

# Factors Affecting Consumers' Intentions to Use Online Food Delivery Services During COVID-19 Outbreak in Jabodetabek Area

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**Abstract** - The research intended to scrutinize aspects affecting intentions to use online food delivery services during COVID-19 outbreak in Jabodetabek area. The research applied Theory of Reasoned Action (TRA) that integrated perceived trustworthiness, perceived relative advantage, perceived risk and attitude toward using to give insights on factors affecting consumers' intention when using online food delivery services. Data collection was conducted by quantitative, non-probability, purposive sampling methods. The research instrument was online questionnaires that were spread out to all people who had experienced using online food delivery services at least once, during COVID-19 outbreak (Feb-May 2020). In total, there were 127 valid returned questionnaires used to analyze data variables using PLS-SEM method through SMART-PLS 2.0 M3 software. The results find out that perceived trustworthiness, perceived relative advantage, and perceived risk positively affect consumers' attitudes toward using online food delivery service. Perceived trustworthiness and attitude toward using positively affects intention to use online food delivery services. However, perceived risk negatively affects intention to use online food delivery services during COVID-19 outbreak in Jabodetabek area.

**Keywords:** consumer intention, online services, food delivery services

## I. INTRODUCTION

For the past few months, starting in February 2020, Indonesia has been overwhelmed by the outbreak of COVID-19 which the World Health Organization

(WHO) has named a pandemic ("Coronavirus confirmed as pandemic", 2020). The outbreak started to appear in Wuhan, China with a total of 75.465 cases as of 20 February 2020 (WHO, 2020). Within several months, it spread out to other countries around the world, such as South Korea, Japan, Italy, including Indonesia. As of 3 September 2020, statistics revealed the largest number of incidents and the highest number of death in the United States of America, which were 6.290.737 and 189.964 consecutively ("Countries where COVID-19", 2020). On the same date, Indonesia reached 184.268 positive cases and 7.750 death cases. Hence, the case fatality rate (CFR) has been 4,20% which is considered high compared to America having the highest number of deaths (Figure 1).

Country/Other	Total Cases	New Cases	Total Deaths	New Deaths	Total Recovered	Active Cases	Serious/Critical	Tot Cases/1M pop	Deaths/1M pop	Total Tests	Test/1M pop	Population
Indonesia	184,268	+3,622	7,750	+134	132,055	44,463		672	28	2,301,628	8,399	274,021,604

Figure 1 Number of COVID-19 Cases in Indonesia as of 3 September 2020.

Source: "Countries where COVID-19" (2020)

Due to rapid increase in the number of infected people, WHO and Indonesian government urges the society to conduct physical distancing and self-quarantine (WHO, 2020). These methods were expected to reduce the number of cases and flatten the curve. As result of this policy, many people will just stay at home. Schools, colleges, universities, and offices have been suggested to conduct the activities through digital platforms (online). Shopping malls and fitness centers have been closed for several weeks

as well. Hence, people will rarely go outside and do outdoor activities unless there is urgency.

It is truly a new phenomenon especially in Jakarta which is considered as a highly populated city. Consequently, people are starting to look for necessities through online platform as well, including to purchase food, drink, and other groceries. Digital platforms have helped people in doing their jobs and other activities.

Along with the penetration of internet, mobile phone and laptop or personal computer (PC) have become part of daily life. Information Technology (IT) has become human's best friend. IT encompasses other information distribution technologies such as television and telephones. Mobile application is one of the products that involves information technology. Smart mobile devices have been rising over the past few years due to the aggressive increment of mobile applications. Mobile devices play essential role in daily life. According to Kim, Wang, and Malthouse (2015), the ways of how customers relate with a product or label have changed due to the speedy acceptance of smartphones and expansion of mobile applications ("app" or "apps" henceforward).

In Indonesian market, it has been revealed that Gojek is the only application from Indonesia that is in the top 10 ranks with the highest number of active monthly users (Andriani, 2019). There are two big names when talking about mobile online application which provide on-demand services. The first one is Gojek and the second one is Grab. The research focuses on online food delivery services in general, with highlights of GoFood and GrabFood as the two biggest providers.

Gojek was first known as ride-hailing services established in 2010 in Indonesia. Five years later, Gojek launched new services such as GoSend, GoShop, and GoFood. Currently, Gojek has been known as a super-app providing around 18 different kind of services. It has also been operating in Southeast Asia including Vietnam, Singapore, Thailand, and Philippines. In fact, it is considered as the first decacorn company in Indonesia (Gojek, n.d-a).

Gojek has one feature called GoFood which offers online food delivery services. It helps people get food from selected restaurants or merchants registered on the application. The users can narrow down their food selection by filtering some factors such as location, merchant's rating, promotion, type of food, operational time, favoritism (best-selling product), and price. By using the application, users can enjoy the food they desire, and know the position of the driver as it gives Estimated Time Arrival (ETA). Furthermore, users can easily and comfortably pick the food they crave for without worry and hassle. The mobile app interface can show live location of the driver and status of the food ordered. Thus, it gives the users confidence and comfort. Besides, GoFood also provides e-wallet payment method that connects to GoPay for easier cashless transaction. (Gojek, n.d.-b).

