

Fried Chicken Consumer's Preference and Purchase Decision Analysis During Covid 19 Pandemic Era

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Abstract

This study aims to observe the decision-making process on fried chicken purchases, and identify the most considered attribute, and combination of attributes based on consumer preference in the Covid-19 pandemic era. The pandemic has altered consumer behavior and consumption patterns, leading to changes in the food industry. Understanding how consumer preferences have shifted can help businesses adapt their strategies to better serve their customers. The data were collected using the questionnaire method through the Google Form platform with respondent criteria being fried chicken consumers who had purchased fried chicken at least twice in the last six months with the number of respondents being 135. The questionnaire consisted of two parts, the first part is about the consumer's purchase decision-making process and the second one is about the consumer's preference for fried chicken. Price, serving, purchase state, and packaging are the attributes chosen to identify consumer preferences using the conjoint analysis method. This study shows consumer habits in the decision-making process of buying fried chicken and consumers' preferences toward the price, serving, purchase state, and packaging of fried chicken. Product attributes were the most considered based on importance level Price (40.73%), Purchase state (33.57%), Serving (16.99%), and Packaging (8.70%). The combination of fried chicken product attributes that are preferred by consumers according to the utility value of each level attribute is less than 15.000 IDR of price, served with rice/fried chicken and vegetables, purchased in ready-to-eat (takeaway/delivery) form and using paper box packaging.

Keywords: *Conjoint analysis, Covid-19 Pandemic Era, Fried chicken, Preference, Purchase decision.*

1. INTRODUCTION

Chicken meat is one of the animal-based protein sources that is commonly consumed by Indonesian people. Besides the delicious taste, chicken meat is also quite easy to obtain and the price is affordable. People can find chicken meat sellers in traditional markets, supermarkets, and even chicken sellers on the roadside.

Table 1. Production of Chicken and Beef in Daerah Istimewa Yogyakarta (Ton)

Commodity	Production (Ton)		
	2019	2020	2021
Chicken	56,504.35	56,977.21	61,379.79
Beef	7,835.21	7,355.13	7,645.34

Source: Badan Pusat Statistik (2022)

Table 1 presents the production of chicken and beef in Daerah Istimewa Yogyakarta (DIY) from 2019 to 2021. The data shows that the production of chicken in the province increased steadily over the three years, starting from 56,504.35 tons in 2019 to 61,379.79 tons in 2021. On the other hand, the production of beef remained relatively stable, with some fluctuations. In 2019, the province produced 7,835.21 tons of beef, which decreased to 7,355.13 tons in 2020 and increased to 7,645.34 tons in 2021. Overall, the data suggests that there has been a significant increase in chicken production in DIY over the three years, while the production of beef has remained relatively stable. Chicken meat production is much higher compared to beef production. The data shows that chicken meat is easier to reach the community. Chicken meat can be processed in many forms such as fried chicken, nuggets, sausages, etc. We can assume that there are opportunities for processed chicken meat businesses to expand their marketing. One of the forms of processed chicken meat that is commonly found is crispy battered fried chicken, which is chicken meat that is coated in seasoned batter rather than being cooked by deep-frying it into hot oil.

A product's attribute is the signature of a product that makes a difference between similar products that are offered by several companies. Knowing the attributes that become consumers' preference in purchasing fried chicken is very important for business owners who offer fried chicken in making decisions on marketing strategies for their products and maintaining their business in the market. Knowing a consumer's preference also helps the company to assess their product and if it already fulfills the consumer's needs and wants so the company could improve their products. One of the methods that can be used to determine consumer preference is conjoint analysis. Through this method, we can identify the most considered attribute and the attribute combination based on consumers' liking of fried chicken purchases.

In this study, we would be evaluating consumers' preferences in fried chicken product attributes during the pandemic. In this study, the data is collected during 2nd level of Pemberlakuan Pembatasan Kegiatan Masyarakat (PPKM)/ *Community Activities Restrictions Enforcement* that is applied by the DIY government according to *Instruksi Gubernur (INGUB)* about 2nd level of PPKM status in DIY. In this 2nd level of PPKM, the health protocols are being widely adhered to in public sectors albeit with little enforcement.

