

## Food Consumption Behavior in Bandung Post COVID-19 Pandemic Emergence

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### ABSTRAK

Penelitian ini dilakukan guna mengetahui perubahan perilaku konsumsi makanan dua tahun pasca kemunculan pandemi COVID-19 yang terjadi di Indonesia. Pengumpulan data primer penelitian ini dilakukan dengan menyebarkan kuesioner dari tanggal 26 Juni 2022 hingga 26 Juli 2022 kepada 258 responden yang berdomisili di Kota Bandung, Indonesia, yang diperoleh dengan metode simple random sampling dan data kemudian diolah menggunakan SPSS. Hasil penelitian menunjukkan bahwa tingkat konsumsi makanan masyarakat mengalami peningkatan bila dibandingkan dengan sebelum pandemi COVID-19. Selain itu, terdapat beberapa perubahan perilaku konsumsi masyarakat, seperti peningkatan pembelian bahan makanan dan makanan jadi melalui aplikasi daring, serta peningkatan waktu untuk memasak makanan sendiri. Ditemukan juga bahwa masyarakat menjadi lebih sering makan bersama anggota keluarga di rumah daripada makan di luar rumah. Situasi COVID-19 yang relatif lebih terkendali juga membuat masyarakat lebih tenang dan tidak merasa perlu untuk membeli makanan dengan masa simpan yang relatif lama. Penelitian ini memiliki keterbatasan dalam keberagaman respondennya. Penelitian lanjutan dapat dilakukan terkait berkurangnya tingkat kerja pegawai pribadi yang diidentifikasi dalam penelitian ini.

### Kata Kunci:

Perilaku konsumsi; perilaku makan; COVID-19; Indonesia

### ABSTRACT

This research was done to discern changes in food consumption behavior in Indonesia two years after the emergence of the COVID-19 pandemic. Primary data for this research was gathered through questionnaires distributed from 26 June 2022 until 26 July 2022 to 258 respondents living in Bandung, Indonesia, using a simple random sampling method, which was then processed with SPSS. Results showed that people's food consumption levels increased. Furthermore, changes in food consumption behavior are also identified, such as increased grocery and food purchases through online applications and increased cooking time. People also eat with their family more often, rather than eating out. The relatively more controlled COVID-19 situation also made people calmer and felt no need to stock up on foods with longer storage lives. This research faces a limitation regarding its respondents' diversity. Follow-up research can be conducted to address the decrease in personal employees' work level identified in this research.

### Keywords:

Consumption behavior; food consumption behavior; COVID-19; Indonesia

## **INTRODUCTION**

All living beings, including humans, need food to survive (Hapsari et al., 2020). People, especially those living in urban areas, tend to buy to fulfill their nutritional needs, both towards food ingredients and pre-cooked and cooked meals. People's consumption behavior is dynamic and varies from time to time and between different places due to the diverse behavior shown by each societal group in responding to various factors and events (Hapsari et al., 2020). Human behavior is indeed influenced by their perception of a certain stimulus, which raises a choice of whether to respond to it (Cavallo et al., 2020).

One such eventful stimulus that affected people's consumption behavior globally was the emergence of the Coronavirus 2019 (COVID-19) pandemic in early 2020. COVID-19 is a type of virus first identified in Wuhan, China. This virus mainly attacks the human respiratory system (Ali et al., 2021) and, without adequate and speedy treatment, can cause death (Yusup et al., 2020). The COVID-19 pandemic causes significant shifts not only in health and cleanliness but also people's perception and behavior toward food consumption (Ali et al., 2021; Beard-Knowland, 2020; Ben Hassen et al., 2020; Hapsari et al., 2020; Lee & Kim, 2021; Yang et al., 2022; Yusup et al., 2020; Zuluĝ et al., 2022), which might make some previously odd habits became a standard one post COVID-19 pandemic (Mustomi et al., 2020)..

Regardless of the various securitization actions already being made, COVID-19 and its policies still cause disruptions to all aspects of human lives, whether directly towards health or indirectly to the socioeconomic, educational, and political situations of individuals, households, corporations, and countries globally. The effects of the COVID-19 pandemic, both direct and indirect, are indeed felt by all levels of society, including by various industries and sectors all across the globe (Hapsari et al., 2020; Mustomi et al., 2020; OECD, 2020; Yusup et al., 2020). One country with a high amount of diverse population is Indonesia. With over 270 million people spread over more than 16 thousand islands within its territory (BPS-Statistics Indonesia, 2022), Indonesians also have diverse consumption behavior. When the COVID-19 pandemic struck the world, Indonesia was also heavily affected, with a total of 6,229,315 confirmed cases, including 157,060 deaths due to the virus as of August 5, 2022 (World Health Organization, 2022). It is not strange, then, that its people's food consumption underwent some changes.

