



# The Effect of Online Order Development on Fast Food, Vegetable, and Fruit Consumption Behavior on Students in Surabaya

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#### Abstract

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### Introduction

The Industrial Revolution 4.0 supports the development of various kinds of startups made in Indonesia. Not only limited to tourism, e-commerce, and transportation, applications made by Indonesian startups also target the provision of online food ordering services. In Indonesia, two online food ordering companies are often used by the Indonesian people, Go-Food and Grab-Food [1]. 87.3% of users aged 17-24 years use online food delivery applications. The frequency of using online order applications in the 17-24-year age group varies, 42.5% of the 17-24year age group used one time every 1-2 weeks, and 26.7% used it more than once per week [2]. The online food ordering application is an innovative and easy-touse platform because users only need a smartphone and only need to download to use and get the service. This application allows users to order food with a wide variety of food choices that will enable them to consume

BACKGROUND: Technology development causes easy access to various sectors, including ordering food online. Unfortunately, most of the food sold nowadays contains more calories, fat, sugar, salt, and so on, especially in fast food. Meanwhile, the consumption of vegetables and fruits of Indonesia's people is still inadequate; only 63.3% consume as recommended. These things will undoubtedly increase the body mass index and increase the risk of overweight and obesity.

AIM: This study aims to analyze the impact of the development of online order services which is related to consumption behavior of fast food, vegetables, and fruit among students and being compared to their nutritional status to know the risk of overweight/obesity by consuming the related food/beverage.

METHODS: This descriptive cross-sectional study enrolled 317 students in Surabaya City, East Java, Indonesia, and was carried out through online survey platforms, SurveyMonkey. Data were analyzed in statistical software SPSS 25.0 using multivariate binomial linear regression test with significance level set at p < 0.05

RESULTS: Regression analysis shows that the habit of ordering boba drinks with a weekly frequency has a significant relationship with the incidence of overweight/obesity in respondents (p = 0.015; odds ratio = 3.037; 95% confidence interval [1.236-7.462]).

CONCLUSION: Based on this study, consumption habits of boba drinks are associated with increasing the risk of overweight and obesity. Besides the awareness of consumers, a policy from the government and related parties is needed to regulate boba consumption limits for the community.

> food according to their choice [3]. Vegetables and fruit are high in fiber and rich in vitamins and minerals. Therefore, according to the guidelines for balanced nutrition, the daily intake of vegetables and fruit for Indonesians is approximately 300-400 grams per day for children and 400-600 g/day for adults. However, consumption of vegetables and fruit in Indonesia is still lacking because only 63.3% of people consume vegetables as recommended [4].

> Lawrence Green classifying several factors that cause an action or behavior changes were predisposing factors (knowledge, attitude, tradition, etc.), enabling factors (facilities and infrastructure), and reinforcing factors (environment, relatives, etc.) [5]. Food choice can be reflected depending on their behavior of choosing their food preference. Some people would likely choose healthy food, and some others would choose junk food, fast food, and so on. Fast food is defined as processed food that is easy to prepare and serve in restaurants for takeout and fast

food. Initially, fast food outlets were aimed at people busy working and who did not have time to eat [6]. However, along with the times, fast food outlets can be well received by the public because their presentation is guick, easy, and offers flexibility in consuming them. Based on observations in online food applications, fast food is included in the food group with the most reviews, indicating that this food group is ordered quite often. Food purchased outside the home contributes to increasing calorie consumption because it contains more fat, saturated fat, sugar, and added sugar compared to home-cooked food. Overweight. abdominal fat gain, and oxidative stress were caused by frequent consumption of fast foods [7]. This will undoubtedly contribute to increased body mass index (BMI), obesity, and non-communicable diseases.

