ATTRIBUTES OF FOOD PACKAGING ON THE CHOICE PURCHASE DECISION OF FOOD PRODUCTS BY STUDENTS OF UITM TERENGGANU FOOD SERVICES

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Abstract **-** Food packaging attributes are some of the main drivers of consumer choice and food waste, an ongoing and significant problem worldwide. Food packaging material, packaging graphics and colours, and packaging size and shape influence consumers. This study aims to establish the relationship between food packaging attributes such as packaging material, graphics and colours, and size and shape, and how these factors influence the purchase decisions of Food Services students. In the present study, a set of questionnaires was distributed through an online survey to 133 respondents, focusing only on UiTM Terengganu Food Services students' stay within the college accommodations. The reliability test, normality test, and multiple linear regression analysis were conducted. The factors that appear to influence food product purchase decisions among Food Services students at UiTM Terengganu colleges include the packaging material, the graphics and colors of the packaging, as well as the size and shape of the packaging. This research thus proves the potential role of packaging design in reducing food waste and promoting more sustainable patterns of student consumption.

Keywords **-** Packaging material, graphics and colors of packaging, size and shape of the packaging, university students

INTRODUCTION

Convenience, aesthetics, and environmental considerations are just a few of the factors that have influenced consumer behavior when choosing food packaging in recent years. Food packaging plays a crucial role in the modern food industry, serving as a protective barrier that safeguards products from contamination and extends their shelf life (Khushidigimarketerzz, 2023). The products could show changes over time because of ongoing interactions between the food and contact with the packaging material. When selecting the ideal packaging for a specific food product, several factors must be considered. Additionally, food packaging keeps your products safe and prevents any damage caused by transportation or stacking (Hello-Creator, 2022). Another definition of food packaging is a coordinated food preparation system used to produce food for safe transportation, distribution, storage, and retail. This ensures that the product is delivered to the customer at the lowest possible cost while optimising sales.

There are numerous food packaging tiers. In the first place, primary packaging allows for direct contact between the packaging and the product it contains. Typically, this packaging is shaped as a substantial protective barrier, like plastic, paperboard cartons, glass bottles, and metal cans. Customers typically buy products with this primary packaging at a retail establishment. In the meantime, a box containing a specific number of primary packages is referred to as a secondary package. The purpose of secondary packaging is to serve as the primary package's physical distribution carrier. (Mansoor,2022) Food packaging serves as a vital shield against physical, chemical, and biological contaminants. It prevents bacteria, insects, and other harmful substances from compromising the integrity and safety of the food. This protection ensures that consumers receive products that meet strict hygiene standards, reducing the risk of foodborne illnesses (Khushidigimarketerzz, 2023).

Food packaging is an indispensable component of the modern food industry, providing numerous benefits that go beyond mere product containment (Khushidigimarketerzz, 2023). Because investigations and studies have shown that food packaging contributes to many environmental problems, many food companies are investing money in research to ensure their products are placed in better, more environmentally friendly packaging. Hence, an investigation of consumers' behaviours and practices when it comes to sustainable packaging is essential. At University Technology MARA (UITM) Terengganu, a diverse student population encounters a wide array of choices in packaged food products. The decision-making process involved in selecting food packaging is not only crucial for meeting nutritional needs but also reflects broader societal trends (Lee & Wang, 2021). They may embody the characteristics of food (Bublitz et al., 2010) and brand values (Orth & Malkewitz, 2008), and elicit a response from customers. The selection of food packaging among UITM Terengganu students represents

an important aspect that goes beyond mere product containment, influencing both environmental sustainability and economic considerations. Although a lot of research has been done on the general problem of food waste, there is a clear lack of information in the literature about the factors influencing student food packaging choices. Therefore, this study aims to evaluate the food packaging attributes on UiTM Terengganu Food Services students' choice purchase decisions of food products. This study's framework is shown below.

Figure 1 : Study Framework

METHODS

This study will employ a quantitative and descriptive approach. The survey is diverse as it includes students in the hospitality industry coming from different backgrounds of life participation. This study will also use a non-contrived setting because a correlational research design evaluates the relationship between variables. The cross-sectional time horizon will be used in this study because, as Cherry (2019) noted, cross-sectional studies can be used to describe the cause and impact of a relationship between two variables by focussing on the population's current information. This study's analytical unit is organisational, with a particular focus on UiTM Terengganu Food Services students'.