One of the provinces in Indonesia that has experienced quite a severe hit due to this pandemic is West Java. With a total of 1,134,160 confirmed cases per July 31, 2022, West Java is second in number of COVID-19 cases in Indonesia, just after the capital city of Jakarta (Satgas COVID-19, 2022). As West Java Province's capital city, Bandung is the best location to observe people's changes in their food consumption behavior in response to the pandemic. BPS-Statistics Indonesia's data shows that West Java had the highest number of F&B businesses in Indonesia back in 2019 (BPS-Statistics

Indonesia, 2021a), which were dominated by micro and small-scale businesses (99.78%) catering to local consumers (57.81%). Most of them had also sold their products online (78.69%). Research done by Yusup et al. (2020) in Bandung during the beginning of the COVID-19 pandemic shows that the pandemic affected consumer behavior, particularly regarding online e-commerce application usage.

Bandung is one of Indonesia's cities that offers a variety of culinary wonders, ranging from traditional to modern to Indonesian-style Dutch cuisines. This fact made Indonesia's Ministry of Tourism ordained Bandung as one of Indonesia's culinary tourism destinations (Astuti, 2018; Pramezwarly et al., 2021). However, due to the COVID-19 pandemic, many F&B businesses operating in Bandung were forced to cease their activities. The number of restaurants in Bandung in 2019 (before the pandemic) was 952 units, which, after the pandemic, dropped to 524 units in 2020 and then to 370 units in 2021 (Department of Tourism and Culture, 2022).

For the food and beverage (F&B) industry, COVID-19 greatly disturbed the supply chain of food consumption. Restrictions of people's movement, accessibility restrictions in going to and from differing cities, employees' physical absenteeism, and lockdowns caused a lack of adequate human resources in the agrarian sector in many countries. They disturbed the harvest in some countries (OECD, 2020). Hindrances in the supply chain and product sales caused a problem, where food, especially those with short shelf life, spoiled without having any chance of being processed and consumed much less, increasing food waste (Ben Hassen et al., 2020). Delayed food import and export access caused by COVID-19-related policies causes global food instability, price surges, and even food crises (OECD, 2020).

Many have also voiced their concern about COVID-19 effects on the demand market, which had been firmly in place before the pandemic, especially because consumers changed their lifestyle and consumption behavior (Ali et al., 2021; Dsouza & Sharma, 2021) due to changes in income level (Yang et al., 2022), changes in regulations, or increase in the understanding that food is the primary nutritional source important for human's health and welfare (Dsouza & Sharma, 2021; Hapsari et al., 2020), especially when the body's immune system is easily compromised (Ammar et al., 2020).

In other words, from the demand side, there is also a change in how people buy and consume food, especially in the beginning when understanding and information regarding COVID-19 was scarce. Panic buying staple and health-related products became common in many countries, especially in the beginning and when the country or city experienced a spike in COVID-19 cases (Beard-Knowland, 2020; Chenarides et al., 2021). This behavior came up as a preventive measure due to excessive anxiety among the population (Cavallo et al., 2020). Regardless, considering the different case levels in each country, panic buying did not always happen. A study in Qatar, for example, shows that neither panic buying nor stockpiling was seen there (Ben Hassen et al., 2020). In Indonesia, as another example, people's food consumption patterns stay relatively the same (Hapsari et al., 2020). However, it is true

that in emergency and uncertain times, people in their capacity as consumers will also change their behavior (Beard-Knowland, 2020), including food consumption and shopping behavior (Celik & Dane, 2020). Thus, a periodic customer behavior study is needed to better grasp market changes.

This kind of shift in demand is very important for F&B businesses to grasp in order to be able to respond instantly and correctly to their consumers' demand and thus retain their competitive advantages (Dsouza & Sharma, 2021). In the first year of COVID-19's emergence, researchers speculated that the behavior changes caused by COVID-19 would return as were before. However, other researchers concurred that these behaviors will stay and become the new habits that will stipulate the F&B industry's future path (Chenarides et al., 2021). By mid-2020, the OECD declared that if outdoor activity restriction countermeasures went on for a long time, then people's eating habits and consumption behavior would undergo a long-lasting change (OECD, 2020). This is why a deeper understanding of people's food consumption behavior is needed so that producers and sellers in the F&B industry can more quickly adapt to the ever-changing environment (Chenarides et al., 2021).

Thus, by the conditions narrated above, this research was done to show the changes in food consumption behavior among Bandung citizens two years after the COVID-19 pandemic emerged and struck the world, to answer a basic but important question: 'How does the emergence of COVID-19 pandemic change Indonesians' food consumption behavior?'. It can be said that this research hoped to illustrate people's food consumption behavior post-emergency situation and after entering the de-securitization phase of the COVID-19 pandemic, considering COVID-19 pandemic can clearly show people's consumption behavior changes amid an uncertain and high-risk condition (Chenarides et al., 2021). Furthermore, the results of this research can hopefully be considered before F&B businesses, especially those operating in Bandung, decide.

