

PACKAGING DESIGN OF FRIED BANANA PRODUCTS FOR FOOD PACKAGING ASSURANCE FOR CONSUMERS USING FOOD DELIVERY SERVICES IN MAKASSAR CITY

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PACKAGING DESIGN OF FRIED BANANA PRODUCTS FOR FOOD PACKAGING ASSURANCE FOR CONSUMERS USING FOOD DELIVERY SERVICES IN MAKASSAR CITY

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ABSTRACT

The culinary business in Indonesia is increasingly in demand by seeing the increasing number of people who like to hunt for a variety of food menus, both traditional, national, and international food. This is evidenced by the increasing number of culinary businesses that have been established from time to time, including culinary businesses that have developed in Indonesia such as Brownies, JCO, Pizza Hut, Burger King, Kentucky Fried Chicken, and Big Bananas. Big Bananas is one of the most popular culinary food businesses today. He started his business in September 2017 with two types of snacks, namely banana nuggets and banana rolls with flavors ranging from chocolate, and green tea, to vanilla. By joining Big Bananas with online delivery services, namely Gojek and Grab, packaging design must be paid more attention to ensure that these products reach consumers safely. So there is no anxiety for Big

Bananas consumers and Food Delivery service users, namely problems that often arise for Food Delivery service users such as easy-to-open packaging, no composition information, and no Big Bananas product packaging seal on the packaging which causes consumers to ask about the safety of Big Bananas products to consumers who use Food Delivery services, so the need for a new Big Bananas packaging design to guarantee food safety for consumers using Food Delivery services. So with that Big Bananas' packaging needs to be redesigned to improve food safety in maintain product quality from the packaging by changing the packaging design, displaying complete attributes on the packaging, changing the color according to product characteristics, providing a seal on the packaging, and selecting the packaging material that is resistant to water and oil so that product quality is maintained and does not cause anxiety to Big Bananas customers in Makassar city.

Keywords: Design, QFD, Packaging, Banana, *Delivery Service*

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1. INTRODUCTION

The culinary business in Indonesia is increasingly in demand by seeing the increasing number of people who like to hunt for various food menus, both traditional, national, and international foods. This is evidenced by the increasing number of culinary businesses that have been established from time to time, including culinary businesses that have developed in Indonesia such as Brownies, JCO, Pizza Hut, Burger King, Kentucky Fried Chicken, and Big Banana (Fried Bananas).

Fried Bananas are a culinary business very popular food today. He started his business in September 2017 with two types of snacks, namely banana nuggets and banana rolls with a variety of flavors, ranging from chocolate, and green tea, to vanilla. Starting from selling online until now, it has opened many Big Bananas outlets, including those located at Jl. Andi Djemma No. 60, Jl Urip Sumoharjo Makassar and Ruko Grand Central BTP, Tamalanrea. By joining Big Bananas with online delivery services, namely Gojek and Grab, packaging design must be paid more attention to in order to ensure that the product reaches consumers safely. So that there is no anxiety for Big Bananas consumers and Food Delivery service users, namely the problems that often arise for Food Delivery service users such as packaging that is easy to open, no composition information and no Big Bananas product packaging seal on the packaging that causes consumers to ask questions. asked about the safety of Big Bananas products to consumers who use Food Delivery, so the need for a new packaging design for Big Bananas to guarantee food safety for consumers who use Food Delivery services.

So with that Big Bananas packaging needs to be redesigned to improve food safety in maintaining product quality from the packaging by changing the packaging design, displaying complete attributes on the packaging, changing the color according to product characteristics, providing a seal on the packaging and choosing suitable packaging materials. water and oil resistant so that product quality is maintained and no longer causes anxiety to Big Bananas customers in the city of Makassar. The problem of food product packaging is very important to get attention because the function of food packaging is to protect food products from microbial pollution, chemical pollution, water, light and others that can damage food quality and safety (Mars and Bugusu, 2007; Adiyanto, et al., 2019; Laminulu, et al., 2021). Based on the explanation of the

packaging function, an effective packaging design is needed to maintain food quality (Lopes, et al, 2004)

2. RESEARCH METHODOLOGY

The research methodology describes the steps that must be taken in this research to solve the existing problems. These steps start from determining the object of research, types and sources of data and data collection techniques.

