

Consumer Intention to Use OFD Services Within The TPB Framework: The Impact of The Covid-19 Pandemic Case

Hermin Istiasih¹⁾, Elis Irmayanti²⁾, Bayu Surindra³⁾

¹⁾Industrial Engineering Study Program, Faculty of Engineering, Nisantara PGRI University of Kediri, Indonesia

^{2,3)}Economics Education Study Program, Faculty of Economics and Business, Nusanara PGRI University of Kediri, Indonesia

*Corresponding Author

Email: hermin@unpkediri.ac.id

Abstract

This study aims to explain the intention to use OFD services within the TPB framework to improve consumer experience in using OFD and consumers' desire to order food during the COVID-19 pandemic and post-pandemic 19. In this study the variables observed were OFD, consumer desire, consumer experience, and the SDG framework (attitudes, subjective norms and behavioral controls). Every food choice is innovating products or services to address the challenges posed by the COVID-19 pandemic by enhancing the value of the consumer experience and stimulating consumer desire. Structural equation modeling (SEM) was used to verify the research hypothesis and to analyze the intention to use OFD services. An online survey was also conducted and a total of 300 questionnaires were distributed, invalid questionnaires were ignored with incomplete answers, and a total of 236 questionnaires were considered valid. The results of the study are as follows: (1) attitudes, subjective norms, and control of consumer behavior have a significant positive effect on the value of consumer experience in using OFD services before and consumer desires; (2) the value of consumer experience on the previous use of OFD services and consumer desires have a significant and positive effect on the effect of intention to use OFD services; and (3) the values of consumer experiences on the use of OFD services before and consumer desires have a mediating effect on attitudes, subjective norms, behavioral control, and intention to use OFD services. Based on the results of the analysis, OFD managers can identify the main factors that drive consumer intentions to use their services to formulate effective management strategies and create greater business opportunities for their organizations.

Keywords: *Consumer Intention, OFD Services, TPB Framework*

INTRODUCTION

The food industry, especially restaurants, is currently changing their business model by implementing rapid innovation in online food delivery (OFD). This is due to facing the changes and challenges of the COVID-19 pandemic era. The COVID-19 pandemic has had a major effect on the global culinary market (Widyasari & Soesanto, 2021). At the end of June 2021, the incidence of the COVID-19 pandemic was very high at the global level (Nugroho, 2021), as a result, in addition to the restrictions imposed to limit the spread of COVID-19 infection, the Indonesian government has decided that economic actors must carry out marketing such as restaurants or restaurants must stop while their activities are normal. In this context, the culinary industry has faced many economic and social problems such as layoffs affected by the unprecedented crisis. The case of the COVID-19 pandemic has had a major effect on the culinary market (Alkasasbeh, 2020).

When it is difficult to face the COVID-19 pandemic and the many policies of the Indonesian government, the OFD (online food delivery) business has emerged as a relevant channel to reach customers and provide them with higher quality services today (Aji et al., 2020) and play a major role in maintaining business. The main advantage of this type of service

is that it simplifies the ordering process for restaurant consumers (Türkeş et al., 2021). The OFD business in the era of the COVID-19 pandemic offers an alternative for restaurant income to remain stable, retain customers, and improve customer experience by providing new delivery channels. OFD has now become more than just a utilitarian alternative but leads to social values in restaurants or eateries in OFD services. Restaurants or restaurants are innovating to offer OFD options in dealing with this challenge, especially when consumers face fear of the transmission of COVID-19.