In January 2020, Go-Food has launched four

new features, which include *GoFood Pickup*, *GoFood Turbo*, *GoFood Plus* and collaboration with Google Assistant ("Luncurkan 4 inovasi sekaligus", 2020). *GoFood Pickup* is a service where the consumer can pick up the food directly at the merchant without queueing. Meanwhile, *GoFood Turbo* guarantees that the food will be delivered in super-fast time. Consumers may also order multiple menus from different merchants in one order. The last new service is *GoFood Plus*, which offers subscription method for users to get more discounts and enjoy various food at affordable prices ("Luncurkan 4 inovasi sekaligus", 2020). This marks GoFood's breakthrough in setting new standards in pampering customers with a super-fast, easy, and economical culinary experience.

On the other hand, Grab has also launched four new services. The first one is a take away service *Take by Yourself*. The feature basically provides an estimated time of taking the order and a notification to inform users that the order is ready to be picked up. *Scheduled Order* is the second useful feature for certain events to set GrabFood order times. Orders can be made from two hours or even two days in advance to be later sent to the selected location. The third feature is *Scheduled Order equipped with Multi-Order* feature whose function is to add variety to dishes, so consumers can choose up to four restaurants at the same time. Lastly, *Order with Friend* allows up to seven people to have one order at once via one digital link. One customer can simply send to six other people, so they are able to add favorite menus in each user's Grab app (Astutik, 2020).

Previously, the customer's love for GoFood services has been proven by 50 million transactions recorded every month in Southeast Asia. A research results indicate that 84% of people using more than one food-delivery application consider GoFood to offer the best service in Indonesia, which is far higher than the industry average (39%). The research also reveals that 83% of the people also consider GoFood services to be user friendly, far superior to the industry average (44%); and 79% of respondents considers GoFood to be the fastest food delivery services, which is also way higher than the industry average that only reached 41% (Arifin, 2019).

Furthermore, based on Statista (2020b), GoFood has become the market leader, followed by GrabFood, compared to other online food delivery providers (Figure 2).

According to Nielsen in Jayani (2019), GoFood has been leading the industry. Therefore, it shows that GoFood has been popular and successful in penetrating Indonesia market (Izzati, 2020; Hidayatullah et al., 2018; Handi, Hendratono, Purwanto & Ihalauw, 2018).

Interestingly, it is found that GoFood has seen a jump in transactions during COVID-19 pandemic in recent months as most people dine at home. According to Gojek Chief Food Officer, Catherine Hindra Sutjahyo, at the beginning of May 2020, GoFood got a 10% rise in transactions relative to the end of April 2020. She has also added that some snacks merchants

record a jump of 30%. The phenomenon of people buying more food from home has driven several small and medium-sized food retailer members to move from offline selling to complete online selling (“GoFood sees double-digit”, 2020). Grab Indonesia has also revealed five changes in Indonesian consumer habits during the Corona pandemic. One of them is online food shopping. The data is obtained from Grab Analytics research by comparing the data in March 2020 and October 2019. During this pandemic, GrabFood transactions has risen by 4%, while the amount of food ordered in a single order (basket size) has increased around 7% (Kholisdinuka, 2020).

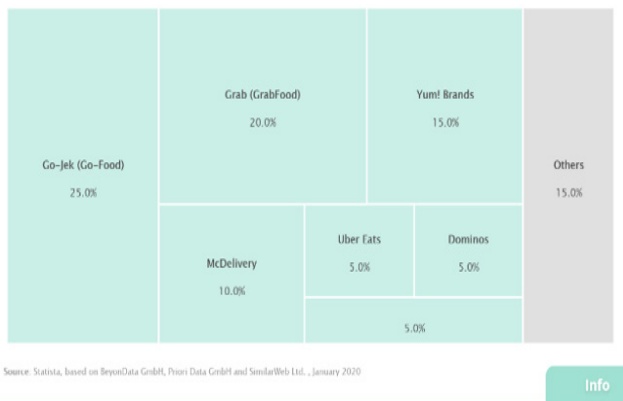


Figure 2 The Usage Share of Online Food Delivery in Indonesia (%).  
Source: Statista (2020a)

People using online food delivery services during COVID-19 is simply because they cannot go out. It is important to see how this outbreak affects the business. As many people stay at home due to social distancing, they tend to order food via online applications more often than they did before the pandemic. Some components might emerge in the consumers’ mind since the food goes through several steps before finally getting delivered. Hence, the research would like to include several variables such as perceived trustworthiness, perceived relative advantage, perceived risks, and the relationships of those three with attitude toward using and intention to use. Moreover, attitude is called an evaluative reaction to instrumental behaviors that represents a propensity to respond in a manner beneficial or unfavorable to a specific activity (Hwang, Lee, & Kim, 2019). The creation of intention to use is established when a customer has pleasant experience over a product and/or service (Hwang, Lee & Kim, 2019). The research adopts Theory of Reasoned Action (TRA) and other additional external variables. The research collects all variables namely perceived trustworthiness, perceived relative advantage, perceived risk, and attitude toward using, as the elements that may affect consumers’ intentions to use online food delivery services. Therefore, it is crucial for online food delivery services providers to have those variables

to satisfy the needs of the consumers with the finest service. Hence, the research aims to observe the factors affecting consumers’ intention to use online food delivery services during COVID-19 outbreak in Jabodetabek area.

