

**THE IMPACTS OF DISPOSABLE PP PLASTIC
FOOD BOX ON CONSUMER BUYING
BEHAVIOUR AMONG UMK STUDENTS**

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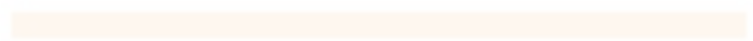
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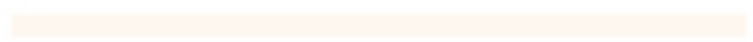
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The Impacts of Disposable PP Plastic Food Box on Consumer Buying Behaviour Among UMK Students

by

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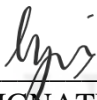



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ABSTRACT

This study was focusing on the impacts of disposable PP plastic food boxes on consumer buying behaviour among University Malaysia Kelantan students. The sample comprised 260 students. The sampling method used in this research was the convenience sampling method. The questionnaires were distributed by using Google Forms. The findings presented that the packaging size ($r= 0.679$, $p= 0.000$), packaging materials ($r= 0.762$, $p= 0,000$), and design of wrappers ($r= 0.761$, $p= 0.000$) were the factors that significantly related to consumer buying behaviour. The analytical results confirmed that there was significant positive correlation between packaging size, packaging materials, design of wrappers, and consumer buying behaviour. In addition to this, the study has some limitations. Therefore, some suggestions were put forward for future research.

Keywords: Packaging size, Packaging materials, Design of wrappers, Consumer buying behaviour

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ABSTRAK

Kajian ini memfokuskan kepada kesan kotak makanan plastik PP pakai buang terhadap tingkah laku pembelian pengguna dalam kalangan pelajar Universiti Malaysia Kelantan. Sampel terdiri daripada 260 pelajar. Kaedah persampelan yang digunakan dalam kajian ini ialah kaedah persampelan mudah. Soal selidik diedarkan menggunakan borang Google Forms. Dapatan kajian menunjukkan bahawa saiz pembungkusan ($r= 0.679$, $p= 0.000$), bahan pembungkusan ($r= 0.762$, $p= 0,000$), dan reka bentuk pembungkus ($r= 0.761$, $p= 0.000$) merupakan faktor yang mempunyai hubungan yang signifikan dengan pengguna. tingkah laku membeli. Keputusan analisis mengesahkan bahawa terdapat korelasi positif yang signifikan antara saiz pembungkusan, bahan pembungkusan, reka bentuk pembungkus, dan tingkah laku membeli pengguna, Di samping itu, kajian ini mempunyai beberapa batasan. Oleh itu, beberapa cadangan dikemukakan untuk kajian akan datang.

Kata kunci: Saiz Pembungkusan, Bahan Pembungkusan, Reka Bentuk Pembungkusan, Tngkah Laku Membeli Pengguna

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CHAPTER 1: INTRODUCTION

A nine-part introduction was provided in the first chapter, including a statement of the problem, the study's goals, and the research questions. Following this, a separate part explains the significance of this study, The Consumer Behaviours on Food Packing Among UMK Students. It was all wrapped up here in the final portion.

1.1 Background of the study

Consumer buying behaviour was the main aim of this study. This study to know more about consumers' actions when deciding to purchase a product that satisfies their expectations. Researchers learn how customers behave and what makes them purchase and use the products. This case study of consumer buying behaviour was key or way for marketers that helps them identify what elements that attract customers to purchase their products. Also, marketers will understand what makes a consumer purchase that particular product. It will be difficult to determine what kind of products will make customers purchase when marketers try to introduce a new product to a new market. Marketers can know what consumers enjoy. It becomes easier for marketers to create their marketing strategies accordingly. Understanding consumer buying behaviour and how consumers make decisions about the products and services that consumers use. According to Kotler and Keller (2011), it can be critical for both manufacturers and service providers because it gives them a competitive advantage over their competitors in a variety of areas. For example, manufacturers and service providers may develop strategies to give the right products and services to the right clients while accurately representing their needs and desires, based on the knowledge manufacturers and service providers had obtained by studying consumer buying behaviour.

Food packaging has been used commercially since the 18th century. In the earliest years, solid food was packaged or stored by using broad leaves, shells, animal skins, and hollowed-out fruits and vegetables. Meanwhile, containers or vessels made from coconuts, gourds, hollowed-out logs, animal skins, as well as shells were used to pack or store liquids. Besides that, clay was used to create containers for the purpose of carrying or storing food throughout the ancient Roman empire and Egypt (Birania et al., 2022). Packaging now serves as an important marketing tool in developing shelf appeal, offering product information, and improving brand awareness, much beyond its primary purpose of protecting the goods. Packaging also enables consumers to make comparisons among a variety of products and affects their buying behaviour since the packaging serves as a differentiation tool (Kwaku & Fan, 2020)

Those with distinctive packaging are more appealing to consumers than products that are already on the market. This situation makes it difficult for the business to stand out from the competition in terms of newness and benefits to their end customers. As a result, packaging components were crucial in influencing consumers' purchase intentions and perceptions of food products (Rahman et al., 2020). Research on food quality preservation was crucial because it directly relates to the aim of improving people's living standards. Furthermore, due to quality and safety features, there was a rising demand from consumers. The materials used for packaging have a significant impact on these problems. Intelligent packaging has the potential to increase consumer safety, reduce environmental impact, and make packaged products and food companies more appealing (Fang et al., 2017).

Disposable containers were often used at local restaurants. Polypropylene (PP), expanded polystyrene (EPS, often known as poly-foam), polystyrene (PS), or polyethylene terephthalate were commonly used (PET). PP plastics can tolerate temperatures ranging from 100oC to 120oC for extended periods of time, however the other three types of plastics are not

ideal for preserving food at temperatures above 100oC. In 2005, the Food and Environmental Hygiene Department collaborated with the Consumer Council on research on the safety of disposable containers. The study found that, if used appropriately, plastic disposable food containers offered by local food businesses, retailers, and school lunch box providers would not pose a food safety risk.

Intelligent packaging will help bridge the gap by monitoring and displaying the quality status from the point of manufacture to the customer. This continuous monitoring not only reduces unnecessary food waste, but also protects consumers from food poisoning, increases food industry efficiency, and improves traceability (Osmólska et al., 2022) Food waste generated in households can be influenced by the food-packaging system. Packaging that was difficult to empty or too large, for example, may impede the entire consumption of a food item. It may result in increased food waste as well as increased environmental burdens (Molina-Besch et al., 2018).

The use of plastics for packaging has some advantages, since they were flexible and inexpensive. However, most plastics was single use which combined with low recycling or reuse ratios, contributes substantially to environmental pollution. The majority of plastics were made from petroleum and deposited in the environment where they cannot dissolve, which causes serious environmental issues. When plastic bags and other types of plastic were disposed of improperly, they end up everywhere, including the oceans, endangering aquatic life, agricultural lands, and the environment as a whole (Weber Macena et al., 2021). Thus, product packaging appears at a critical point when customers make a purchasing decision (Ampuero & Vila, 2006). According to (Wang, 2017) product packaging draws attention to a product and influences the consumer purchasing process, making marketing communications through packaging essential for developing products that meet customer needs. It was critical to use packaging as a strategic marketing tool for the entire company, especially in the highly

competitive food industry. As a result of increasing market competition in various product settings, food companies have fuelled this interest even further.

1.2 Problem Statement

According to Lydekaityte and Tambo (2020), the primary functions of packaging have changed and been impacted by the evolution and improvement of industrial utilization and technologies. For instance, advanced technology has improved the ‘communication’ function of packaging while the protection and preservation function of packaging has improved by using nanoscale-nature materials and composites that discovered recently. As a result, there were more innovative packaging is becoming available on the market and plays an important as a tool of a company in order to communicate with consumers. Besides that, Lockamy (1995) and (Regattieri et al., 2019) state that packaging was a critical element of both domestic and international trade and commerce. Without the use of packaging, the process of material and product handling would be ineffective, inconvenient as well as exercise and nearly impossible to execute current consumer marketing.

Nowadays, packaging design was a crucial consideration when consumers were looking for healthy foods since consumers frequently look for a statement on product packaging that was in line with their overall health and well-being goals. Food packaging can enable customers in visually categorizing foods such as healthy and unhealthy (Karnal et al., 2016). Furthermore, the choice of the materials for the package significantly affects the performance and the costs of a product-packaging system (Accorsi & Manzini, 2019). Pålsson (2018) mentioned that various activities that link to packaging will affect the effectiveness of logistics and environmental in the supply chain. These activities may include material-handling equipment, information systems, manual handling, transportation and waste management. In terms of

logistical packaging, the logistical system components may influence the productivity of logistics channels. Besides that, packaging also brings impacts on the performance of aviation logistical systems (D. Twede, 1992; Karpun, 2020). Additionally, the productivity of a company will increase by implementing effective packaging solutions (Silva & Pålsson, 2022).

Packaging manufactured by nanomaterial can regulate the pH, temperature, moisture and freshness of items contained inside the package which extends the food material's shelf life. As a result, a long distance of transportation for food materials was acceptable (Ameta et al., 2020). Furthermore, de Oliveira & de Melo (2019) mentioned that food safety should be balanced with other concerns in packaging technology such as energy and materials expenditures, rising social and environmental awareness and the stringent rules on pollutants and the disposal of municipal solid waste. In addition, packaging was commonly considered to have a detrimental effect on the environment. Once the product was consumed, the consumer has to recycle or dispose the packaging because the packaging was decomposed. However, packaging may keep food in good condition and increase shelf life as well as minimize a product's environmental effect by avoiding food waste (Brennan et al., 2021). According to Chung & Wu (2020), a comprehensive strategy was necessary for developing and analyzing the design of packaging in industry or academia to optimize overall cost-effectiveness and minimize the overall environmental impact of the whole supply chain.