According to Fuad et al. (2019), marketing is a way to identify and profitably fulfill human and social needs. The marketing concept maintains that the essence of marketing consists of satisfying consumers' needs, creating value, and retaining customers. It maintains that companies must produce only those goods that they have already determined that consumers would buy (Schiffman & Wisenblit, 2015). The American Marketing Association defines marketing as a functional organization and a series of processes to create, communicate, and give value to customers and maintain relationships with customers profitably.

(Kotler & Keller, 2012) stated that consumers typically pass through five stages when deciding to purchase a product, there are (a) problem recognition when consumer recognize their problem and their needs. (b) Information search when consumers are making effort to gather as much information from various sources (c) Evaluation alternatives, from information that had gathered, consumers could develop their beliefs in certain products they will buy (d) Purchase decision, where consumers are sure about their choice and deciding to purchase that product. (e) Post-purchase behavior, consumers can evaluate the product that they purchased based on so many aspects and use them as a reference in a future purchase. Research in consumer behavior is important for business owners to control consumption and maintain market stability, in other words, is to help to maximize the efficiency of resource usage in marketing and helps to solve marketing problems in an effective way (Khuong & Duyen, 2016)

According to Guleria & Parmar (2015), consumer preference is described as "individual subjective taste that is stated in utility value on a series of product attributes". Consumers can sort a set of attributes based on the level of benefits obtained. Consumer preference is consumer satisfaction with a particular brand when comparing price and quality with other products makes them choose that brand (Thomas & Rajendran., 2020).

Conjoint analysis is one of the methods to evaluate objects such as products, services, or new ideas. A direct example of a conjoint analysis application is designing a new product and developing new services. Conjoint analysis can be used to evaluate a complex product just by assessing some product's profile which is a combination of product levels, the researcher also be able to assess the importance level of each attribute (Hair et al., 2019). Conjoint analysis can be used to understand the consumer preference towards certain products to measure the utility value and importance of each attribute. The objection of conjoint analysis is to find someone's impression of some object that contains many parts. The last result of conjoint analysis is a form of product design consisting of the attributes desired by most respondents (Widyawati et al., 2014). This study aims to (a) analyze the decision-making process on fried chicken purchases, (b) identify the most considered attribute, and (c) identify the combination of attributes based on consumer preference in the Covid-19 pandemic era.

2. MATERIAL AND METHODS

The object of this study is fried chicken. The survey was conducted using a questionnaire through the Google Form platform, the questionnaire was blasted on social media with the intended respondents being fried chicken consumers who had purchased fried chicken at least twice in a month. Sample determination is done by non-probability sampling with purposive

sampling type. The total population in this study is not known with certainty so the number of samples is determined using the formula by Lemeshow et al. (1990) and the target respondent is 97 respondents.

$$n = \frac{z^2 p(1 - p)}{d^2} \tag{1}$$

$$n = \frac{(1.96)^2 0.5(1 - 0.5)}{(0.1)^2} = 97$$

- n = number of sample
- z = standard value = 1.96
- p = maximum estimation = 50% = 0.5
- d = sampling error = 10%

The questionnaire was divided into two parts, the first part was a multi-choice question about the consumer’s buying decision process and the other part was about consumer preference on certain attributes that were rated using the Likert scale. The validity of the questionnaire was conducted using Pearson-Product-Moment by comparing the r -table value and the Corrected Item-Total Correlation value while the reliability of the questionnaire was conducted using Cronbach’s Alpha value. Based on the validity test, the value of the Corrected Item-Total Correlation on each question is more than the table value, and based on the reliability test shows that Cronbach’s Alpha value was more than >0.60. Therefore, the questionnaire was valid and reliable.

