Customer's Repurchase Decision of Fruits and Vegetables Through E-Commerce Sites during Omicron Outbreak in Surabaya

Dinda Ayu Sekarnurani[1], Jamhari[2], Arini Wahyu Utami[2]

[1]Master Student in Agribusiness Management, Faculty of Agriculture, Universitas Gadjah Mada

[2]Departement of Agricultural Socioeconomics, Faculty of Agriculture, Universitas Gadjah Mada, Yogyakarta, 55281, Indonesia
Jl. Flora 01, Bulaksumur, Yogyakarta
dindasekarnurani@mail.ugm.ac.id

ABSTRACT

In the past few years, the number of e-commerce businesses in Indonesia is increasing including those that offer vegetables and fruits. Due to COVID-19 outbreak, transactions through e-commerce sites had also increased. During the outbreak, customers in Indonesia had a tendency to allocate their income for essential needs such as vegetables and fruits. This study aims to: (1) assess the frequency of vegetables and fruits purchases through e-commerce sites before the Omicron outbreak (October – December 2021) and during the Omicron outbreak (January – March 2022); and (2) examine the determinant factors of customers repurchase decision to buy vegetables and fruits through e-commerce sites. Data were collected using online questionnaire distributed to 140 respondents that were selected based on age and experience of purchasing vegetables and fruits online. The differences in frequency of purchasing vegetables and fruits through e-commerce sites before and during the Omicron outbreak were analyzed using the Wilcoxon test. Meanwhile, the determinant factors of the decision to repurchase vegetables and fruits through e-commerce sites were analyzed using binary logistic regression. The results showed that there is no significant difference in frequencies between purchasing before and during the Omicron outbreak. Education, products, price discounts, promotions, and COVID-19 situation are the determinant factors of repurchase decision of vegetables and fruits through e-commerce sites. As the writer conducting this study, there was no previous study on the same case that using the combination of demographic, marketing mix, and situational factor as determinant factors on customers repurchase decision through online platforms.

INTRODUCTION

The evolution of technology and information has brought many changes to many sectors, including the economic sector which is moving to a new direction to the digital economy era. In Indonesia, e-commerce has come as a leading sector in digital economy. E-commerce is any exchange activity of goods, services, and information between organization and third party through an electronic system (Chaffey et al., 2015). E-commerce is predicted to continue to grow every year as technology, infrastructure as well as digital payment methods continue to develop. Based on surveys conducted by Das et al. (2018), the projected growth in e-commerce would come from several cities such as Greater Jakarta, Bandung, Surabaya, and Semarang.

Currently, there are many businesses that originally only sell their products offline, but they are now starting to go online. This shift has also been accelerated by the COVID-19 pandemic. The virus had spread massively and rapidly, causing a huge number of fatalities. This rapid transmission had also resulted in at least three outbreaks in Indonesia: the Alpha variant outbreak (November 2020 – January 2021), the Delta variant outbreak (May – September 2021), and the Omicron variant outbreak (January – March 2022). This led the government to create a policy that required people to do any physically-distanced activities such as work, school, and shopping from home. This situation has resulted in an increasing trend of online shopping, with the highest increment was in the purchase of groceries (Shen et al., 2022). Among these outbreaks, Delta variant had the highest number of transmissions and fatalities case. Meanwhile, the Omicron variant has a decreasing case trend compared to the delta. This variant has milder medical symptoms than the previous variants. Due to this condition, Omicron outbreak has the lowest policy level for maintaining physical distance and limiting physical activity during the pandemic. Hence, people consider the Omicron variant to be harmless.

The decision to buy groceries via online platform is influenced by customer demographic characteristics. Previous studies (Listyowati et al., 2020; Meitasari et al., 2020; Dominici et al., 2021; Magalhães, 2021) examined customer demographics such as age, income, and education level as determinant factors of customers purchase decision on online shopping in various countries.

Besides demographic, one of the factors that needs to be considered is the marketing mix factor. Marketing mix was introduced by McCarthy in 1960 who streamlined it into 4 essential elements or the 4Ps (product, place/distribution, promotion, and price) (Altay et al., 2022). This theory has been widely adopted by companies and is still applicable today. Previous studies found price and product as factor that determine online purchase decision (Cang & Wang, 2021; Vista et al., 2021; Vydiamanta et al., 2021).