Baseline Health Research Indonesia (2018) shows that the prevalence of overweight and obesity in adults is 13.6% and 21.8% [8], while the prevalence of obesity in East Java is equal to 13.7% and 22.4%. Meanwhile, the prevalence of obesity in Surabaya is 15.18 and 28%. Surabaya is the city with the highest number of universities in East Java. The number of universities in Surabaya in 2019 was 6 public universities and 72 private universities with 272,846 students [9]. The high busyness of students in academic and nonacademic matters will undoubtedly affect the way students obtain food and food preferences. Therefore, researchers are interested in knowing the impact of the development of online orders on the consumption behavior of fast food, vegetables, and fruit among students in Surabaya.

### **Materials and Methods**

### Study settings

This research was conducted in the city of Surabaya through online platforms such as SurveyMonkey, with a research period from September 2021 to November 2021.

#### Study design and population of interest

The type of research in this study is an observational study with a cross-sectional design approach. This approach will be carried out for students to determine the impact of the development of online order services including frequency of ordering food/ beverage by online which is related to consumption behavior of fast food, vegetables, and fruit among students and being compared to their nutritional status to know the risk of overweight/obesity by consuming the related food/beverage. The population in this study were students from public and private universities in Surabaya.

#### Table 1: Characteristics of respondents

	(81)
Variable	n (%)
Sex	
Male	55 (17.4)
Female	262 (82.6)
Ages	
17	2 (0.6)
18	38 (12)
19	69 (21.8)
20	70 (22.1)
21	72 (22.7)
22	56 (17.7)
23	8 (2.5)
25	1 (0.3)
26	1 (0.3)
Universities	
UNAIR	254 (80.1)
UNESA	23 (7.3)
UIN Sunan Ampel	7 (2.2)
ITS	5 (1.6)
UPN Veteran Jawa Timur	4 (1.3)
Universitas Surabaya	3 (0.9)
Universitas Hang Tuah	1 (0.3)
Universitas 17 Agustus 1945 Surabaya	1 (0.3)
Universitas Muhammadiyah Surabaya	1 (0.3)
Others	18 (5.7)
Study Major	
Health (Medicine, Pharmacy, Nursing, etc.)	215 (67.8)
Exact sciences (Math and Sciences, Engineering, etc.)	26 (8.2)
Social humanities (Law, Social, and Politics, etc.)	76 (24)
Monthly allowance	
<idr 500,000<="" td=""><td>150 (47.3)</td></idr>	150 (47.3)
IDR 500,000–IDR 1,000,000	121 (38.2)
>IDR 1,000,000–IDR 2,000,000	30 (9.5)
>IDR 2,000,000	16 (5)
Nutrition status based on BMI	
Overweight obese	101 (31.9)
No overweight obese	216 (68.1)

BMI: Body mass index, UNAIR: Universitas Airlangga, UNESA: Universitas Negeri Surabaya, ITS: Institut Teknologi Sepuluh Nopember.

#### Sample

The subjects in this study as shown in Table 1 were college students studying at universities in Surabaya City. By using the Lemeshow formula below, the number of samples in this study was 500 samples. The inclusion criteria in this study were: (1) college students who studied at the universities in Surabaya City, (2) had ordered food online before, and (3) are willing to be research respondents.

Determination of the research sample was carried out using the accidental sampling technique, which is a method of determining the sample by taking respondents who happened to exist or were available and met the research requirements. Every respondent who fills out the questionnaire completely and meets the inclusion criteria, then they can be used as a sample in this study. Based on those criteria, 317 students as shown in Table 1 are the samples in this study. All cases that did not meet the inclusion criteria were excluded from the study.