In order to achieve those purposes, this article will be divided into four parts. The second part explains a compact explanation of the primary data collection method through a questionnaire, from which the result is shown and analyzed in the third part. This article ends with a conclusion of the results and their practical implications, explained in the third part, along with the limitations of this research and suggestions for further research.

## **RESEARCH METHOD**

This research is quantitative descriptive, with its primary data collected through the quantitative method of surveying a sample of its intended population. This method was chosen to gather a more comprehensive picture of changes in the Bandung population's food consumption behavior. Quantitative research uses quantitative data to answer specific research questions, while descriptive research explains, describes, and summarizes certain phenomena (Sugiyono, 2022). An analysis of mean value and results from Mann-Whitney U or Kruskal-Wallis tests was done to achieve this. This

research's secondary data came from previous studies and legitimate reports regarding COVID-19 and its effects.

This research's population is Indonesian citizens living in Bandung, the capital city of West Java Province. Bandung's population is estimated at around 2.5 million people (BPS-Statistics Indonesia, 2021b), though this number is dynamic and cannot be accurately confirmed. The sampling technique used in this research is simple random sampling. Further, considering the number of indicators used in this research's questionnaire, which is 26 points, the minimum sample number needed is 130 respondents (Ferdinand, 2014). The total number of respondents used in this research is 258, which fulfilled the minimum requirement mentioned above.

Data was collected through an online survey in Indonesia using an online questionnaire. The questionnaire used is an adapted version of the questionnaire used by Ben Hassen et al. (2020), who studied a similar topic in Qatar in 2020. The questionnaire was adapted in accordance to the situation in Indonesia, for example, regarding the traditional market and the use of personal employees, which are common in Indonesia but may not be so much in other countries and was translated into Bahasa Indonesia before being distributed from June 26, 2022, until July 26, 2022, through Google Form platform. Respondents filled out the questionnaire voluntarily without any pressure and were informed of this research's purposes and their privacy beforehand.

**Table 1. Research Questionnaire's Statements' Codes and Details**

Code	Detail	Code	Detail
X1.1	I buy groceries in traditional market by myself	X2.6	I consume frozen foods
X1.2	I buy groceries in supermarket by myself	X2.7	I consume canned foods
X1.3	I order groceries through online means	X2.8	I consume healthy snacks
X1.4	I ask my personal employee to buy groceries	X2.9	I consume less healthy snacks
X1.5	I ask my personal employee to buy meals	X3.1	I prepare and cook meals by myself
X1.6	I buy meals by myself (dine-in or take-away)	X3.2	I spend a lot of time to cook
X1.7	I order meals through online delivery application	X3.3	I make easy-to-prepare foods
X1.8	I order meals from a caterer	X3.4	I order foods from outside
X2.1	I consume fruits and vegetables	X3.5	I eat snacks between meals (snacking)
X2.2	I consume meat products	X3.6	I eat alone at home
X2.3	I consume healthy foods	X3.7	I eat with my family members
X2.4	I consume less healthy foods	X3.8	I eat in other people's house
X2.5	I consume instant foods	X3.9	I eat outside the house

*Source: Authors' adaptation from Ben Hassen et al. (2020)*

The questionnaire uses a 5-level-answers linear scale, which is never anymore, more seldom, does not change, more often, and far more often, to answer the statements regarding changes in food consumption behavior since the emergence of the COVID-19 pandemic, including changes in purchase method, food type, and consumption activity. The questionnaire has a total of 34 points adapted from Ben Hassen et al. (2020), which are divided into four parts: 1) Social-demography (8 questions); 2) Changes in food purchase behavior since the COVID-19 pandemic (8 statements); 3) Changes in eating

habits since COVID-19 pandemic (9 statements); and 4) Changes in food consumption activity since COVID-19 pandemic (9 statements). The details of each statement can be found in **Table 1**.