In addition to the demographic

and marketing mix factors, this study also examined situational factor as another determinant factor of customers repurchase decision. Situational factors are the state of shopping facilities and time, usage of product, and conditions when making a purchase (Sangadji & Sopiah, 2013). Thus, situational factors studied in other studies may vary. The situational factor in this study is the COVID-19 situation. Several studies (Febrilia & Warokka, 2021; Shahzad et al., 2022; Tyrväinen & Karjaluoto, 2022) found that online purchasing for groceries is increasing during the pandemic.

To the best of our knowledge, no previous study has examined the combination of demographic, marketing mix, and situational factor as determinant factors of customers repurchase decision via online platforms. Therefore, this study could contribute to knowledge of customers behavior especially the repurchase decision through online distribution channel. This study could also help both scholars and professional marketers to get a better understand-ing of determinant factors of customers repurchase decision especially on fresh product. The purpose of this study is to identify the purchase frequency differences before (October – December 2021) and during (January – March 2022) the Omicron outbreak and to analyze the determinant factors of customers decision to repurchase fruits and vegetables via e-commerce.

METHODS
Data Collection

This research was conducted online from March to April 2022. The population in this study were internet users in Surabaya who had purchased vegetables and fruits through online platforms at least once. Surabaya became the focus of this study because it is one of cities with the highest e-commerce transactions in Indonesia. The age limitation of the sample was ≥ 19 years old with the assumption that they can make their own decisions. It is estimated that the number of people who have shopped for groceries online in Surabaya is 50% of all who have shopped online, or around 1,025,200 people. The sampling method is convenience sampling with sample size of 140 respondents. The data was collected from questionnaires using Google Forms whose links were distributed via Instagram, Twitter, Facebook, and WhatsApp.

Purchase Frequencies Differences
The frequency differences of purchasing vegetables and fruits via e-commerce before (October – December 2021) and during Omicron outbreak (January – March 2022) were obtained from the same respondents and analyzed with Wilcoxon test. These time setting were chosen be-cause they have different situation re-lated to number of transmission and fatalities case; symptoms of transmis-sion; and level of physical distancing and physical activity policy. The hy-potheses are:

H_0 = There is no frequency
          differences of purchasing before

and during the Omicron outbreak.

H$_1$ = There is a frequency difference of purchasing before and during the Omicron outbreak.

If Asymp.Sig (2-tailed) < 0.05, then H$_0$ is rejected, it means that there is a significant difference between purchases before and during the Omicron outbreak.

Binary Logistic Regression Model

Based on the purpose of this study, the binary logistic regression model was used to assessed the determinant factors of customers' decision on repurchasing vegetable and fruits through e-commerce. There are two main advantages of using logistic regression model for this study; first, normal distribution assumption is not needed (Ghozali, 2016). Second, the independent variables in the logistic regression can be both categorical (ordinal/nominal) and continuous (interval/ratio), making this model a versatile method to analyze many types of data. In this case, the dependent variable was characterized as binary or categorized as Y=1 representing 'repurchase' decision, and Y=0 representing 'not repurchase' decision.

There are eight factors that were predicted as determinant factors in this study. These factors are age, education, income, marketing mix, and COVID-19 situation. Marketing mix and COVID-19 situation were measured by using a Likert scale of 1 (strongly disagree) to 5 (strongly agree). The components of marketing mix in this study are product (10 questions), price discount (8 questions), promotion (4 questions), and distribution factor (7 questions). Meanwhile COVID-19 situation factor is the average of 4 question items related to the pandemic situation. These questions consist of physical distancing policy; number of transmission case; the safer feeling of online shopping during pandemic; and whether the e-commerce implement the health protocol or not.

The validity of each variable was tested using Pearson product moment correlation. The variables are valid if r count ≥ r table. The variables were also tested to see whether these questions are reliable or not. If the value of Cronbach's Alpha is greater than 0.6 then the data is reliable.

The logistic regression equation model used is as follows:

$$Y = \ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + e$$

Where:

Y : repurchase decision (1 = repurchase, 0 = not repurchase)

β : constant

X_1 : age (years)

X_2 : education (years)

X_3 : income (IDR/month)

X_4 : product (Likert scale)

X_5 : price discount (Likert scale)

X_6 : promotion (Likert scale)

X_7 : distribution (Likert scale)

X_8 : COVID-19 Situation (Likert scale)

The regression coefficient value in logistic regression cannot be

directly interpreted as in the linear probability model. The effect of independent variable on dependent variable can be determined by interpreting the value of odds ratio and marginal effect $\left(\frac{dy}{dx}\right)$.