2.1 Research Object

The object of this research is Big Bananas, Makassar City, Grand Central BTP Ruko Complex, Jalan Tamalanrea Raya, Tamalanrea District, Makassar City, South Sulawesi.

2.2 Types of Research

2.2.1 Data Type

1. Qualitative data, namely at this data collection stage there are sources of various knowledge about Big Bananas packaging design.
2. Quantitative data, which is obtained by using a questionnaire distributed to respondents in the city of Makassar.

2.3 Data Collection Techniques

In implementing this research, data collection was carried out in the following way:

1. Field research (observation) is research by making observations with questionnaires distributed in the field.
2. Field interviews (interviews) in the form of direct questions to respondents who proposed by researchers as companion data to obtain more detailed information from respondents regarding the attributes of customer needs or desires.
3. Research literature (Library research) is research that aims to obtain a theoretical basis as well as literature related to the object of research.
4. Initial data collection questionnaire regarding consumer desires and conditions. A number of questions were asked to obtain information from respondents.
5. SPSS and excel software to process data.

2.4 Analysis Method

1. Quality Function Deployment (QFD) method approach
2. Validity test is conducted to determine the extent to which this research questionnaire can measure what is actually being measured.
3. Reliability test was conducted to determine the extent to which this research questionnaire can be trusted or relied on.

2.5 Data Processing Techniques

- 1) Quality Function Deployment (QFD) The method used to obtain the required data is by

conducting observations and interviews with the data obtained in the form of;

a. Desire rate data

b. Satisfaction level data

2) Making a quality house (House of Quality)

The quality house is a matrix that describes the overall information needed to develop product quality improvements. The stages of making a quality house are as follows:

a. Filling the sub-matrix of customer desires

b. Filling in the technical response sub-matrix

c. Identity of Big Bananas packaging design needs

3. RESULTS AND DISCUSSION

3.1 Characteristics of Respondents

a. By age

Table 1. Characteristics of Big Bananas consumers in Makassar city by age

Age (Years)	Total	Percentage
16	1	1%
17	1	1%
18	2	2%
19	8	8%
20	15	15%
21	34	34%
22	28	28%
23	5	5%
24	1	1%
25	3	3%
28	1	1%
30	1	1%
Total	100	100%

Based on the table above. From the results of this study a sample of 100 respondents, it can be concluded that the biggest consumers of Big Bananas in Makassar are 21 years old.

3.2 The stages of making a house of quality

Table 2. Filling in the sub-matrix of customer desires Functional material design packaging can withstand steam and heatCustomer requirement (What's)

Functional	main	packaging form can protect food
	addition	packaging can withstand steam and heat
	frame shape	rectangular packaging shape
Design	dimensions	packing size 15cm x 12cm x
	Packaging Colour	yellow packaging design color, green and black
	addition	packaging using shaped seals sticker
Material	frame	ivory packaging paper
	sticker	print images using digital print
	addition	oil and grease resistant packaging material water

Based on the table above, it is found that the task of the design is to translate product attributes into a more specific technical parameter.

a. Technical Sub Matrix Filling

No	Technical Response
1	Pack Volume
2	Material strength
3	Selection of front and image types
4	Age of use
5	Packing weight
6	Packaging folding techniques

Table 3. Technical response of Big Bananas packaging design

b. Importance to customer

Tabel 4. *Importance to customer*

No.	Number of Respondents	Total Score Desire	ImportanceTo Customer
1	100	432	4,32
2	100	410	4,01
3	100	406	4,06
4	100	395	3,95
5	100	376	3,76
6	100	429	4,29
7	100	433	4,33
8	100	438	4,38
9	100	425	4,25
10	100	424	4,24

The importance to customer value shows how much the level of desire for each attribute of the Big Bananas packaging design is.