1.3 Research Question

To achieve the meaning of the objective, the formulated research questions for this research are as follow:

1. Is there any significant relationship between packaging size and consumer buying behaviour among UMK students?
2. Is there any significant relationship between packaging materials and consumer buying behaviour among UMK students?
3. Is there any significant relationship between design of wrappers and consumer buying behaviour among UMK students?

1.4 Research Objectives

1. To examine the significant relationship between packaging size and consumer buying behaviour among UMK students.
2. To examine the significant relationship between packaging materials and consumer buying behaviour among UMK students.
3. To examine the significant relationship between design of wrappers and consumer buying behaviour among UMK students.

1.5 Scope of the Study

This study also focuses on University Malaysia Kelantan Students from Logistics and Distributive Trade (SAL) at Taman Bendahara, Pengkalan Chepa, Kelantan. A set of questionnaires and the number of questions to be distributed to SAL students will be provided on google forms. The researcher required 260 students from SAL programs as the target respondents. The survey questionnaire will be distributed using an online system using google forms. The questionnaire was designed based on the impacts of Disposable PP Plastic food box

packaging on consumer buying behaviour of University Malaysia Kelantan Students from SAL Program for the purchase decision.

1.6 Significance of Study

This study looks into the impacts of Disposable PP Plastic food box packaging on consumer buying behaviour among University Malaysia Kelantan students from the Bachelor of Entrepreneurship (Logistics and Distributive Trade). This research can help in-depth with potential research problems by determining packaging factors that can influence consumer behaviour when deciding on a purchase, both objectively and subjectively.

Packaging directly affects consumer behaviour and their intention to purchase. This research was mainly focused on analyzing Disposable PP Plastic food box packaging elements including design, size, and materials, and their impact on consumers' buying behaviour. Impulse buying theories present an ocean of opportunities for marketers. Every aspect of a product, from how the packaging catches the eye to how the product was displayed in the store, impacts a consumer's impulse control. Marketers who can capture impulsive thoughts and close the sale will have the most success.

The research findings can assist companies and industries in the world of goods and services identify design features by involving consumers directly in design of the final packaging of the product and help improved the shelf and sales performance of the brands through their response. Based on our research, can provide a better understanding to the firm about what factors influence perception and how to effectively measure and improve pack performance. Food manufacturers must comprehend how consumers react to their packaging and integrate their input into creating better packaging for their current products and new product launches to the market.

1.7 Definition of Term

The main objective of this research was to look at the effect of food packaging on consumer buying behaviour. The terms used in this study were packaging size, packaging materials, and design of wrappers. The research objectives were described as follows:

1.7.1 Consumer Buying Behaviour

Consumer buying behaviour refers to the actions that consumers take (both online and offline) before acquiring a product or service. Consumer buying behaviour was regarded as an integral aspect of marketing, and Kotler and Keller (2011) define it as the study of the ways in which people, groups, and organizations acquire and dispose of goods, services, ideas, or experiences in order to meet their needs and wants. This procedure may include using search engines, responding to social media posts, or a range of other actions. Understanding this process was beneficial for organizations because it allows them to better match their marketing operations to marketing efforts that have effectively encouraged customers to buy in the past.

1.7.2 Packaging Size

Packaging size refers to the physical dimensions of a container that encloses consumer goods. The significance of packaging lies in the establishment of the company's brand image and symbolic communication to influence consumer buying habits and their contributions to influencing consumer intention to purchase (Benachenhou et al., 2018). Proper package sizing may save money, time, and provide clients with peace of mind. Packaging size was significant in food packaging. This is because proper food package dimensions might influence consumer buying behaviour. The right size of food packaging may provide better protection for the food contained therein. When it comes to securing things during transportation, larger isn't necessarily better. This is because larger packages have more vacant areas to fill, which

increases the likelihood of a product moving around inside the box. The proper package size will protect the goods while not doubling or triple its size.

1.7.3 Packaging Materials

Packaging materials were used to enclose or keep packed items together. It has the ability to pack the packed contents into or onto the packaging materials. The packaging materials has a considerable impact on the shelf life of a food product. Proper packing materials can help to retain product quality and freshness during transportation and storage (Marsh & Bugusu, 2007). Glass, metals (aluminium, foils and laminates, tinfoil, and tin-free steel), paper and paperboards, and polymers have traditionally been used in food packaging. Furthermore, a broader range of stiff and flexible polymers has been offered. Today's food packaging frequently combines different materials to take use of each material's functional or esthetic features. By utilizing the correct material for food packaging, consumers may ensure that the food is safe for their health, which will have a big impact on consumer buying behaviour.

1.7.4 Design of Wrappers

Design of wrappers was defined as the process of creating and implementing the physical shape, as well as the esthetic appearance and feel of a product's outer packaging. It was the outcome of a collaborative effort including font, graphics, artwork, structure, size, and colour. Packaging design also refers to the selection of material and shape, as well as the mix of structure, text, colours, artwork, and other features that will be distinctive and attract customers. Pleasant images of the package (mountains, beaches, elegant residences, and automobiles) assist to generate lifestyle expectations (Ngoi & Lee, 2020). The fundamental goal of packaging and product design when purchasing was to attract customer attention and differentiate from rivals in the shop or supermarket. As a result, when it comes to food packaging design, organizations need a lot of knowledge and study before releasing a product

to achieve the appropriate mix of branding and practicality. Indeed, many experts feel that packaging influences the purchasing process. Packaging has a significant impact that extends beyond our tastes in food, fonts, and colour.

1.8 Organization of The Proposal

There were five sections to this study. The first chapter consists of an overview of the study by describing the research background and provides the main issues motivating this research. It includes the problem statement, research questions, research objectives, scope of the study, the significance of the study, definition of terms and last but not least the organization of the proposal.

The main part of the literature review was talked about in Chapter Two. This study's literature review was mostly about how other researchers have talked about earlier studies. This chapter will focus on and talk in depth about all of the factors. Both the study's independent variables and its dependent variables have been labelled. This chapter looks at the research on the level of information sharing, the quality of information sharing, the relationship between the customer and the seller, and consumer buying behaviour towards food packaging among UMK students. This chapter will also talk about how to make a hypothesis by putting the dependent variable and the independent variables together.

In Chapter Three, the research methods for this study are explained. The third chapter includes the research design, data collection methods, and the population of the study. This is followed by the sample size, sampling techniques, research instrument development and measurement of the variables. The procedure for data analysis will be explained at the end of this chapter that followed by a summary of this chapter

In Chapter Four, both the results and the analysis of the data were presented, with specific focus on the reliability analysis, the demographic information of the respondents, the descriptive analysis, and the Pearson's coefficient analysis. In addition, the findings and outcomes of the present investigation were discussed in this chapter, as well as an overview of those results. In a summary, this chapter provides a full discussion of the outcomes that relate to each hypothesis, along with the explanation of those results. Additionally, it has the answers to the study objectives that were defined in the first chapter.

The discussion will be explained in Chapter Five, which provides a conclusion based on the analysis presented in the prior chapter. It emphasizes the significance of the findings for the theory and literature on the effects of food packaging on consumer buying behaviour. This chapter will cover the remediation of the study, the findings, and the debate regarding the relationship between packaging size, packaging materials and design of wrappers. In addition, this chapter discussed the restrictions imposed by the study and offered a number of suggestions for avenues worthy of investigation in subsequent research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The chapter provides an overview of the data from other researchers who have conducted similar packaging and consumer behaviour research. This chapter presents current research on the subject. Literature reviews were based on secondary sources found in published works including books, theses, journals, conference proceedings, and other publications. The literature review provides insights into theories that represent both the dependent and independent variables. It necessitates a thorough examination of the established theoretical framework as well as the subject matter of the studies. This dissertation was divided into two sections: theoretical and empirical. The theoretical section was related to the impulse buying theory which explain the behaviour of consumers. Besides that, the quantitative research method was used for the empirical portion. This investigation's data was gathered using a questionnaire. The findings and conclusions of the study were presented at the end.

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2.2 Underpinning Theory

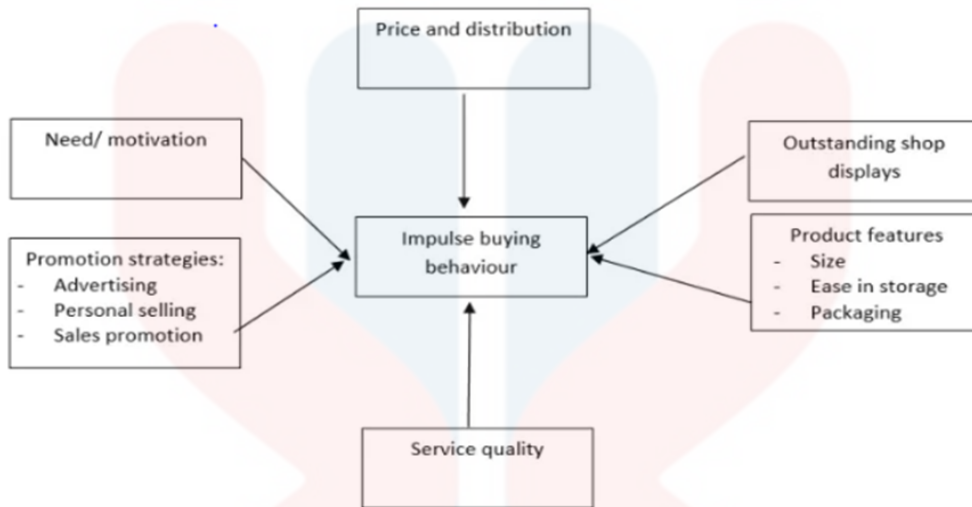


Figure 2.1: Hawkins Stern's Impulse Theory

In contrast to some of the modern consumer behaviour theories such as Maslow's Need Hierarchy Theory of Motivation (1943) and Engel, Kollat and Blacwell (1968) that mentioned the consumers always make rational and well-planned buying decisions, the Hawkins Stern's impulse theory highlighted the concept of impulse behaviour (Agarwal & Chetty, 2019). According to Bawono (2020), impulsive buying has almost no correlation with rational decision making and is affected by external stimuli. In addition, every component of a product such as packaging, features, display of the product, and ease of shopping will influence on the impulse of consumers (Matos et al., 2021). There were four categories of impulsive buying which include pure impulse purchases, impulse purchase reminded, suggested impulse purchase, and impulsive purchases that were planned.