#### Data collection

The dataset was obtained from SurveyMonkey from September 2021 to November 2021. The data were collected using five questionnaires, which included Frequency of Online Orders Questionnaire; Frequency of Online Orders of Fast Foods Questionnaire; and Frequency of Online Orders of Vegetables, Fruits, and Processed Vegetables and Fruits Questionnaire. This dataset contains information related to the frequency of

#### Table 2: Frequency of online order

Variable	Frequencies					
	Almost everyday, n (%)	4-6×in week, n (%)	1–3×in week, n (%)	2-3×in month, n (%)	1×in month, n (%)	<1×in a month, n (%)
Frequency of online orders	17 (5.4)	24 (7.6)	94 (29.7)	106 (33.7)	29 (9.1)	47 (14.8)

online orders; frequency of online orders of fast foods; and frequency of online orders of vegetables, fruits, and processed vegetables and fruit.

### Dependent variables of the study

The dependent variable in this study is the nutritional status of the respondents. The nutritional status will be determined by looking at the BMI through the weight and height that the respondent has filled in the questionnaire for this study. The BMI results will be classified into two categories, namely: (1) overweight obese (BMI (body mass index) > 23.5) and (2) not overweight obese (IMT < 23.5).

#### Independent variables of the study

The independent variables in this study were frequency of online orders, frequency of online orders of vegetables, fruits, and processed vegetables and fruit; and frequency of online orders of fast foods.

### **Results**

### Characteristics of the study population

This study indicates that all respondents have ordered food online with various frequencies ranging from daily to monthly. The majority of respondents order food online with a frequency of 2–3 times per month. The frequency of respondents' habits in ordering food online in detail is shown in Table 2.

This study also found that almost all respondents never ordered vegetables (84.8%), fruit (88.3%), and vegetable- and fruit-based processed foods (50.5%) online. The frequency of ordering vegetables, fruit, and vegetable- and fruit-based processed foods is shown in Table 3.

In addition, the results show that respondents also have a habit of ordering fast food online. Most of the food is ordered with a monthly frequency. This study shows that consumption of chicken and poultry occupies the first rank of food consumption frequency on online orders. Daily order and consumption of chicken and poultry reach 44.5% of respondents. The frequency of ordering and types of fast food that respondents often buy is shown in Table 4.

From the results of the analysis of the habit of ordering food, vegetables, fruit, and ready-to-eat food online variables using a multivariate binomial logistic regression test, it was found that weekly boba consumption had a significant relationship with the incidence of obesity/overweight (p = 0.015). In addition, the results of the test showed that respondents who consumed boba on a weekly basis have a 3.037 times higher risk of becoming overweight/obese compared to those who have the habit of ordering and consuming boba drinks every month. Table 5 explains the results of the analysis in this study in more detail.

### Discussion

Currently, ordering food online has become a trend and very popular with all people, including students. A survey conducted in Indonesia shows that one thousand one hundred forty-six respondents took part in this survey, and 82% of respondents were adults. In addition, with the COVID-19 pandemic, people have to make various new adaptations by keeping their distance and not leaving the house if necessary. The existence of attractive promos and discounts offered, ease of access, a sense of security, varied food choices, easy payment methods, and so on are some of the reasons many people order food online.

Based on the results of the multivariate binomial regression test, It was found that the frequency of ordering food or drinks online did not have a significant relationship with the nutritional status of the respondents, showed by frequency of every week (p = 0.716), 4-6 times per week (p = 0.664), 2-3 times per month (p = 0.826), and 1 time every month (p =0.524). The results of this study are in line with a study which also showed that the frequency of ordering food and drinks online was not related to nutritional status (p = 0.595) [10]. Primary factors that influence people choose to order food and drink online were in order to save time and energy and promo availability. Besides that, the number and variety of restaurants, menu, delivery tracking service, and attitude of delivery person are the secondary factors [11]. These factors can

Table 3: Frequency of Online orders of vegetables, fruits, and processed vegetables and fruit

Variable	Frequencies					
	Everyday	Several times a week	1×in week	Several times in a month	1x in month	Never
Frequency of online order of vegetables	1 (0.3)	6 (1.9)	6 (1.9)	12 (3.8)	23 (7.3)	269 (84.9)
Frequency of online order of fruits	0	3 (0.9)	7 (2.2)	7 (2.2)	20 (6.3)	280 (88.3)
Frequency of online order of processed vegetables and fruits	1 (0.3)	25 (7.9)	16 (5)	51 (16.1)	64 (20.2)	160 (50.5)