c. Customer satisfaction performance

Table 5. Customer satisfaction performance

Table 6. The target value of each attribute

No.	Attribute	Target Value
1	Package form can protect food	4
2	Packs can hold rom steam and heat	4
3	Packaging form rectangular	4
4	Packing size 16cm x 12cm x 5cm	4
5	Color design yellow, green and black packaging	4
6	Packaging design include full information label	4
7	Packs of use a sticker-shaped seal	4
8	Paper packing made of ivory	4
9	Print image use digital print	4
10	Materials oil and water resistant packaging	4

The goal here shows how much the level of satisfaction performance is expected to be achieved by the company in order to fulfill every consumer desire. The targets are set by the company by considering the following elements:

1. Order of desire for each attribute

2. The level of limitations that have been given by the producer

3. For limited resources, both human resources and financial resources.

e. Reduction of goals and level of satisfaction

Table 7. Gap value for each attribute

No.	Attribute	Satisfaction Rate Value	Target Value	Gap
1	Package form can protect food	4.31	4	-0.31
2	Packs can hold rom steam and heat	4.24	4	-0.24
3	Packaging form rectangular	4.28	4	-0.28
4	Packing size 16cm x 12cm x 5cm	4.15	4	-0.15
5	Color design yellow, green and black packaging	3.97	4	0.03
6	Packaging design include full information label	3.85	4	0.15
7	Packs of use a sticker-shaped seal	4.25	4	-0.25
8	Paper packing made of ivory	4.30	4	-0.30
9	Print image use digital print	4.24	4	-0.24
10	Materials oil and water resistant packaging	4.34	4	-0.34

Customer Satisfaction Performance is a consumer assessment as the level of consumer satisfaction with the current Big Bananas packaging design.

d. Target

Based on the table above, the results obtained from the analysis are the value (-1.93). This means that the larger the gap that occurs indicates that the bright packaging color to meet consumer satisfaction is still far from the target to be achieved.

3.3 Penentuan ukuran kemasan produk pisang goreng

Tabel 9. Penentuan ukuran kemasan pisang goreng

No.	Product Data	Dimension	Result Calculation (cm)
1	Packing height		5
2	Packing height		12
3	Packaging length		16

Based on the table above, the results obtained from the analysis for the size of the packaging, namely the width of the packaging, the height of the packaging and the length of the packaging are measured according to the wishes of the related consumers in the processed questionnaire data.

3.4 Packaging Design Concept

Food product packaging systems are very important to maintain product quality and safety. In connection with this, one of the important elements that need attention in making product packaging is packaging material that is safe and can protect the quality of food until it reaches the hands of consumers (Mahmed, et al., 2021). In some sectors of the food industry to develop standard specifications for packaging food ingredients with the special requirements needed (Helman, 2003). The selection of fried banana product packaging materials is expected to be a consideration in good packaging design and desired by consumers. This is important because good packaging design for food products can attract consumers to buy the product (Wells, et al., 2007). Currently, in designing food packaging, packaging innovation is needed that considers material safety aspects and is environmentally friendly (Lavoine, et al., 2016; Petrescu, 2019). Based on these considerations, the design of the "Big Bananas" fried banana packaging is recommended to use the main material in the form of ivory paper.

Based on the results of the analysis of processing design data for fried banana packaging using ivory paper, it is equipped with attractive pictures on the packaging containing important information related to the product using the

digital printing method. The packaging design approach taken is a packaging innovation step that considers product safety aspects and packaging colors and images that have an appeal to consumers. This packaging innovation is carried out because it is very important to maintain food quality and safety (Yan et al., 2022). The packaging innovation for the fried banana product "Big Bananas" also considers aspects of image variations and standard shapes and sizes based on consumer perceptions. This is important to note because variations in color and shape of packaging are visual things that can be an attraction for buyers (Purwaningsih, et al., 2019; Lamatinulu, et al., 2021).

Model variation for the variation of the model used is an attractive and safe packaging design during delivery with added complete attributes to the Big Bananas packaging. For the safety of Big Bananas fried banana products in the delivery process to consumers, packaging innovation is carried out by adding a seal to the packaging so that in the delivery process using the Grab Food delivery service the product is not opened and its safety is guaranteed from contamination by substances that are harmful to consumer health. In the development of Big Bananas product packaging, it is also necessary to innovate by adding information about halal product labels, displaying local brands, logos of collaboration with Grab food and Gofood delivery services and displaying scans of Big Bananas insyagrams and other attributes that can be an attraction and source of information for consumers.