Most organizations in all fields of business, trade, non-profit, and government now profoundly rely on their Information Technology (IT) and Information Systems (IS). The growing omnipresence of smart connected apps opens up possibilities for innovative goods and services, more operating efficiencies and different forms of markets and business model. Strategic information systems are designed to boost productivity by modifying the structure or behavior of the commerce.

In addition, maintenance by supervisors and coordination between company strategy and Information Systems (IS) policy are demanded to gain an emulous benefit through the tactical usage of IT (Kitsios & Kamariotou, 2016). Moreover, technology and information systems play ever-greater roles in environmental organizations today (Rahro & Soleymani, 2017).

The Theory of Reasoned Action (TRA) is used to analyze the acceptability actions of consumers and recognize critical elements in obtaining the highest advantages of information technology (Venkatesh, Morris, Davis & Davis, 2003). According to Oni, Oni, Mbarika and Ayo (2017), the theory indicates that the intention to conduct actions will be decided by attitude towards conduct and subjective norms, rendering it a behavioral aim that defines real behavior rather than attitudes. In circumstances where an individual sets their own manner, and is introspective for it, TRA can be applied to forecast actions. TRA indicates that behavioral purpose shapes human actions, from which behavioral purpose is created from a mixture of two components: attitude towards behavior and subjective norm.

TRA puts attention on the structures of theories which involves the desirable aspects of an individual as contributing factors of the possibility in showing certain behavior. TRA assumes that behavioral intent is the best forecaster of behavior, under which attitude toward the behavior becomes one of the determinants (Montano & Kasprzyk, 2015).

For some reasons, to embrace electronic services, trust is an essential element as it derives from some experiences (Fakhoury & Aubert, 2015). Trust has been discovered as a critical research subject in the online world as it is a major determinants of online transaction decision-making. The number of consumers of cell phones for purposes of company communication has been increasing. Thus, it is important to give trust not only to online business practitioners, but also to those mobile commerce users (Nilashi et al., 2015).

Nilashi et al., (2015) argue that to gain trust from consumers, one of the essential steps is by providing the trust itself in mobile software. In order to conquer consumers’ perceptions of insecurity, doubt, and risk,

trust is a vital component in application consumption and usage. However, a user's confidence in a mobile device can be subjective.

The expansion of relative advantage may include increasing the performance and benefits, as well as lowering the organization's operational expenditures (Chen & Zhang, 2016). Online food delivery services can be certainly recognized and relied on if the services are able to provide and boost efficiency and profitability as well as to reinforce the firm's competitiveness (Chen & Zhang, 2016). Hence, the intensity of the usage depends on the level of relative advantage.

Someone's decision to install an application can be affected by many aspects. One of them is perceived risk whose theory has been utilized to explain consumers' behavior since 1960s. Moreover, they have also discovered six categories of risk namely monetary, product efficiency, emotional, period or comfort loss, public, and material. In online environments, perceived risk is correlated with both financial transactions and the commodity itself (Sullivan & Kim, 2018).

According to Hamari (2015), there is a robust constructive relationship between attitude toward using and intention to use. He claims that attitude is generally considered as a huge contributing factor for intention to use. Lada, Tanakinjal, and Amin (2009) argue that the values underlying a person's behavioral attitude are called behavioral values. They have also proved that attitude is positively related to the intention to use. In addition, Al-Hujran et al. (2015) also find that intention to use is directly and positively influenced by attitude. An individual with a favorable attitude toward an activity would be more likely to respond in a specific way (Rezaei et al., 2016c). Despite that, it is evident that mindset has a strong association despite behavioral intent (Yeo, Goh, & Rezaei, 2017).

TRA is mostly used for research in the information systems to analyze the acceptability actions of consumers and recognize critical elements in obtaining the highest advantages of information technology (Venkatesh et al., 2003). Moreover, the theory also believes that behavioral intent is the best indicator of behavior, under which behavioral mood is one of the determinants (Montano & Kasprzyk, 2015). Hence, the hypothesis are tested.

Several previous research have tested the correlation between perceived trustworthiness and attitude toward using. Ayeh (2015) discovers that perceived trustworthiness positively propels attitude toward using. Therefore, it is projected that perceived trustworthiness has positive relationship with the consumers' attitude in using online food delivery services. Hence, the hypothesis will be:

*Hypothesis 1: Perceived trustworthiness positively affects consumers' attitudes toward using online food delivery services during Coronavirus outbreak in Jabodetabek.*

According to van Deventer et al. (2018) and Lin (2011), it is noticed that perceived relative advantage of mobile banking indirectly affects the user's behavior intention to use, via attitude toward using. Therefore, it is predicted that perceived relative advantage has positive relationship with the consumers' attitude in using online food delivery services. Hence, the hypothesis will be:

*Hypothesis 2: Perceived relative advantage positively affects consumers' attitudes toward using online food delivery services during Coronavirus outbreak in Jabodetabek.*

According to Yang, Park, and Park (2007), consumers' attitudes are negatively affected by social risk. Hence, the hypothesis will be:

*Hypothesis 3: Perceived risk negatively affects consumers' attitudes toward using online food delivery services during Coronavirus outbreak in Jabodetabek.*

