held constant.

Environmental issues show a positive and considerable impact on willingness to pay (0.331, $p < 0.001$), which shows that respondents who are more environmentally conscious tend to pay more to get sustainable food packaging. The perceived value is also positively and significantly correlated with willingness to pay (0.250, $p < 0.001$). Environmental concerns were found to be the most predictive independent variable, which was then succeeded by the perceived value.

Table 4.4: Multiple Regression Analysis (Coefficients)

(Sources: SPSS Output)

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.359	.421		3.230	.001
	IV1	.126	.064	.135	1.955	.052
	IV2	.337	.064	.331	5.231	<.001
	IV3	.256	.070	.250	3.659	<.001

a. Dependent Variable: DV

4.6.2 Pearson's Correlations Analysis

Pearson correlation test was applied to analyse the connection between the consumer attitudes, environmental issues, perceived value, and the willingness to pay on sustainable food packaging. The findings indicate that there is a positive and significant correlation between consumer attitudes and willingness to pay ($r = 0.273$, $p < 0.001$). The positive and significant correlation between willingness to pay and environmental concerns is also observed ($r = 0.349$, $p < 0.001$). On the same note, there is a significant positive correlation between perceived value and willingness to pay ($r = 0.307$, $p < 0.001$).

These results show that environmentally concerned attitudes, positive attitudes and perceived value are related to greater willingness to pay on sustainable food packaging. The findings give tentative evidence of the given hypotheses and the reason to proceed with the multiple regression analysis.

Table 4.5: Pearson's Correlations between Independent Variables and Dependent Variable
(Sources: SPSS Output)

		Correlations			
		IV1	IV2	IV3	DV
IV1	Pearson Correlation	1	.118	.397**	.273**
	Sig. (2-tailed)		.097	<.001	<.001
	N	200	200	200	200
IV2	Pearson Correlation	.118	1	.009	.349**
	Sig. (2-tailed)	.097		.900	<.001
	N	200	200	200	200
IV3	Pearson Correlation	.397**	.009	1	.307**
	Sig. (2-tailed)	<.001	.900		<.001
	N	200	200	200	200
DV	Pearson Correlation	.273**	.349**	.307**	1
	Sig. (2-tailed)	<.001	<.001	<.001	
	N	200	200	200	200

** . Correlation is significant at the 0.01 level (2-tailed).

4.7 Summary

In short, this chapter outlined the results and analysis of the questionnaire survey that was carried out to study the consumer attitudes and willingness to pay on sustainable food packaging within the Malaysian SMEs. The respondent data was analyzed by use of SPSS version 29.0 based on descriptive statistics, Pearson correlation analysis and multiple regression analysis to obtain the research objectives of the study.

The analysis of the descriptive statistics showed that the respondents tend to be positive in terms of their attitudes, high in terms of their environmental concerns, and positive in terms of limaged value of sustainable food packaging. Specifically, the mean value was the highest in the environmental issues, meaning that the respondents are very sensitive to the environmental aspect of packaging waste. The findings indicated also that the willingness of the respondents to pay sustainable food packaging is rather high which indicates the increased acceptance of the environmentally friendly packaging practices by the consumers in Malaysia.

Pearson correlation analysis revealed that all the consumer attitudes, environmental concern and perceived value have significant and positive relationship with willingness to pay. The research findings indicate that the better the perceptions and awareness of the consumers about sustainability the greater the willingness to pay on sustainable food packaging. The findings give tentative evidence of the hypothesized correlations between the variables in the study. The multiple regression analysis, in addition, gave more insights on how the independent variables affect willingness to pay. In the model summary, the attitude of consumers, environmental issues, and the perceived value alone explain an appreciable share of the variance in willingness to pay. Nevertheless, the regression coefficients indicated that the willingness to pay is highly determined by the environmental concerns and perceived value but not the consumer attitudes in a scenario that the remaining factors are held constant. Environmental concerns were the strongest independent variable that affected willingness to pay, with perceived value coming behind.