The descriptive percentage was used to evaluate the consumer’s buying decision process including problem recognition, information search, evaluation alternatives, purchase decision, and post-purchase behavior while the consumer’s preference for fried chicken was processed using conjoint analysis. Conjoint analysis is one of the models in the Statistical Package for the Social Sciences (SPSS) that can be used to identify the most desired attributes combination and importance level of attribute on a certain product (Witono & Nurmalingda, 2012). The stages of conjoint analysis in this study are stated below:

- a Determining attributes and level
Each attribute contains a couple of levels which later would form a stimulus. The attributes that were used in this study were price, serving, purchase state and packaging.
- b Determining the stimulus (attribute and level combination)
Stimulus consisted of a combination of levels of attributes; there are 11 levels from 4 attributes. The stimulus was conducted using an orthogonal design array in SPSS software and resulted in 9 stimuli.
- c Collecting respondent evaluation
Research data was collected through online questionnaires using Google Form, respondents are expected to rate every stimulus using Likert scale in a scale 1 to 5. Score 1 for the least desired stimulus and score 5 for the most desired stimulus with following symbol:

Score	Response categories
5	Strongly agree
4	Agree
3	Neither agree/disagree
2	Disagree
1	Strongly disagree

- d Conjoint analysis
Conjoint analysis was conducted using Syntax Conjoint Plan on SPSS software. The base of the conjoint analysis model study was formulated as following equation:

$$Pref (X) = \sum_{i=1}^m \sum_{j=1}^k a_{ij}x_{ij} \tag{2}$$

- Pref (x) = all utilities of one alternative
- a_{ij} = utility j and attribute I
- k_i = number of attribute level i

- m = number of attributes
- x_{ij} = is 1 if attribute i and attribute level j exist and 0 if attribute i and level

In conjoint analysis is also resulted relative importance level of each attribute against another attribute that formulated below:

$$W_i = \frac{I_i}{\sum_{i=1}^m I_i} \tag{3}$$

- W_i = Importance of i attribute
- I_i = $[\max(a_{ij}) - \min(a_{ij})]$
- m = number of attributes

The validity of measurement can be conducted from Pearson’s and Kendall’s Tau values, if both values are more than 0.5 then the measurement has high accuracy. Significance values are used to determine the correlation between the estimated values and actual values, if the significance values are below 0.05 then it could be concluded there is a strong correlation. Hypotheses are stated as below:

H_0 = there is no correlation between the estimated value and actual value

H_1 = there is a correlation between the estimated value and actual value

If the significance value is > 0.05 then H_0 can’t be rejected, if the significance value is $< 0,05$ then H_0 is rejected.

3. RESULTS AND DISCUSSION

3.1 Respondent’s Profile

This study aims to observe the process of buying decision-making and to know the priority attribute along with the most desired attribute combination of fried chicken. The survey was conducted using an online questionnaire with the number of respondents being 135. The profiles of entire respondent are stated in Table 3:

Table 3. Respondent’s Profile

Categories	Frequency	Percentage (%)
Age		
<18 years old	6	4.44
18-24 years old	115	85.18
25-31 years old	13	9.63
>31 years old	1	0.74
Gender		
Female	99	73.33
Male	36	26.67
Education		
Junior High School	2	1.48
Senior High School	67	49.63
Bachelor/Diploma	63	46.67
Other	7	2.22
Occupation		
Student	85	62.96
Private employee	27	20.00
Civil servant	1	0.74
Freelance	4	2.96

Categories	Frequency	Percentage (%)
Earnings		
<IDR 500,000.00	60	44.44
IDR 500,000.00 - IDR 1,500,000.00	39	28.89
IDR 1,500,001.00 - IDR 2,000,000	11	8.15
> IDR 2,000,000,00	25	18.52

Respondents are dominated by the age of 18-24 years old (85.85%), the gender of female (73.33%), the education level of Senior High School (49.63%), occupation of student (62.96%) and the range of earnings is below 500,000 IDR (44.44%).

3.2 Buying Decision Process

This study was observed the buying decision process by John Dewey (1910) on fried chicken products including: problem recognition, information search, evaluation alternative, purchase decision, and post-purchase behavior. Respondents are expected to choose one answer of a multi-choice question that suits them or their liking.

3.2.1 Problem Recognition

In this stage were observed about their purchase reason, the perfect time to consume, purchase frequency (in a month), and what triggers the purchase. Problem recognition stage are stated in Table 4.