Fakhoury and Aubert (2015) report that perceived trustworthiness has a beneficial impact on the determination to utilize e-government services. This is also corroborated by Wibisono et al. (2016) on their research of Gojek application. Hence, the hypothesis will be:

*Hypothesis 4: Perceived trustworthiness positively affects consumers' intentions to use online food delivery services during Coronavirus outbreak in Jabodetabek.*

Many findings have confirmed that perceived risk has negative impact on intention to use. According to Harris, Brookshire, and Chin (2016), perceived risk has negative impact on consumers' intention to use an application. It is also verified by Sullivan and Kim (2018) that perceived risk is negatively associated with repurchase intention. Hence, the hypothesis will be:

*Hypothesis 5: Perceived risk negatively affects consumers' intentions to use online food delivery services during Coronavirus outbreak in Jabodetabek.*

Many findings have confirmed that attitude toward using constructively affects the behavioral intention to use. Lin (2011) proves the finding for his research on mobile banking. Hence, the hypothesis will be:

*Hypothesis 6: Attitude toward using positively affects consumers' intentions to use online food delivery services during Coronavirus outbreak in Jabodetabek.*

In conclusion, so far, the literature review reveals that elaboration on this model, which is to know the correlation between perceived trustworthiness, perceived relative advantage and perceived risk with attitude toward using and consumers' intention to use online food delivery services, especially during extraordinary circumstances like Coronavirus outbreak, has not been available yet. Thus, the research come up with this idea to go into detail and assess the model depicted in Figure 3.

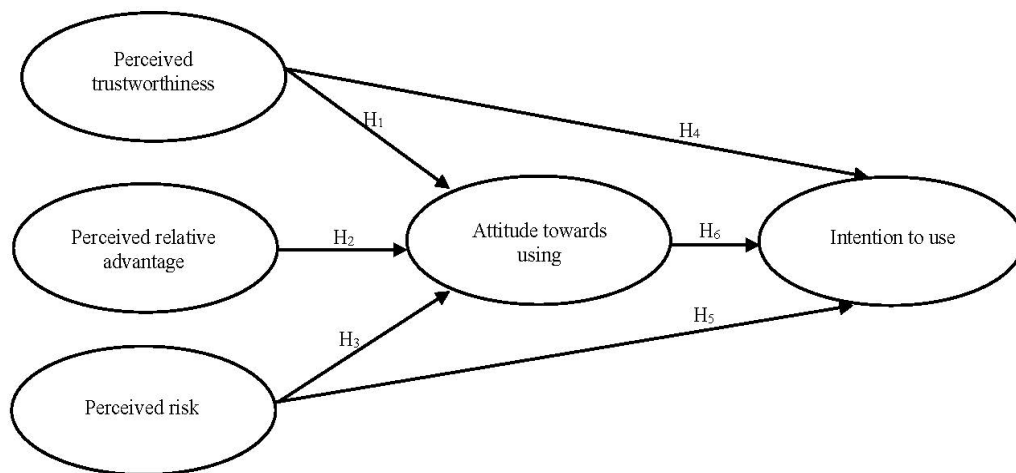


Figure 3 Research Model  
Source: Author (2020)

## II. METHODS

The research design is a quantitative method, where the research focuses on a group of individuals with a criterion of those who have used online food delivery services at least once, during COVID-19 outbreak which started in February 2020. The research is a descriptive study, which according to Sreejesh et al., (2014), aims to illustrate the traits and conduct of several substances, incidents, individual or group as well as the correlation between variables and produce certain predictions. The research also aims to uncover the association between variables such as perceived trustworthiness, perceived relative advantage, perceived risk on attitude toward using and attention to use. Thus, it can help to find the market and understand the customer better.

The research uses survey as the strategy for research. A survey is a study mechanism, which is utilized to collect information from a bunch of people as samples by using a questionnaire (Sreejesh et al., 2014). The implementation of surveys usually aims to acquire primary data. The survey is conducted online as it is not possible to distribute it physically (offline) due to physical distancing. It is distributed to respondents who have used online food delivery services at least once during COVID-19 outbreak, which started in February 2020, while the data collection period started at the end of June 2020. The analysis uses main data-gathering process, where primary data is obtained from online questionnaires distributed to respondents in Jabodetabek area, who have used online food delivery services for at least once, during COVID-19 outbreak starting in February 2020. The purpose of using questionnaires is to gather substantial amount of data (Sekaran & Bougie, 2016).

Four specific forms of scales are available: 1) proportional; 2) interval; 3) ratio; and 4) ordinal. In this case, it is unlikely to catch the entire image with only one for all attitude-scale queries since it involves human's attributes. Several levels have been formed

to calculate personal characteristics, for example from most agreeable to least agreeable (Sreejesh et al., 2014). One of the examples of this type of scale is Likert, which would be used in the research. The most popular format of Likert that usually appears on textbooks are the 5- or 7-point (Malhotra & Peterson, 2006). In the research, the Likert scale examines how strong the subjects agree or disagree with statements on a five-point scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Population is defined as a group of people that will be studied for research (Smith & Albaum, 2012). In the research, the population is online food delivery services users in Jabodetabek. A sample is a subset, or some part, of a larger population. The sample of the research are people living in Jabodetabek who have used online food delivery services at least once during COVID-19 outbreak (starting from February 2020). The research will have  $5 \times 24$  (number of indicators) = 120 respondents.