1. Pure Impulse Buying

Pure impulse buying refers to a purchase that is made as a sudden decision without any consideration and calculations by the consumers. Furthermore, pure impulse

buying also mentioned that the consumers tend to be emotional, and impulsive and may not initially seek for the products but instead have a strong emotional need.

2. Reminder Impulse Buying

Reminder impulse buying happens when consumers decide to purchase a product since they have prior knowledge about the product, either from an advertisement or some information the consumers have previously noticed.

3. Suggested Impulse Buying

Suggested impulse buying happens when a consumer first sees a product and becomes attracted to purchase it.

4. Planned Impulse Buying

Planned impulse buying occurs when consumers want to buy a product but unsure of its features.

2.3 Previous Studies

Generally, customers believe more elongated packages to be larger, even when they acquire these products on a regular basis and can feel genuine volume. This means that, in the long run, disconfirmation of package size after consumption may not cause consumers to change their volume judgments, especially if the gap was not significant (Raghubir and Krishna, 1999).

Customer attraction to product, customer perception, and customer preferences are all indicators of buying behaviour. Quality, protectability, meeting consumer needs, and packaging are all components of the product. One of the most effective tools in the food sector is packaging since, in addition to its traditional function, it also serves as a branding and marketing tool. Packaging serves four purposes which is namely containment, protection, communication, and convenience (Robertson, 2012).

Consumer buying behaviour

According to Ahsan Ansari and Siddiqui (2019), consumer buying behaviour is a complex and continuously evolving issue which is hard to define. Consumer buying behaviour can relate to the individual's actions for purchasing, using and disposing economical goods and services as well as the decision-making process before buying behaviour. Furthermore, the term consumer behaviour also refers to the actions that consumers display in exploring for, buying, using, evaluating and discard of goods and services that the consumer expect will meet their needs. Besides that, consumer behaviour also related to how consumers make decision to spend their available resources such as time, money and efforts on purchasing goods or services (Kumar et al., 2021). According to Kumar (2022), there were various factors impacting consumers' buying behaviours which included internal, external, and personal factors. The internal factors represent the need, motive attitude, perception and learning of the consumers while external factors refer to the culture, social class, reference groups, economic status and family of the consumer. Additionally, personal factors involve the age, occupation, income and lifestyle of the consumer.

Packaging Size

According to Philip Kotler K. L., (2008), the product using ratio increases when the product package is changed and the product size is increased. The size of the product packaging was determined by the product features and the market that the company P R Smith (2004) was aiming for, as well as the increased consumption of the product Keller (2009). According to Arun Kumar (2012), the packing size, like the product colors, was also considered the tool of the product. The availability of numerous sizes of the goods in the market was related to the product's market expansion. The smaller size of the product becomes the purpose of the small

family, and the greater size of the product was regarded as a waste of the product by them (Silayoi, P., & Speece, M., 2004). It has also been discovered in a previous study that customer readiness to purchase a product increase if the product is accessible in a smaller size and has a shorter expiration date, indicating that consumers do not appreciate huge product sizes (Ahmadi et al., 2013). According to Rundh (2009), smaller households purchase the packs that are in the small level. If the initial product size is large, but the buyer does not want to buy it again (Raghubir Karishina, 1999). The labeling and size of the goods boost the consumer's confidence and repeat purchase behaviour. According to Vila and Ampuero (2006), larger product packaging was better than smaller packaging and provides better value than tiny value.

Packaging Materials

According to Smith (2004), some packaging materials must be designed in such a way that they can survive temperatures below zero or high temperatures in a microwave, depending on the product's functionality and consumer needs. One study on food packaging (Hollywood et al., 2013) investigated three packaging materials which were glass, plastic, and cardboard revealed various packaging perceptions about various packaging materials. Many people advocated for the use of glass packing material in food packaging, despite the fact that it was heavy and required washing after use. Second, buyers expressed concerns about cardboard packaging, arguing that it does not keep a product fresh and makes it difficult to see the items, and they likened it to UHT treated food (Hollywood et al., 2013). Participants in that study recommended the usage of plastic containers and agreed that they were superior to cardboard and glass packaging since their screw top closure prevented product leakage (Hollywood et al., 2013). Good packing materials must be utilized to protect the goods from damage. Customers find high-quality materials more appealing than low-quality materials. Consumer perception of

packaging materials can influence a product's perceived quality (Shah et al., 2013). Packaging now serves as an important marketing tool in developing shelf appeal, offering product information, and improving brand. The materials used for packaging have a significant impact on these problems and intelligent packaging has the potential to increase consumer safety and satisfaction. (Fang et al.,2017).

Design of Wrappers

The design of the packaging conveys implied meanings about a product that are either positive or negative (Aday and Yener, 2014). According to Limon et al., (2009), packaging was used to identify the product. Play a significant part in enticing customers. In the case of wrapper design, children are most likely more sensitive. As a result, the corporation must develop a wrapper design that appeals to both adults and children. Children exhibit more sensitive behaviour when they purchase a product based on the design of the wrapper. As a result, every company wants to improve its wrapper design approach in order to attract consumers. Agariya et al. (2012) discovered that seeing the wrapper design creates an image in the mind of the consumer's beliefs about the product. According to Ahmadi et al., (2013), appealing designs increase consumer interest in the product. The shape of the product was used for carrying and using the goods. Wang (2013) conducted a visual packaging survey and discovered that attitude affects how consumers perceive the quality of food and their brand preferences. If the wrapper design does not appeal to the buyer, he will not buy the goods, regardless of its size, shape, or quality. If the original wrapper design of the purchasing product was changed, the consumer will not attempt to repeat the purchase (Raghubir & Krishna, 1999).

2.4 Hypotheses Statement

The research has several objectives and questions which are related to the consumer buying behaviour among UMK students. There are following hypotheses that are formed for this research:

H1: There is a significant relationship between packaging size and consumer buying behaviour among UMK students.

H2: There is a significant relationship between packaging materials and consumer buying behaviour among UMK students.

H3: There is a significant relationship between the design of wrappers and consumer buying behaviour among UMK students.

2.5 Conceptual Framework

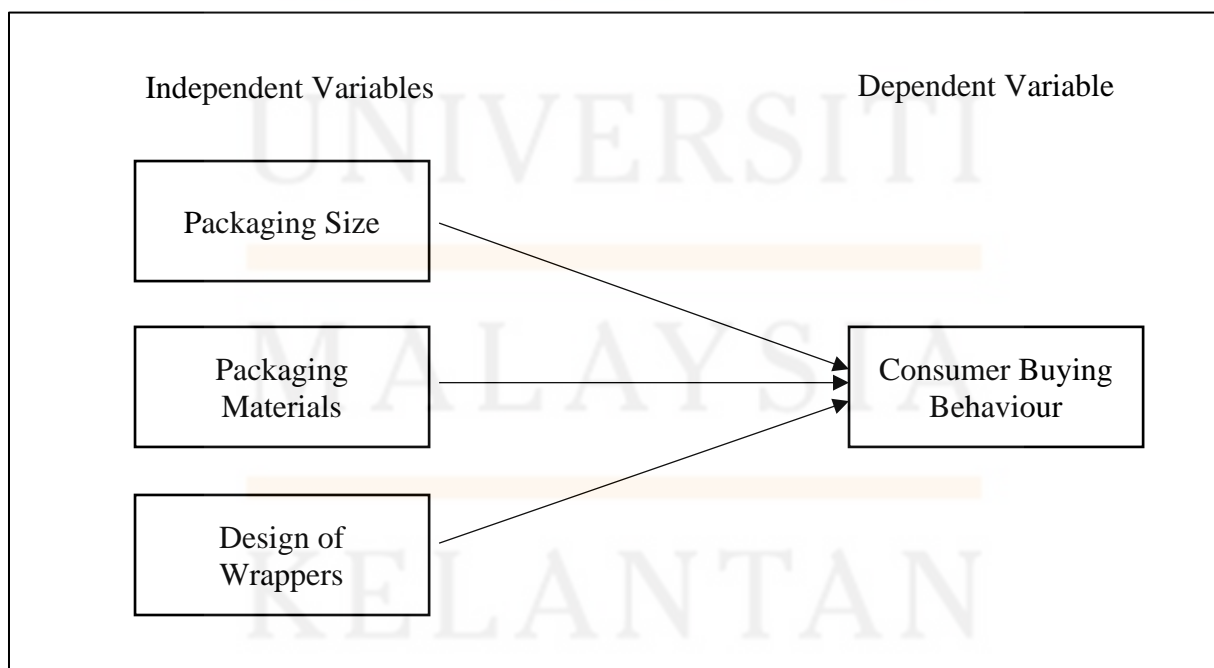


Figure 2.2: The framework indicates the relationship between Packaging Size, Packaging Materials, Design of Wrappers and Consumer Behaviour among UMK students.

The framework indicates the relationship between the Packaging Size, Packaging Materials, Design of Wrappers and Consumer Buying Behaviour among UMK students in illustrating the extent to which Packaging Size, Packaging Materials, Design of Wrappers and Consumer Buying among UMK students have a good linkage between them.

2.6 Summary/ Conclusion

This chapter has been focused on other perspectives as well as previous study perspectives in order to create a more relevant, significant, and tangible study. This chapter focuses on the literature review as it relates to the independent and dependent variable, which include the definition of design of wrappers, size, and materials. The following chapter describes to research methods and the research design approach used in this study

CHAPTER 3: RESEARCH METHODS

3.1 Introduction

After analysing previous studies on the issues mentioned in Chapter 2, this chapter detailed the research approach that would be employed in the study. This chapter will discuss every aspect of doing this study, including research design, data collection methods, study population, sample size, sampling methodologies, research equipment creation, variable measurement, and data analysis procedures. The summary of this chapter will come next.

