



## THE CHANGES IN FOOD CONSUMPTION BEHAVIOR: A RAPID OBSERVATIONAL STUDY OF COVID-19 PANDEMIC

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### Abstract

**Purpose of the Study:** This study aims to identify food consumption behaviour at pre, during, and post-pandemic (possibility).

**Methodology:** This study uses a quantitative-based descriptive study approach to explain changes in consumer consumption patterns. Sampling was done by using probability sampling techniques or by a simple random sampling method. Electronic-questionnaire distribution was carried out through the WhatsApp broadcast message application to which 75 respondents responded. Meanwhile, a simple quantitative analysis method is used to calculate several formulas, including mean value, frequency distribution, and percentage.

**Main Findings:** The results showed that health, social, and psychological factors influenced the respondent's food consumption behaviour. There are increasing organic food intentions and self-cooking trends. Besides, this study also shows an increasing awareness of the importance of aspects of health, quality, and food safety in choosing food.

**Implication/Applications:** This research can be used as a theoretical reference, especially related to the factors that influence eating behaviour during a pandemic. Also, the results of this research can be used by culinary businesses to design strategies to survive the Covid-19 pandemic by adjusting products, innovating, and improving product quality based on consumer needs.

**The originality of the study:** The paper is original, and this is the current study to examine the food consumption behavior of local communities in the pandemic issue.

**Keywords:** Food, Culinary Businesses, Food Consumption Behavior, Observational Study, COVID-19 Pandemic.

### INTRODUCTION

The outbreak of the Corona Virus Disease (Covid-19) throughout the world has changed human habits from various aspects. Covid-19 was first detected in Wuhan, China, and reported to the World Health Organization (WHO) by the Chinese government on December 8, 2019. Covid-19 is a new type of virus that has never been previously identified in humans. Clinical manifestations usually appear within 2 to 14 days with general signs of fever, cough, and shortness of breath ([Worldometers, 2020](#)).

Restrictions on economic activities ([Wachyuni & Kusumaningrum, 2020](#)) have also been imposed, including restaurants, cafes, and restaurants to prevent the spread of Covid-19. Changes in extreme situations have affected human behavior in everyday life. One of the most basic things is the need for food and drink. Apart from having an impact on restaurant and café operations, food health issues are also getting the main attention of people around the world. Based on reports in various mass media, it states that Covid-19 is a virus that originates from bats and causes respiratory tract infections such as fever, dry cough, headaches, dyspnea, pneumonia, and finally Severe Acute Respiratory Syndrome (SARS) in humans ([Mohapatra et al., 2020](#)).

Therefore, to maintain the immunity of the human body, WHO urges people to consume healthier foods and avoid or reduce alcohol consumption. The increasing awareness of healthy food has influenced the rising demand for halal food. The United Kingdom Halal Monitoring Committee (HMC), a halal certifying body, reports that there has been an increase in demand for halal meat due to the outbreak in various countries ([Prasidya, 2020](#)). Besides, the phenomenon or trend of people starting to make their food at home, known as the "youtube home chef" during the pandemic, also indicates that Covid-19 influences people's eating behaviour. This phenomenon is undoubtedly exciting to study, especially from the approach to public consumption patterns.

Food is a material that usually comes from plants and animals that contain nutrients, and is used by organisms to produce energy, grow and maintain their life ([Piscopo, 2004](#)). ([Richard, 2012](#)) emphasizes that food is a crucial part of a culture and an essential element in world heritage. Each individual's perception of food will be different for each community. Meanwhile, ([Piscopo, 2004](#)) adds that the manifestations or symbolism of food are very diverse, both related to the food



itself and with the activity of consuming food. Food symbolism is believed to have a positive correlation with a society's eating behaviour.

(Webb, 1995) generally, relates to the phenomenon of eating activities based on Maslow's Hierarchy of Needs. He stated that after the food supply has been fulfilled, then at the next level, the need for love and affection can influence decisions in food selection. Likewise, with the need for self-esteem and self-actualization, it is believed that it also affects the choice of food to show personality and personal characteristics. Some examples are how people often try new foods, new recipes, and non-conforming patterns of selection. Various factors also influence this eating behaviour. (Warde, 1997) states that from a sociological perspective, the four most significant driving factors influence food consumption, including individualization that describes personality, stylization as a particular social group, and informality related to great individual diversity in food choice with little regulation.