The research applies non-probability sampling-purposive sampling since the researcher sets specific criteria of respondents, which is: the consumer has to use the online food delivery services at least once during COVID-19 outbreak (Feb-May 2020). Therefore, the samples are aligned with the research objectives to solve the research problems. Structural Equation Modelling (SEM) is to test the hypothesis, commonly used in marketing and management research to analyze causal relationship (Hair et al., 2011).

Operationalization of variables explains the dependent variable, the mediating, and the independent variable. The independent variables are perceived trustworthiness, perceived relative advantage, and perceived risk. Meanwhile, attitude toward using becomes the mediating variable, and intention to use becomes the dependent variable. The operationalization of the variables can be seen in Table 1.

Table 1 Operationalization of Variables

Variable	Item Code	Indicator	Source
Perceived Trustworthiness	PT 1	Security	Al-Hujran et al. (2015)
	PT 2		
	PT 3	Reliable	Munoz-Leiva et al. (2017)
	PT 4		
	PT 5	Trustworthy	Al-Hujran et al. (2015); Munoz-Leiva et al. (2017).
	PT 6		
Perceived Relative Advantage	PRA 1	Efficient	Chen & Zhang (2016)
	PRA 2		
	PRA 3	Cost-saving	
	PRA 4		
	PRA 5	Helpful	Izuagbe, Hamzat, & Joseph (2016), Wang, Meister, & Wang (2008)
	PRA 6		
	PRA 7	Effective	Wang, Meister, & Wang (2008)
	PRA 8		
	PRA 9	Increment in productivity	
	PRA 10		
Perceived Risk	PR 1	Insecure transaction	Koenig-Lewis et al. (2015).
	PR 2		
	PR 3	Private data leakage	
	PR 4		
	PR 5	Risky	
	PR 6		
	PR 7	Mishandling	Forsythe, Liu, Shannon, & Gardner (2006)
	PR 8		
	PR 9	Wrong delivery	
	PR 10		
	PR 11	Complicated	
	PR 12		
Attitude toward Using	ATU 1	Positive Feeling	Shin (2008)
	ATU 2		
	ATU 3	Appealing	
	ATU 4		
	ATU 5	Enjoy/pleasant	Lada et al., (2009), Shin (2008), Venkatesh et al., (2003)
	ATU 6		
	ATU 7	Fun	Venkatesh et al., (2003)
	ATU 8		
	ATU 9	Interesting	
	ATU 10		
Intention to Use	ITU 1	Accessibility	Munoz-Leiva, Climent-Climent, & Liébana-Cabanillas (2017), Agrebi & Jallais (2015)
	ITU 2		
	ITU 3	Frequency	Agrebi & Jallais (2015)
	ITU 4		
	ITU 5	Loyalty	Koenig-Lewis et al., (2015), Munoz-Leiva, Climent-Climent, & Liébana-Cabanillas (2017).
	ITU 6		
	ITU 7	Lifestyle (Habit)	Oliviera, Thomas, Baptista, & Campos (2016)
	ITU 8		
	ITU 9	Reference/	Shin (2008)
	ITU 10	Recommendation	

Source: Author (2020)

In selecting assessment methods, validity and reliability are two vital aspects that should be noticed. Validity refers to the capability of research sample to yield meaningful findings for the scholar, meanwhile reliability relates to the accuracy of which tests for the same or similar groups are obtained under constant estate. Factors such as the option of questionnaire type, measurement procedures, scaling strategies, expertise, and preparation of the researchers influence the accuracy of the results in a questionnaire. The underlying pros and cons of the chosen survey technique are also associated (Sreejesh et al., 2014).

The quality of research kits is verified through validity and reliability tests (Kokanuch & Tuntrabundit, 2017). The conduct of validity test aims to evaluate how effective the mechanism being built can quantify the term to be tested (Sekaran & Bougie, 2016). There are several types of validity tests to be applied. The research utilizes construct validity that refers to the degree to which a set of variables reflects the object to be evaluated. Some projections are generated based on the design of theories to determine the validity of the model, while these prognoses are checked to confirm the validity of the mechanisms (Souza, Alexandre, & Guirardello, 2017). Convergent validity and discriminant validity are the components of construct validity. Convergent validity is the test to assess the degree of similarity between different measures of the same form that are settled upon. The indicator load factor, composite reliability (CR) and the derived average variance extracted (AVE) must be considered to create convergent validity. On the contrary, discriminant validity refers to the degree to which the model objectively varies analytically from each other. The level of discrepancies between the intersecting items is also gauged (Ab Hamid, Sami, & Sidek, 2017). The validity check is performed with appropriate parameters on Smart PLS program version 2.0 M3 with valid criteria if the average variance extracted (AVE) of each model is equivalent to 0,5 or higher (Hair Jr., Sarstedt, Hopkins, & Kuppelwieser, 2014).

Following the validity test, reliability test is implemented, after all substances have been announced legitimate through validity test. Reliability is primarily referred to cohesion, internal steadiness, and correspondence of a degree (Souza et al., 2017). In PLS-SEM, the amounts are ordered based on the single reliability of their indicators having range from 0 to 1, where greater rate signifies greater reliability (Hair et al., 2014).