#### Table 4: Frequency of online orders of fast foods

Variable	Frequencies	•		
	Daily, n (%)	Weekly, n (%)	Monthly, n (%)	
Burger	16 (5)	43 (13.6)	258 (81.4)	
Pizza	7 (2.2)	33 (10.4)	277 (87.4)	
Fried chicken (McDonald's, KFC, etc.)	14 (4.4)	109 (34.4)	194 (61.2)	
Spicy noodles	17 (5.4)	115 (36.3)	185 (58.4)	
Chicken and poultry	141 (44.5)	148 (46.7)	28 (8.8)	
French fries	21 (6.6)	139 (43.8)	157 (49.5)	
Dimsum	14 (4.4)	97 (30.6)	206 (65)	
Soda (Fanta, Coca Cola, etc.)	7 (2.2)	57 (18)	253 (79.8)	
Boba drink	5 (1.6)	76 (24)	236 (74.4)	
Coffee	25 (7.9)	98 (30.9)	194 (61.2)	
Теа	41 (12.95)	132 (41.6)	144 (45.4)	
Sweet beverages	28 (8.8)	105 (33.1)	184 (58)	

influence someone to choose to order food and drink online. However, the frequency of ordering food and drinks online is not always directly related to a person's nutritional status. Nutritional status can be influenced by various factors including age, dender, genetic factors, food habits, food preferences, and so on [12].

In addition, based on the results of statistical tests, there is no relationship between the frequency

#### Table 5: Analysis result

Type of Foods	OR	CI 95%		р
		Lower	Upper	
Frequency of online orders (almost every day)	1.362	0.257	7.223	0.716
Frequency of online orders (4-6x in the week)	0.701	0.142	3.467	0.664
Frequency of online orders (1-3x in the week)	0.789	0.299	2.080	0.632
Frequency of online orders (2-3x in a month)	1.102	0.466	2.603	0.826
Frequency of online orders (1x in a month)	1.455	0.459	4.610	0.524
Frequency of the online order of vegetables	1979	0.000	0.000	0.999
(every day)				
Frequency of the online order of vegetables	6160	0.000	0.000	0.999
(several times)				
Frequency of online order of vegetables (1x in	0.410	0.040	4.209	0.453
the week)				
Frequency of online order of vegetables	1.036	0.200	5.357	0.966
(several times in a month)				
Frequency of online order of vegetables (1x	0.541	0.161	1.813	0.319
in a month)				
Frequency of the online order of fruits (every	0.000	0.000	0.000	0.999
day)	0.000	0.000	0.000	0.000
Frequency of the online order of fruits (several	1.716	0.213	13.796	0.612
times)		0.210	101100	0.012
Frequency of online order of fruits (1x in the	1.119	0.285	4.390	0.872
week)		0.200		0.012
Frequency of online order of fruits (several	0.000	0.000	0.000	0.999
times in a month)	0.000	0.000	0.000	0.000
Frequency of online order of fruits (1x in a	0.000	0.000	0.000	0.999
month)	0.000	0.000	0.000	0.000
Frequency of online order of processed	5762	0.000	0.000	1.000
vegetables and fruits (every day)	5702	0.000	0.000	1.000
Frequency of online order of processed	0.793	0.241	2.605	0.702
vegetables and fruits (several times)	0.735	0.241	2.005	0.702
Frequency of online order of processed	1.149	0.287	4.596	0.844
vegetables and fruits (1x in the week)	1.145	0.207	4.550	0.044
5 ( )	0.832	0.383	1.806	0.642
Frequency of online order of processed vegetables and fruits (several times in a	0.032	0.303	1.000	0.042
- · · ·				
month)	1.481	0.700	3.135	0.305
Frequency of online order of processed	1.401	0.700	3.135	0.305
vegetables and fruits (1x in a month)	2.105	0.476	22.000	0 570
Monthly allowance ( <idr 500,000)<="" td=""><td></td><td>0.176</td><td>23.008</td><td>0.573</td></idr>		0.176	23.008	0.573
Monthly allowance (IDR 500,000–IDR	2.330	0.213	25.478	0.488
1,000,000)	1 000	0.450	22 222	0.015
Monthly allowance (>IDR 1,000,000–IDR	1.893	0.158	22.722	0.615
2,000,000)	4 004	0.405	40 447	0 700
Monthly allowance (>IDR 2,000,000)	1.604	0.135	19.117	0.708
Burger (weekly)	1.305	0.453	3.758	0.622
Pizza (weekly)	0.742	0.208	2.649	0.646
Fried chicken (McDonald's, KFC) (weekly)	0.889	0.443	1.783 1.641	0.740
Spicy noodles (weekly)	0.858 1.030	0.449 0.379	2.798	0.643 0.955
Chicken and poultry (weekly) French fries (weekly)	1.828	0.969	3.449	0.955
Dimsum (weekly)	0.797	0.394	1.612	0.002
Soda (Fanta, Coca Cola, etc.) (weekly)	0.942	0.394	2.273	0.328
Boba drink (weekly)	3.037	1.236	7.462	0.094
Coffee (weekly)	0.650	0.328	1.286	0.015
Tea (weekly)	1.770	0.927	3.379	0.210
Sweet beverages (weekly)	0.705	0.357	1.392	0.314
*Significantly different with alpha <0.05 using logistic regre				