4. CONCLUSION

Based on the making of the Big Bananas packaging design with the concept approach and the House of Quality method from Quality Function Development (QFD), the following conclusions are drawn:

1. Based on the analysis and evaluation, it can be concluded that the old packaging design of Big Bananas does not display the complete attributes desired by consumers. So that the new Big Bananas packaging displays several attributes that consumers want, namely displaying composition, displaying the Halal logo, displaying local brands, displaying Otlets in Indonesia, displaying the logo of the online service collaboration of Grabfood and Gofood, displaying the Big Bananas service number, displaying the brand , and Displays Scan Instagram Big Bananas.

2. To create a new design of Big Bananas packaging for consumer safety are using ivory paper material that is water, oil and hot steam resistant, packaging frame shapes with sizes designed based on consumer desires, using digital printed sticker materials and adding seals for packaging.

BIBLIOGRAPHY

- Adiyanto, O., Jatmiko, H.A., Erni (2019) Development of Food Packaging Design With Kansei Engineering Approach. *International Journal Of Scientific & Technology Research*, 8(12), pp. 1778-1780
- Dekker, M. (2011), 'Food packaging design', in A. R. Linnemann, C. G. P. H. Schroën and M. A. J. S. van Boekel (eds), *Food Product Design: An Integrated Approach*, Wageningen: Wageningen Academic Publishers, pp. 197–205
- Heldman, DR 2003, *Encyclopedia of Agricultural, Food, and Biological Engineering*. New York: Marcel Dekker.
- Lamatinulu, Dahlan, M, Mardin. (2021). Packaging Design Concepts as Attributes of Product Diversification Using Kansei Engineering Approach in SMEs Scale Cocoa Industry in South Sulawesi. *International Journal of Innovative Science and Research Technology*, 6(11), pp. 81-84.
- Lamatinulu, Afiah, I.N., Rustam, F.E.P, and Nusran, M. (2021). The Development of Design Dry Cake Packaging at the SME-Scale Industry Using Kansei Engineering. *International Journal of Innovative Science and Research Technology*, 6(10), pp. 671-675.
- Lavoine, N.; Guillard, V.; Desloges, I.; Gontard, N.; Bras, J. (2016). Active bio-based food-packaging: Diffusion and release of active substances through and from cellulose nanofiber coating toward food-packaging design. *Carbohydr. Polym*, 149, pp. 40–50.
- Lopez-Rubio, A, Almenar, E, Hernandez-Munoz, P, Lagaron, JM, Catala, R and Gavara, R 2004, Overview of active polymer-based packaging technologies for food applications. *Food Reviews International*, 20(4), pp. 357-387.
- Mahmed, A. M., Mohammed, B. H., and Hassen L. K. (2021). The Role of Packaging Technology in The Food Product. *IOP Conf. Series: Earth and Environmental Science* 761 (2021) 012116 doi:10.1088/1755-1315/761/1/012116
- Marsh, K and Bugusu B 2007, Food packaging-roles materials and environmental issues. *Concise Reviews and Hypotheses in Food Science*, 72(3), pp.39-55.
- Petrescu, D.C.; Vermeir, I.; Petrescu-Mag, R.M. (2019). Consumer Understanding of Food Quality, Healthiness, and Environmental Impact: A Cross-National Perspective. *Int. J. Environ. Res. Public Health*, 17, 169.
- Purwaningsih, I., Surachman, S, Pratikto P., Santoso, I. (2019). Influence of Packaging Element on Beverage Product Marketing. *International Review of Management and Marketing*, 9(6), pp. 205-210.
- Wells, L.E., Farley, H., and Armstrong, G.A. (2007). The importance of packaging design for own-label food brands. *International Journal of Retail & Distribution Management*, 35(9), pp. 677-690
- Yan, M.R., Hsieh, S., Ricacho, N. (2022). Innovative Food Packaging, Food Quality and Safety, and Consumer Perspectives. *Processes*, 10, 747.

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