The purpose of this study is to identify food consumption behaviour before and during the pandemic. The study also seeks to offer possible actions after the pandemic has ended. The results of this study are expected to provide theoretical implications regarding the effect of Covid-19 on eating behaviour patterns. Also, this research can be a source of information for food or culinary stakeholders to adapt and encourage the emergence of innovative ideas to build a culinary business following changes in people's consumption behaviour.

## LITERATURE REVIEW

### Food

Philosophers think that food is challenging to analyze because food belongs to economics, culture, and ecology. However, nowadays, the increasing public attention and awareness related to health, diet, and agriculture have prompted scientists to analyze food philosophically. Some issues of concern include what exactly food is? What are we supposed to eat? How do we know it's safe? what is good food? (Kaplan, 2012).

According to (Kaplan, 2012), metaphysically, food can be seen from various points of view, including food as nutrition (the primary function of food is to provide nutrition to the organism), food as nature (the more natural food is better), food as culture (relating to beliefs, norms, and culture), food as a social good (good that human need in social relations), food as spirituality (appropriate food for consumption related to religion), food as desideratum (as an object of desire and hunger), and food as an aesthetic object (as a visually aesthetic experience and a corresponding composition). While (Katz & Weaver, 2003) added several points of view such as, food is diet (related to lifestyle and tradition), food as fuel (such as nutrition but which directly becomes energy), food as a commodity (goods of economic value), food is veganism (no animal products), and food as technology (processed social reality).

Meanwhile, epistemologically, (Kaplan, 2012) adds that food is about risk and trust (risk is the uncertainty of a hazard, whereas faith refers to the situation whether there is assurance regarding the food consumed), food as a practical reason (as an object of knowledge and skills, for example, how processing and packaging), and food is also about involuntary and unconscious (sometimes the experience of eating cannot be explained, we eat). Meanwhile, according to (Richard, 2012), food is a crucial part of a culture and an essential element in world heritage.

### Consumption Behavior

According to (Montanari, 2006), in a cultural context, food is believed to not just exist in nature. But food is made to provide characteristics between nature and culture and differentiates between animal and human identities. As in the Mediterranean region, bread as a symbol of nutritious food does not just exist in nature, but humans make it with knowledge and technology. The manifestation of food symbolism is very diverse, both related to the food itself or consumption behaviour. The symbolism of food will also be perceived differently by each person according to their life experiences (Piscopo, 2004). It means that the definition of food is also very dependent on a person's experience and knowledge, which then affects the pattern or behaviour of consumption.

According to (Hartono & Gibney, 2019), consumption behaviour is a person's actions that are influenced by perceptions and knowledge of food. Meanwhile, according to (Notoatmodjo, 2007), consumption behaviour is a person's response to food as a vital need for life. As for (Sulistyoningsih, 2019) argues that consumption behaviour is the behaviour of a group of humans in meeting their food needs, including attitudes, beliefs, and food choices. Therefore, consumption behaviour is influenced by the perceptions of each individual based on their life experiences, perspectives, thoughts, and knowledge.

Many factors influence a person's consumption behaviour, especially those related to food. (Seymour, 2004) states that choices and tastes are not only influenced by personality but are also constructed by social factors. Meanwhile, (Montanari, 2006) describes a person can eat whatever he wants, however, the consumption decision is often influenced by several factors such as economic dimension, nutrition, or symbolic value of the food itself. Meanwhile, when viewed from the



theory of behaviour, ([Armstrong et al., 2014](#)) argues that consumer behaviour is influenced by demographic, social, cultural and psychological factors.

When it comes to health concern issues, the Greek lifestyle has been implementing it for a long time. They call it the term "Diaita", which means food is consumed because of the nutritional value it contains. The principle of "Diaita" also regulates what foods should be avoided ([Finkelstein, 2004](#)). According to ([Skrabanek, 1994](#)), paying attention to health when consuming food is also a virtue. It confirms that a person should consume healthy foods in life.