of ordering vegetables online, and nutritional status of respondents on each frequency, either daily (p = (0.999), several times a week (p = 0.999), once a week (p = 0.459), several times a month (p = 0.966), or once a month (p = 0.319). Research related to the relationship between ordering vegetables online and nutritional status has not been widely studied and studied. This is because the Indonesian people, including college students, prefer to buy vegetables directly, such as in traditional markets or supermarkets. Meanwhile, the underlying reason for this is because the vegetables are fresh, there's a lot of choices, and the price can be negotiated [13]. This is in line with a study which shows that consumer decisions in buying vegetables are based on cognitive analysis and emotional elements of self and advertising or advertising campaigns have a relatively small effect on their behavior [14], [15]. The study also explained that consumers value and place more emphasis on the quality, freshness, appearance, and price of the product than other characteristics. Other studies also mention that the factors that influence a person in ordering and consuming vegetables and fruit are the level of preferences, attitudes, and consumer behavior [16].

Frequency of online order of fruits seems not giving a significant value. Most of the respondents give none (p = 0.999) on option order every day, several times in a month, and 1x in a month. Only several respondents give answers to several times (p = 0.612) and 1x in a week options (p = 0.872). This result is in line with a study which shows that by ordering online, the most frequently ordered fruits are oranges, dragon fruit, and avocados with the average number of orders for once in a month. The majority of fruits consumed by offline purchases are bananas, oranges, and papayas with a frequency of 3–6 times a month. Fruit soup, salad, and fruit pie were the processed fruit menus that were most frequently consumed by respondents through online order [17].

In this study, it was shown that the amount of student monthly pocket money with a monthly allowance of <IDR 500,000 (p = 0.579), IDR500,000-IDR1,000,000 (p = 0.488), IDR1,000,000-IDR2,000,000 (p = 0.615),and >IDR2,000,000 (p = 0.708) did not have a significant relationship with the nutritional status of the respondents. The results of this study are in line with a study which showed that the amount of monthly pocket money did not have a significant relationship with the nutritional status of students with a p = 1.000 [18]. Another research also shows that there is no significant relationship between the amount of pocket money and the nutritional status of students with a p value of 0.305 [19]. However, various studies show different results such as a study which shows that there is a significant relationship between the amount of pocket money with nutritional status students with a p value of 0.000 [20]. A person with a low amount of pocket money tends to have an unfavorable consumption pattern, namely consuming less fruit and

vegetables and consuming more sugary drinks [21]. Meanwhile, if someone has a higher amount of money, it will lead to an increase in the quality of the diet such as an increase in fruit and vegetable consumption. This can reduce the risk of various cardiovascular diseases in a person such as diabetes mellitus, obesity, and cardiovascular disease [22].