Many studies on OFD services including Li et al., Li et al., (2020) found that consumers can follow the instructions given on food delivery platforms and can track order fulfillment in real-time, do not need to communicate with restaurant staff and can reduce energy to go to a restaurant and wait to be served..Chen et al., (2020) and Hooi et al., (2021) found that OFD made food ordering more attractive by reducing perceptions of waiting time and also helping to reduce credits issued when consumers called restaurants to inquire about the status of their orders. Hong et al., (2021) found that the role of OFD was beneficial for parties involved parties. For restaurants, they can add new sources of income without increasing the number of dining chairs. For consumers, they have more choices when they want to order food and they can access relevant information such as comments and reviews about restaurants. Several other studies have investigated the main drivers of OFD use (Lau & Ng, 2019;Koay et al., 2022;Kartono & Tjahjadi, 2021). Researchers who are more focused on OFD and the characteristics of mobile applications (Elkhair et al., 2019;Stocchi et al., 2022) and several studies have investigated the effect of contextual factors on intentions Stocchi et al., 2022) and several studies have shown that the COVID-19 pandemic has caused consumer fear to go to traditional markets (Gu et al., 2021;Taha et al., 2021). In this dynamic scenario there is relevance to focus on food purchasing impulses changing in response to the uncertainty associated with the evolution of the scenario and little is known about the future desire side, for example new users of OFD services (Lau & Ng, 2019).

Planned behavior theory (TPB) is used to explain and predict consumer behavior patterns in certain circumstances. TPB has been widely used to explore personal behavior in different research domains, such as consumer behavior. According to Troise et al., (2021) used TPB to analyze consumers' willingness to adopt online food delivery (OFD) by considering food choice, convenience, trust, and the effects of perceived risks associated with a disease pandemic. Coronavirus 2019 (COVID-19) as contextual factors. Poon & Tung, (2022) use TPB to understand consumer behavior in the context of online food delivery (OFD), especially considering that the lockdowns imposed in several countries have changed consumer behavior.

Reviewing previous research involving the use of TPB theory, it can be said that this theory has been used extensively in several fields and has provided significant results. In this study, TPB was used to explore the influence of consumer desires and consumer experiences on previous OFD use, especially implementation of the COVID-19 pandemic on attitudes, behavioral controls, and subjective norms on consumers' intention to use OFD. Previous research has shown that consumer intentions are an important predictor of online shopping behavior (Poon & Tung, 2022). According to Hooi et al., (2021) the experience of consumers in using OFD previously greatly influenced their behavioral intentions to use food delivery services. Therefore, consumer desires and consumer experiences on the use of OFD were

previously included in this study and based on the explanation and description above, this research is based on the TPB framework.

TPB has been used to discuss many fields, for example services, technology, and new issues which is the reason why this research uses TPB. In using online food service platforms, consumers behave and think about OFD which can cause benefits and harms at the same time. Thus, they will estimate the value of an online food delivery service before they use it. So consumer attitude is very important to be considered. Subjective norms mean that the impact of other people will influence the intention to use OFD services and it is very easy to get feedback information from the internet. So subjective norms are the key factors that influence consumer intentions in using OFD. Behavioral control is also a key factor influencing consumer intention because when consumers feel it is not easy to use or find it difficult to find what they want, they prefer to buy their own food rather than using OFD (Poon & Tung, 2022;Hooi et al., 2021). This research aims to study the use of OFD within the TPB framework to enhance the experience value of OFD and consumer willingness to order during the COVID-19 pandemic and post-COVID 19 pandemic. Each food choice innovates in products or services to overcome the challenges posed by the COVID-19 pandemic by increasing the value of the consumer experience and stimulating consumer desire.

RESEARCH METHODS

Research Framework

This study refers to the TPB framework and adds two variables, namely consumer desires and consumer experience in previous OFD use to explore intentions to use OFD services. The proposed research framework for verification and analysis is shown in Figure 1.