Problem Recognition	
Reason	Taste good
Consumption time	Afternoon
Purchase frequency	1-4 times
Purchase trigger	Hunger

3.2.2 Information Search

Information search was observed based on four indicators which are the personal source, commercial source, experiential source, and main attention of the purchase which stated in Table 5.

Information Search	
Personal source	Recommendation from relatives
Commercial source	Social media advertisement
Experiential source	Found by themselves
Main attention	Product Quality

3.2.3 Evaluation Alternative

The third stage in the buying decision process is evaluation alternatives, the stage where consumers compare several products and brands to know which product meets their preferences and needs which stated in Table 6.

Evaluation Alternative	
How do they choose purchase place	By rating/review
Purchase method	Dine in
Cost incurred	15,000 IDR – 25,000 IDR
Considered attribute	Taste
Considered hygiene factor	Health protocol for employees and customer

3.2.4 Purchase Decision

The purchase decision is the 4th stage of the buying decision process. In the evaluation, alternative stage consumers developed their preference from many options, in this stage their choice becomes conical. Consumers are faced with 2 or more alternative choices and the choice to buy or not to buy. The purchase decision stage in the fried chicken purchase is stated in Table 7

Table 7. Purchase Decision

Purchase Decision	
Purchase place	Permanent outlet
When to buy	Depending on needs
Influence factor	Themselves
Promotion method	Discount

3.2.5 Post-Purchase Behavior

Post-purchase behavior is the last stage of the buying decision process. After they purchased the product, consumers would assess that product from many aspects, they would decide if they are satisfied or not with the product. Their assessment could affect the future purchase. Consumer's post-purchase decision stages are stated in Table 8.

Table 8. Post-Purchase behavior

Post-Purchase behavior	
Repeat buying	Yes
Consumers respond to many brands	Interested to try some brand
How consumers show their satisfaction	Recommending to their relatives
If their desired product is not available	Find substitution product

3.3 Conjoint Analysis

3.3.1 Attribute and Level

The first stage of finding out consumers' preferences using conjoint analysis is determining the stimulus which is a combination of attribute and level. This study is using 4 attributes related to a consumer behavior pattern that changes during the pandemic, there are how many cost incurred every fried chicken purchase (price), how fried chicken served related to nutritional balance (serving), product condition when buying (purchase state) and product packaging for take away purchase that is assumed to maintain the quality and keep the product clean.

Table 9. Attribute and Level

Attribute	Level
Price	less than 15,000 IDR 15,000 IDR - 25,000 IDR more than 25,000 IDR
Serving	Fried chicken only With rice/fries With rice/fries and salad
Purchase state	Fresh (dine in) Ready to eat (takeaway/delivery) Ready to cook (frozen food)
Packaging	Paper box Thin wall sealed pack

3.3.2 Stimulus

Stimulus are arranged based on a combination of each attribute and level. Stimulus were stated using a full-profile approach in which respondents are shown a separate profile of all attributes in a form of a profile card. From attributes and levels based on Table 8 resulted in $3 \times 3 \times 3 \times 2 = 54$ combinations, that number of combinations is too many for respondents to assess, hence the combinations are reduced using an orthogonal design array in SPSS. The arrangement of stimuli is achieved through fractional factorial design, utilizing the orthogonal array design technique and SPSS software, by inputting data in the form of product levels and attributes and resulting in 9 stimulus as the following table.

Table 10. Stimulus

Price (IDR)	Serving	Purchase state	Packaging
more than 25,000	with rice/fries	fresh (dine in)	thin wall-sealed pack
15,000-25,000	with rice/fries and salad	fresh (dine in)	paper box
less than 15,000	fried chicken only	fresh (dine in)	paper box
more than 25,000	with rice/fries and salad	ready to cook (frozen food)	paper box
15,000-25,000	with rice/fries	ready to eat (takeaway/delivery)	paper box
15,000-25,000	fried chicken only	ready to cook (frozen food)	thin wall-sealed pack
less than 15,000	with rice/fries	ready to cook (frozen food)	paper box
less than 15,000	with rice/fries and salad	ready to eat (takeaway/delivery)	thin wall sealed pack
more than 25,000	fried chicken only	ready to eat (takeaway/delivery)	paper box