In the 12th century, in China, eateries resembling taverns emerged in the hospitality, bar, and entertainment districts to cater to business travellers ([Rawson & Shore, 2019](#)). Likewise, in Japan, in the 1500s, the culture of eating in restaurants emerged from the tea shop tradition ([Kumparan, 2020](#)). The culture of eating in restaurants or dining-out is growing over time. It is believed that social factors dominate the dining-out behaviour. According to ([Wood, 2004](#)), apart from aiming to eat, there is an expectation that restaurants provide emotional satisfaction with status and belongingness. Meanwhile, ([Finkelstein, 1989](#)) argues that dining out in the postmodern era has more to do with fashion or concerning culinary appreciation.

Currently, technological developments also have an impact on the increasing trend of dining out. It once again proves that dining-out behaviour is closely related to social factors. The use of "celebrity endorsement" has also contributed significantly or around 25% to restaurant purchasing decision making ([Wachyuni & Kusumaningrum, 2020](#)). Another study states that restaurant interior and exterior design contributes up to 70% of purchasing decisions at restaurants. Meanwhile, promotions in the form of discounts also contributed 49%, especially for consumers in the beverage sector in cafes.

## METHODOLOGY

This research is a descriptive study on changes in consumer consumption patterns from pre, during, and post-pandemic (possibility). The research method used is quantitative, with the sampling technique used is probability sampling with simple random sampling. Data collection was carried out in the period May-June 2020 using an online questionnaire distributed via Whatsapp broadcast messages to respondents living in Jakarta, Indonesia.

The incoming response is filtered by cleaning the data to eliminate incomplete responses. After data cleaning (pre-processing) is done, the number of valid and complete responses that can be continued to the analysis stage is 75 responses. According to Roscoe in ([Sekaran & Bougie, 2016](#)), the sample size which appropriates for most studies is more than 30 and less than 500. During the pandemic period or from May to June 2020. Questions are made based on the current situation that developed in society during the pandemic by considering various theories regarding factors that influence consumer behaviour, such as demographic, social, cultural, and psychological ([Armstrong et al., 2014](#); [Kotler & Keller, 2009](#); [Montanari, 2006](#); [Seymour, 2004](#)).

The research instrument uses multiple-choice answer options and to explore respondents' agreement, and several questions use a Likert scale (1-5) ranging from strongly disagree to agree strongly. Meanwhile, the data analysis techniques used include frequency distribution, percentage, and mean value.

## FINDINGS

### Respondent profile

Based on the survey results (Table 1), respondents were dominated by women as much as more than 70%. This data explains that the interest of female respondents in filling out this questionnaire is higher than that of men. It might be because women are the primary determinant in providing food for the family at home so that they are more interested in the theme of food. Meanwhile, the majority of respondents' ages were in the range 21-30 years at 29%, followed by 31-40 years at 23%, and > 50 years at 17%. The educational background of the respondents was dominated by bachelor's degrees by 50%, postgraduate by 38%, and high school equivalent by 10%. Meanwhile, from a professional background dominated by students at 35%, private employees by 31%, and entrepreneurs by 13% of the population.

**Table 1:** Profile of survey respondents

Demography	Options	Frequency	Percentage
Gender	Male	19	25.3%
	Female	56	74.7%
Age	17-22 years old	14	18.7%
	21-30 years old	22	29.3%
	31-40 years old	17	23.0%
	41-50 years old	9	10.7%
	>50 years old	13	17.3%
Educational background	high school equivalent	8	10.7%

	bachelor's degrees	38	50.7%
	postgraduate	29	38.7%
<b>Professional background</b>	students	26	35.1%
	private employees	23	31.1%
	functionary	7	8.1%
	entrepreneurs	10	13.5%
	others	9	12.2%
	<b>Marital status</b>	Single	35
Married		40	53.3%
<b>Number of children (Married)</b>	0	43	57.3%
	1-2	26	34.7%
	>2	6	8.0%
<b>Revenue</b>	IDR 1.000.000-3.000.000	20	26.7%
	IDR 3.000.000-6.000.000	17	22.7%
	> IDR 6.000.000	38	50.7%

Source: Primary data, 2020

The respondents who were married were 53% of the total respondents, more than the respondents who were single. Meanwhile, 43% do not have children and 34% have about one to two children. In terms of income, most of the respondents are of middle to upper level because they have an income above the regional average salary standard of > IDR 6,000,000, which is 50%.

### Food Consumption Behavior: pre, during, and post-pandemic

Changes in consumption behaviour in this study are classified into three parts, such as during the pre, during, and post-pandemic periods. This period was chosen to conclude and offer possibilities related to changes in people's consumption patterns, especially those related to eating habits.