CHAPTER 5

DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

5.1. Introduction

The last chapter provides a concise summary and detailed discussion of the study results, which are the consumer attitudes and their willingness to pay (WTP) of sustainable food packaging in relation to Small and Medium Enterprises (SMEs) in Malaysia. The discussion is well organized to correlate with the research objectives of Chapter 1 giving a clear systemized interpretation of the results of the study. Besides the summary of the major findings, this chapter explains the practical implications of the study to SMEs, policymakers, and industry practitioners, in terms of how the knowledge of consumer perceptions can be used to implement and promote the use of sustainable packaging solutions. Theoretical contributions are also highlighted where the study builds on the existing literature on the topic that involves consumer behavior, sustainability and green marketing practices in the Malaysian context. Additionally, the given methodological shortcomings experienced during data collection are critically reflected in this chapter in the form of sampling limitations, the biases present, and thus impacting the generalizability of the results. Lastly, recommendations are given that can be applied by both industry parties and future researchers to foster the use of sustainable packaging practices, inform policy formulation and direction of further scholarly research in this dynamic field of study. The combination of these aspects, in its turn, makes the chapter not only summarize the results of the study but also offer a valuable structure on how the findings of the research can be translated into practical and effective applications to the Malaysian SME sector.

5.2 Discussion of Results

5.2.1 Discussion on Research Objective 1: To research consumer environmental attitudes.

The discussion of the gathered data indicates that, as a rule, the attitude of Malaysian consumers to sustainable packaging is positive and supportive. The large means of the survey point to a significant level of the adherence to the statements that demonstrate pro-environmental behavior and green preferences. This attitude indicates that consumers are becoming more conscious of the environmental consequences linked to single-use plastics, such as pollution, resource loss, and the harm that will befall the ecosystem in Malaysia in the long term.

According to the Theory of Planned Behavior (TPB), attitude is one of the primary predictors of behavioral intention that subsequently determines the actual behavior. The results of the given research indicate that the positive attitudes of consumers towards sustainable packaging are not simply a figure of speech, a fashionable element; it is the actual awareness of the necessity of environmentalism in the food industry. The introduction of a sustainable packaging is seen by the respondents as a required measure that SMEs should take in an attempt to show corporate social responsibility (CSR) and environmental stewardship.

These findings can be related to the rising green trend in Malaysia, whereby through more environmental campaigns, social media awareness and public discussion has created consumer consciousness. The society is moving towards the direction of sustainability with consumers being more willing to patronize SMEs that embrace green practices. The implications of these results are important to SMEs: the development and the maintenance of the strong ecologically friendly image can positively develop the brand name, appeal to the users who tend to be ecologically friendly, and lead to the long-term loyalty.

5.2.2 Discussion on Research Objective 2: To measure environment issues and perceived value.

The paper also brings out environmental concern as an essential force in consumer behavior. High levels of concern were registered by the respondents on the issues of improper waste disposal, plastic pollution, and environmental degradation as a demonstration of increased level of consciousness towards the issue of sustainability in Malaysia. This kind of worry is translated into a desire to prefer the use of products that are packaged in biodegradable, recyclable or other materials that are environmentally friendly.

Besides concern towards the environment, the perceived worth of sustainable packaging was also revealed to be a significant factor. Consumers are not just looking at the packaging based on its environmental capability but also based on the functional value of the packaging such as longevity, safety, ability to preserve the food quality, and spills or leakage. The successful implementation of sustainable packaging, which incorporates sustainability with excellent functionality, makes the consumer feel a greater overall value, which lowers the barrier of switching to a more sustainable alternative.

Such dual orientation towards environmental goodness and functional utility means that Malaysian SMEs must consider applying a value-added marketing strategy, as it involves both the environmental and practical benefits of sustainable packaging. These marketing campaigns must also not only inform about the environmental importance of environmentally friendly materials but also support the information that the products can preserve or even improve the quality of the food served. This mode fits well with the current movement in green marketing around the world in which perceived functional benefits are becoming more common as a method of justification of the price premium on sustainable products.

5.2.3 Discussion on Research Objective 3: To determine the relationship between variables and Willingness to Pay (WTP)

The correlation and the regression tests performed in this research give empirical evidence on the existence of a significant positive relationship between consumer attitudes, perceived value and willingness to pay sustainable packaging. These findings agree that positive attitudes toward the environment impact the intention to purchase, but the perceived benefits and sensitivity to price are the moderating factors on the actual choice to pay premium.