The cost for outer loading must be larger than 0,70 (Hulland, 1999) and would be recommended for exclusion after extracting the outer loading predictor between 0,40 and 0,70 as it leads to improved composite stability and removed average variance (Hair et al., 2014). Conversely, as stated by Hair, Ringle & Sarstedt (2011), elimination should be done if the outer loading indicator is less than 0,40. A generally acceptable standard for composite reliability is 0,7 or higher (Hair et al., 1998). Indicator loadings

will be higher than those of all cross loads (Hair et al., 2011). For exploratory research, the acceptable value for Cronbach's alpha is above 0,6 (Latan & Ghazali, 2012).

### III. RESULTS AND DISCUSSIONS

The primary data gathering is conducted by spreading the online questionnaires using google forms. Data collection period is at the end of June 2020 with a target of 120 respondents. After a week, there are 131 questionnaires returned. After running a validity test, four invalid questionnaires are taken out from the research data. As a result, with 127 respondents left, the responses rate is at 97%. The respondents come from different backgrounds, age groups, occupations, and gender. Based on Table 2, it can be concluded that majority of online food delivery users are females.

Table 2 Profile of Respondents by Gender

Demographic characteristics	Categories	Number of respondents	%
Gender	Male	53	42%
	Female	74	58%

Source: Author (2020)

Based on Table 3, majority of online food delivery services users are Generation Z and Y. It shows that younger generations are more tech-savvy and practical as they tend to use technology to get things done, including to buy food and beverages. This is also aligned with the conclusion from Karakas, Manisaligil and Sarigollu (2015) which express that Generation Y (Millennials) and Generation Z have strong digital literacy which makes them inclined to socialize and learn on the Internet, ingest, and generate digital content.

Table 3 Profile of Respondents by Age Group

Demographic characteristics	Categories	Number of respondents	%
Age	<20 years old	0	0,00%
	21-30 years old	71	55,91%
	31-40 years old	30	23,62%
	41-50 years old	8	6,30%
	>50 years old	18	14,17%

Source: Author (2020)

Meanwhile, the number of users who are older than 40 years old, considered as older generations (Generation X and Baby Boomers) are only 20%. As not all of them are tech-savvy, thus they tend to choose traditional platform to get their food and beverages, such as cook or go to the supermarket or restaurant by themselves.

Table 4 Profile of Respondents by Occupation

Demographic characteristics	Categories	Number of respondents	%
Occupation	Student	1	1%
	Freelancer	6	5%
	Entrepreneur	34	27%
	Employee	76	60%
	Housewife	6	5%
	Professional	4	3%

Source: Author (2020)

Table 4 depicts that majority of the online food delivery users are employees, with a total of 60% from total respondents. It makes some sense that employees are not as flexible as entrepreneurs and the others since they are tied up with work and limited time. They are tied down by the working hours which sometimes makes them work overtime. Therefore, they need practical services that can help them in getting their food and beverages.

Table 5 Type of Order

Profiling characteristics	Categories	Number of respondents	%
Type of Order	Heavy Food	55	72%
	Beverages	12	16%
	Snacks	9	12%

Source: Author (2020)

Table 5 describes that majority of the online food delivery users usually order for heavy food instead of beverages and snacks. This is common as people tend to look for heavy food to fulfill their stomachs.

Table 6 Order Time

Profiling characteristics	Categories	Number of respondents	%
Order Time	In the morning (7-11 am)	3	4%
	In the afternoon (12-3 pm)	35	46%
	In the evening (above 3 pm)	38	50%

Source: Author (2020)

Table 6 describes that majority of food delivery service users usually order the food in the evening (above 3 pm) where they tend to be sleepy and lethargic, thus they need to get their concentrations back by eating some heavy food. It can also be concluded that they might order food for dinner.

Validity test is needed to determine whether all indicators used are valid before testing the hypothesis. Table 7 provides a description of the findings of each questionnaire element on the validity test. There are two types of validity tests: convergent validity and discriminant validity.

Convergent validity is related to the principle that there should be a high correlation between the measures of a construct. Convergent validity test with reflective indicator using SMART PLS 2.0 M3 software can be seen from the meaning of the load factor of each indicator of the construction (Latan & Ghozali, 2012). Average Variance Extracted (AVE) may be used to test convergent validity. Convergent validity would be satisfied if the Average Variance Extracted (AVE) is greater than 0,5 (Hair Jr et al., 2014). For the factor loading, it should be equal to or greater than 0,70, then the assumption of convergent validity may be satisfied (Hulland, 1999). The findings of validity checking are exposed in Table 7 and Table 8.