RESULTS AND DISCUSSION
Characteristics of Respondents

A total of 400 questionnaires were distributed and from that number, 170 questionnaires were successfully completed, or around 42.5% of the response rate. The total data of 170 respondents was then filtered and eliminated to get the best completed data. Thus, a total of 140 data were obtained. Characteristics of respondents are based on age, Based on Table 1, the respondents who

decide to repurchase mostly are from Generation Y from age 26 to 41 years old. The respondents who decide to repurchase have a bachelor's degree (undergraduate). Meanwhile, the respondents' income was grouped into two based on the regional minimum wage (RMW) of Surabaya in 2022 or IDR 4,375,500. Most respondents who make repeat purchases have income higher than the RMW.

Validity and Reliability Test
The research findings showed that the r count values of all question items were in the range of 0.289 – 0.656, and the significance value of all question items is sig 0.00 < 0.05. Based on the decision criteria of r count value ≥ r Table 0.165, it can be assumed

Table 1. Characteristic of Respondents Based on Group Age, Education, and Income

Characteristics of Respondents	Repurchase Decision		Percentage (%)
	No	Yes	
Group Age			
Generation X (42 – 57)	0	6	4
Generation Y (26 – 41)	23	93	83
Generation Z (19 – 25)	3	15	13
Total	26	114	100
Education			
High School	4	6	7.1
Diploma	6	7	9.3
Undergraduate	13	94	76.5
Graduate	3	7	7.1
Total	26	114	100
Income			
≤ IDR 4,375,500 (RMW)	13	20	23.6
> IDR 4,375,500 (RMW)	13	94	76.4
	26	114	100

Source   : Primary data analysis, 2022

Table 2. Result of Reliability Test

Variable	Cronbach's Alpha Value	Decision
Overall	0.915	Reliable
Product	0.914	Reliable
Price Discount	0.868	Reliable
Promotion	0.718	Reliable
Distribution	0.789	Reliable
COVID-19 Situation	0.863	Reliable

Source: Primary Data Analysis, 2022.

Table 3. Respondents' Response on Marketing Mix Factor (Product)

	The Statement items of product factor (X4)	Min	Max	Modus	Mean
X4.1	The quality of vegetables is good	2	5	5	4.4
X4.2	The quality of fruits is good	1	5	5	4.3
X4.3	There are various kind of vegetables	2	5	5	4.2
X4.4	There are various kind of fruits	1	5	5	4.2
X4.5	The real product of vegetables is suitable with the picture shown	1	5	4	4.1
X4.6	The real product of fruits is suitable with the picture shown	1	5	5	4
X4.7	The real product of vegetables is suitable with the description	2	5	5	4.4
X4.8	The real product of fruits is suitable with the description	2	5	5	4.4
X4.9	Safety packaging for vegetables product	2	5	5	4.5
X4.10	Safety packaging for fruits product	2	5	5	4.5

Source   : Primary data analysis, 2022

that all the variables were valid.

The reliability test was done using Cronbach's Alpha. Based on Table 2, the Cronbach's Alpha value of all the variable were more than 0.6; therefore, all variables used in this research were reliable. The reliability test can be seen in Table 2.

Distribution of Respondents' Answers

Respondents were asked several statement items to find out whether marketing mix and situational factor determine their repurchase decision or not.

Distribution of respondents' answers regarding the product factor is shown in Table 3. All ten questions have average answers of ≥ 4. The most chosen answer by respondents is 5 (strongly agree) in almost all of the questions, except for question X4.5 with 4 (agree) as the most chosen answer.

Distribution of respondents' answers on price discount factor is shown in Table 4. The answer 5 (strongly agree) appears most frequently in question item X5.5. Meanwhile, the answer score that appears the most on other questions

varied between scores of 2 (disagree), 3 (neutral), and 4 (agree). The average answer to these questions varied from 2.8 on questions X5.7 and X5.8 to 4.2 on question X5.3.

Respondents were asked four questions related to promotion factor to determine its effect on repurchase decision. Distribution of respondents' answers on promotion factor is shown in Table 5. We can see that the most chosen answers scored 5 (strongly agree) and 4 (agree). The highest average in the respondents' answers is question X6.1, which is of 4.2. The lowest average is question X6.4, which is 3.7.