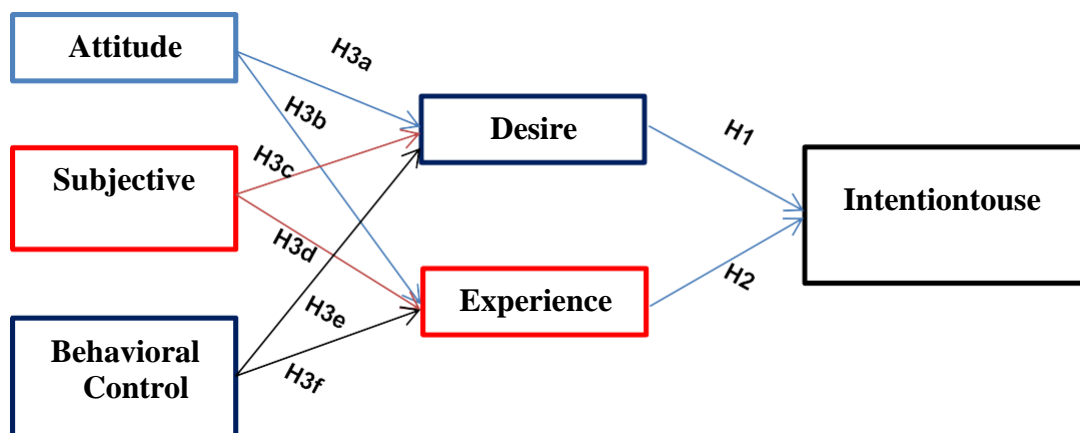


Figure 1. Research Framework

Analysis Method

In this study, the structural equation model (SEM) Amos 26 and SPSS 20 was used to analyze the data. The statistical process consisted of analysis of measurement models and analysis of structural models.

RESULT AND DISCUSSION

Results

a. Sample Information

The purpose of this study was to analyze the intention to use OFD services. Convenience sampling was used to analyze the sample and to evaluate the experience of using OFD. In this study, 300 questionnaires were distributed to respondents and 236 valid questionnaires were received. Among the selected samples, 33% were male respondents, while 67% were female respondents. For the age of the respondents, most of the samples came from respondents aged 21 to 30 years as much as 69% of the total sample size. Most of the respondents' education was undergraduate as much as 57%. In terms of the monthly income of respondents, an average of 47% of respondents earns less or equal to three million and 53% have an average monthly income of four million per month.

b. Descriptive Statistical Analysis

This study uses descriptive statistical analysis to calculate the mean and standard deviation of each variable in the item, as well as to explore potential information from respondents in measuring each variable. The calculation results are shown in table 1 and the average value of the respondents' assessment of each variable is different. Variables in this study include attitude (M = 5.533, subjective norm (M = 4.409), behavioral control (M = 5.673), desire (M = 5.543), experience (M = 5.671), intention to use OFD services (M = 5.494) these results indicate that respondents have relatively higher behavioral control and OFD offers relatively higher values of desire and experience. In addition, the results on experience show the largest standard deviation (SD = 0.974), meaning that respondents have different experiences in using OFD before.

Table 1. Construct Reliability and Validity

Variabel	Average (M)	Standard Deviation (SD)	Cronbach's	CR	AVE
Attitude	5.533	0.924	0.843	0.832	0.566
Subjective Norms	4.409	0.847	0.891	0.861	0,722
Behavior Control	5.673	0.915	0.940	0.853	0.521
Desire	5.543	0.935	0.744	0.842	0.611
Experience	5.671	0.974	0.754	0.910	0.731
Intention to use OFD services	5.414	0.881	0.811	0.811	0.563

c. Measurement Model Analysis

Structural Equation Model analysis (SEM) was used in this study where the reliability and validity of the questionnaire was measured as part of the measurement model analysis. The Cronbach reliability questionnaire was tested using SPSS 20.0 and component reliability (CR). In terms of convergent validity of the questionnaire, Amos 26 was used for confirmatory factor analysis (CFA), and extraction the average variation (AVE) is calculated using the formula. Discriminant validity of variables was tested using the square of the correlation coefficient between AVE and each variable. The Cronbach values of the six variables in this study are all greater than 0.7 indicating that there is internal consistency between the appropriate variables. The CR of the potential variables

consists of the reliability of all observed variables and the reliability value must be greater than 0.7 (Hussain & Ali, 2015).