## RESULTS AND DISCUSSION

### Respondents' Socio-demographic Profile

**Table 2. Respondents' Socio-demographic Profile (n = 258)**

Variable		Frequency	Percentage
Sex	Male	91	35.27%
	Female	167	64.73%
Age	≤25 years old	186	72.09%
	26-35 years old	58	22.48%
	36-45 years old	6	2.33%
	46-55 years old	3	1.15%
	>55 years old	5	1.94%
Education Level	Graduate and Post-graduate	6	2.33%
	Undergraduate	115	44.57%
	Diploma	12	4.65%
	Senior High School	123	47.67%
	Junior High School	0	0%
	Elementary School or less	2	0.78%
Profession	Student	146	56.59%
	Government Employee	7	2.71%
	Private Employee	47	18.22%
	Entrepreneur	28	10.85%
	Medical Personnel	5	1.94%
	Housewife	6	2.33%
	Retired	2	0.78%
	Unemployed	14	5.43%
	Others	3	1.16%
	Monthly Earning	≤IDR 3,000,000	164
IDR 3,000,001 – IDR6,000,000		65	25.19%
IDR 6,000,001 – IDR10,000,000		17	6.59%
>IDR10,000,000		12	4.65%
Monthly Expense	≤IDR 3,000,000	203	78.68%
	IDR 3,000,001 – IDR6,000,000	44	17.05%
	IDR 6,000,001 – IDR10,000,000	8	3.10%
	>IDR 10,000,000	3	1.16%
Household Composition	Alone	59	22.87%
	Husband/Wife and/or Children	24	9.30%
	Parents and/or Siblings	156	60.47%
	Children and/or In-laws	3	1.16%
	Relatives	6	2.33%
	Friend	10	3.88%
	Others	0	0%

*Source: Processed data by author (2022)*

As depicted in **Table 2**, the majority of this research's 258 respondents are female (64.73%) students (56.59%) aged under 25 years old (72.09%). These numbers are caused by bias in the questionnaire distribution method, which is through an online platform, where said group members have the highest internet access and are willing to fill out a scientific research questionnaire voluntarily. Further, most respondents live with their small family, particularly with parents and siblings (60.47%), and thus, their consumption behavior indirectly reflects their small family's consumption behavior.

## **COVID-19 Pandemic as an Extraordinary Event**

COVID-19 is a type of virus that causes respiratory infections among humans, ranging from mild to deadly (Ali et al., 2021). Usually, patients diagnosed with COVID-19 experience flu-like symptoms, including coughing, runny nose, sore throat, headaches, and fever (Yusup et al., 2020). However, patients with a relatively weak immune system and who did not receive adequate medical treatment can experience worse conditions, such as breathing difficulties, which can lead to death.

COVID-19 was first reported on December 31, 2019, by the Health Commission of Wuhan, Hubei Province, People's Republic of China, to the World Health Organization (WHO) as a cluster of pneumonia cases with unknown cause (Cavallo et al., 2020). Afterward, on January 9, 2020, China's Centers for Disease Control and Prevention announced a new strain of coronavirus (SARS-CoV-2) which causes an infectious respiratory disease, later called COVID-19. In response to the many related cases across the globe, WHO declared COVID-19 as a health emergency on January 30, 2020, and later formally named it a pandemic on March 11, 2020 (Ben Hassen et al., 2020; Celik & Dane, 2020; Yang et al., 2022).

Due to the COVID-19 pandemic, all countries enforce lockdowns and restrictions to decrease the virus' infection rate (Ammar et al., 2020; Cavallo et al., 2020; Hapsari et al., 2020). These common securitization strategies include international border closure, travel restrictions, restrictions towards educational and religious institutions along with non-strategic companies, crowding ban, and physical distancing (Ammar et al., 2020; Ben Hassen et al., 2020; Hapsari et al., 2020). Consequently, everyday life, physical activities, and travel, commonly done before, became extremely restricted (Ammar et al., 2020; Scarmozzino & Visioli, 2020).

As with almost all countries in the world, Indonesia experienced its first COVID-19 case in early 2020. Specifically, the first case in Indonesia was announced on March 2, 2020 (Hapsari et al., 2020). In mid-March 2020, Indonesia announced that the COVID-19 pandemic struck Indonesia (Retaduari, 2022; Sabiila, 2022). During that emergency, Indonesia implemented some securitization actions to protect itself and its population. These actions include workplace policies, crowds, domestic and international travel, cooperation with other countries and the WHO, and the development of a tracking system.

Securitization actions are extraordinary measures undertaken by actors, both government and individual citizens when faced with a condition deemed threatening and outside the norm (Dunne et al., 2013). When COVID-19 was declared an international pandemic, and in Indonesia, it was also recognized as a pandemic and non-natural disaster, it was then natural that the government responded by implementing various securitization measures, as seen in Table 3. However, contrary to natural disasters, three things make the COVID-19 pandemic unique: its scope, duration, and uncertainty of the cause and spread of this virus (Chenarides et al., 2021). The disaster itself refers to events caused by

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natural or man-made factors that are deemed as disturbing and threatening to society's life and livelihood and incur losses in the shape of material loss, environmental damage, loss of lives, etc. (Yusup et al., 2020).