3.3.3 Data Analysis

Questionnaire data that is stated in the Likert scale then shall be processed through conjoint analysis using SPSS software Version 25 with Syntax Conjoint Plan. Data processing using conjoint analysis resulted utility value, relative importance level value and correlation value.

a. Utility Value

Table 11. Utility value

Attribute	Level	Utility
Price (IDR Rp)	less than 15,000 IDR	0.224
	15,000 IDR - 25,000 IDR	0.105
	more than 25,000 IDR	-0.329
Serving	Fried chicken only	-0.034
	With rice/fries	-0.098
	With rice/fries and salad	0.132
Purchase state	Fresh (dine in)	0.063
	Ready to eat (takeaway/delivery)	0.196
	Ready to cook (frozen food)	-0.259
Packaging	Paper box	0.059
	Thinwall sealed pack	-0.059
(Constant)		3.548

Utility value in conjoint analysis shows consumers satisfaction on each attribute level; it shows which level is the most desired by the respondent by seeing the highest utility value. Based on Table 11 the combination of attribute levels that respondents prefer over fried chicken producers are price <15,000.00 IDR, served with rice/fries and vegetables, purchased on ready-to-eat form (by takeaway or delivery), and packed with paper box.

The study found that the majority of the respondents were students aged 18-24 years old, and for this group, a price of <15,000.00 IDR was considered reasonable and affordable. Many outlets in Sleman Regency sell fried chicken for under this price, including some that include rice in the serving. However, this poses a challenge for marketers or potential marketers as the cost of basic materials tends to increase over time. Diversity in a meal is crucial to maintain a balanced nutritional intake. Fried chicken flour, being a fried food, may contain high levels of cholesterol, but serving it with vegetables can provide significant benefits to the body, including a source of vitamins, minerals, and fiber. Vegetables can also help to reduce cholesterol levels and the risk of heart disease and digestion issues. The daily recommended vegetable consumption is 150 to 200 grams (Widyayunita, 2019). The use of application features that provide food delivery services can provide a convenient option for consumers to order food and beverages from a wide selection of restaurants without physically visiting them. Online food delivery services also offer convenience for MSMEs to develop their businesses and improve marketing without incurring high costs associated with product registration on such platforms (Az-zahra, 2021). Packaging using paper boxes has a higher utility value compared to plastic sealed packaging. Paper-based packaging is biodegradable and recyclable. Besides, paper packaging has less impact on the environment compared to other materials. Hence, paper is considered an environmentally friendly material (Oloyede, 2021).

b. Relative Importance Value

Table 12. Importance value

Attribute	Importance value
Price	40.73%
Serving	16.99%
Purchase state	33.57%
Packaging	8.70%

Table 12 shows the importance level of an attribute, that is the most preferred attribute by the overall respondent when purchasing fried chicken which was Price (40.73%) and followed by purchase state attribute (33.57%), serving attribute (16.99%) and packaging attribute (8.70%).

c. Correlation Value

Table 13. Correlation value

	Value	Sig.
Pearson's R	0.992	0.000
Kendall's tau	0.994	0.000

Pearson's R and Kendall's Tau values in the conjoint analysis show the accuracy of conjoint analysis measurement, if both values are more than 0.5 then the measurement is accurate. In this study Parson's R and Kendall's Tau values were close to 1 hence can be concluded that this measurement has a strong accuracy. The significance value in conjoint analysis shows a correlation between the estimated values and actual values. This value was less than the recommended significance level of 0.05. This means that there was a strong correlation between estimation and actual condition.

4. CONCLUSION

In this study, consumers' habit in purchasing fried chicken based on the 5 stages of buying decision process are identified. The most considered attribute in purchasing fried chicken among price, serving, purchase state and packaging based on the result of conjoint analysis is price. The most preferred attribute level combination is price less than 15,000 IDR, served with rice/fries and salad, purchased on the ready-to-eat form (by takeaway or delivery), and packed in paper box. Since the majority of respondents were students, the future research entailed the respondents of professional and households.