This study used an online survey strategy or questionnaire on the Google Form platform because it was more appropriate and easier. The questions in the online survey questionnaire have been written in one language, which is English. All dependent and independent questions are based on previous research. The online survey question was divided into five sections: demographic information, packaging material, graphics and colors of packaging, size and shape of the packaging and purchase decision. There would be five items in the variable section of food packaging attributes on UiTM Food Services students' ' choice purchase decisions among students in colleges, which are demographic information, packaging material, graphics and colours of packaging, size and shape of the packaging, and purchase decision. In this section, the Likert scale is applied as we want to measure the respondents' answers starting from scale 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. The sample size consisted of 133 respondents who were UiTM Terengganu students who currently stay in college.

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Table 1 shows the demographic information of the respondents. Based on the frequency analysis of the data, it was found that the proportion of female respondents is lower than that of male respondents. Specifically, 42.9 percent of the 57 female respondents and 57.1 percent of the male respondent group are smaller than the female respondents, with a total of 133 respondents. Next, the age range between 22 and 23 years old has the highest percentage of respondents, accounting for 45.1 percent. This is followed by the age range between 24 and 25 years, which accounts for 39.8 percent, as reported by 53 respondents. The age range between 20 and 21 years is the lowest, with only 15 percent of respondents falling into this category. Furthermore, the highest recorded education level for a degree in food service management is 58.1, with 116 respondents out of the total reporting 87.2 percent. This is followed by a diploma in food service management, which is reported by 12.8 percent (17 respondents). Finally, the respondents' highest

frequency of purchasing packaged foods was 11–15 days, with 41.4 percent (55 respondents), followed by 6–10 days with 38.3 percent (51 respondents), and then 27 respondents (20.3 percent) with 11–15 days.

Table 1 : Demographic profile of respondents

Variables	Category	Frequency	Percent
Gender	Male Female	76 57	57.1 42.9
Age	20-21 years 22-23 years 24-25 years	20 60 53	15 45.1 39.8
Education	Diploma Degree	17 116	12.8 87.2
How often do you buy packaged food	1-5 days 6-10 days 11-15 days	27 51 55	20.3 38.3 41.4

The following tables display all the variables, as well as a descriptive analysis of the mean and standard deviation for each variable. Based on the average mean score, can conclude that the respondent has food packaging material (M = 4.3082), food graphics and colours of packaging (M = 4.2706), and size and shape of packaging (M = 4.1203). The mean result is an important measure because it incorporates the score for each item in the research study. Note: Likert scale (1: strongly disagree, 2: disagree, 3: neutral, 4: agree, 5: strongly disagree).

Table 2: Descriptive analysis

	N	Mean	Std. Deviation
Food Packaging Material	133	4.3082	.5926
Food Graphic and Colors of Packaging	133	4.2706	.7797
Size and Shape of Packaging	133	4.1203	.5645
Valid N (listwise)	133		

Relationship between variables

The Pearson Correlation method is used to analyze the direction and strength of a linear relationship between two variables. Table 3 presents the correlation between food packaging materials, food graphic and colors of Packaging, size and shape of packaging and purchase decision. So, The Pearson Correlation method relates with objective number which is the objective is to identify the relationships between food packaging attributes on UiTM Terengganu Food Services students' choice purchase decisions of food products. The characteristics of a dataset are described by a descriptive statistic, like the Pearson correlation coefficient. There is a detailed description of the strength and direction of the linear relationship between two quantitative variables. Based on the table below the correlation analysis between food packaging materials, food graphic and colors of Packaging, size and shape of packaging and purchase decisions reveals that packaging materials show a weak positive correlation (r = 0.035), which is not significant, indicating minimal impact on purchase decisions. Graphics and color exhibit a negative correlation (r = − 0.218), significant at the 0.05 level, suggesting that certain graphics and colors might deter purchases. Shape and size display a stronger negative correlation (r=0.239), significant at the 0.01 level, indicating that larger or differently shaped packaging can significantly and negatively impact purchase decisions

Table 3: Pearson Correlation

		Packaging	Graphic And	Shape And	Purchase

		Materials	Color	Size	Decision
Packaging Materials	Pearson Correlation	1	.325**	-.054	.035
	N	133	133	133	133
Graphic And Color	Pearson Correlation	.325**	1	.558**	-.218*
	N	133	133	133	133
Shape And Size	Pearson Correlation	-.054	.558**	1	-.239**
	N	133	133	133	133
Purchase Decision	Pearson Correlation	.035	-.218*	-.239	1
	N	133	133	133	133

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

* Correlation is significant at the 0.05 level (2-tailed)

Discussion

The first objective of this study is to identify the dominant food packaging attributes that influence UiTM Terengganu Food Services students' food product purchase decisions. The findings indicate that every variable significantly influences the dependent variable. This is due to the significant influence of packaging material, graphics, and colors, as well as the size and shape of the packaging, on the purchasing decisions of food products. The P value for all variables is less than 0.05.