**Table 3. COVID-19 Timeline in Indonesia**

Date	Event
2 March 2020	The first COVID-19 case in Indonesia
10 March 2020	The first COVID-19 death in Indonesia COVID-19 became a national emergency and COVID-19 Handling Task Force was formed
27 March 2020	Launching of Peduli Lindungi application for tracing, tracking, and fencing
10 April 2020	COVID-19 struck all provinces The capital city Jakarta started PSBB ( <i>Pembatasan Sosial Berskala Besar</i> or Large Scale Social Restriction), followed by other cities in Java and Bali
13 April 2020	COVID-19 pandemic was declared a national non-nature disaster
24 April 2020	2020 Lebaran-related travel ban
5 June 2020	The capital city Jakarta entered transitional PSBB
7 January 2021	PSBB changed into PPKM ( <i>Pemberlakuan Pembatasan Kegiatan Masyarakat</i> or Community Activities Restriction Implementation)
13 January 2021	President Joko Widodo became the first person in Indonesia to receive COVID-19 vaccine, heralded the start of national vaccination program
16 April 2021	2021 Lebaran-related travel ban
June-July 2021	Second wave of COVID-19 cases
3 July 2021	Emergency PPKM was declared
20 July 2021	Emergency PPKM was prolonged
21 July 2021	Emergency PPKM changed into Level 3-4 PPKM
16 & 21 August 2021	Public launch of Peduli Lindungi application
16 December 2021	The first case of Omicron-variant COVID-19 in Indonesia
February 2022	Third wave of COVID-19 cases
9 March 2022	Long-distance train passenger capacity back to 100%
10 March 2022	Face-to-face classes in school was allowed with 100% capacity
14 March 2022	Three airports were reopened for international flights (previously only Soekarno-Hatta Airport, Cengkareng, then Ngurah Rai Airport, Denpasar, and Juanda Airport, Surabaya, followed)
18 May 2022	Easing of outdoor mask-related policy
20 May 2022	Domestic and international flights no longer stipulate negative COVID-19 test result for passengers with a minimum of two vaccine dosage
24 May 2022	Work-from-office for non-essential sectors back to 100%
8 June 2022	International arrival no longer needs quarantine

*Source: Authors' Own Work (2022)*

Two years after the emergence of this pandemic in Indonesia, and after the vaccination program was deemed quite successful, the Indonesian government started de-securitization measures, which included allowing offline learning, religious activities, and work, re-opening international arrivals and departure channels, and easing the policies regarding masks in outdoor areas (Tim detikcom, 2022). These measures were taken to welcome the new post-COVID-19 pandemic, specifically once COVID-19 is categorized as an endemic (Supanji, 2021).



**The Effect of Social-demography Profile towards Food Consumption Behavior in Bandung Post COVID-19 Pandemic Emergence**

Generally, respondents' demography has not affected changes in food consumption behavior since the COVID-19 pandemic started. However, sex, age, profession, monthly expenses, and household composition slightly affect some people's food consumption behavior. The result can be seen in Table 4 below, where a significance level of less than 0.05 shows a difference in results between the various demographic groups.

**Table 4. The Effect of Social-demography Profile towards Food Consumption Behavior in Bandung Post COVID-19 Pandemic Emergence**

Indicator	Sex	Age	Education Level	Profession	Monthly Earning	Monthly Expense	Household Composition
	Mann-Whitney				Kruskal-Wallis		
Changes in Food Purchase Behavior Since COVID-19 Pandemic							
X1.1	0.080	0.606	0.364	0.705	0.326	0.432	0.148
X1.2	0.712	0.416	0.118	0.425	0.766	0.486	0.361
X1.3	0.140	<b>0.016</b>	0.401	0.236	0.698	0.618	0.397
X1.4	0.709	0.999	0.559	0.208	0.440	0.743	0.253
X1.5	0.191	0.829	0.712	0.664	0.429	0.727	0.241
X1.6	0.132	0.407	0.511	0.888	0.785	0.180	0.942
X1.7	0.864	0.664	0.356	0.166	0.310	0.571	0.308
X1.8	<b>0.034</b>	0.700	0.670	0.129	0.590	0.411	0.299
Changes in Eating Habits Since COVID-19 Pandemic							
X2.1	0.818	0.210	0.537	0.554	0.635	0.797	0.411
X2.2	0.748	0.102	0.176	0.507	0.332	<b>0.040</b>	0.064
X2.3	0.657	0.262	0.693	0.312	0.458	0.668	0.313
X2.4	0.670	<b>0.044</b>	0.150	<b>0.002</b>	0.203	0.123	0.293
X2.5	0.751	0.078	0.081	<b>0.001</b>	0.268	0.101	0.411
X2.6	0.321	0.520	0.329	<b>0.030</b>	0.155	0.381	0.184
X2.7	0.896	0.574	0.457	0.499	0.251	0.388	0.102
X2.8	0.493	<b>0.046</b>	0.664	0.430	0.822	0.629	0.385
X2.9	0.873	0.120	0.347	0.160	0.809	0.088	<b>0.019</b>
Changes in Food Consumption Activity Since COVID-19 Pandemic							
X3.1	0.873	0.164	0.384	0.604	0.204	0.518	0.186
X3.2	<b>0.042</b>	0.291	0.269	0.766	0.645	0.653	0.305
X3.3	0.211	0.466	0.437	<b>0.039</b>	0.320	0.054	0.312
X3.4	0.926	0.975	0.774	0.072	0.269	0.590	0.458
X3.5	0.886	0.899	0.364	0.131	0.785	0.530	0.105
X3.6	0.226	0.158	0.714	<b>0.040</b>	0.095	0.570	<b>0.000</b>
X3.7	0.294	0.959	0.481	0.327	0.747	0.647	<b>0.000</b>
X3.8	0.116	0.179	0.250	0.788	0.739	0.671	0.122
X3.9	0.545	0.075	0.340	0.389	0.535	0.445	0.082