#### Before the pandemic

Covid-19 first broke out in the world at the end of December 2019 in Wuhan China. Whereas in Indonesia, this epidemic was first officially announced on March 2, 2020 (CNN, 2020). So, the pre-pandemic period was in and before 2019. Before the pandemic, where the human movement was not restricted, eating out had become a habit of Indonesian society. The majority of respondents (41%) stated that they do dining out twice a week, 24% stated once a week, 21% once a month, and even 13% said it every day. Even so, they also continue to cook at home for a family or personal need.

Respondents who stated that they did cooking activities at home every day was 66%. Meanwhile, 12% of respondents did it once a week, 10% twice a week, and 10% of respondents did it only once a month. Meanwhile, the types of food purchased before the pandemic were non-organic (58%) and organic (41%). The consumption behaviour of pre-pandemic respondents can be seen in Table 2 below.

Table 2: Pre-pandemic Food Consumption Behavior

Questions	Options	Percentage
<b>How often did you eat outside the home (dining-out) before the covid-19 virus pandemic?</b>	Everyday	13.3
	Twice a week	41.3
	Weekly	24.0
	Monthly	21.3
<b>How often did you cook yourself at home before the Covid-19 virus pandemic?</b>	Everyday	66.7
	Twice a week	10.7
	Weekly	12.0
	Monthly	10.7
<b>The type of food you buy for your household needs before the pandemic?</b>	Organic	41.3
	Non-Organic	58.7

Source: Primary data, 2020

### During Pandemic

During the pandemic, there are restrictions on activities outside the home, including dining-out activities. In Indonesia, especially in Jakarta, many restaurants and shopping centres (except supermarkets) are closed on the government's recommendation. Therefore, researchers identified changes in consumption habits during a pandemic, the results of which can be seen in Table 3. Based on the survey results, during an epidemic, most respondents or as much as 92% did their cooking activities every day. They also choose to process and cook fresh food (by 93%), frozen food (50%), cooked food delivery (40%), fast food delivery order (37%), dining-out (14%), and other means (1%).

The five types of food that are mostly purchased during a pandemic are fresh raw materials such as vegetables, fruit, meat, and others. Likewise, with groceries (80%), health drinks such as honey and herbal medicine (53%), frozen food (50%), and milk and processed products (50%). The consumption behaviour of respondents during-pandemic can be seen in Table 3 below.

**Table 3:** During-pandemic Food Consumption Behavior

Questions	Options	Percentage
Food preferences during Covid	Process and cook fresh food yourself	93.3
	Fast food delivery order (Fried Chicken, Pizza, etc.)	37.3
	Delivery order for freshly cooked food (Soto, Tongseng, etc.)	40.0
	Processing Frozen Food	50.7
	Dining Out (at a restaurant or at an open shop)	14.7
	Others (combination)	1.30
The type of food most purchased during a pandemic	Fresh raw materials (vegetables, fruit, meat, etc.)	93.3
	Staple food or groceries (rice, oil, flour, etc.)	80.0
	Instant food (instant noodles and vermicelli, etc.)	46.7
	Frozen foods (sausages, nuggets, etc.)	50.7
	Milk and Dairy	50.7
	Health Drinks (honey, herbs, etc.)	53.3
	Bread and Cake	42.7
	Snacks (candy, biscuits, etc.)	41.3
	Packaged foods (sardines, corned beef, etc.)	32.0
How often do you cook yourself at home during the Covid Pandemic (while staying at home)	Everyday	92.0
	Twice a week	4.0
	Weekly	1.3
	Monthly	2.7
Type of food purchased	Organic	58.7
	Non-Organic	41.3
The Covid-19 pandemic changes your diet to be healthier	Strongly Agree	29.3
	Agree	38.7
	Quite Agree	21.3
	Disagree	6.7
	Strongly disagree	4.0

**Source:** Primary data, 2020

Respondents' preference for the type of food purchased is organic food for both fresh ingredients and groceries, with a percentage of the answers of 58.7%. The majority of respondents agreed 38.7%, 29.3% strongly agreed, and 21.3% somewhat agreed that the Covid-19 pandemic changed the respondent's diet to be healthier.