Each variable has high reliability which shows that the measurements taken on each variable can produce reliable data (SÜRÜCÜ & MASLAKÇI, 2020). Similar to Cronbach's reliability, CR also reflects internal consistency between potential variables. Table 1 shows that the CR of each variable is greater than 0.7. Thus, the six variables in this study have internal consistency. The reliability of the questionnaire construct can be assessed from its convergence and discriminant validity. AVE is used to evaluate convergence validity which means that the average variation in the explanatory power of the measurement variable over the potential variable must be greater than 0.5 (Janadari et al., 2016). The AVE value of all potential variables in table 1 is greater than 0.50, thus all variables have good convergence validity. In addition, good discriminant validity is shown when the square root value of the AVE of each variable is higher than its correlation coefficient with other variables (Ab Hamid et al., 2017). Data Table 2 shows that each value on the diagonal is greater than all the values on the left and below. So, the square root value of the AVE of each variable is higher than the coefficient between the different variables.

Table 2. Analysis of Reliability, Convergent and Discriminant Validity

	Attitude	Subjective Norms	Behavior Control	Desire	Experience
Attitude	0.766				
Subjective Norms	0.432***	0.831			
Behavior Control	0.451***	0.254***	0.713		
Desire	0.611***	0.322***	0.631***	0.732	
Experience	0.745***	0.463***	0.453***	0.722***	0.811
Intention to use OFD services	0.643***	0.621***	0.463***	0.746***	0.733***

***p<0.001

d. Structural Model Analysis

The relationship between the different variables was further explored using path analysis as shown in Figure 2. The fit test performed on the theoretical framework resulted in the following: goodness-of-Fit index (GFI) = 0.936; root mean square error of approximation (RMSEA) = 0.017; Tucker-Lewis index (TLI) = 0.942; adjusted goodness of fit index (AGFI) = 0.931; normalized fit index (NFI) = 0.948; comparative fit index (CFI) = 0.929. All of the other fit indices are above the recommended criteria.

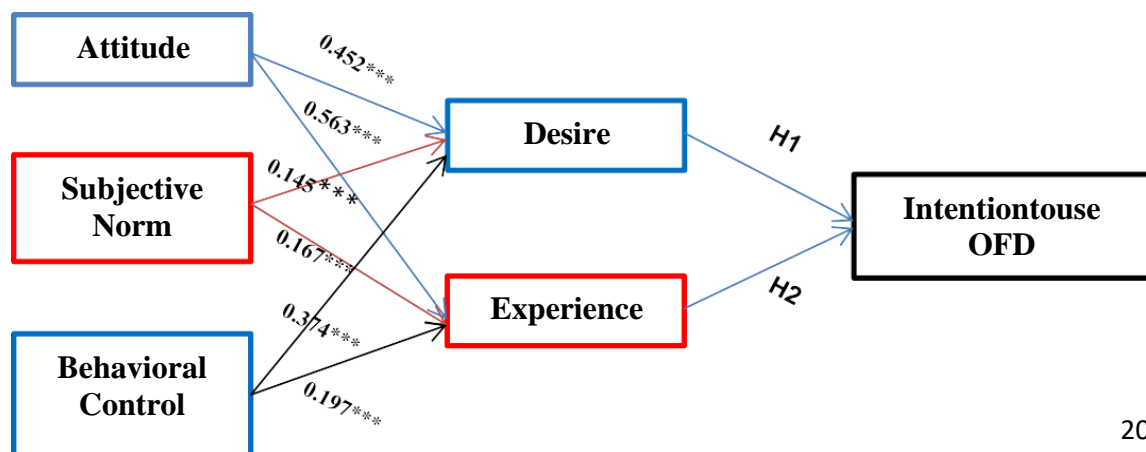


Figure 2. Structural model analysis diagram. GFI = 0.936; CFI = 0.929; NFI = 0.948; TLI = 0.942; AGFI = 0.931; RMSEA = 0.017. Note: *** $p < 0.001$.