In 2021, Grab released a survey for 10 bestselling foods ordered on GrabFood in Indonesia. There are fast food, martabak, pizza, meatballs, chicken, fried rice, burgers, seblak, noodles, and satay [23]. Based on that survey and what food that most of students' order, we decided to include burger, pizza, fried chicken, spicy noodles, chicken and poultry, french fries, and dimsum in our survey. Based on our survey, there is no significant relationship between consumption of burger (p = 0.622), pizza (p = 0.646), fried chicken (p = 0.740), spicy noodles (p = 0.643), chicken and poultry (0.955), french fries (p = 0.062), and dimsum (p = 0.528) with the nutritional status of the respondents. The results are in line with a study that showed there is no significant relationship between fast food consumption, BMI, and the pattern of fast food consumption [24].

Based on a survey conducted by Grab Indonesia in 2019 [25], it was found that the drinks that are often ordered online are boba, coffee, various types of tea, and sweet drinks. In addition, the results of this study indicate that there is no significant relationship between coffee consumption with the nutritional status of the respondents (p = 0.579). This result is in line with a study which showed that there was no effect between coffee consumption and a person's nutritional status [26]. Other studies have also shown that coffee consumption does not affect a person's intake, so it is very unlikely to affect a person's nutritional status [27]. Other studies have also shown that coffee consumption 3-4 h before eating has a low effect on macronutrient intake and coffee consumption  $\frac{1}{2}$ -4 h can also suppress energy intake [28]. This is in line with a study which showed that consumption of instant coffee more than three times a day led to a 1.3 times higher risk of developing obesity, such as central obesity in adults [29].

In addition, this study shows that there is no relationship between tea consumption and the nutritional status of the respondents (p = 0.084). There is no relationship between the two variables because this study did not pay attention to the amount or amount of tea consumed by the respondents, thus affecting the results of the study. One study showed that someone who drank hot tea had a lower waist circumference and BMI (p < 0.001). Conversely, if a person consumes cold tea, there is an increase in BMI, waist circumference, and thickness of fat on the skin [30]. The content of caffeine, catechins, tannins, and flavonoids in tea can cause interference with the absorption of protein and iron nutrients if tea is consumed in large quantities and frequently [31].

Sugar-sweetened beverages (SSB) are any liquids sweetened with added sugars such as

brown sugar, corn sweetener, corn syrup, dextrose, fructose, glucose, high-fructose corn syrup honey, lactose, malt syrup, maltose, molasses, raw sugar, and sucrose [32]. Based on our study, consumption of sweet beverages show no significant relationship with nutritional status of the respondents (p = 0.314). Furthermore, our study showed that there is no significant relationship between consumption of soda with the nutritional status of respondents (p = 0.894). In addition, our study showed that the consumption of boba drinks every week had a significant relationship with the nutritional status of overweight and obesity in respondents (p = 0.015; odds ratio [OR] = 3.037; 95% confidence interval [CI] [1.236-7.462]). A study shows that 254 from 483 (52.5%) respondents choose boba as a topping on their drinks [33]. Boba is one of the drinks included in the SSB category. The sugar content in boba drinks is high sugar and calories around 38-96 g sugar and 299-515 kcal depending on the type of topping and size of boba drinks. The sugar content in boba exceeds the recommended daily sugar consumption, which is only 5% of total energy per day [34]. Boba drinks have similar sugar and calories as other SSB, containing high fructose corn syrup (55% fructose, 45% glucose) or sucrose (50% fructose, 50% glucose) [35].