Source: Processed data by author (2022)

**Changes in Food Purchasing Behavior Since COVID-19 Pandemic**

As seen in Table 5 below, the food purchasing behavior of the community in Bandung has changed compared to the situation before the COVID-19 pandemic. It appears that online platforms, both for ready-to-eat foods and groceries, are increasingly becoming the community's preferred option thanks to the COVID-19 pandemic (33.33% and 39.15%), which are in line with previous studies (Ben Hassen et al., 2020; Cavallo et al., 2020; Chenarides et al., 2021; FMI, 2020; Hapsari et al., 2020; Lee

& Kim, 2021; OECD, 2020; Yang et al., 2022; Zuluš et al., 2022). The increase in ordering groceries via online platforms was mainly carried out by respondents aged 36-45 years (see Table 4), most of whom are married and accustomed to internet access. On the other hand, online ordering of ready-to-eat foods is increasing regardless of age group.

However, this condition is accompanied by a decrease in people's interest in shopping personally at traditional markets (36.43%). This means that in the future, micro and small merchants will need to have a higher ability to use technology to stay competitive with supermarkets and other merchants who have marketed their products through online channels. On the other hand, sales of groceries through supermarkets tend to remain unchanged. This can be caused by supermarkets' consistent and disciplined efforts to implement health protocols set by the government, such as scanning the Peduli Lindungi application, checking body temperature, and the availability of hand sanitizers, which maintain consumer confidence in supermarkets (FMI, 2020).

Another thing that deserves attention is the ceasing of purchases through employees, such as domestic helpers and private drivers, for groceries (43.8%) and ready-to-eat foods (39.53%). This can indicate that people are reluctant to allow their household members to interact too much with outsiders. However, it can also indicate a significant layoff phenomenon among domestic helpers and private drivers. If the second cause is proven to be true, then the unemployment rate may increase soon, especially in Bandung. With skills development, these private employees might find it easier to find other jobs, reducing people's purchasing power and exacerbating societal economic and social inequalities.

**Table 5. Changes in Consumer Food Purchasing Behavior Since COVID-19 Pandemic (n = 258)**

Statement	Percentage (%)					Means*	VR
	1*	2*	3*	4*	5*		
X1.1	12.79	<b>36.43</b>	30.23	13.95	6.59	2.65	0.64
X1.2	3.10	29.07	<b>35.27</b>	24.81	7.75	3.05	0.65
X1.3	8.14	15.50	16.67	<b>39.15</b>	20.54	3.48	0.61
X1.4	<b>43.80</b>	16.28	26.74	10.47	2.71	2.12	0.56
X1.5	<b>39.53</b>	17.44	25.58	13.18	4.26	2.25	0.6
X1.6	6.59	23.64	26.36	<b>27.91</b>	15.50	3.22	0.72
X1.7	5.43	12.02	16.67	<b>33.33</b>	32.56	3.76	0.67
X1.8	24.03	25.19	<b>31.78</b>	12.40	6.59	2.52	0.68

\*Scale: 1 = Never anymore; 2 = More seldom; 3 = Does not change; 4 = More often; 5 = Far more often

*Source: Processed data by author (2022)*

Changes in consumer behavior that tend to buy their ready-to-eat foods by coming directly to the store (27.91%) indicate that people have started to come to terms with COVID-19 and do not feel overly concerned about doing activities outside their home or concerned about the chances of getting infected by consuming food from outside. The increase in online purchases for both groceries (39.15%) and ready-to-eat foods (33.33%) is also a sign that in the future, businesses in the F&B industry need to run their business using hybrid or even fully online methods.