3.2 Research Design

According to Sileyew (2019), research design plays an important role in providing suitable framework for a study. Besides that, the decision about research method was significant in the process of research design as it decides the way of collecting data in the study and there were several connected decisions involved in the research design process. In addition, a research design also establishes to determine, among other aspects, how to get further data and evaluate them, interpret them as well as to offer a solution to the issue (Sekaran & Bougie, 2016).

In this study, researcher was using quantitative approach to conduct this study. According to Davies and Hughes (2014), the quantitative approach was employed to find solutions to problems through the use of scientific. The scientific procedures were created to increase the likelihood that the information collected was reliable, unbiased and relevant to the questions presented. Moreover, descriptive analysis was used in this study as well. A questionnaire was designed to gather information from respondents and examine the

relationship between independent variables and dependent variable. As a result, a Google Form was created and distributed to the SAL students from UMK in order to obtain data.

3.3 Data Collection Design

Data collection can be defined as the procedure of obtaining and measuring information on variables in an established system in order to address relevant questions and analysis outcomes. A formal data collection process was required and necessary in a study since it plays an important role in guaranteeing the data collected were defined and reliable and that decisions made in the future based on the results in the findings were justified (Yakkaldevi, 2021). In this study, the primary data was used by researcher to address research problems.

3.3.1 Primary Data

Primary data was defined as the first-hand data or information gathered for the first time and therefore making them unique by nature. The methods of collecting primary data include questionnaires (Cr, 2020). In this study, an online survey questionnaire was used to collect data from UMK students.

3.4 Study Population

According to Bairagi and Munot (2019), the population refers to the group of people participants a researcher would be looking at before conducting an experiment. Besides that, the class, city families, or voters choose for the sample were referred to the population or study population and the letter N is often used to represent the size of population (Kumar, 2018).

In this study, SAL (Logistics and Distribution Trade) students from UMK were selected as the study population in this study. This is because SAL students were learning the knowledge regarding logistics and supply chain management which includes warehousing, packaging,

transportation, and inventory management. According to Pålsson (2018), packaging was strategically important and has significant impacts on logistics performance in supply chain. Based on the information provided by the Faculty of Entrepreneurship and Business of UMK, the total number of students from SAL was 792.

3.5 Sample Size

According to Kumar (2018), sample size can be defined as the number of students, families, or electors from whom the researcher desires to obtain necessary information from them. Moreover, sample size was often represented by the letter *n*.

Krejcie & Morgan’s table was used in this study to determine the appropriate sample size. As a result, the appropriate sample size of this study was 260 and the questionnaire will distribute randomly to people who were willing to answer the questionnaires.

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	26	140	103	340	181	1000	276	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is Population Size
"S" is Sample Size.

Source: Krejcie & Morgan (1970)

Figure 3.1: Determining sample size from a given population

3.6 Sampling Techniques

Sampling was the process of selecting a sufficient number of elements from a population. Sampling techniques can be divided into probability sampling and non-probability sampling. The researcher used non-probability sampling techniques for this quantitative research based on this research study. Individuals in this non-probability sample were chosen based on non-random criteria, and not every individual has a chance of being included. In these types of research, the aim was to develop an initial understanding of a small or under-research populations. Convenience sampling was a type of non-probability sampling technique in which participants in this research sample are chosen based on their convenience and accessibility to the researcher. This means that the researcher selects a sample from the population closest to hand. This approach is suited to use for Statistical Package (SPSS) software version 25.0 and allows for immediate research outcomes. Questionnaires were created to cover all aspects of the study objectives and research questions. Therefore, this situation can be used as a sampling technique in conducting a study on the impact of Disposable PP Plastic food box packaging on consumer buying behaviour.

3.7 Research Instrument Development

Questionnaires were used as a data collection in this study. This approach was the most compatible for gaining data and information from respondents. Through this method, feedback on aspects of the study can be obtained directly from the respondents. In this study, sources of data will be gathered in questionnaires to investigate the impact of Disposable PP Plastic food box on consumer buying behaviour.

The questionnaire designed in this format serves two purposes. The questionnaire was designed with the objectives of the research conducted to ease the understanding of respondents to answer questions. The second purpose for assisting the respondent with the questionnaire was to limit the length of the questions on the questionnaire. In order to improve the accuracy of the data in the research, the questions in this questionnaire should also focus on the respondents' behaviour. In research, the first section of the questionnaire was also attached to the front page, containing the researcher's identity and information as well as a guarantee of confidentiality. Respondents were also more motivated to complete the questionnaire as a result of this.

The questionnaire was divided into three sections with different measurement scales. Section A discusses nominal scales for answering questions about gender, age, race, and social status. In Section B, ordinal scales were used for the dependent variable of consumer purchasing behaviour. Furthermore, ordinal scales were used in section C, which includes three independent variables: packaging size, packaging materials, and design of wrappers. In this section, respondents were given various statements about their attitudes toward food packaging attributes and asked to rate them on a Likert five-point scale.

Table 3.1: Overview of Research Instrument

Section	Variables	Author
A	Demographic	

B	Packaging size	Jemima Kalilanji, 2020
	Packaging materials	Anwar Sadat Shimul and Isaac Cheah, 2022
	Design of Wrappers	Sidrah Waheed, Marium Mateen Khan, and Nawaz Ahmad, 2018
C	Consumer buying behaviour	Rauyalakshmi Nittala and Venkata Rajasekhar Moturu, 2021

3.8 Measurement of the Variables

According to the study, the most common measuring scales were nominal scale, ordinal scale, interval scale, and ratio scale. The study questionnaire will be measured using a nominal scale and a Likert scale in this investigation. Meanwhile, the gender, ethnicity, religion, educational background, and general questions will be differentiated in this study using a nominal scale. Following that, for the independent and dependent variables in the questionnaire, a Likert scale will be used in this study. In this study, a five-point Likert scale rating with five alternative alternatives such as strongly disagree, disagree, neutral, agree, and strongly agree will be used for the independent and dependent variable question statements.

3.8.1 Nominal scale

A nominal scale was used for qualitative variables. A qualitative variable was a research method that produces observable data (Lexy 2007). In this context, numerals were only used to classify or identify objects. Nominal scale responses are simply named or grouped. The distribution of questionnaires, which is a quantitative tool, can be used to supplement the

conclusions of the study with qualitative factors. Nominal scale can be organised into categories, names, or labels. Nominal data was a type of category that cannot be ordered, such as gender (male/female). The nominal scale was used in section A questions to compute each respondent's demographic profile. In order to analyze the target respondents, gender, age, race, occupation, level of education, and income were all measured in a nominal scale based on the surveys.

3.8.2 Interval Scales (Likert-Scale)

On an interval scale, the difference between two values was significant. The Likert scale was a five-point scale that allows people to express how much they agree or disagree with a given statement. The Likert Scale was used as a research tool. Respondents were asked to rate topics on a five-point Likert scale, with 1 representing 'Strongly Disagree,' 2 representing 'Disagree,' 3 representing 'Neutral,' 4 representing 'Agree,' and 5 representing 'Strongly Agree.'

Table 3.2: Table Likert Scale

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

3.9 Procedure of data analysis

Data analysis was a method of collecting data from multiple respondents and transforming it into a more manageable and acceptable size (Ju, Chen et al. 2006). After the data collection procedure was completed using the questioner that was provided to logistics students (SAL) at the University Malaysia Kelantan, the data analysis process began. The Social Sciences Statistical Package (SPSS) software version 25.0 was used to analyze all of the acquired data and get an accurate result. SPSS was a statistical programme created by IBM that is extensively used by researchers and academics all over the world. A descriptive analysis and a reliability test were all part of this study. The descriptive research also revealed the respondent's demographics, such as mean, median, and mode. This statistical application performs comparison and correlational statistical tests in the context of univariate, bivariate, and multivariate analysis for both parametric and non-parametric statistical methods. The analyses were completed in four stages (Ong & Puteh, 2017). Therefore, the types of data analysis methods that will be used in this study include reliability analysis, descriptive analysis and Pearson correlation analysis.

3.9.1 Reliability Analysis

The features of measuring scales and the items that comprise the scales will be studied using reliability analysis. The reliability analysis process computes a variety of regularly used scale reliability measures and also offers information about the correlations between particular scale items. The dependability model that will be utilized is Alpha (Cronbach). This is an internal consistency model based on average inter item correlation. The Cronbach's Alpha will be used to determine the reliability of the multiple-question Likert scales survey. These questions were used to assess latent unobservable variables. This model will tell researchers of

how closely connected a group of test items was since they are tough to analyze in real life. When using the rule of thumb for the outcome, a score greater than 0.7 is usually acceptable.

Table 3.3: Rules of Thumb about Cronbach's Alpha

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Sources: Statistics How To, 2022

3.9.2 Descriptive Analysis

The data in sections A, B, C, D, and E will be analyzed using descriptive analysis. Measures of frequency will be utilized in section A as the type of descriptive analysis. It was critical to understand how frequently a specific occurrence is likely to occur. For demographic parameters such as gender, age, and even education, percentages and frequencies were routinely utilized. It was helpful in Section A of the questionnaire, which questioned respondents for demographic information. As a result, data may be made considerably more accessible by measuring with this approach. Sections B, C, D, and E will then be evaluated using the Central Tendency measures. Three averages were used to calculate central tendency (mean, median and

mode). Consider a poll with 260 people responding. In this circumstance, the mean average would be an appropriate descriptive statistic to characterize mid-values.