Distribution of product in online system is different than offline system as it involves internet and technology. Distribution on online

platforms includes purchasing methods, delivery, payment systems, and websites or applications used. Distribution factor was measured by seven statements as shown in Table 6. The most chosen score by respondents is 5 (strongly agree). The highest average is on questions X7.3 and X7.5 with an average of 4.6. While the lowest average is on question X7.2, which is 3.8.

Next, respondents were grouped into the type of e-commerce where they purchase vegetables and fruits online, i.e., customers who buy from large scale, small scale, and or combination of large- and small-scale e-commerce platforms. Large-scale e-commerce are those that already operate in several cities other than Surabaya, are incorporated with

Table 5. Respondents' Response on Marketing Mix Factor (Promotion)

	The Statement items of promotion factor (X6)	Min	Max	Modus	Mean
X6.1	There is promotion of free delivery fee	2	5	5	4.2
X6.2	There are various promotions (discount, coupon, buy one get one)	2	5	5	4.0
X6.3	There are advertisements in various medias	1	5	4	4.0
X6.4	The advertisement is convincing	1	5	4	3.7

Source: Primary data analysis, 2022

Table 6. Respondents' Response on Marketing Mix Factor (Distribution)

	The Statement items of distribution factor (X7)	Min	Max	Modus	Mean
X7.1	Purchasing method is easy to understand	2	5	5	4.5
X7.2	There is same-day delivery option	1	5	5	3.8
X7.3	The payment system is easy to use	3	5	5	4.6
X7.4	There are various payment options	2	5	5	4.5
X7.5	Website/application/marketplace is easy to access	2	5	5	4.6
X7.6	Website/application/marketplace is easy to use	2	5	5	4.5
X7.7	There is everyday delivery option	2	5	5	4.4

Source: Primary data analysis, 2022

Table 7. Buying Frequencies Before and During Omicron Outbreak

Buying Frequency	Before	During
0	17	11
1 – 5	64	74
6 – 10	29	25
11 – 15	21	21
16 – 20	3	5
>20	6	4
Total	140	140

Source: Primary data analysis, 2022.

marketplaces, or an additional feature in ride-hailing applications. Some examples are Sayurbox, Tanihub, HappyFresh, Shopee Segar, Tokopedia, PasarNow, BlibliMart, Go Market, and GrabMart. Meanwhile, small-scale e-commerce only operate in Surabaya with a small number of followers on social media. For example, Mlijoy Surabaya, Mlijoqu, Aratamart, Mracang Market, Blonjo_Sayur, Ovegi, PakSayur.com, Sayurleli, BakulSayur. The number of customers who shop for fresh grocery products based on the type of e-commerce are 40% from large-scale, and 30% from both small-scale and a combination of large and small-scale e-Commerce.

Purchase Frequency Differences

The difference between purchase frequencies before and during the Omicron outbreak is shown in Table 7. Buying frequencies were grouped into six groups of frequencies, from 0 to >20. It can be inferred that there is no specific difference between buying frequencies before and during Omicron outbreak.

We subsequently tested the purchase frequency before (October- December 2021) and during (January-March 2022) the Omicron outbreak from the same respondents. The result shows that Asymp. Sig. (2 tailed) value is $0.530 > a=0.050$, so H_1 is rejected, meaning that there is no significant difference between the frequencies of purchase before and during the Omicron outbreak. This is because there was a decrease in the number of cases during the outbreak. As the physical activity restrictions were also eased, people began to do a lot of physical activities outside the home, including shopping for daily necessities. In addition, according to Ameratunga et al. (2022), the Omicron variant has milder symptoms and lower-case fatality rate compared to the Delta variant. This has caused people to respond to the Omicron variant more lightly.