### **Changes in Eating Habits Since COVID-19 Pandemic**

The Bandung population's eating habits have remained unchanged since the COVID-19 pandemic. The changes occur lean towards a significant increase in fruit and vegetable (43.02%) and healthy food (36.43%) consumption. In line with this result, it can be seen that people are more informed about the vital part a healthy diet plays in maintaining the body's health and immunity. This result is similar to those from Celik & Dane (2020) and FMI (2020), who found that the most sought-after foods changed from meat and bakery products to healthier-looking fruits and vegetables due to the pandemic. Still, this increase in the consumption of fruits, vegetables, and healthy foods is not accompanied by a decrease in less healthy foods, such as instant and canned foods. This means people's consumption level is increasing, where healthy foods do not substitute the usually eaten foods but rather complement and add up the consumed portion. This result also aligns with Scarmozzino and Visioli's (2020) research at the beginning of the COVID-19 pandemic.

The absence of drastic changes in instant, frozen, and canned foods shows that there are currently no instances of panic buying or stockpiling consumers after two years since the COVID-19 emergence, similar to the results shown by Ben Hassen et al. (2020). This result is in contrast with the condition in the earliest days of the pandemic, where foods that are easy to consume and have long shelf life are thus deemed worthy of being stocked during emergencies (Ben Hassen et al., 2020; OECD, 2020) such as instant, frozen, and canned foods were bought in bulk and stored at home. This contrast occurs because people no longer feel too worried and anxious that another wave of COVID-19 cases capable of forcing the Indonesian government to enforce lockdowns will occur again. Correspondingly, snacking towards healthy and less healthy snacks shows no significant change. This condition shows that people no longer seek snacks as their comfort food, nor are they stress eating akin to the early days of the pandemic when they felt stressed and bored due to their restricted and mostly indoor life. After all, those negative feelings can cause the consumption of familiar and childhood foods, the so-called comfort foods, to increase as a way to escape and entertain oneself, which can reduce excessive anxiety during uncertain times (Cavallo et al., 2020; Scarmozzino & Visioli, 2020).

However, snacks are still being consumed. From the results shown in Table 4, it can be seen that respondents aged 55 years old and above, who are more prone to COVID-19 infection, tend to consume healthy snacks, which is in line with the results shown by Zulug et al. (2022) who said that the older the respondent, the higher their snack consumption is. The increase in awareness mostly causes this condition that healthier foods are needed as one ages. On the other hand, respondents who live by themselves tend to consume less healthy snacks due to the absence of outside control and supervision, especially from their family.

Regarding meat product consumption, it can be seen that the condition caused by the COVID-19 pandemic does not deter people from consuming meats, which are mostly more expensive than fruits

and vegetables. This result can be seen from the absence of respondents who stopped consuming meat products since the COVID-19 pandemic. This situation can be a sign that it will be tough for the citizens to change their meat-eating habits, which means the increase in meat prices will significantly affect people’s perceived quality of life. When considering the food crisis looming over the globe, started by the COVID-19 pandemic and aggravated by the Ukraine-Russia war, insufficient meat supply can greatly disturb people’s lives.

**Table 6. Changes in Eating Habits Since COVID-19 Pandemic (n = 258)**

Statement	Percentage (%)					Means*	VR
	1*	2*	3*	4*	5*		
X2.1	0.39	8.53	27.52	<b>43.02</b>	20.54	3.75	0.57
X2.2	0	14.34	<b>59.95</b>	26.74	10.08	3.33	0.51
X2.3	0.39	11.63	33.33	<b>36.43</b>	18.22	3.60	0.64
X2.4	8.53	31.40	<b>32.56</b>	20.54	6.98	2.86	0.67
X2.5	5.04	25.97	<b>64.50</b>	24.81	9.69	3.08	0.66
X2.6	10.47	25.58	<b>31.40</b>	23.26	9.30	2.95	0.69
X2.7	22.09	29.46	<b>32.17</b>	12.79	3.49	2.46	0.68
X2.8	4.26	16.67	<b>39.92</b>	27.91	11.24	3.25	0.6
X2.9	10.85	27.13	<b>36.05</b>	19.38	6.59	2.84	0.64

\*Scale: 1 = Never anymore; 2 = More seldom; 3 = Does not change; 4 = More often; 5 = Far more often

Source: Processed data by author (2022)

### **Changes in Food Consumption Activity Since COVID-19 Pandemic**

The COVID-19 pandemic has changed Bandung citizens’ food consumption activity habits. It can be seen that respondents tend to increase their activity of making meals by themselves (38.76%). As a result, the time spent cooking also increases (36.43%), and the type of meals prepared leans towards easy-to-prepare ones (36.43%). This result shows that the COVID-19 pandemic increased the time and energy people poured into preparing and making their meals, whether due to health concerns, economic reasons, or idle time availability. This is in line with the research results of Ben Hassen et al. (2020), Lee & Kim (2021), and Zulug et al. (2022). Habits formed during the COVID-19 pandemic, such as cooking, were perceived as beneficial; for example, cooking their meals tends to be healthier and cost less, making these behaviors continue even after the pandemic. However, with the return of activity level and workload, people have started to become increasingly busy and thus, buying food from outside is seen as an effective choice, as shown by how many respondents increased their food orders (39.92%). At the same time, people, especially females (see Table 4), no longer feel as burdened and instead enjoy cooking their food during their spare time, as seen from how respondents tend to increase their time spent cooking (36.43%), even for simple meals (36.43%).