Post-pandemic (possibility)

The post-pandemic respondent's consumption behaviour is likely to continue to pay attention to health. Although the majority of respondents agreed and strongly agreed to continue cooking at home, 64% of respondents said they would return

to dining out. As many as 65% said they would eat out less than three months after the pandemic was declared over. Three important aspects that were considered by respondents when dining out were the cleanliness of the place (84%), taste (56%), and its health benefits (36%). Predictions of the consumption behaviour of respondents in the post-pandemic can be seen in Table 4 below.

**Table 4:** Post-pandemic Possibility of Food Consumption Behavior

Questions	Options	Percentage (%)
You will continue your healthier diet after this pandemic has passed	Strongly Agree	41.3
	Agree	44.0
	Quite Agree	14.4
	Disagree	0
	Strongly disagree	0
Will you return to eating out (dining-out) after this pandemic is over?	Yes	64.0
	No	30.7
	Maybe	5.3
How long after this pandemic has ended do you intend to eat out (dining-out)?	Less than 3 months	65.3
	4-6 month	21.3
	> 6 months	13.3
The aspects that you most consider in consuming food when dining out after the pandemic period ends	Taste	56.0
	Foods uniqueness	18.7
	Its health benefits	36.0
	Cleanliness of the place	84.0
	Services	29.3
I will prefer to cook myself after this pandemic is over	Strongly agree	28.4
	Agree	35.1
	Quiet agree	28.4
	Disagree	4.1
	Strongly disagree	4.1
The type of food chosen after a pandemic	Organic	53.3
	Non-organic	46.7

Source: Primary data, 2020

### The Changes in Food Consumption Behavior due to Covid-19 pandemic

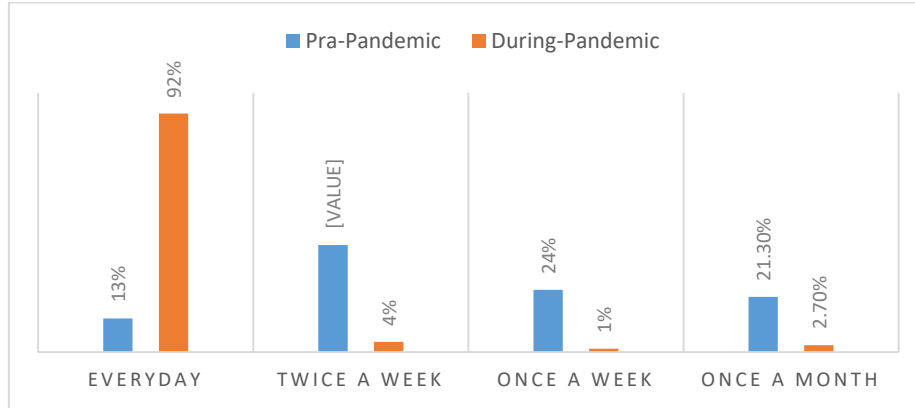
Some of the findings of this study are related to changes in people's consumption behaviour after the Covid-19 pandemic, among others, an increase in the trend of cooking at home, an increase in the intention of consuming organic food, increasing awareness of food health, and increasing awareness of the importance of food quality and safety.

#### The increasing trend of home cooking

Figure 1. shows that there is an increasing trend of cooking at home from pre-pandemic and during the pandemic. The data shows that respondents who cook every day have a significant increase of 79%, while those who cook less frequently are decreasing.

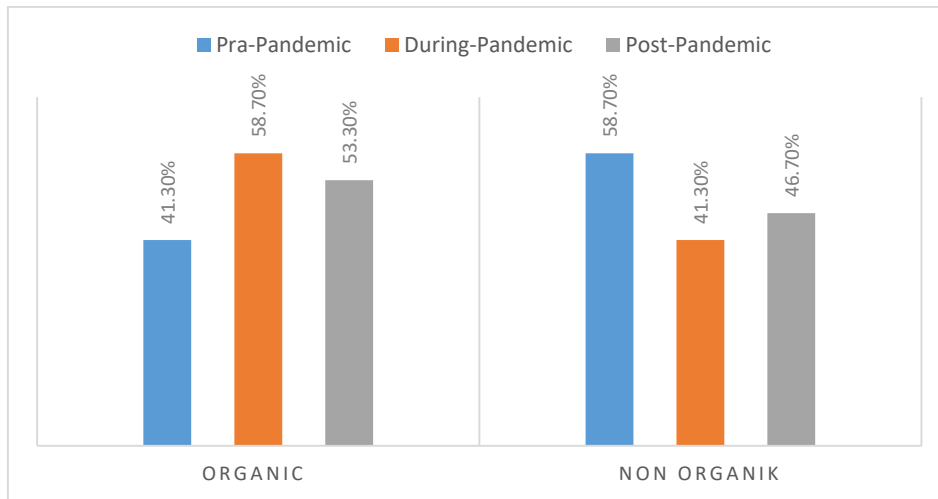
#### The increase of organic foods consumption and interest