Determinant Factors of Repurchase Decision

We included eight factors that were predicted to determine the re-purchase decision of vegetables and fruits through e-commerce sites. These determinant factors were analyzed using binary logistic regression with results as follow in Table 8. Based on the results of the binary logistic regression analysis, the following equation is obtained:

$$g(x) = \ln\left[\frac{\pi(x)}{1 - \pi(x)}\right] = -37.690 + 0.028X_1 + 0.455X_2 + 0.000X_3 + 0.279X_4 + 0.183X_5 + 0.539X_6 + 0.030X_7 + 0.311X_8$$

The results showed that the hypothesized model was in accordance with

the data. The model fit test indicates that the significance value of Hosmer and Lemeshow test is 0.789 > 0.05, meaning that the model fits with the data. The statistical value of Log-Likelihood (-2LL) is 52.922 < chi square table which is 167.514, so the model fits the data. The value of Nagelkerke R Square is 0.751, meaning that 75.1% of the variation of repurchase decision can be explained by the variables of age, education, income, product, price discounts, promotions, distribution, and COVID-19 situation. The results of the simultaneous significance test shows that the prob value is 0.000 <0.05 with chi square value of 81.463> Chi Square table on df 8 which is 15.507, meaning that independent variables affect dependent variable simultaneously.

Age may affect customer repurchase decisions to buy vegetables and fruits through ecommerce. However, based on Table 8, the

Table 8. Output of Binary Logistic Regression

Independent Variables	Expt sign	Tolerance	VIF	Regression Co-efficient	Marginal Effect (%)	Sig	Odds Ratio
Constant				-37.690		0.000	0.000
X1 (Age)	-	0.849	1.178	0.028	0.162	0.784	1.028
X2 (Education)	+	0.896	1.116	0.455	2.635*	0.076	1.576
X3 (Income)	+	0.877	1.140	0.000	$1.45×10^{-5}$**	0.017	1.000
X4 (Product)	+	0.615	1.626	0.279	1.618***	0.000	1.322
X5 (Price Discount)	+	0.708	1.413	0.183	1.061**	0.023	1.201
X6 (Promotion)	+	0.737	1.357	0.539	3.124***	0.001	1.714
X7 (Distribution)	+	0.675	1.481	0.030	0.174	0.794	1.030
X8 (COVID-19 Situation)	+	0.729	1.371	0.311	1.802***	0.005	1.365
Prob Hosmer and Lemeshow Test							0.789
Log Likelihood Statistic (-2LL)							52.922
Chi Square Tabel							167.514
Nagelkerke R Square							0.751
Prob Likelihood Ratio							0.000
Chi-Square							81.463

*   : significant at the 10% (α = 0.10)
**   : significant at the 5% (α = 0.05)
***   : significant at the 1% (α = 0.01)
Source   : Primary data analysis, 2022

significance value of age variable is greater than α of 10%, denoting that age has no significant statistical effect on the repurchase decision. Previous studies by Melović et al., (2021); and Pramesty & Simanjuntak (2020) stated that online shopping does not depend on the age of the customer although it is true that younger generation shop online more often than the older generation.

The significance value of education is smaller than α of 10%, meaning that education level affects the repurchase decision to buy vegetables and fruits via e-commerce. Odds ratio of education level is 1.576. This means that every one-year increment in customer's education level will increase the probability of repurchase decisions by 1.576 times. Customers with higher level of education have a higher tendency to shop for groceries online (Lin et al., 2019; and Dominici et al., 2021). The marginal effect of education level is 0.026347, meaning that every additional year of education will increase the possibility of repurchasing decision by 2.63%. Education affects the way of thinking, how to make decisions, preferences, and tastes, among others (Hawkins & Mothersbaugh, 2016). Education also affects customer's ability to purchase through their income and occupation. Education also affects the adaptability to technological innovations, one of which is e-commerce or e-grocery.

Moreover, income is also predicted to affect the repurchase decision of vegetables and fruits via e-commerce. The significance value of income is smaller than α of 5%, meaning that income has a significant effect on repurchase decision. Odds ratio and marginal effect of income are 1.000 and 1.45E-08. It shows that an increment in customer income hardly affects the repurchase possibility even though this factor is statistically significant. Income makes purchases possible, but it does not necessarily represent the way a person spends the money (Schiffman & Wisenblit, 2019). The way or behavior of using income is influenced by the priorities of each individual, as reflected from their education, job, and social environment.