SEM was applied in order to analyze the relationship between constructs in the model. On hypothesis H3a: "Consumer attitudes have a significant positive effect on desire" ($\beta = 0.452$, $p < 0.001$); H3b: "Consumer attitude has a significant positive effect on experience" ($\beta = 0.563$, $p < 0.001$); H3c: "Subjective norms have a significant positive effect on desire" ($\beta = 0.145$, $p < 0.001$); H3d: "Subjective norms have a significant positive effect on experience" ($\beta = 0.167$, $p < 0.001$); H3e: "Behavior control has a significant positive effect on desire" ($\beta = 0.374$, $p < 0.001$); and H3f: "Behavior control has a significant positive effect on experience" ($\beta = 0.197$, $p < 0.001$). We found that consumer attitudes, subjective norms, and perceived behavioral control are significantly and positively related to consumer intentions and experience of prior OFD use. Therefore, the hypotheses H3a, H3b, H3c, H3d, H3e, and H3f can be accepted.

Test the Effect of Desire Mediation, Consumer experience on the use of OFD before, and Intention to use OFD services

The result of testing the mediating effect of desire and experience on the antecedent factors (attitudes, subjective norms, and behavioral control) and their consequences on the intention to use OFD services in this study are as follows:

a. Test the Mediation Effect on the desire variable

Testing the mediating effect of desire on attitudes and intentions to use OFD services, this study found that the effect of attitudes on desire was statistically significant ($\beta = 0.681$; $p < 0.001$), and the effect of attitudes on intentions to use OFD services was also statistically significant ($\beta = 0.674$; $p < 0.001$). The variable mediating experience on attitudes and intentions to use OFD services was statistically significant ($\beta = 0.353$; $p < 0.001$). The effect of desire on intention to use OFD services also remains significant ($\beta = 0.742$; $p < 0.001$). Therefore, the results of the analysis can be concluded that desire has a partial mediating effect between attitudes and intentions to use OFD services. Testing the mediating effect between subjective norms and intention to use OFD services, the addition of desire as a mediating variable shows that the effect of subjective norms on intentions to use OFD services is statistically significant ($\beta = 0.374$; $p < 0.05$), while the effect of desire on intention to use OFD services is also statistically significant ($\beta = 0.753$; $p < 0.001$). Thus, consumer desire has a partial mediating effect between subjective norms and intention to use OFD services. Testing the effect of mediation between behavior control and intention to use OFD services, the addition of a mediating variable shows that the effect of perceived behavioral control on intention to use OFD services is statistically significant ($\beta = 0.028$; $p = 0.714$), but the effect of consumer desires on intention to use OFD services remains statistically significant ($\beta = 0.741$; $p < 0.001$). Therefore, consumer desires have a full mediating effect between behavior control and intention to use OFD services.

b. Consumer Experience With Previous OFD Uses of Mediation Effect Tests

With the addition of experience as a mediating variable in testing the mediating effect of experience between attitudes and intentions to use OFD services. Analysis of the results of the experience mediating variable on the effect of attitudes on intention to use OFD services ($\beta = 0.348$; $p < 0.001$) and the effect of experience on intention to use OFD services ($\beta = 0.732$; $p < 0.01$) is statistically significant. Therefore, experience has a partial mediating effect between attitudes and intentions to use OFD services. When examining the mediating effect between subjective norms and intention to use OFD services, the

addition of the mediating variable showed that the effect of subjective norms on intention to use OFD services ($\beta = 0.399$; $p < 0.001$) and the effect of experience on intention to use OFD services ($\beta = 0.714$; $p < 0.001$) statistically significant. The experience variable has a partial mediating effect between subjective norms and intention to use OFD services. The addition of mediating variables showed that the effect of behavioral control on intention to use OFD services ($\beta = 0.175$; $p < 0.001$) and the effect of experience on intention to use OFD services ($\beta = 0.715$; $p < 0.001$) were statistically significant. Therefore, experience has a partial mediating effect between behavior control and intention to use OFD services.

Attitude variables, subjective norms, and behavioral control all have significant and positive effects on consumer desires and consumer experiences with prior use of OFD. These findings indicate that consumers' subjective expectations, the influence of third parties, and the influence of the COVID-19 pandemic conditions in the past will influence consumer perceptions of consumer desires and consumer experiences with previous OFD use. In other words, OFD managers need to pay attention to the effectiveness and efficiency of OFD factors because they can affect consumer attitudes. In terms of subjective norms, OFD managers need to pay attention to consumer suggestions or complaints, because comments or third party information are key factors that influence consumer subjective norms. Behavioral control is also an important factor where OFD needs to make OFD services easier and add more payment methods for consumers to choose.