Second, this research aims to identify the relationships between food packaging attributes and the purchase decisions made by UiTM Terengganu Food Services students regarding food products. According to the data in Table 3, a Pearson correlation coefficient of 0.035 was found between food packaging materials and the purchase decisions made by UiTM Terengganu Food Services students. The positive correlation direction suggests a slight, albeit weak, association, even if this correlation is not statistically significant (it does not meet the significance threshold at either the 0.01 or 0.05 levels). The research does not support the hypothesis (H1). This positive association suggests that the quality or appeal of packaging materials may slightly increase these students' likelihood of making purchases. According to the World Food Programme (2019), packaging materials are important in protecting and preserving food, but they are not the primary factor driving consumer purchasing decisions. This study indicates that while packaging plays a role in maintaining food quality and reducing waste, other factors such as taste, price, and health benefits are more influential in determining food purchases. The insignificant but positive connection ($r = 0.035$) between food packaging materials and purchase decisions, in spite of the lack of statistical significance, implies that package materials may still have some influence on consumer behavior.

Next, the graphics and colours of the packaging also influence the purchase decisions of UiTM Terengganu Food Services students for food products. Table 6 reveals a Pearson correlation coefficient of -0.218* between the artwork and colours of the packaging and the food product purchases made by UiTM Terengganu Food Services students. At 0.05, this correlation is statistically significant. Given the negative association, it can be inferred that students' propensity to make purchases decreases as packaging graphics and colours become more appealing or effective, supporting the (H2) of this research. According to packaging research by Ali et al. (2015), choosing an image for a product package that is relevant to and associated with the brand can aid in attracting customers' attention and impact their intention to buy. The four most important PDEs found to influence consumers' decisions to buy via the internet were graphics, colours, label information, and country of origin (Al-Samarraie et al., 019). An adverse link is indicated by the considerable negative correlation ($r = -0.218$, $p < 0.05$) found between packaging graphics and colors and purchasing decisions. This implies that students are less likely to choose to buy certain products the more they are exposed to graphics and colours on food packaging.

Finally, UiTM Terengganu Food Services students' purchase decisions of food products are influenced by the size and shape of food packaging. According to Table 6's data, there is a -0.239** Pearson correlation coefficient between the size and design of the package and the food goods that UiTM Terengganu Food Services students' decide to buy. The negative correlation indicates that these students' propensity to make purchases declines in proportion to how attractive or effective the packaging's size and shape are. supporting the (H4) of this research. A packaging study by Ali et al. (2015) indicated that consumers who prefer simple packaging designs will be influenced by the size and shape of the container when making a purchase decision. Although large packaging may entice customers, if the product is small or of low quantity, the buyer is unlikely to buy it (Ali et al., 2015). Consumers frequently favour

packaging that is simple to handle and store, in line with the practical demands of their hectic lifestyles, according to research by Smith and Taylor (2020). Similarly, Jones et al. (2019) emphasised that although creative packaging designs can raise brand awareness, they also need to fulfil functional specifications to have a beneficial impact on consumer behaviour.

CONCLUSION

In conclusion, the study aimed to determine the dominant food packaging attributes influencing UiTM Terengganu Food Services students' purchase decisions and to identify the relationships between these attributes and the students' choices. The results show that the size, shape, and material of the packaging, together with its images and colours, all have a big impact on the students' purchasing decisions. More specifically, graphics and packaging colors displayed a substantial negative association, indicating that excessively complicated designs may discourage sales, while the correlation between package materials and purchase decisions was positive but not statistically significant. In a similar vein, a significant negative association was found between packing size and shape and buy inclination, suggesting that elaborate or impractical designs may discourage purchases. These findings demonstrate the complex relationship between packaging and customer behaviour, indicating that while packaging components influence buying decisions, visuals, colours, and useful design elements are more important. Further research should delve deeper into these aspects to design packaging tactics that harmonise visual allure and practicality, accommodating the inclinations and pragmatic requirements of the intended consumer demographic.

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