3.9.3 Pearson Correlation

The Pearson correlation technique will be used in this inquiry for numerical variables. It assigns a value between -1 and 1, with 0 indicating no correlation, 1 indicating total positive correlation, and -1 indicating whole negative correlation. The Pearson correlation coefficient was a descriptive statistic, which implies that it summarizes a dataset's qualities. It specifies the strength and direction of the linear relationship between quantitative variables. Although interpretations of the relationship strength vary between disciplines, the table below given general rules of thumb:

Table 3.4: Rule of Thumb for Interpreting the Size of a Correlation Coefficient

Size of Correlation	Interpretation
.90 to 1.00 (-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-.70 to -.90)	High positive (negative) correlation
.50 to .70 (-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50 (-.30 to -.50)	Low positive (negative) correlation
.00 to .30 (.00 to -.30)	Negligible correlation

3.10 Summary

This chapter has described the detail of the methodologies such as research design, data collection, population, sample size, sampling techniques, research instrument and data analysis method that will be applied in this study. This chapter also said that the data gathered from the respondents via the questionnaire will be reviewed and applied for the following chapter. Respondents in this study were Logistics students from the University Malaysia Kelantan.



CHAPTER 4: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter discuss the findings obtained from questionnaire that distributed to UMK students. The collected data from questionnaire will be analyzed by using SPSS and the final results of statistical analysis will be explained in this chapter. Moreover, preliminary analysis, demographic profile of respondents, descriptive analysis, reliability and validity test, normality test, hypothesis testing were included in this chapter.

4.2 Preliminary Analysis

4.2.1 Pilot test

A pilot test was conduct in this study before distributed the questionnaire to respondents in order to reduce mistakes. There were 30 participants were involved in the pilot test. The pilot test was used to test the reliability of both independent variables and dependent variable.

Table 4.1: The results of Cronbach's Alpha Coefficient of pilot test

Variable	Number of Items	Alpha Coefficient	Strength of Association
Packaging size	5	0.875	Good
Packaging materials	5	0.856	Good
Design of wrapper	4	0.791	Acceptable
Consumer buying behaviour	4	0.839	Good

Table 4.1 show the results of Cronbach’s Alpha Coefficient of the pilot test. The Cronbach’s Alpha Coefficient of both independent variables and dependent variable were more than 0.7. The Cronbach’s Alpha Coefficient of consumer buying behaviour was 0.839 and has good association. Besides that, the Cronbach’s Alpha Coefficient of packaging size was 0.875 which represent a good association. Moreover, the second independent variable of this study- packaging materials also show a good association which was 0.856. Meanwhile, the Cronbach’s Alpha Coefficient of design of wrapper was lowest compared to other variables which was 0.791 and the association was acceptable.

4.3 Demographic profile of respondents

This section explained the findings of demographic profile of 260 respondents who have answered the online questionnaire. The demographic profile which includes gender, age and race of respondents will be discussed in this section. The table below show the descriptive of demographic profile.

Table 4.2: Descriptive of Demographic Profile

Category	Details	Frequency	Percentage (%)
Gender	Male	112	43.1
	Female	148	56.9
Age	19-21 years old	43	16.5
	22-24 years old	184	70.8
	25 years old and above	33	12.7
Race	Malay	153	58.8
	Chinese	61	23.5

	Indian	44	16.9
	Iban	2	0.8

4.3.1 Gender

1. Gender / Jantina
260 responses

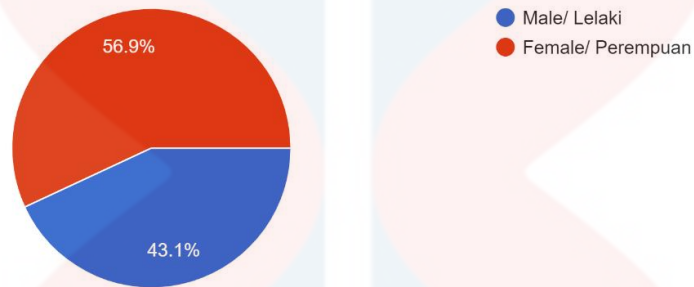


Figure 4.1: Percentage of Gender

The figure 4.1 represent the percentage of gender. There were 148 out of 260 respondents were female while 112 respondents were male. In term of percentage, 56.9% of respondents were female and 43.1% of respondents were male.

4.3.2 Age

2. Age / Umur
260 responses

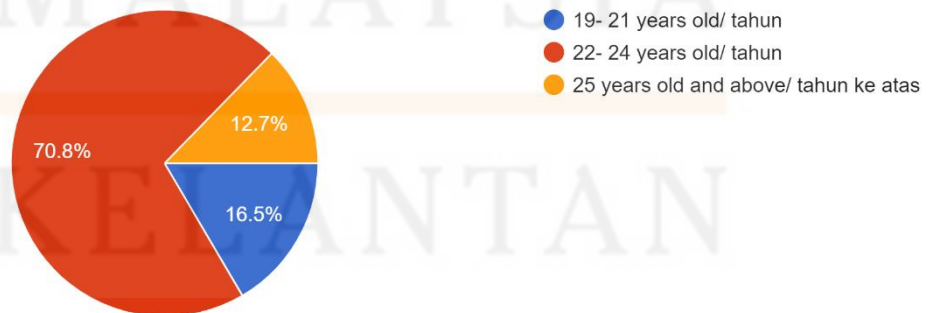


Figure 4.2: Percentage of Age

Figure 4.2 shows the percentage of age of 260 respondents which answered the online questionnaire. There were 70.8% of respondents were aged between 22 to 24 years old with the frequency of 184. In addition, there were 16.5% of respondents were aged between 19 to 21 years old which means there were 43 out of 260 respondents were aged between 19 to 21 years old. Besides that, 12.7% of respondents were 25 years old and above with the frequency of 33.

4.3.3 Race

3. Race / Bangsa
260 responses

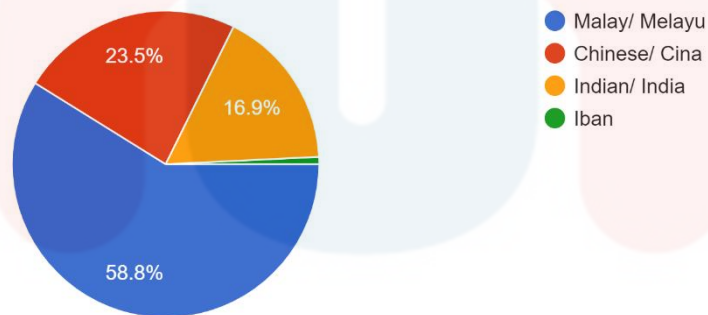


Figure 4.3: Percentage of Race

Figure 4.3 represents the percentage of race among 260 respondents. There were 153 respondents were Malay with the percentage of 58.8%. Meanwhile, 61 out of 260 respondents were Chinese (23.5%) and 44 respondents were Indian (16.9%). Moreover, there were 0.8% of respondents were Iban with the frequency of 2.

4.4 Descriptive analysis

In the section of descriptive analysis, the table of intervals and levels used to interpret mean scores was used to indicate the level of independent variables and dependent variable in this study. Therefore, the researcher compared the mean of every question of the online questionnaire that distributed to respondents. According to the table of intervals and levels used to interpret mean scores, there were 5 levels of means scores. The means score between 1.00 to 1.80 represent the respondents totally disagree the question and very low level. Meanwhile, there was a low level of mean score or the respondents disagree the question if the mean score was between 1.81 to 2.60. Besides that, mean score between 2.61 to 3.40 indicate the respondents were partially agree from respondents and the level was moderate. In addition, there was high level of mean scores and the respondents agree the question as the mean score was between 3.41 to 4.20. Meanwhile, the mean score between 4.21 to 5.00 explains that there was very high level of means score and the respondents totally agree the question.

Table 4.3: Intervals and Levels Used to Interpret Mean Scores

Interval	Level
1.00-1.80	Very Low (Totally Disagree)
1.81-2.60	Low (Disagree)
2.61-3.40	Moderate (Partially Agree)
3.41-4.20	High (Agree)
4.21-5.00	Very High (Totally Agree)

4.4.1 Descriptive Statistics of Independent Variables and Dependent Variable

Table 4.4: Descriptive Statistics of Independent Variables and Dependent Variable

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Packaging size	260	1.00	5.00	4.0915	.77833
Packaging materials	260	1.00	5.00	4.1708	.80926
Design of wrapper	260	1.00	5.00	4.2567	.71909
Consumer buying behaviour	260	1.00	5.00	4.1808	.75498
Valid N (lwestwwase)	260				

Table 4.4 explained the mean and standard deviation of independent variables and dependent variable. The mean of packaging size was lowest among independent variables and dependent variable which was 4.0915 and it shows that there was high level of mean score and the respondents were agree the question asked in the section of packaging size. Meanwhile, design of wrapper shows the highest mean among independent variables and dependent variable which was 4.2567 and it represent the respondents agree the question in the section of design of wrapper. In addition, the mean of packaging materials was 4.1708 and it shows the respondents agree the questions. Lastly, consumer buying behaviour has a high level of mean score which was 4.1808 and it indicates the respondents agree the questions asked in the section of consumer buying behaviour of the online questionnaire.