CONCLUSION

The results presented in this study indicate that attitudes, subjective norms, and behavioral control have a significant positive effect on consumer desires and consumer experiences with prior use of OFD. Thus, OFD managers must be careful when carrying out branding, always carry out evaluations, and always follow consumer wishes to avoid negative impressions on consumers, so that negative information does not spread to other consumers continuously. Consumer desires and consumer experience in using OFD previously also have a significant and positive influence on the intention to use OFD.

Desire and experience variables produce a mediating effect on attitude, subjective norm, and behavioral control, and intention to use OFD services, besides that desire variable has a full mediating effect between behavioral control and intention to use OFD services indicating that factors such as ease of use, convenience, and the level of enjoyment felt will all affect the intention to use OFD services. In particular, the variables of consumer desire and consumer experience on previous use of OFD become more important as drivers of consumer intention and existing barriers to be anticipated (such as payment methods or availability of internet access). We hope the emergence of OFD will change consumer consumption patterns, as well as use research results as a reference for future strategy development in the food and beverage market. Therefore, OFD managers must pay attention to consumer wishes and consumer experiences with previous OFD use to be considered before making certain programs, for example they must design questionnaires to confirm satisfaction with purchasing experiences, improve application systems to make it easier for consumers to find what they need, they must also use consumer desires and consumer experience in previous use of OFD to estimate the achievement scores of certain strategies. Attitude variables, subjective norms, and behavioral control are factors that can influence consumers, so the intention to use OFD services and actions to handle consumer complaints are very important factors to consider.

REFERENCES

- Ab Hamid, M. R., Sami, W., & Mohmad Sidek, M. H. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. *Journal of Physics: Conference Series*, 890(1). <https://doi.org/10.1088/1742-6596/890/1/012163>
- Aji, P. M., Nadhila, V., & Sanny, L. (2020). Effect of social media marketing on instagram towards purchase intention: Evidence from Indonesia's ready-to-drink tea industry. *International Journal of Data and Network Science*, 4(2), 91–104. <https://doi.org/10.5267/j.ijdns.2020.3.002>
- Alkawasbeh, F. (2020). The effects Of COVID-19 on restaurant industry: A perspective article. *Journal of Innovations in Digital Marketing*, 1(1), 22–31. <https://doi.org/10.51300/jidm-2020-16>
- Chen, H. S., Liang, C. H., Liao, S. Y., & Kuo, H. Y. (2020). Consumer attitudes and purchase intentions toward food delivery platform services. *Sustainability (Switzerland)*, 12(23), 1–18. <https://doi.org/10.3390/su122310177>
- Elkhair, Z., Mutalib, A. A., & Ntroduction, I. (2019). Mobile Learning Applications : Characteristics , Perspectives , And Future Trends. *International Journal Of Interactive Digital Media*, 5(1), 18–21.
- Gu, S., Ślusarczyk, B., Hajizada, S., Kovalyova, I., & Sakhbieva, A. (2021). Impact of the covid-19 pandemic on online consumer purchasing behavior. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(6), 2263–2281. <https://doi.org/10.3390/jtaer16060125>
- Hong, C., Choi, H. (Hailey), Choi, E. K. (Cindy), & Joung, H. W. (David). (2021). Factors affecting customer intention to use online food delivery services before and during the COVID-19 pandemic. *Journal of Hospitality and Tourism Management*, 48(August), 509–518. <https://doi.org/10.1016/j.jhtm.2021.08.012>
- Hooi, R., Leong, T. K., & Yee, L. H. (2021). Intention to Use Online Food Delivery Service in Malaysia among University Students Keywords : *Conference on Management, Business, Innovation, Education and Social Science*, 1(1), 60–73. <https://journal.uib.ac.id/index.php/combinas/article/view/4415>
- Janadari, N., Janadari, M., Ramalu, S., & Wei, C. (2016). EVALUATION OF MEASURMENT AND STRUCTURAL MODEL OF THE REFLECTIVE MODEL CONSTRUCTS IN PLS-SEM methodology View project EVALUATION OF MEASURMENT AND STRUCTURAL MODEL OF THE REFLECTIVE MODEL CONSTRUCTS IN PLS-SEM. *Proceedings of the 6th International Symposium—2016 South Eastern University of Sri Lanka (SEUSL), September*, 187–194. <https://www.researchgate.net/publication/327572183>
- Kartono, R., & Tjahjadi, J. K. (2021). Investigating Factors Affecting Consumers' Intentions to Use Online Food Delivery Services During Coronavirus (COVID-19) Outbreak in Jabodetabek Area. *The Winners*, 22(1), 1–14. <https://doi.org/10.21512/tw.v22i1.6822>
- Koay, K. Y., Cheah, C. W., & Chang, Y. X. (2022). A model of online food delivery service quality, customer satisfaction and customer loyalty: a combination of PLS-SEM and NCA approaches. *British Food Journal*, January. <https://doi.org/10.1108/BFJ-10-2021-1169>
- Lau, T., & Ng, D. (2019). Online Food Delivery Services : Making Food Delivery the New Normal. *Journal of Marketing Advances and Practices*, 1(1), 17.
- Li, C., Miroso, M., & Bremer, P. (2020). Review of online food delivery platforms and their impacts on sustainability. *Sustainability (Switzerland)*, 12(14), 1–17. <https://doi.org/10.3390/su12145528>