The results indicate that most of the respondents are ready to spend an extra 5 percent and 10 percent higher than the usual price on sustainable packaging. But the willingness is much less when the price is raised more than 20 percent, which shows that the green premium has the threshold. This has a practical implication to SMEs: pricing strategies should think hard about striking the balance between cost and perceived value of sustainable materials in order not to scare potential customers away.

In addition, these findings also emphasize the significance of emphasizing functional and qualitative advantages of marketing communications. Customers will be willing to pay a price

reasonably higher when they can see some tangible benefits in the sustainable package, e.g., a longer lifespan or better hygiene. To the SMEs, it strengthens the idea that environmental concern does not necessarily ensure sales but must be accompanied with explicit communications relating to quality, convenience and value addition.

5.3 Limitations of the Study

Despite its significant contributions, this study acknowledges several limitations that may influence the generalizability of the findings.

First, the geographical scope of the study was largely concentrated in regions such as Melaka. This may limit the representativeness of the data, as consumer behavior can vary across urban and rural areas. For example, consumers in Kuala Lumpur or other highly urbanized cities may demonstrate higher willingness to pay due to greater exposure to environmental campaigns and higher disposable incomes, whereas those in smaller towns may prioritize cost over sustainability.

Second, the reliance on self-administered questionnaires introduces the possibility of social desirability bias, where respondents may overreport eco-friendly attitudes or willingness to pay to present themselves in a favorable light. This limitation is common in survey-based research on environmentally sensitive topics and should be considered when interpreting the results.

Third, the broad categorization of SMEs in this study did not differentiate between various types of food businesses. Different segments such as street food vendors, fast-food outlets, or high-end cafés may face unique operational and cost-related challenges when implementing sustainable packaging. Future research could benefit from a more granular approach, segmenting SMEs by business type, size, or customer base to better understand specific adoption challenges.

5.4 Recommendations and Suggestions

5.4.1 Regarding Small and Medium Sized Businesses (SMEs)

According to the results of the study, it is highly recommended that Malaysian SMEs should employ a holistic sustainability approach it is not a one-dimensional approach that includes providing eco-friendly packaging. Although the consumers show good attitudes towards the environment, their buying behavior is affected by the perceived value and sensitivity towards prices. Thus, SMEs are to pay attention to the strategies that will increase both environmental veracity and practicality of their packaging.

The first applicable strategy is to deploy a value-added marketing strategy. The sustainable packaging requires emphasis on various benefits that include its durability, hygiene, non-toxicity, and the capacity to preserve the quality of food offered by SMEs. Functional values that are manifested practically, such as packaging that keeps food fresh, avoids leaks, or is heat-resistant can be valued, at a small price increment. These benefits and the effects on the environment should be well captured in marketing messages and hence attract rational and emotional decision-making processes of consumers.

Green Loyalty Programs could be created by the SMEs as well, where customers that prefer green alternatives or bring their own reusable containers are rewarded. To illustrate, the positive consumer attitudes and the positive purchasing behavior may be linked by small discounts, free add-ons, or loyalty points offered in relation to the eco-friendly options. These programs do not only promote a sustainable lifestyle but also enhance customer growth and loyalty.

The other suggestion is that SMEs should partner with sustainable packaging suppliers to save on the cost and increase high-quality material records. An alternative way of breaking through the cost constraints of biodegradable or recyclable packaging suggested by the SMEs is to engage in group purchasing or collaborate with local environmentally friendly manufacturers. The SMEs are also encouraged to train the staff to handle and use the sustainable packaging properly because when properly applied, the consumer satisfaction may be lower, or the perceived value may be lower.

Besides, SMEs can think about incremental implementation strategies. The case in point, to begin with eco-friendly packaging of certain high-margin products, limited promotional items

or orders delivery can be used to determine customer reaction and control the operational expenses and scale up to the point of increase. This gradual strategy will reduce the risk but will develop consumer confidence in the sustainability of the brand.

Lastly, storytelling and brand transparency can be used by SMEs to share their sustainability journey. It is possible to share the work, problems, and success of the company adopting environmentally friendly practices in social media, websites, or store signs and it will help to support the brand image and appeal to environmentally conscious people. With environmental gains and viable benefits, SMEs will be able to stand out in a competitive market and become more profitable and socially beneficial.