4.4.2 Descriptive Statistics of Packaging Size

Table 4.5: Descriptive Statistics of Packaging Size

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
(i) Packaging Size	260	1	5	4.08	.968
1. The shape of disposable PP plastic food box influences my purchase decision. (Bentuk kotak makanan plastik PP pakai buang mempengaruhi keputusan pembelian saya.)					
2. Various sizes of disposable PP plastic food box influence my purchase decision. (Pelbagai saiz kotak makanan plastik PP pakai buang mempengaruhi keputusan pembelian saya.)	260	1	5	4.05	.959

<p>3. Disposable PP plastic food box that could aid storage and preservation influenced my purchase decision. (Plastik makanan plastik PP pakai buang yang boleh membantu penyimpanan dan pemeliharaan mempengaruhi keputusan pembelian saya.)</p>	260	1	5	4.07	.925
<p>4. Disposable PP plastic food box modification influences my purchase decision. (Pengubahsuaian kotak makanan plastik PP pakai buang mempengaruhi keputusan pembelian saya.)</p>	260	1	5	4.04	.978

5. Packaging of disposable PP plastic food box with good quality influence my purchase decision. (Pembungkusan kotak makanan plastik PP pakai buang dengan kualiti yang baik mempengaruhi keputusan pembelian saya.)	260	1	5	4.22	.893
Valid N (listwise)	260				

Table 4.5 shows the descriptive statistics of one of the independent variables in this study which was packaging size. There were 5 questions in the section of packaging size of the questionnaire. The fifth question in the section of packaging size shows the highest mean scores which was 4.22. Moreover, the fourth question in the section of packaging size, disposable PP plastic food box modification influences my purchase decision shows the lowest mean score which was 4.04. Furthermore, the shape of disposable PP plastic food box influences my purchase decision's mean score was 4.08 while the mean score of various size of disposable PP plastic food box influence my purchase decision was 4.05. Lastly, disposable PP plastic food box that could aid storage and preservation influenced my purchase decision's mean score was 4.07 and it represent the high level of mean score and the respondents agree this question.

4.4.3 Descriptive Statistics of Packaging Materials

Table 4.6: Descriptive Statistics of Packaging Materials

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
(ii) Packaging Materials	260	1	5	4.15	.917
1. Material quality of disposable PP plastic food box influence my purchase decision. (Kualiti bahan kotak makanan plastik PP pakai buang mempengaruhi keputusan pembelian saya.)					

<p>2. Versatility of disposable PP plastic food box (i.e., can reuse the package) influence my purchase decision. (Fleksibiliti kotak makanan plastik PP pakai buang (iaitu, boleh menggunakan semula bungkusan) mempengaruhi keputusan pembelian saya.)</p>	260	1	5	4.14	.961
<p>3. Safety of disposable PP plastic food box packaging influence my purchase decision. (Keselamatan pembungkusan kotak makanan plastik PP pakai buang mempengaruhi keputusan pembelian saya.)</p>	260	1	5	4.21	.927

4. Ability to recycle disposable PP plastic food box packaging influence my purchase decision. (Keupayaan untuk mengitar semula pembungkusan kotak makanan plastik PP pakai buang mempengaruhi keputusan pembelian saya.)	260	1	5	4.18	.945
5. Disposable PP plastic food box packaging material influence my purchase decision. (Bahan pembungkus kotak makanan plastik PP pakai buang mempengaruhi keputusan pembelian saya.)	260	1	5	4.17	.927
Valid N (listwise)	260				

Table above shows the mean and standard deviation of packaging materials. According to this table, the highest mean score belongs to the third questions of the section of packaging materials in the online questionnaire which was 4.21. This represent a high level of mean score and the

respondents were agree the question. Meanwhile, the lowest mean score was 4.14 which belongs to the second question, versatility of disposable PP plastic food box (i.e., can reuse the package) influence my purchase decision. Besides that, the first question also shows a high level of mean score which was 4.15 and this means the respondents were agree that material quality of disposable PP plastic food box influence my purchase decision. Furthermore, ability to recycle disposable PP plastic food box packaging influence my purchase decision represents a high level of mean score which was 4.18. Last but not least, the mean score of firth questions, disposable PP plastic food box packaging material influence my purchase decision was 4.17 and it shows a high level of mean and the respondents agree this question.

4.4.4 Descriptive Statistics of Design of Wrappers

Table 4.7: Descriptive Statistics of Design of Wrappers

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
(iii) Design of Wrappers	260	1	5	4.30	.820
1. Attractive packaging influence my purchase decision. (Pembungkusan yang menarik mempengaruhi keputusan pembelian saya.)					

2. The quality of the disposable PP plastic box influences my purchase decision. (Kualiti kotak plastik PP pakai buang mempengaruhi keputusan pembelian saya.)	260	1	5	4.27	.827
3. Design of this product of plastic food box inspires me to purchase. (Reka bentuk produk kotak makanan plastik ini memberi inspirasi kepada saya untuk membeli.)	260	1	5	4.23	.892
4. The packaging design gives you enough information to identify the components of the product. (Reka bentuk pembungkusan memberi anda maklumat yang mencukupi untuk mengenal pasti komponen produk.)	260	1	5	4.23	.866
Valid N (listwise)	260				

The table above shows the mean and standard deviation of design of wrappers. The highest mean score belongs to the first question which the respondents agree that attractive packaging influence my purchase decision and the mean score of this question was 4.30. Besides that, the mean of second question was 4.27 and it indicates that the respondents agree the quality of the disposable PP plastic box influence my purchase decision. Lastly, the third and fourth question shows the same mean score which was 4.23 and it represent a high level of mean and the respondents agree these questions.

4.4.5 Descriptive Statistics of Consumer Buying Behaviour

Table 4.8: Descriptive Statistics of Consumer Buying Behaviour

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Consumer Buying Behaviour	260	1	5	4.14	.874
1. I was satisfied with disposable PP plastic food box that I bought. (Saya berpuas hati dengan kotak makanan plastik PP pakai buang yang saya beli.)					

2. I am satisfied with the disposable PP plastic food box packaging. (Saya berpuas hati dengan pembungkusan kotak makanan plastik PP pakai buang.)	260	1	5	4.22	.843
3. I can evaluate the environmental benefits of the disposable PP plastic food box with confidence. (Saya boleh menilai faedah alam sekitar kotak makanan plastik PP pakai buang dengan yakin.)	260	1	5	4.18	.889
4. The disposable PP plastic food box are good value of the money. (Kotak makanan plastik PP pakai buang adalah nilai wang yang baik.)	260	1	5	4.18	.899
Valid N (listwise)	260				

Table above shows the descriptive statistics of consumer buying behaviour. There were 4 questions in the section of consumer buying behaviour and the highest mean score belongs to

the second question which was 4.22. This means the respondents were satisfied with the disposable PP plastic food box packaging. In addition, the lowest mean score was 4.14 which belongs to the first question. Additionally, the mean scores of third and fourth question were same which is 4.18 and it show the respondents agree both of the questions.

4.5 Validity and Reliability Test

The reliability coefficient represented the degree of variability acquired from the experiment as a whole. To validate the accuracy and consistency of the data, Cronbach's Alpha analysis was used to test the data. According to George and Mallery's (2016), Cronbach's Alpha Coefficient Range rules of thumb value of 0.4 or below was deemed unsatisfactory, while a value of more than 0.7 was typically considered to be acceptable. The item's internal consistency reliability increases as the value gets nearer to 1.

Table 4.9: Rules of Thumb of Cronbach's Alpha

Cronbach's Alpha	Internal Consistency
$\alpha > 0.9$	Excellent
$\alpha > 0.8$	Good
$\alpha > 0.7$	Acceptable
$\alpha > 0.6$	Questionable
$\alpha > 0.5$	Poor
$\alpha > 0.4$	Unacceptable

4.5.1 Actual Reliability Test

Table 4.10: Cronbach's Alpha Actual Reliability Test

Variables	Cronbach's Alpha	No of Items	Internal Consistency
Dependent Variable			
Consumer Buying Behaviour	0.884	4	Good
Independent Variables			
Packaging Size	0.881	5	Excellent
Packaging Materials	0.916	5	Excellent
Design of Wrappers	0.866	4	Excellent

Table showed above was the Cronbach's Alpha Actual Reliability Test regarding the questions of dependent variable and independent variables that have been collected after conducting a survey to the respondents. A total of 260 respondents were obtained in showing impacts of disposable pp plastic food box on consumer buying behaviour among UMK students. In this study, the dependent variable was consumer buying behaviour and the independent variables were packaging size, packaging materials and design of wrappers. Each variable was presented with 5 questions in the questionnaire conducted except 2 variable that only presented with 4 questions which is design of wrappers and consumer buying behaviour. Therefore, the result of the dependent variable for the actual reliability test, which is consumer buying behaviour, has shown a Cronbach's Alpha reading value of 0.884 with good internal consistency. Next, the results of the independent variable showed only 1 variable with excellent internal consistency which was packaging materials with 0.916. The other result of the

independent variables which were packaging size and design of wrappers showed with good internal consistency readings with 0.881 and 0.866. It was concluded that every questionnaire question displayed was at the good and excellent internal consistency.

4.6 Normality Test

The normality test determines whether a sample was regularly distributed or not, depending on its significance value. It refers to the study's sample size that can be concluded as normally or non-normally distributed. For example, if the sample size was greater than 50 respondents, Kolmogorov-Smirnov will be used, whereas Shapiro-Wilk will be used if the sample size was fewer than 50. If the significant value or p-value was less than 0.05, it showed normal and significant data.

Table 4.11: Statistical normality tests for the scale data from the sample (N=260)

Tests of Normality						
	Kolmogorov-Smirnov^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Packaging Size	.130	260	.000	.900	260	.000
Packaging Materials	.159	260	.000	.873	260	.000
Design of Wrappers	.168	260	.000	.867	260	.000
Consumer Buying Behaviour	.171	260	.000	.882	260	.000
a. Lilliefors Significance Correction						

Table 4.11 showed the normality test for dependent variable (Consumer Buying Behaviour) and independent variable (Packaging Size, Packaging Materials and Design of

Wrappers). Apart from that, Kolmogorov-Smirnov was being used in this study because of more than 50 respondents which is total of 260 respondents. Moreover, it can see that significance value was 0.000 which is less than 0.05. As the result, it was considered as a normal data and significant.