Figure 2 shows that there is an increase in the intention to consume organic food during the pre-pandemic during the pandemic, which offers a significant increase of 17.4%. Although it is predicted that there will be a decrease in post-pandemic intention by 5.4% from the during-pandemic period, it is still 12% higher than the pre-pandemic period. Organic food is food that is not genetically modified and produced naturally and does not use chemicals such as pesticides and fertilizers (Chen, 2007).



**Figure 1:** Trend of home cooking

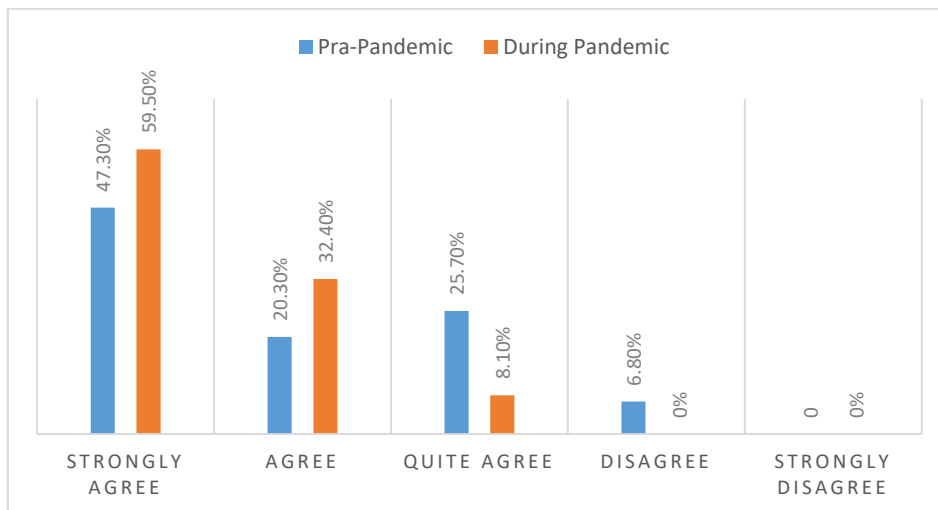
Source: Primary data, 2020



**Figure 2:** Trend of organic foods consumption and interest

Source: Primary data, 2020

**Increased awareness that health is an essential aspect of choosing food**

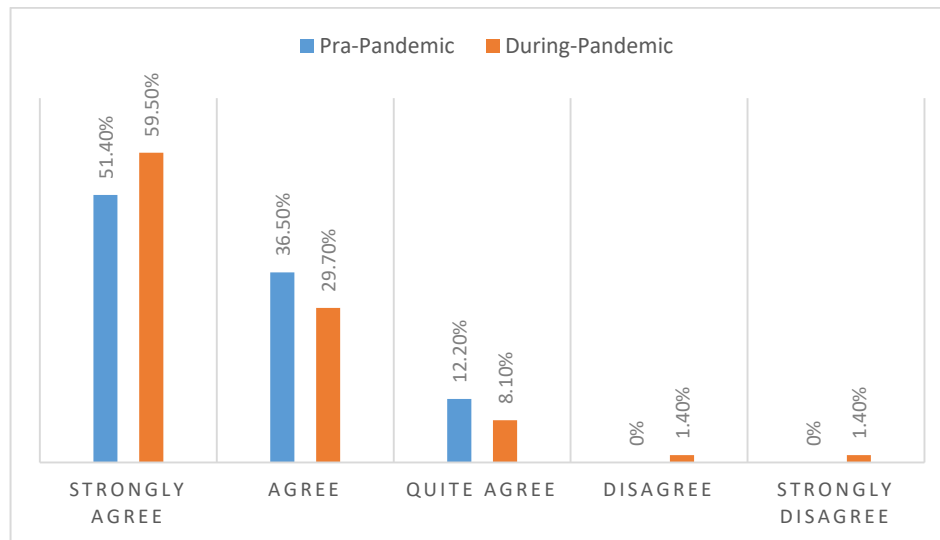


**Figure 3:** Awareness of the health aspects of choosing food

Source: Primary data, 2020

Increased awareness of health factors as an essential aspect of choosing food is also seen in the research data. Figure 3 shows that the percentage increase was seen from the average value of the respondents' answers, where 4.06 (agree) increases to 4.51 (strongly agree).