As for product, its significance value is smaller than α of 1%, indicating that product affects the repurchase decision of vegetables and fruits via e-commerce. Odds ratio value of product is 1.322, so that each in crement of product will increase the probability of customers repurchase decision by 1.322 times. This is in line with the results from Hariyani (2020) in which product quality has significant impact on purchasing decision. The quality and variety of vegetables and fruits offered in e-commerce greatly affect customer decisions to repurchase. The value of the marginal effect of product is 0.01618. This means that every addition of product factor will increase the possibility of repurchase decision by 1.62%. The limitations to analyze products directly force customers to obtain information about the products via the internet. The assessment of the products offered online is based on photos, descriptions, and also reviews from customers who have used these

products before. Reviews have a great impact on influencing customer's decision to buy fresh agricultural products (Cang & Wang, 2021). Additionally, e-commerce also needs to pay attention to aspects that can help consumers to analyze and assess the products they will buy, such as product photos and appropriate product descriptions. This may encourage and convince the customers to buy, since they cannot directly touch and assess the products.

The significance value of price discount is smaller than α of 5%, meaning that the price discount affected the decision to repurchase vegetables and fruits via e-commerce. The value of odds ratio is 1.201. It shows that every 1 unit increase in the price discount will increase the probability of repurchasing by 1.201 times higher. The marginal effect of price discount is 0.01061, which means that each additional price discount will increase the possibility of customers decision to repurchase by 1.06%. According to Bucko et al. (2018), price is the most influential factor of customer's decision.

The significance value of promotion is smaller than α of 1%, which means that the variable has a significant effect on the decision to repurchase vegetables and fruits via e-commerce. As odds ratio of promotion is 1.714, more frequent promotions could increase the probability of repurchase by 1.714 times. The marginal effect of promotion is 0.03124, meaning that more promotion leads to the possibility of repurchase by 3.12%. Promotional activities in online businesses are very important. Online promotion includes strategies to promote products and ensuring that the promotions have a lasting impression on customers, so customers will consider this to make repurchase decisions (Sriram et al., 2019). Currently, e-commerce businesses carry out several promotional activities to increase customers' awareness and to increase sales. Promotional activities to increase awareness include promotions using local influencers, quizzes or giveaways, advertisements on social media, and offline ads such as billboards and bazaars. Meanwhile, promotional activities to increase sales include discounts, vouchers for discounts, free shipping on a certain minimum purchase, flat shipping rates, and other similar promotions. Promotional activities by the e-commerce businesses are the dominant determinant factors for customer's repurchase decisions. E-commerce that offers vegetables and fruits are suggested to implement more promotional effort, such as discounts, some events with discounts, voucher codes for discounts, free shipping on a certain minimum purchase, flat shipping rates, and other similar promotions.

The significance value of distribution is greater than α of 10%, meaning that the distribution factor has no significant statistic effect on the decision to repurchase vegetables and fruits via e-commerce or e-grocery. Most of the e-grocery sites in Surabaya have a limited delivery time

option which may lead to inflexible delivery service. This could result in failure to fulfill customer needs in which the customers tend to want to get these products as fast as possible. This outcome seems to contradict the previous study by Cang & Wang (2021) which found that logistic service (distribution) is a great determinant factor of customer's willingness to shop online for agricultural products.

Lastly, the COVID-19 situation factor has a significance value of 0.005 which is smaller than α of 1%, so pandemic has significantly affected customer's repurchase decision of vegetables and fruits via e-commerce. The odds ratio of COVID-19 situation is 1.365, meaning that a higher probability of pandemic is associated with an increasing probability of a repurchase decision by 1.365 times. The marginal effect of the COVID-19 situation is 0.01802. This means that for each addition of the pandemic situation factor, the possibility of making a repurchase decision will increase by 1.80%. This result is in line with the researches by Tyrväinen & Karjaluoto (2022) and Meister et al. (2023) which showed that there is an increase in online grocery shopping during the pandemic in which people are required to maintain physical distances and reduce activities outside the home. Thus, shopping online becomes a choice. Uncertain conditions during the pandemic have also forced people to prioritize their essential need such as foods.

CONCLUSION AND SUGGESTION

This study aims to analyze the customers repurchase decisions of vegetables and fruits through e-commerce and the determinant factors of the repurchase decisions in Surabaya. The frequency of customers repurchases of fruits and vegetables through e-commerce before and during the Omicron outbreak did not show a statistically significant difference based on the Wilcoxon test. Meanwhile, binary logistic regression showed that variables that significant-ly affected the probability to repurchase vegetables and fruits through e-commerce are promotion (3.12%), education level (2.63%), COVID-19 situation (1.80%), product (1.62%), and price discounts (1.06%). The other variables included in the models, i.e., customers' age, income, and distribution, have no statistical significant effect on the probability to repurchase vegetables and fruits from e-commerce. However, this research is only limited to examining the factors that affect the decision to repurchase vegetables and fruits through e-commerce in the city of Surabaya only. We suggest that similar research is conducted elsewhere, with additional variables, due to variation in local culture, taste, and other factors.