4.7 Hypotheses Testing

4.7.1 Pearson correlation

Pearson correlation was one of the correlation measures used to measure the strength of a linear relationship of two variables. Pearson Correlation Coefficients have been used by the researchers to identify the significant relationship between the dependent variable (Consumer Buying Behaviour) and independent variables (Packaging Size, Packaging Materials and Design of Wrappers). Table 4.7.1 showed the Rule of Thumb for Interpreting the Size of a Correlation Coefficient while Table 4.7.2 showed the result of Pearson’s Correlation Coefficient that used to identify the hypotheses.

Table 4.12: Rule of Thumb for Interpreting the Size of a Correlation Coefficient

Size of Correlation	Interpretation
.90 to 1.00 (-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-.70 to -.90)	High positive (negative) correlation
.50 to .70 (-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50 (-.30 to -.50)	Low positive (negative) correlation
.00 to .30 (.00 to -.30)	Negligible correlation

4.7.2 The Pearson Correlation Result

Table 4.13: The Pearson Correlation Result

Correlations					
		Packaging Size	Packaging Materials	Design of Wrappers	Consumer Buying Behaviour
Packaging Size	Pearson Correlation	1			
	Sig. (2- tailed)				
	N	260			
Packaging Materials	Pearson Correlation	.718**	1		
	Sig. (2- tailed)	.000			
	N	260	260		
Design of Wrappers	Pearson Correlation	.707**	.803**	1	
	Sig. (2- tailed)	.000	.000		
	N	260	260	260	
	Pearson Correlation	.679**	.762**	.761**	1

Consumer Buying Behaviour	Sig. (2-tailed)	.000	.000	.000	
	N	260	260	260	260
**. Correlation is significant at the 0.01 level (2-tailed).					

According to the relevant analysis described in Table 4.13, the correlation (r) between variables was between 0.679 and 0.762. Therefore, there is a high correlation between all the variables, indicating that there was a significant relationship between them. According to Table 4.13, all constructs were different and do not overlap each other. In addition, there was no variable has shown a negative sign, then there is a positive correlation between all variables.

According to Table 4.13, independent variables such as packaging size, packaging materials and design of wrappers have a significant correlation with dependent variable which was consumer buying behaviour, at level 0.01 (2-tailed). According to the Pearson correlation value, packaging size scored 0.679, packaging materials scored 0.762 and design of wrappers scored 0.761. Thus, packaging materials had the strongest significant relationship with consumer buying behaviour, followed by design of wrappers and packaging size. As a result, there was a high correlation and significant relationship between packaging size, packaging materials and design of wrappers towards consumer buying behaviour.

4.7.3 Hypothesis Testing

Table 4.14: Summary for Hypothesis Testing

	Research Question and Objective	Hypothesis	Pearson's Correlation Result
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<p>H1</p>	<p>RQ: Is there any significant relationship between packaging size and consumer buying behaviour among UMK students?</p> <p>RO: To examine the significant relationship between packaging size and consumer buying behaviour among UMK students.</p>	<p>There is a moderate positive correlation and significant relationship between packaging size and consumer buying behaviour among UMK students.</p>	<p>(r) = 0.679 p = 0.000</p>	<p>Significant</p>
<p>H2</p>	<p>RQ: Is there any significant relationship between packaging materials and consumer buying behaviour among UMK students?</p> <p>RO: To examine the significant relationship between packaging materials and consumer buying behaviour among UMK students.</p>	<p>There is a high positive correlation and significant relationship between packaging materials and consumer buying behaviour among UMK students.</p>	<p>(r) = 0.762 p = 0.000</p>	<p>Significant</p>

H3	<p>RQ: Is there any significant relationship between design of wrappers and consumer buying behaviour among UMK students?</p> <p>RO: To examine the significant relationship between design of wrappers and consumer buying behaviour among UMK students.</p>	<p>There is a high positive correlation and significant relationship between design of wrappers and consumer buying behaviour among UMK students.</p>	<p>(r) = 0.761 p = 0.000</p>	<p>Significant</p>
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Based on the table above, there was positive and significant relationship between Packaging Size, Packaging Materials, Design of Wrappers and Consumer Buying Behaviour. All the hypotheses were accepted at 0.01 significant levels.

4.8 Summary

In conclusion, this chapter presented the details of the study's data analysis, including the respondents' backgrounds, and then discussed how to conduct analytical data that was relevant, acceptable, understandable, and correctly evaluated using some tests chosen by the researcher. The data analysis includes reliability tests, which determine the level of knowledge of respondents when answering questions and the feasibility of the questionnaires provided.

The descriptive tests were then used to comprehend each data point entered into the SPSS programme. Each test and analysis were designed to assess the effectiveness of the data collected from 260 respondents. The future, which will be discussed further in Chapter 5.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter also discusses the analysis and findings from the chapter 4 discussion and conclusions. The outcomes of data analysis for independent factors (Packaging Size, Packaging Materials, and Design of Wrappers) and dependent variables (Consumer Buying Behaviour) were also covered in this chapter. The main findings of this study were also discussed in order to address the research question and purpose for the study, which was about The Impacts of Disposable PP Plastic Food Boxes on Consumer Buying Behaviour Among UMK Students.

In addition, this study also analysed the Pearson Correlation to answer the hypothesis development for the three independent variables (Packaging Size, Packaging Materials, and Design of Wrappers) to determine the acceptance of the hypothesis and whether there are a significant relationship two variables.

5.2 Key Findings

Table 5.1: Summary of Hypothesis Testing Result

Research Question and Research Objective	Hypothesis Result	Findings
RQ 1: Is there any significant relationship between packaging size and consumer buying behaviour among UMK students?	$p=0.00$ ($p<0.01$) $r=0.679$	There is significant relationship between packaging size and consumer buying behaviour among UMK students.

<p>RO 1: To examine the significant relationship between packaging size and consumer buying behaviour among UMK students.</p>		
<p>RQ 2: Is there any significant relationship between packaging materials and consumer buying behaviour among UMK students?</p> <p>RO 2: To examine the significant relationship between packaging materials and consumer buying behaviour among UMK students.</p>	<p>p=0.00 (p<0.01)</p> <p>r=0.762</p>	<p>There is significant relationship between packaging materials and consumer buying behaviour among UMK students.</p>
<p>RQ 3: Is there any significant relationship between design of wrappers and consumer buying behaviour among UMK students?</p> <p>RO 3: To examine the significant relationship between design of wrappers and consumer buying behaviour among UMK students.</p>	<p>p=0.00 (p<0.01)</p> <p>r=0.761</p>	<p>There is significant relationship between design of wrappers and consumer buying behaviour among UMK students.</p>

5.3 Discussion

In this chapter, there was also more discussion to determine whether the hypothesis was true or just a prediction. Hypothesis refers to a statistical test conducted to determine whether a sample of data was true for an entire population (Kumar, et al. 2013). The hypothesis was also two

variables tested to obtain validity for a data set. Therefore, the hypothesis can also be checked based on the observation of the process mode through a series of random variables. According to Sekaran and Bougie (2019), P-value is more than 0.01 which was a significant value then the hypothesis was not accepted while P-value was less than 0.01 which was a significant value then the hypothesis can be accepted and the data was true. There are three hypotheses according to independent variables (Packaging Size, Packaging Materials, and Design of Wrappers).

5.3.1 Hypothesis 1

There is a significant relationship between packaging size and consumer buying behaviour among UMK students.

In this study, this hypothesis also as there is a positive and significant relationship between the packaging size of disposable pp food boxes and consumer buying behaviour among University Malaysia Kelantan students. From the results of the correlation test, the correlation value for packaging size and consumer buying behaviour was 0.679 at the value of P-value which was less than 0.01. Therefore, the results indicate the alternative hypothesis (H1) was accepted.

Based on research question 1, the study can conclude that there was significant relationship between the packaging size of disposable pp food boxes and consumer buying behaviour among University Malaysia Kelantan students. This study was also supported by Kotler and Keller (2011), that the product using ratio increases when the product package was changed and the product size is increased. The smaller size of the product becomes the purpose of the small family, and the greater size of the product was regarded as a waste of the product by them (Silayoi & Speece, 2004).

There is a significant relationship between packaging size and consumer buying behaviour among UMK students.

5.3.2 Hypothesis 2

There is a significant relationship between packaging materials and consumer buying behaviour among UMK students.

In this study, this hypothesis also has there was a significant relationship between packaging materials of disposable pp plastic food boxes and consumer buying behaviour among University Malaysia Kelantan students. From the results of the correlation test, the correlation value for packaging materials and consumer buying behaviour was 0.762 at the value of P which was less than 0.01. Therefore, the results indicate the alternative hypothesis (H2) was accepted.

In this research question 2, this study concludes that there was a significant relationship between packaging materials of disposable pp plastic food boxes and consumer buying behaviour among University Malaysia Kelantan students. These correlation coefficients were supported by participants in Hollywood et al., 2013 study that recommended the usage of plastic containers and agreed that they were superior to cardboard and glass packaging since their screw top closure prevented product leakage. The perceived quality of a product by consumers might be influenced by its packaging (Shah et al., 2013).

5.3.3 Hypothesis 3

There is a significant relationship between the design of wrappers and consumer buying behaviour among UMK students.

In this study, this hypothesis also as there was a significant relationship between the design of disposable pp plastic food box wrappers and consumer buying behaviour among University Malaysia Kelantan students. From the results of the correlation test, the correlation value for the design of wrappers and consumer buying behaviour was 0.761 at the value of P which was less than 0.01. Therefore, the results indicate the alternative hypothesis (H3) was accepted.

In this study question 3, this study concludes that there was a positive relationship between the design of disposable pp plastic food box wrappers and consumer buying behaviour among University Malaysia Kelantan students. Agariya et al. (2012) discovered that seeing the wrapper design creates an image in the mind of the consumer's beliefs about the product. According to Ahmadi et al., (2013), appealing designs increase consumer interest in the product. The shape of the product was used for carrying and using the goods. Wang (2013) conducted a visual packaging survey and discovered that attitude affects how consumers perceive the quality of food and their brand preferences. If the wrapper design does not appeal to the buyer, the buyer will not buy the goods, regardless of their size, shape, or quality.