#### Increased awareness that food quality and safety is an essential aspect of choosing food



**Figure 4:** Awareness of the food quality and safety is an essential aspect of choosing food

**Source:** Primary data, 2020

In Figure 4, it can be seen that the number of respondents who responded strongly agreed that food quality and safety were important factors that consistently increased. Based on the results of data analysis, the average response value of respondents in the pre-pandemic was 4.39, increasing during the pandemic to 4.45. It shows the respondent's agreement that food quality and safety are essential aspects of choosing food.

#### DISCUSSION

Based on respondent profile data, the majority of respondents are dominated by women of productive age ranging from 21-40 years old. According to the generation theory, this age range can be categorized as generation Y or millennial generation, namely those born between 1982-2000 (Howe & Strauss, 2000). Slightly different, (Martin & Tulgan, 2002) categorize millennial generation as those born between 1981-1999.

Respondents involved in this study were dominated by women and millennials, with professional backgrounds as students and private employees. Most of the respondents were married but did not have children, while others had one to two children. According to the income issue, most of the respondents are included in the upper middle level because they have an income more than the standard salary of workers in Jakarta of IDR 4,267,349.00 (Aida, 2020). Apart from being fluent in technology, they also have a very reactive character to the changes in the environment that occur around them and consider family factors in their every decision making (BPS, 2018).

Food is a human physiological need. (Montanari, 2006) states that a person can eat whatever he wants, but when choosing food, one can determine based on the economic dimension, nutrition, or symbolic value of the food itself. Meanwhile, according to (Seymour, 2004), choices and tastes are more than just personality but are constructed by social factors. Meanwhile, according to (Armstrong et al., 2014), consumer behaviour is influenced by demographic, social, cultural, and psychological factors.

Without intending to exaggerate the feminist side, the dominance of women involved as respondents is believed to have influenced the survey results. (Wood, 2004) states that the majority of women play a role in buying and choosing food for family consumption. It is often seen as a burden not as power because in choosing one needs to consider taste, cost, variety, and nutritional value. It means that the role of women also affects food preferences at pre, during, and post-pandemic.

The results of this study prove that health factors influence the respondent's eating behaviour. The most significant change reaching 79% in the pre-pandemic and during the pandemic is the trend of cooking at home. This increasing trend is





inversely proportional to dining-out habits; it is because many restaurants cannot operate after the pandemic, based on government recommendations. It also occurs because the respondents' awareness of hygiene issues is increasing, and cooking is an alternative that provides more security assurance. This study's results are supported by a survey conducted by the Indonesian Institute of Sciences (LIPI) as an Indonesian research institute during a pandemic. Indonesian families tend to consume food to maintain the body's immunity. In addition, households tend to shop less frequently in the market and shop online more and process their own food more often ([Azizah, 2020](#)).

This research also shows an increasing awareness that health, quality, and safety of food are essential aspects of choosing food. Despite being a worrying spectre, the Covid-19 pandemic has had a positive impact on increasing awareness of respondents regarding the food eaten daily. The majority of respondents agreed and even strongly agreed that the Covid-19 pandemic changed the respondent's consuming behaviour to be healthier.

Several issues that arise during a pandemic affect consumption decision. WHO advises people around the world to consume local products, healthy food, and drinks to increase the body immunity and reduce alcohol consumption ([Prasidya, 2020](#)). Several issues regarding the transmission of Covid-19 through consumption of eating wild animals that have appeared on social media ([Septian, 2020](#); [Utami, 2020](#); [Wijaya, 2020](#)) also affect dietary patterns to become plant-based.