- Nugroho, H. (2021). *Indonesia Development Update A Year of Covid-19 : A Long Road to Recovery and Acceleration of Indonesia ' s Development*. *Indonesia Development Update A Year of Covid-19 : A Long Road to Recovery and Acceleration of Indonesia ' s Development*. V(1), 1–19. <https://doi.org/10.36574/jpp.v5i1>
- Poon, W. C., & Tung, S. E. H. (2022). The rise of online food delivery culture during the COVID-19 pandemic: an analysis of intention and its associated risk. *European Journal of Management and Business Economics*. <https://doi.org/10.1108/EJMBE-04-2021-0128>
- Stocchi, L., Pourazad, N., Michaelidou, N., Tanusondjaja, A., & Harrigan, P. (2022). Marketing research on Mobile apps: past, present and future. In *Journal of the Academy of Marketing Science* (Vol. 50, Issue 2). Springer US. <https://doi.org/10.1007/s11747-021-00815-w>
- SÜRÜCÜ, L., & MASLAKÇI, A. (2020). Validity and Reliability in Quantitative Research. *Business & Management Studies: An International Journal*, 8(3), 2694–2726. <https://doi.org/10.15295/bmij.v8i3.1540>
- Taha, V. A., Pencarelli, T., Škerháková, V., Fedorko, R., & Košíková, M. (2021). The use of social media and its impact on shopping behavior of slovak and italian consumers during COVID-19 pandemic. *Sustainability (Switzerland)*, 13(4), 1–19. <https://doi.org/10.3390/su13041710>
- Troise, C., O'Driscoll, A., Tani, M., & Prisco, A. (2021). Online food delivery services and behavioural intention – a test of an integrated TAM and TPB framework. *British Food Journal*, 123(2), 664–683. <https://doi.org/10.1108/BFJ-05-2020-0418>
- Türkeş, M. C., Stăncioiu, A. F., Băltescu, C. A., & Marinescu, R. C. (2021). Resilience innovations and the use of food order & delivery platforms by the romanian restaurants during the covid-19 pandemic. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(7), 3218–3247. <https://doi.org/10.3390/jtaer16070175>
- Widyasari, M. C., & Soesanto, H. (2021). Restaurant Marketing Strategies in Facing New Habits Post-Covid-19 Pandemic: Revolutionary Entrepreneur Paradigm. *International Journal of Economics ...*, 2021(2), 238–244. <http://jurnal.stie-aas.ac.id/index.php/IJEBAR/article/view/2439>