5.4.2 For Policymakers and the Government

The intervention of the government is crucial in the speed-up in the adoption of sustainable packaging practices in Malaysian SMEs. Whereas the demand of environmentally friendly solutions is growing among consumers, the expense of sustainable materials can be quite a stumbling block, and policy intervention and financial stimulus are necessary.

Government can initiate tax rebate or subsidies to businesses that use biodegradable, recyclable or reusable packaging. Buy-in programmes or collaborations with accredited manufacturers of packaging may also allow SMEs to gain access to sustainable materials at a reduced price and thus be more cost-effective in terms of the green premium that is transferred to consumers.

Moreover, the government can fund the campaigns of the public awareness to inform the consumers on the environmental and health advantages of the sustainable packaging. These campaigns would contribute towards the perceived value of environmentally friendly materials and consumers would be prepared to pay a moderate premium to ensure this. The campaigns could be expanded by cooperating with NGOs, universities and industry associations.

Another issue that the policymakers need to consider is the regulatory framework that would encourage or even require sustainable packaging in certain industries. As an example, the gradual introduction of single-use plastic usage in food services, the introduction of certification programs to become a green SME, or the implementation of eco-labeling systems may be used as an incentive to use alternatives that are sustainable by SMEs, and as a way of providing consumers with transparent and trustworthy information.

In addition, the government may arrange knowledge-sharing platforms or knowledge-sharing programs to the SMEs to acquire information on sustainable packaging technologies, cost effective sourcing and innovative design practices. By eliminating the knowledge and resource gaps, SMEs will be able to execute sustainability initiatives more efficiently and courageously.

5.4.3 For Future Researchers

The current research offers useful information on consumer attitudes and their readiness to spend on sustainable packaging, but there are several opportunities to advance it through the subsequent research and improve the knowledge and practice.

The future research ought to contemplate changing the research design, whereby a longitudinal study will be adopted, where the changes in consumer attitudes and their willingness to pay in several years will be monitored. This would help understand more in the trends of environmental awareness and enable the researchers to assess whether repetition of exposure to sustainable practices leads to higher price premiums being accepted by consumers.

Also, the qualitative research like focus groups, in-depth interviews, or ethnographic research may be used to complement the quantitative research to reveal emotional and psychological factors that contribute to the eco-friendly decisions of consumers. Such knowledge of values, beliefs and social forces behind buying behaviors would help in designing more efficient marketing to SMEs.

Comparison studies between various urban and rural populations or various types of SMEs like street vendors, fast-food chains, fine dining, might also yield some insight into contextual issues that drive willingness to pay. This would enable specific recommendations to the individual segments of the SMEs or the geographies.

The relevance of technological innovation in packaging, including biodegradable packaging, edible packaging, or smart reusable packaging, to consumer perception and buying behavior is also a potential research area of future researchers. Researching the effect of technological

advancements on perceived value, cost acceptability, and the whole adoption levels would be useful to academia and industry.

Lastly, research may be conducted on the long-term economic and environmental effects of using sustainable packaging, considering such factors like the cost reduction through a decrease in waste, the increase in brand loyalty, and the addition to national sustainability objectives. This type of research may present a more convincing business case to SMEs to make sustainable investment and help in the evidence-based policy making.

5.5 Conclusion

To sum it up, this study presents a solid and promising evidence that sustainable food packaging has been an emerging and developing market among the Malaysian SMEs. The research confirms the impact of the growing popularity of the so-called green movement in Malaysia by proving the fact that consumers are becoming more aware of the eco-related problems and express positive attitudes towards environment-friendly efforts. They are no mere expressions of attitude; rather, they show an actual interest in the ecological effect of single-use plastics and a desire to become customers in a business that has shown an ecologically responsible trend.

Nonetheless, the results also indicate that the intention to pay sustainable packaging is a rational choice. Before making a commitment to purchase consumers are influenced by considerations of perceived value, functional advantage and price elasticity. Most respondents would be happy to pay a humble premium of 5% to 10 percent on sustainability alternatives but as the price goes past 20 percent, the willingness would go down considerably. This underscores the need to strike a balance between environmental initiatives and affordability by SMEs and to have a clear communication of the functionality of sustainable packaging which is its longevity, food safety, and convenience.