Based on the results of the study, during the pandemic, the food preferences of most respondents were processing and cooking fresh food by themselves. The majority of the types of food purchased are fresh raw materials such as vegetables and fruits, followed by groceries. Functional drinks such as honey and Indonesian herbal medicine are also in the third position of most purchased foods. Frozen food is also an option because of free processing considerations as well as milk, and various other types of preparations are believed to be good for health. Packaged foods and snacks are the lowest preferences of during-pandemic respondents. Although this data is not compared to the situation before the pandemic, this information illustrates that consumer preferences during an epidemic are foods that are considered healthy. The food-related health concern is not new. According to ([Skrabaneck, 1994](#)), a person's attention to health is related to the value of virtue.

The increase in the intention of organic food can also be seen from pre-pandemic, during-pandemic, and post-pandemic (possibility). This phenomenon occurs due to an increase in respondents' awareness of health and concerns related to the hygiene and safety of the food sold. Psychological worry can be characterized by doubt, fear, panic ([Wachyuni & Kusumaningrum, 2020](#)). As a result, in addition to health factors, psychological factors also affect consumer behaviour.

Also, organic food tends to be considered healthier and safer, and more environmentally friendly than conventionally produced foods ([Mondelaers et al., 2009](#); [Rimal & Moon, 2005](#)). Feeling safer to consume organic food, most respondents chose to cook it themselves at home.

Currently, in September 2020 the Covid-19 pandemic is still not over. Meanwhile, researchers around the world remain working to provide a vaccine in the near term. Therefore, the results of the study, especially those related to post-pandemic, are still a possibility based on current and past phenomena. The results showed that the majority of respondents answered agree and strongly agree that they will continue to adopt healthier consumption patterns after the pandemic. The innate impact of Covid-19 is to provide awareness that health is the most important thing.

Respondents predicted that the dining-out habit that was often practised during the pre-pandemic period would be repeated. Most of them said they would do so less than three months after the pandemic ended. There are some of the respondents' considerations, including the issue of cleanliness of the place, taste, and health benefits.

According to ([Finkelstein, 1989](#)), dining-out activities are related to self-presentation or in other words, to be socially acceptable and fashionable. ([Wood, 2004](#)) added that restaurants are expected to provide social satisfaction for status and belongingness. Therefore, dining-out remains a necessity related to social life. Dining-out will always be interesting, although based on the data, the majority of respondents agree and strongly agree that they will continue to do their cooking activities in the post-pandemic. Dining-out is a leisure activity, so what we eat is related mainly to dual concerns of health and pleasure. It proves that social factors also influence food consumption behaviour.

## CONCLUSIONS AND RECOMMENDATIONS

This research has theoretical and practical implications. Theoretically, this study found that health, social, and psychological factors influence a person's food consumption behavior. As the objective of this research which is to identify food consumption behavior before and during the pandemic, the result found that the Covid-19 pandemic changes consumption behavior patterns to become healthier—An increasing trend of self-cooking indicates it, and the intensity of organic food consumption. The results of this study also suggest that the role of women also dramatically influences the family's food consumption choices.

Meanwhile, the practical implication of this research is to provide information to business actors in the food and beverage sector to adapt to the conditions of the Covid-19 Pandemic. Some things that can be adjusted are modifying the products to



the needs of the pandemic, for example, providing organic food-based products, healthy frozen foods, and functional food. Besides, as another research objective to seek the possible action after a pandemic, the culinary business needs to adapt several strategies. There are improving the food quality, using marketplaces in sales, providing online delivery, promoting using social media, informing that products are processed with food safety standards, and designing restaurants with new protocols (considering physical distancing, providing transparent kitchen and drive-thru).

### LIMITATION AND STUDY FORWARD

This study has limitations in data analysis which is dominated by descriptive data related to changes in food consumption behaviour at pre, during, and post-pandemic. If the method is combined with qualitative studies, it is believed that this research can provide a more comprehensive and in-depth picture of changes in consumer behaviour. This study also did not examine the influence of health, social, psychological factors on food consumption behaviour during a pandemic. Therefore, further research is expected to analyze how much the contribution of health, social, and psychological factors in influencing consumption behaviour. The results of this study also indicated an increase in respondents' interest in organic food. Therefore, further research can further explore consumer motivation towards the consumption of organic food during a pandemic.

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### AUTHORS' CONTRIBUTION

This work was carried out in collaboration among all authors. Suci Sandi Wachyuni designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Kadek Wiweka managed the analyses of the study and the literature searches. All authors read and approved the final manuscript.

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