5.4 Implication of The Study

This research will help the manufacturers to get a deeper understanding of how packaging attributes such as packaging size, packaging materials, and design of wrappers influence consumer buying behaviour. It will help existing manufacturers to look for opportunities to differentiate their products from others by packaging. According to the results, packaging attributes have shown their importance both cumulatively and independently in communicating product features and quality in a manner that is competitive. Therefore, the findings of this research lead manufacturers to understand the importance of the marketing role played by a package in enhancing product visibility, awareness, and attractiveness.

Additionally, the majority of customers prefer a variety of product choices when selecting a product based on packaging. Thus, the marketer can make several of strategies to enhance their brand trust through innovative and distinctive packaging, with distinctively different sizes, instructions, convenience, and the proper shape of the product, while comparing it to the competitors in the market segmentation. Effective packaging is crucial not just for the

storage and protection of goods but also for drawing consumer attention and encouraging them to make a purchase.

5.5 Limitations of the Study

For this research, it is complete research that needs to face certain limitations which is the quantitative research method that is the focus of this research. These are some of the limitations we encountered while doing this study. First of all, this study only focuses research on Logistics and Distribution bachelor's degree students with honors (SAL) only among University Malaysia Kelantan in the city campus. However, there are some challenges for this study where the respondents avoid answering the proper questionnaire to less interested in answering the distributed form.

The researchers did not have enough time to collect data from students and rushed to collect data from respondents. Furthermore, data collection by respondents is through online questionnaires Google form. The data obtained is less/inaccurate from the respondents, it is because not all respondents are committed to this questionnaire and support this study. Some respondents also did not answer the questionnaire at all which required the researcher to find other respondents distributed one by one to complete the questionnaire.

Finally, a limitation of this study is the variables. This study only focuses on three parts of independent variables, namely level of awareness, student experience and social media influence. According to previous research and the information obtained, these three variables greatly influence the consumer buying behaviours on Food Packing among of University of Malaysia Kelantan (UMK) students. Research is limited in their ability to investigate in relation to other aspects of the study. Also, the occurrence is when these researchers use convenience sampling as the sample size. This lack of control can bias the sample and research results, and

thus limit the wider applicability of the study. In the future researchers need to consider using a mixed method approach in the future to reduce the potential limitations of a study.

5.6 Recommendations for Future Research

Recommendations are studies that will be done by future researchers. They will add new independent variables and use other methods to do their research. The researchers can expand their study by adding more sample sizes, they can also expand the number of respondents who come from different programs and from other universities as well. Based on this study, some recommendations for future studies can be obtained.

The first recommendation of the researcher suggested some suggestions to further improve the results of the study. The researcher suggested expanding the sample size. This study uses a sample size that only focuses on Logistics and Distribution bachelor's degree programs with honors (SAL) in University Malaysia Kelantan only. Researchers in the future can further expand the number of respondents and can include more programs and public universities to further increase accuracy and reliable data.

Next, the researcher suggests that this study can add qualitative research methods to get accurate answers from respondents by conducting face-to-face interviews. During the interview, the researcher can ask questions openly and explain about the questions in the questionnaire. But not only that, it is possible that the answer given by the respondent is an honest, true answer and the respondent answers it well and all the questions can be completed and resolved immediately. This is because, respondents can give their information and opinions based on what they have experienced after getting involved with bitcoin currency. Therefore, future researchers may need to consider recommendations to improve the results of the study.

The last suggestion is related to the addition of variables. This current study has three factors that influence the perception of bitcoin risk. Therefore, there must be various variables

that may not be focused on by current researchers. Nevertheless, researchers in the future can use different variables to get various new findings in this kind of research.

5.7 Overall Conclusion of the Study

The aim of this study was to investigate The Impacts of Disposable PP Plastic Food Boxes on Consumer Buying Behaviour Among UMK Students through the analysis results and the finding indicated that all the independent variables (Packaging Size, Packaging Materials, and Wrapper Design) that used in this researcher had a significant relationship level of the impacts of disposable pp plastic food boxes on consumer buying behaviour among University Malaysia Kelantan students.

In this research, a total of 260 respondents were collected through the Google form questionnaire method. The data was evaluated using SPSS software and methods of Preliminary Analysis, Descriptive analysis, Validity, Reliability test, Normality Test, and Hypothesis testing were used. In chapter 4, the reliability analysis was good and acceptable for the independent variable and dependent variable. The reliability analysis for Packaging Size, Packaging Materials, Design of Wrappers, and Consumer Buying Behaviour were 0.881, 0.916, 0.866 and 0.884. This shows that the result could be accepted.

The findings can be used in future research to support the characteristics of disposable pp plastic food boxes that impact consumer buying behaviour and new studies on the subject are expected to develop over time. The researchers can focus more on this study by extending it to students from other Malaysian institutions of higher learning, such as IPTA or IPTS.

In addition, as a guideline for future research, this report includes recommendations for future studies and of limitation of the study can give chance to researcher to give more recommendation to improve the quality of the research.

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APPENDIX A - DRAFT OF QUESTIONNAIRE

A STUDY ON THE IMPACTS OF DISPOSABLE PP PLASTIC FOOD BOXES ON CUSTOMER BUYING BEHAVIOUR

Dear Respondents:

We are final year students of Bachelor of Entrepreneurship (Logistics and Business Distribution) with Honours from Faculty of Entrepreneurship and Business, University Malaysia Kelantan. We are conducting a study on the title “The Impacts of Disposable PP Plastic Food Box on Customer Buying Behaviour Among Umk Students”.

Therefore, we would like to invite you to help us to complete the questionnaire. The questionnaire is divided into three sections, namely Sections A, B, and C. The questionnaire will take about 5 to 10 minutes of your valuable time. Your personal information will be strictly confidential. The data collected are only used for the purpose of academic research. Your kind participation to this study is greatly appreciated.

For further details please contact

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SECTION A: DEMOGRAPHIC PROFILE

Instruction: Please tick (/) the suitable answer at the space given.

Arahan: Sila tandakan (/) pada jawapan yang sesuai di ruang yang disediakan.

1. Gender / *Jantina*

Male/ *Lelaki*

Female/ *Perempuan*

2. Age / *Umur*

19- 21 years old/ *tahun*

22- 24 years old/ *tahun*

25 years old and above/ *tahun ke atas*

3. Race / *Bangsa*

Malay/ *Melayu*

Chinese/ *Cina*

Indian/ *India*

Other/ *Lain-lain*

SECTION B: INDEPENDENT VARIABLE

Instruction: Please rating each item in this section with the Likert scale of 1 to 5. 1 being strongly disagree while 5 being strongly agree. Please tick (/) the suitable answer at the space given.

Arahan: Sila nilaikan setiap item di dalam bahagian ini dengan skala likert 1 hingga 5. 1 merupakan sangat tidak setuju manakala 5 merupakan sangat setuju. Sila tandakan jawapan yang sesuai di ruang yang disediakan.

1	2	3	4	5
Strongly Disagree/ Sangat tidak setuju	Disagree/ Tidak setuju	Neutral	Agree/ Setuju	Strongly Agree/ Sangat setuju

Variable	Items	Scale				
		1	2	3	4	5
Packaging Size	The shape of disposable PP plastic food box influences my purchase decision					
	Various sizes of disposable PP plastic food box influence my purchase decision					
	Disposable PP plastic food box that could aid storage and preservation influenced my purchase decision					
	Disposable PP plastic food box modification influences my purchase decision					
Packaging Material	Material quality of disposable PP plastic food box influence my purchase decision					
	Versatility of disposable PP plastic food box (i.e., can reuse the package) influence my purchase decision					
	Safety of disposable PP plastic food box packaging influence my purchase decision					

	Ability to recycle disposable PP plastic food box packaging influence my purchase decision					
	Disposable PP plastic food box packaging material influence my purchase decision					
Packaging Design	Attractive packaging influence my purchase decision					
	The quality of the disposable PP plastic box influences my purchase decision					
	Design of this product of plastic food box inspires me to purchase					
	The packaging design gives you enough information to identify the components of the product					

SECTION C: DEPENDENT VARIABLE

Variable	Items	Scale				
		1	2	3	4	5
Customer Buying Behaviour	I was satisfied with disposable PP plastic food box that I bought					
	I am satisfied with the disposable PP plastic food box packaging					
	I can evaluate the environmental benefits of the disposable PP plastic food box with confidence					
	The disposable PP plastic food box are good value of the money					

APPENDIX B - GANTT CHART

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Selection of Research Title <ul style="list-style-type: none"> • Discussion with supervisor • Collect information from journal, books, past thesis 														
Writing Research Proposal														
Submission Proposal to Supervisor and Correction														
Research Proposal Presentation														
Questionnaire Distribution														
Data Analysis														
Discussion of Findings														
Conclusion / Final Touch-up														
Multidiscipline Research on the Entrepreneurship and Business E-Colloquium 2022/2023														



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Nama Program/Name of Programme: SAK, SAB, SAL, SAR, SAP, SAH, SAW

Fakulti/Pusat/Faculty/Centre: Fakulti Keusahawanan Dan Perniagaan/
Faculty of Entrepreneurship and Business

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Saya Mok See Yan(Nama),No.Matrik

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THE IMPACTS OF DISPOSABLE PP PLASTIC FOOD BOX ON CONSUMER BUYING BEHAVIOUR
AMONG UMK STUDENTS

Tandatangan/Signature

.....

Nama Pelajar/Student Name: Mok See Yan

No.Matrik/Matrix No: A19A0305

Tarikh/Date: 18/1/2023

Pengesahan

Penyelia/Supervisor:

Tandatangan/Signature:

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THE IMPACTS OF DISPOSABLE PP PLASTIC FOOD BOX ON CONSUMER BUYING BEHAVIOUR AMONG UMK STUDENTS

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