The consequences of this paper go beyond consumer behavior. Sustainable packaging offers a chance to SMEs to gain a competitive advantage, build a strong brand image, and customer loyalty if it is done in the long term. Through a combination of environmental friendliness and the availability of a straightforward message on the quality and value, the SMEs will be able to translate favorable environmental attitudes into the actual buying behavior. In this research,

the significance of government backing such as subsidies, incentives, and public ethical campaigns in the alleviation of the monetary strain of sustainable material and their wide incorporation by businesses can also be emphasized.

Theoretically, the study can be used to understand the relationship between consumer attitude, perceived value and willingness to pay especially when it comes to sustainability in the new markets. It is in line with the Theory of Planned Behavior (TPB) findings that show the influence of positive attitudes towards eco-friendly practice that, in combination with perceived functional benefits, affects the intentions to behave in the form of willingness to pay.

Lastly, this paper underlines the idea that sustainable packaging does not only belong to business social responsibility, but it is also a business opportunity. Through sustainable packaging, Malaysian SMEs can not only be in line with the changing consumer values, but also innovate and differentiate themselves among their competitors, and survive in a market that is becoming more and more environmentally aware. By so doing, the SMEs will be able to play a significant role in the broader sustainability objectives, mitigating the environmental effects, and at the same time boosting the economy.

In general, the research offers a good basis to future research, policy formulation, and practice in the industry since it illustrates the fact that sustainability and profitability are not two opposite factors but may be combined and harmonized in their application when properly approached.

REFERENCES (APA 7th Edition)

Ahmad, W., Kim, W. G., Anwer, Z., & Zhuang, W. (2022). Sustainable packaging and customer behavior: How packaging influences purchase decisions. *Sustainability*, 14(2), 785. <https://doi.org/10.3390/su14020785>

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)

Ali, M. H., Tengku Adil, T. S., & Shamsudin, M. F. (2021). Green consumer behavior in Malaysia: An application of the theory of planned behavior. *Journal of Asian Finance, Economics and Business*, 8(2), 989–997. <https://doi.org/10.13106/jafeb.2021.vol8.no2.0989>

Boz, Z., Korhonen, V., & Koelsch Sand, C. (2020). Consumer considerations for the implementation of sustainable packaging: A review. *Sustainability*, 12(6), 2192. <https://doi.org/10.3390/su12062192>

Hamid, N. R. A., Md Noor, N. A., & Aziz, A. (2020). Factors influencing consumer purchase intention of eco-friendly food packaging. *Journal of Business and Social Review in Emerging Economies*, 6(4), 1385–1396. <https://doi.org/10.26710/jbsee.v6i4.1487>

Han, H., Moon, H., & Lee, H. (2021). Consumer behavior toward plastic-free food packaging: Investigating the roles of consumer attitudes, subjective norms, and values. *Journal of Retailing and Consumer Services*, 62, 102636. <https://doi.org/10.1016/j.jretconser.2021.102636>

Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behavior and future research directions. *International Strategic Management Review*, 3(1–2), 128–143. <https://doi.org/10.1016/j.ism.2015.04.001>

Kumar, P., Singh, R. K., & Modgil, S. (2021). Exploring the relationship between CSR and green purchase intention: The mediating role of green trust. *Journal of Cleaner Production*, 293, 126063. <https://doi.org/10.1016/j.jclepro.2021.126063>

Licciardello, F. (2017). Packaging, blessing in disguise. *Stewardship of the environment and packaging waste. Agriculture*, 7(10), 86. <https://doi.org/10.3390/agriculture7100086>

Magnier, L., & Schoormans, J. (2015). Consumer reactions to sustainable packaging: The interplay of visual appearance, verbal claim and environmental concern. *Journal of Environmental Psychology*, 44, 53–62. <https://doi.org/10.1016/j.jenvp.2015.09.005>

Md Salleh, N. Z., Mohamad, N. A., & Yusof, S. (2022). Transitioning Malaysian SMEs to sustainable packaging: Challenges and government support. *Malaysian Journal of Business and Economics*, 9(2), 112–125.