Table 7 Convergent Validity Test Result

Variables	Items	Factor Loading	Average Variance Extracted (AVE)
PT	PT 1	0,842	0,743
	PT 2	0,845	
	PT 3	0,844	
	PT 5	0,873	
	PT 6	0,905	
PRA	PRA 6	0,786	0,699
	PRA 7	0,825	
	PRA 8	0,873	
	PRA 9	0,859	
PR	PR 2	0,788	0,623
	PR 3	0,837	
	PR 4	0,853	
	PR 7	0,735	
	PR 11	0,724	
ATU	ATU 1	0,802	0,642
	ATU 2	0,775	
	ATU 5	0,810	
	ATU 6	0,890	
	ATU 7	0,720	
ITU	ITU 5	0,872	0,748
	ITU 6	0,923	
	ITU 9	0,795	

Source: Author (2020)



Table 8 Discriminant Validity Test Result

	ATU	ITU	PRA	PR	PT
ATU	<b>0,801</b>				
ITU	0,613	<b>0,865</b>			
PRA	0,531	0,383	<b>0,836</b>		
PR	-0,614	-0,430	-0,350	<b>0,789</b>	
PT	0,584	0,486	0,257	-0,626	<b>0,862</b>

Source: Author (2020)

Reliability test is needed to determine whether all of the indicators used are reliable before testing the hypothesis. For exploratory research, the acceptable value for Cronbach's alpha is above 0,6 (Latan & Ghozali, 2012). Meanwhile, for composite reliability, the general acceptable standard is 0,7 or higher (Hair et al., 1998).

Table 9 provides a description of the findings of each questionnaire element on the reliability test. The composite reliability of each variable is greater than 0,7 and the Cronbach's Alpha of each variable is also higher than 0,6. Hence, the reliability assumptions are fulfilled for each construct in the research.

Table 9 Validity Test Result Based on Questionnaires

Variables	Items	Cronbach's Alpha	Composite Reliability
PT	PT 1	0,914	0,935
	PT 2		
	PT 3		
	PT 5		
	PT 6		
	PT 6		
PRA	PRA 6	0,859	0,903
	PRA 7		
	PRA 8		
	PRA 9		
PR	PR 2	0,849	0,891
	PR 3		
	PR 4		
	PR 7		
	PR 11		
ATU	ATU 1	0,859	0,899
	ATU 2		
	ATU 5		
	ATU 6		
	ATU 7		
ITU	ITU 5	0,823	0,899
	ITU 6		
	ITU 9		

Source: Author (2020)

Inner model depicts the connections between the latent structures (Hair et al., 2011). To assess the structural model with PLS, it begins by looking at the value of R-squared for each endogenous latent variable as the predictive power of the structural model. A large R-squared meaning can be seen from a predictor with a strong collinearity in the PLS-SEM (Latan & Ramli, 2013). The impact of such exogenous latent variables on which endogenous latent variables have significant effects can be clarified by shifts in the meaning of R-squared (Latan & Ghozali, 2012). It can be inferred that the R-squared values of 0,75, 0,50, and 0,25 shows that the model is strong, moderate, and weak, respectively (Hair et al., 2011). PLS R-squared tests indicate the sum of build variance described by the formula.

Another PLS' dynamic inner model is path coefficient that may be represented as uniform beta coefficients of ordinary square least regression. Much as with the weights and loadings of the markers, the importance of increasing path coefficient may be measured using a bootstrapping method (Hair et al., 2011).

Table 10 portrays the coefficient of determination – R-squared values which determine a model's degree of fit, representing different endogenous variable to be clarified by exogenous variables.

Table 10 R-squared Values

Variables	R-squared
ATU	0,548
ITU	0,401

Source: Author (2020)

The R-squared value of Perceived Trustworthiness (PT), Perceived Relative Advantage (PRA), and Perceived Risk (PR) towards Attitude toward Using (ATU) is 0,548. It can be inferred that the total variance of Attitude toward Using (ATU) is 54,8% explained by Perceived Trustworthiness (PT), Perceived Relative Advantage (PRA), and Perceived Risk (PR), while the remaining of 45,2% is explained by other variables. Thus, it is considered as moderate.

Besides, R-squared value of Perceived Trustworthiness (PT), Perceived Relative Advantage (PRA), and Perceived Risk (PR) towards Intention to Use (ITU) is 0,401. It means that the total variance of Intention to Use (ITU) is 40,1% explained by Perceived Trustworthiness (PT), Perceived Relative Advantage (PRA), Perceived Risk (PR), and Attitude toward Using (ATU), and the remaining of 59,9% is explained by other variables. Thus, it is considered as weak.

After testing the validity and reliability, the next step is testing hypothesis to see the impact of the independent variable and the dependent variable and how a shift of the mediating variable mediates the

Table 11 Hypothesis Testing Results

Hypotheses	Effects	Coefficient	Standard Deviation	T Statistics	Result
1	Perceived Trustworthiness → Attitude toward Using	0,307	0,080	3,866	Accepted
2	Perceived Relative Advantage → Attitude toward Using	0,347	0,065	5,358	Accepted
3	Perceived Risk → Attitude toward Using	-0,299	0,087	3,422	Accepted
4	Perceived Trustworthiness → Intention to Use	0,192	0,092	3,763	Accepted
5	Perceived Risk → Intention to Use	-0,004	0,100	1,532	Rejected
6	Attitude toward Using → Intention to Use	0,499	0,084	5,918	Accepted

Source: Author (2020)