People also increased their activity of eating together with family members (31.40%) thanks to the COVID-19 pandemic and decreased their frequency of eating out (39.92%). This condition is expected because many respondents live with their direct family (see Tables 2 and 4). This result is similar to Ben Hassen et al. (2020) and Lee & Kim (2021). A decrease in eating in other people’s houses, on the other hand, can be caused by the understanding that the COVID-19 pandemic has not

indeed ended and, thus, there are still infection risks, which makes people think twice before visiting someone else's house or before welcoming other people as guests inside their home

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**Table 7. Changes in Food Consumption Activity Since COVID-19 Pandemic (n = 258)**

Statement	Percentage (%)					Means*	VR
	1*	2*	3*	4*	5*		
X3.1	3.49	11.24	24.81	<b>38.76</b>	21.71	3.64	0.61
X3.2	4.65	14.34	27.91	<b>36.43</b>	16.67	3.46	0.64
X3.3	4.26	18.99	27.91	<b>36.43</b>	12.40	3.34	0.64
X3.4	5.43	15.50	17.05	<b>39.92</b>	22.09	3.58	0.6
X3.5	5.43	19.38	<b>34.50</b>	29.84	10.85	3.21	0.66
X3.6	12.40	24.03	<b>30.62</b>	21.71	11.24	2.95	0.69
X3.7	6.20	10.47	30.23	<b>31.40</b>	21.71	3.52	0.69
X3.8	<b>32.17</b>	<b>32.17</b>	20.93	10.08	4.65	2.23	0.68
X3.9	14.34	<b>39.92</b>	27.13	12.02	6.59	2.57	0.6

\*Scale: 1 = Never anymore; 2 = More seldom; 3 = Does not change; 4 = More often; 5 = Far more often

Source: Processed data by author (2022)

## CONCLUSION AND RECOMMENDATION

Extraordinary events such as the COVID-19 pandemic have caused changes in people's behavior, including food consumption. Based on the research results above, several conclusions can be

drawn about consumer food consumption behavior changes. First, people generally felt that their food consumption level had increased compared to before the COVID-19 pandemic. People choose to increase their fruit and vegetable intake without reducing their meat consumption, which increases their overall consumption level. Second, purchases made using online applications have increased for groceries and ready-to-eat meals. This new habit indicates that F&B businesses must use online channels to maintain competitiveness.

Third, the COVID-19 pandemic and the obligation to stay at home increase the time people spend cooking their meals, either due to health concerns, economic reasons, or the availability of free time. Fourth, the pandemic situation also increases the closeness between families. This can be seen from the increased eating with family and decreased eating outside one's home. Fifth, after two years since the emergence of the COVID-19 pandemic, the emergency is now under control, and the public is now more settled. This can be seen from the unchanged intensity of purchasing foods with a relatively longer shelf life, such as canned, instant, and frozen food.

The implication of this research for Bandung's F&B industry is that they need to adapt according to people's consumption behavior after the COVID-19 pandemic's emergence. F&B businesses must utilize online platforms to market and deliver their goods to end consumers. In addition, considering the increasing preference for healthier foods, F&B businesses can add healthier menus as an alternative for their consumers.

Despite these findings, this study still has some limitations. For example, a limitation related to respondents' diversity was identified, where students aged less than 25 years old dominate this study's respondents' profile compared to other age and profession groups. Although this group can represent the food consumption behavior of their small family, future research is expected to broaden the scope of age groups and professions more evenly to obtain results that can describe conditions in various demographic profiles.

Further research should also change the terms "healthy" and "unhealthy" because of the connotations attached to these words. Instead, specific examples of foods can be given to reduce confusion due to subjectivity. In addition, for further research that wishes to replicate this research questionnaire, it is necessary to pay attention to the suitability of the statement items so that they remain relevant to the context of each country or region, for example, statements regarding traditional markets and personal employees which are quite typically found among Indonesian living in urban areas.

Follow-up research can be carried out to address the drastic reduction of groceries and ready-to-eat foods purchased through employees, which is suspected to be due to large-scale layoffs of private employees during the COVID-19 pandemic. Further research to confirm this is needed to anticipate a rise in unemployment rates and a decline in purchasing power that may occur, especially among people with middle to lower economic levels.

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