SSB can contribute to higher consumption of sugar that will increase the risk of type 2 diabetes mellitus [36] and cardiovascular disease [37], [38], [39]. SSB also has higher calories and will increase total calorie intake, resulting in weight gain over time [40] and making higher obesity risk. Due to fructose, high dietary glycemic in SSBs can also increase the risk of hepatic insulin resistance and visceral fat deposition and elevate the triglycerides and cholesterol level [41]. Recent research suggests that drinking about 1 L or the equivalent of two 16 ounces SSBs per day for 6months can induce features of metabolic syndrome and fatty liver [41]. SSB can also cause feelings of not being satiety, increasing energy intake. Overconsumption of these SSBs and boba drinks can contribute to higher overweight and obesity [42]. Recent evidence suggests that SSB consumption is positively associated with or has an effect on adults' obesity [43].

Therefore, considering the existing problems, regulations or policies regarding the rules and limits on SSB consumption are needed, such as restrictions on the amount and type of sugar used, size of drinks, and level of sweetness. Besides that, a study shows the importance of self-efficacy in helping adolescents to reduce their consumption of SSB. The strongest predictor in reducing consumption by adolescents in Taiwan is self-efficacy because there are difficulties in changing the high environmental accessibility of SSB in Taiwan. However, this study has several implications for producing a policy brief that regulates the limits of SSB consumption in adolescents. First, this study found that consumption of boba drinks at least once a week had a relationship with the BMI of overweight and obese respondents. It may be helpful to design a health promotion program in the form of a policy brief to reduce SSB in adolescents [44]. Some recommendations that can be used as a policy brief are implementing a tax on SSB, especially boba drinks, and making effective social marketing campaigns that support healthy beverage choices [45]. Online food platforms sometimes give buyers a big promo and discount to increase the sales rate; restricting promo and discount for unhealthy food or drinks might provide an excellent chance to reduce fast-food consumption due to the higher price that consumers should pay.

# Conclusions

This study examines the influence of the development of online orders on the habitual pattern of consumption of fast food, vegetables, and fruit in students in the city of Surabaya, Indonesia. The results of this study indicate that the habit of consuming boba drinks with a recurring frequency and in the long term will impact increasing BMI, which will then increase the risk of obesity. Therefore, a government and related party policy is needed to minimize the impact of boba consumption habits on adults. The limitation of this study is that the questionnaire used does not include a clearer frequency of consumption such as how many times it is consumed in one week, and so on. In addition, it does not include the size or portion of each food ingredient studied. Further studies should be included for more detailed results. Besides the limitations, this study also has benefits, such as renewable research on how online orders' development impacts students' consumption habits, especially fast food, vegetables, and fruit. Furthermore, currently, there is not muchrelated research about this.

# Author Contributions

Conceptualization, T.M.; investigation, T.M., C.T.A.; methodology, T.M., C.T.A., D.A.P., and E.E.; validation, T.M., D.A.P., and H.M.; formal analysis, T.M., E.E., and D.I.; resources, G.P.Y.; writing–original draft preparation, T.M., C.T.A., D.A.P., and E.E.; writing–review and editing, G.P.Y., T.M., C.T.A., D.A.P., and E.E.; and supervision, T.M., H.M., and D.I. All authors have read and agreed to the published version of the manuscript.

### **Institutional Review Board Statement**

This study was approved by the Ethics Committee from the Faculty of Public Health (KEPK FKM UNAIR) on October 25, 2021, with approval number 46/EA/KEPK/2021.

## **Data Availability Statement**

The datasets generated during and/or analyzed during the current study are not publicly available due to the subject's privacy and ethical concern but are available from the corresponding author on reasonable request.

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