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REFERENCES

- Az-zahra, Handira Nurul, Vadilla Aries Tanyta, dan Nurliana Cipta Apsari. 2021. Online Food Delivery Services to Help Increase Sales in Micro Businesses (In Bahasa: Layanan Online Food Delivery dalam membantu meningkatkan penjualan pada usaha mikro). *Jurnal Pengabdian dan Penelitian Kepada Masyarakat (JPPM)*, 2(2), pp. 156-165. Doi:10.24198/jppm.v2i2.
- BPS. 2022. Indonesian Statistics Agency (In Bahasa: Badan Statistik Indonesia). In D. Statistik Direktorat (Ed.), *Statistik Indonesia 2022* (Vol. 1101001). Badan Pusat Statistik Indonesia. <https://www.bps.go.id/publication/2020/04/29/e9011b3155d45d70823c141f/statistik-indonesia-2020.html>
- Fuad, M., Hanafiah, H., & Wibowo, G. A. 2019. The Role of Product Attributes in Forming Consumers Perception of Local Packed Drinking Water Brand in Langsa City. *Journal of Physics: Conference Series*, 1375(1). Doi:10.1088/1742-6596/1375/1/012059
- Guleria, D., & Parmar, S. 2015. a Study of Consumer Preference for Smartphone: A Case of Solan Town of Himachal Pradesh. *International Journal of Management Research & Review*, 5(3).
- Jr, J. F. H., Black, W. C., Babin, B. J., & Anderson, R. E. 2019. *Multivariate Data Analysis Eighth Edition*. In *Cengage*.
- Kementerian Perindustrian. 2022. Ministry of Industry: Pandemic Changes Consumption Patterns, Food Industry Needs to Innovate (in Bahasa: "Kemenperin: Pandemi Ubah Pola Konsumsi, Industri Makanan Perlu Berinovasi"). Kementerian Perindustrian, Kementerian Perindustrian, 19 Jan. 2021, <https://kemenperin.go.id/artikel/22227/Pandemi-Ubah-Pola-Konsumsi-Industri-Makanan-Perlu-Berinovasi>.
- Khuong, M. N., & Duyen, H. T. M. 2016. Personal Factors Affecting Consumer Purchase Decision towards Men Skin Care Products — A Study in Ho Chi Minh City, Vietnam. *International Journal of Trade, Economics and Finance*, 7(2), pp. 44–50. Doi:10.18178/ijtef.2016.7.2.497.
- Kotler, P., & Keller, K. L. 2012. *Marketing Management*, 14th Edition, Pearson. In *General Equilibrium Theory*.
- Lemeshow, S., Hosmer Jr, D. W., Klar, J., & Lwanga, S. K., 1990. Adequacy of Sample Size in Health Studies. In John Wiley & Sons Ltd.
- Oloyede, O.O., Lignou, S. 2021. Sustainable Paper-Based Packaging: A Consumer's Perspective. *Foods*, 10, 1035.
- Schiffman, L. G., & Wisenblit, J. 2015. *Consumer Behavior* (11th, glob ed.). In Pearson Australia.
- Thomas, S., & Rajendran., S. 2020. a Study on Consumer Preference Towards Health Food. 6(11), pp. 222–226.
- Widyawati, W., Sitepu, R., & Napitupulu, N. 2014. Application of Conjoin Analysis of Student Preferences for Employment (Case Study: Undergraduate Students of FMIPA USU) (in Bahasa: Penerapan Analisis Konjoin Preferensi Mahasiswa Terhadap Pekerjaan (Studi Kasus: Mahasiswa S1 FMIPA USU)). *Saintia Matematika*, 2(2), pp. 189–200.
- Widayunita, M. 2019. Description Of Eat Pattern and Relationship Between Nutrition Status With Basic Consumption Levels in Children Of School. *Foodscitech*, 2(1), pp. 22-37. <http://dx.doi.org/10.25139/fst.v2i1.1734>.
- Witono, A., & Nurmalingda. 2012. Conjoin Analysis of Consumer Preferences for Product Attributes of Potatoes, Shallots, and Red Chilies (in Bahasa: Analisis Konjoin Preferensi Konsumen Terhadap Atribut Produk Kentang, Bawang Merah, dan Cabai Merah). *J. Hort*, 22(3). pp. 292 – 302.