REFERENCES

Altay, B. C., Okumuş, A., & Adıgüzel Mercangöz, B. (2022). An Intelligent Approach for Analyz ing The Impacts of The COVID- 19 Pandemic on Marketing Mix Elements (7Ps) of The On-Demand Grocery

Delivery Service. *Complex and Intelligent Systems*, *8*(5), 129–140. https://doi.org/10.1007/s40747-021- 00358-1

Ameratunga, R., Leung, E., Woon, S. T., Chan, L., Steele, R., Lehnert, K., & Longhurst, H. (2022). SARS-CoV-2 Omicron: Light at The End of The Long Pandemic Tunnel or Another False Dawn for Immunodeficient Patients? *Journal of Allergy and Clinical Immunology: In Practice*, *10*(3), 2267–2273. https://doi.org/10.1016/ j.jaip.2022.06.011

Bucko, J., Kakalejčík, L., & Ferencová, M. (2018). Online Shopping: Factors That Affect Consumer Purchasing Behaviour. *Cogent Business and Management*, *5*(5), 1–15. https://doi.org/10.1080/23311975.2018.1535751

Cang, Y. mei, & Wang, D. chun. (2021). A Comparative Study on The Online Shopping Willingness of Fresh Agricultural Products Between Experienced Consumers and Potential Consumers. *Sustainable Computing: Informatics and Systems*, *30*. https://doi.org/10.1016/j.suscom.2020.100493

Chaffey, D., Edmundson-Bird, D., & Hemphill, T. (2015). *Digital Business and E-commerce Management* (Vol. 0). Edinburgh: Pearson Education Limited.

Das, K., Tamhane, T., Vatterott, B., Wibowo, P., & Wintels, S. (2018). *The Digital Archipelago: How Online Commerce is Driving Indonesia's Economic Development*. Retrieved from https://www.mckinsey.com/featured-insights/asia-pacific/the-digital-archipelago-how-online-commerce-is-driving- indonesias-economic- development

Dominici, A., Boncinelli, F., Gerini, F., & Marone, E. (2021). Determinants of Online Food Purchasing: The Impact of Socio-Demographic and Situational Factors. *Journal of Retailing and Consumer Services*, *60*. https://doi.org/10.1016/j.jretconser.2021.102473

Febrilia, I., & Warokka, A. (2021). Consumer Traits and Situational Factors: Exploring The Consumer's Online Impulse Buying in The Pandemic Time. *Social Sciences & Humanities Open*, *4*(1), 100182. https://doi.org/10.1016/j.ssaho.2021.100182

Ghozali, I. (2016). *Aplikasi Analisis Multivariete dengan Program IBM SPSS 23* (2th ed.) (Multivariate Analysis Application with IBM SPSS 23 Program (8th ed.). Semarang: Badan Penerbit Universitas Diponegoro.

Hariyani, N. (2020). Pengaruh Bauran Pemasaran terhadap Keputusan Pembelian Pestisida Organik secara Online di Landbouw Mart Ketindan (The Effect of Marketing Mix on Decisions to Purchase Organic Pesticides By Online in Landbouw Mart Ketindan). *Jurnal AgroSainTa: Widyaiswara Mandiri Membangun Bangsa*, *4*(2), 105–116. https://doi.org/10.51589/ags.v4i2.6

Hawkins, D. I., & Mothersbaugh, D. L. (2016). *Consumer Behavior: Building Marketing Strategy* (13th ed.). New York: McGraw-Hill Education.