Nguyen, T. N., Lobo, A., & Greenland, S. (2020). Pro-environmental purchase behaviour: The role of consumers' biospheric values, attitudes and advertising skepticism. *Journal of Retailing and Consumer Services*, 50, 145–153. <https://doi.org/10.1016/j.jretconser.2019.05.026>

Norazman, M. R., Sulaiman, Z., & Rashid, N. (2022). Government support and environmental innovation in Malaysian SMEs: A case of green packaging. *Asian Journal of Innovation and Policy*, 11(1), 22–36. <https://doi.org/10.7545/ajip.2022.11.1.022>

Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*, 29, 123–134. <https://doi.org/10.1016/j.jretconser.2015.11.006>

Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer “attitude–behavioral intention” gap. *Journal of Agricultural and Environmental Ethics*, 19(2), 169–194. <https://doi.org/10.1007/s10806-005-5485-3>

Wang, X., Liu, W., & Qi, G. (2020). Factors affecting consumer green purchase intention toward green packaging products. *Resources, Conservation and Recycling*, 156, 104718. <https://doi.org/10.1016/j.resconrec.2020.104718>

Yadav, R., & Pathak, G. S. (2016). Young consumers’ intention towards buying green products in a developing nation: Extending the theory of planned behavior. *Journal of Cleaner Production*, 135, 732–739. <https://doi.org/10.1016/j.jclepro.2016.06.120>

Zainal Abidin, N., Hanafiah, M. H., & Jamil, N. H. (2021). Adoption of sustainable practices among SMEs: An insight into food packaging trends in Malaysia. *Journal of Sustainable Development*, 14(3), 56–68. <https://doi.org/10.5539/jsd.v14n3p56>

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.

DeVellis, R. F. (2016). *Scale development: Theory and applications* (4th ed.). SAGE Publications.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson Education.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill-building approach* (7th ed.). Wiley.

TASK	PSM 1 GANTT CHART / WEEK														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PSM Brainstorming Session									M I D S E M E S T E R B R E A K						
Selection of Research Title															
Construct Research Question and Research Objective															
Search the Literature Review															
Discussion on the topic by Supervisor															
Writing Chapter 1: Introduction															
Finding Related Journals															
Completion of Chapter 1															
Writing Chapter 2: Literature Review															
Completion of Chapter 2															
Writing Chapter 3: Research Methodology															
Determine Research Methodology															
Completion of Chapter 3															
PSM 1 Presentation															
PSM 1 Submission															

TASK	PSM 2 GANTT CHART / WEEK														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Finalize Report									M I D S E M E S T E R B R E A K						
Questionnaire Check															
Pilot Test															
Actual Survey															
Data Collection															
Data Analysing															
Writing Chapter 4															
Writing Chapter 5															
Compiling Chapter 1 to Chapter 5															
PSM 2 Submission															
PSM 2 Presentation									A K						
Final Report Correction															

APPENDIX 3

RESEARCH PROJECT SURVEY



CONSUMER ATTITUDES AND WILINGNESS TO PAY FOR SUSTAINABLE FOOD PACKAGING AMONG SMES IN MALAYSIA: A QUANTITATIVE STUDY

Dear Sir/Madam,

My name is AAINAA NABILAH BINTI AZIZUDDIN. I am a final year student of Bachelor of Technology Management and Technopreneur with Honour at University Teknikal Malaysia Melaka, UTeM. I am currently doing research on CONSUMER ATTITUDES AND WILINGNESS TO PAY FOR SUSTAINABLE FOOD PACKAGING AMONG SMES IN MALAYSIA: A QUANTITATIVE STUDY. This survey is conducted to study customer attitudes, environmental concerns, and perceived value.

Thank you in advance for your willingness to volunteer some of your time to assist me in achieving my educational objectives. Your information will be kept confidential. Any information on or linked with specific individuals, organizations, or companies will not be published, released, or disclosed. If you have any further questions or issues concerning the questionnaire used in my research, please do not hesitate to contact me by email or WhatsApp.

Your cooperation is highly

Appreciated.

Thank you.

Faithfully,

Aainaa Nabilah Binti Azizuddin

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