Lin, W., Ortega, D. L., & Caputo, V. (2019). Are Ex-Ante Hypothetical Bias Calibration

Methods Context Dependent? Evidence from Online Food Shoppers in China. *Journal of Consumer Affairs*, *53*(2), 520–544. https://doi.org/10.1111/joca.12202

Listyowati, E. A., Suryantini, A., & Irham, I. (2020). Faktor-Faktor yang Mempengaruhi Niat dan Keputusan Konsumen Membeli Sayuran dan Buah Secara Online (The Influencing Factors of Costumer Intention and Decision in Purchasing of Vegetables and Fruits by Online). *Jurnal Kawistara*, *10*(1), 66. https://doi.org/10.22146/ kawistara.41891

Magalhães, D. J. A. V. de. (2021). Analysis of Critical Factors Affecting The Final Decision-Making for Online Grocery Shopping. *Research in Trans-portation Economics*, *87*. https://doi.org/10.1016/j.retrec.2021.101088

Meister, A., Winkler, C., Schmid, B., & Axhausen, K. (2023). In-Store or Online Grocery Shopping Before and During the COVID-19 Pandemic. *Travel Behaviour and Society*, *30*, 291–301. https://doi.org/10.1016/j.tbs.2022.08.010

Meitasari, D., Mutisari, R., & Widyawati, W. (2020). Pengaruh Sosio-Demografis Terhadap Keputusan Pembelian Produk Hortikultura pada Online Market (The Effect of Socio-Demographics on Purchasing Decisions on Horticultural Products on The Online Market). *Jurnal Ekonomi Pertanian Dan Agribisnis*, *4*(8), 959–972.

Melović, B., Šehović, D., Karadžić, V., Dabić, M., & Ćirović, D. (2021). Determinants of Millennials'

Behavior in Online Shopping – Implications on Consumers' Satisfaction and E-business Development. *Technology in Society*, *65*. https://doi.org/10.1016/j.techsoc.2021.101561

Pramesty, D. W., & Simanjuntak, M. (2020). Intergerational Self Concept, Life Style, Marketing Strategy, and Impulsive Buying. *Jurnal Ilmu Keluarga Dan Konsumen*, *13*(1), 87–98. https://doi.org/10.24156/jikk.2020.13.1.87

Sangadji, E. M., & Sopiah. (2013). *Perilaku konsumen: Pendekatan Konsumen (Consumer Behaviour: Practical Approach with Collection of Research Journals).* Yogyakarta: ANDI Offset.

Schiffman, L., & Wisenblit, J. (2019). *Consumer Behavior* (56th ed.). New Jersey: Pearson Education. Shahzad, M. A., Razzaq, A., Qing, P., Rizwan, M., & Faisal, M. (2022). Food Availability and Shopping Channels During The Disasters: Has The COVID-19 Pandemic Changed Peoples' Online Food Purchasing Behavior? *International Journal of Disaster Risk Reduction*, 103443. https://doi.org/10.1016/j.ijdrr.2022.103443

Shen, H., Namdarpour, F., & Lin, J. (2022). Investigation of Online Grocery Shopping and Delivery Preference Before, During, and After COVID-19. *Transportation Research Interdisciplinary Perspectives*, *14*, 5449[2] 4. https://doi.org/10.1016/j.trip.2022.100580

Sriram, K. V., Phouzder, K., Oommen Mathew, A., & Hungund, S. (2019). Does E-Marketing Mix Influence Brand Loyalty and Popularity of E-Commerce

Websites? *ABAC Journal*, *39*(6), 64–81.

Tyrväinen, O., & Karjaluoto, H. (2022, July 1). Online Grocery Shopping Before and During The COVID-19 Pandemic: A Meta-Analytical Re view. *Telematics and Informatics*, Vol. 71. Elsevier Ltd. https://doi.o rg/10.1016/j.tele.2022.101839

Vista, A., Roessali, W., & Mukson, M. (2021). Analisis Faktor-Faktor yang Mempengaruhi Keputusan Pembelian Sayuran Organik di Pasar Modern Kota Semarang. (Analysis of Factors Affecting Purchasing Decision of Organic Vegetables at Modern Market In Semarang City). *Jurnal Ekonomi Pertanian Dan Agribisnis*, *5*(1), 108–115.https://doi.org/10.21776/ub.jepa.2021.005.01.10

Vydiamanta, V., Suhud, U., Si, M., & Febrilia, I. (2021). Keputusan Konsumen Membeli Sayur Menggunakan Aplikasi Online : Apakah WoM dan Kualitas Produk Mempengaruhi? (Consumer Decision to Buy Vegetables Using Online Applications: Do WoM and Product Quality Affect?). *Jurnal Riset Manajemen Sains Indonesia (JRMSI) |*, *12*(6), 2301 – 8313.https://doi.org/10.21009/JRMSI