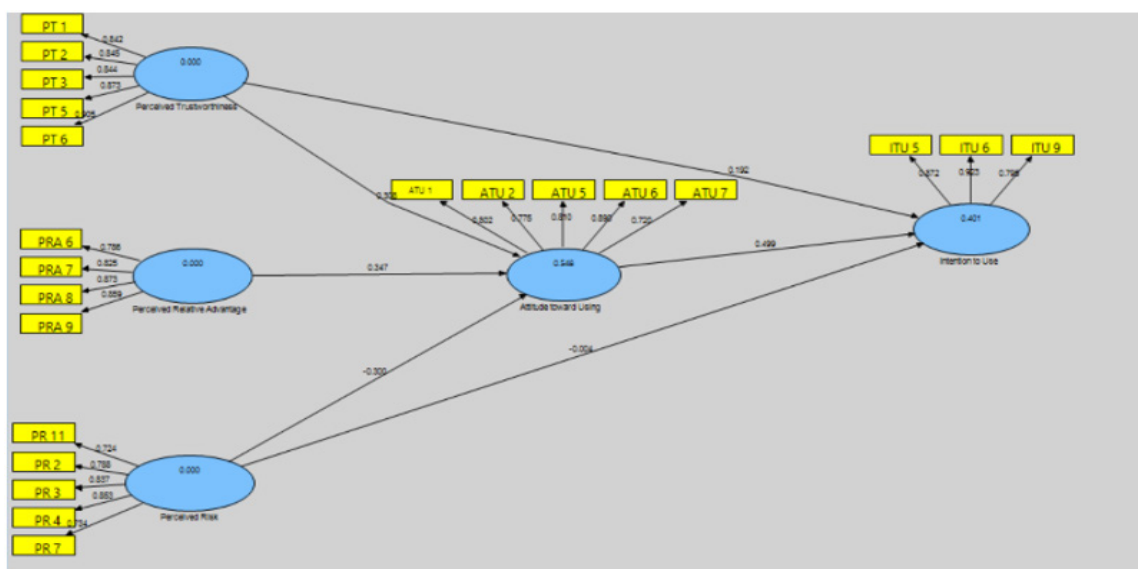


Figure 4 Measurement Model  
Source: Author (2020)

influence of the independent variable on the result.

The hypothesis testing result can be seen at Table 11 which shows effects, coefficient, standard deviation, t statistics, and conclusion/result.

Bootstrapping is utilized to evaluate the implication of the path coefficient. The research interprets the hypothesis by equating t-statistic to critical value (1,96), from which  $H_0$  is either dismissed or not dismissed on this basis. Therefore, if the absolute t-statistic > critical value (1,96),  $H_0$  is rejected. Meanwhile, if the absolute value of t-statistic < critical value (1,96),  $H_0$  is not rejected. Figure 4 depicts measurement model along with coefficient in each path.

#### IV. CONCLUSIONS

The research aims to examine the relationship between perceived trustworthiness, perceived relative

advantage, and perceived risk with attitude toward using and consumers' intention to use online food delivery services, especially during extraordinary circumstances like Coronavirus (COVID-19) outbreak. This work allows the use of quantitative testing methods to collect and interpret data using SMART PLS 2.0 M3 (SEM-PLS) as a platform for data analysis. Six hypotheses are being tested to evaluate whether each of these independent variables (perceived trustworthiness, perceived relative advantage, and perceived risk) has some influences on the attitude towards using and intention to use.

First, the test result shows that perceived trustworthiness positively affects consumers' attitudes toward using online food delivery services during Coronavirus (COVID-19) outbreak in Jabodetabek area. Thus, it is important to improve security, reliability and trust as they were proven to be able to help increasing consumers' trust which later can bring

positive effects on their attitude toward using.

Second, perceived relative advantage positively affects consumers' attitudes toward using online food delivery services during COVID-19 outbreak in Jabodetabek. Consumers feel the ease of using online food delivery services to make their jobs more manageable, effective and efficient. Moreover it promotes cost-saving, so it affects consumers' attitude toward using since the services provide convenience.

Third, the test result depicts that perceived risk negatively affects consumers' attitudes toward using online food delivery services during COVID-19 outbreak in Jabodetabek. It is discovered that if consumers feel that the services are risky, they will not be comfortable to use them. Hence, it will be better that online food delivery services providers raise their standard of hygiene by following the COVID-19 protocol.

It is found that perceived trustworthiness positively affects consumers' intention to use online food delivery services during COVID-19 outbreak in Jabodetabek. The feeling of secure and trust about the online food delivery services makes customers tend to use them repeatedly. Therefore, it is important for online food delivery services to keep improving their security and reliability to help them grow their trustworthiness which lead to customers' intention to use.

Next, perceived risk has no negative influence on consumers' intention to use online food delivery services during COVID-19 outbreak in Jabodetabek since  $H_5$  hypothesis is rejected. It turns out that even if perceived risk existed, consumers would not bother and would still intend to use the services. However, it is crucial for online food delivery services providers to mitigate the arising risks in terms of process, hygiene, and financial risks.

Finally, it is implied that attitude toward using positively affects consumers' intention to use online food delivery services during COVID-19 outbreak in Jabodetabek. Consumers feel comfortable, appealed, and interested in using the online delivery services. As a result, they intend to keep using the services in the future. Hence, it is essential for online food delivery services providers to maintain consumers' attitude toward using to be positive as always.

Based on the results, the research have come up with some recommendations for online food delivery providers. It is advised for the online food delivery services providers to offer security, reliability and trustworthiness by enhancing the security of the application, in terms of privacy data and financial security. This aims to maintain the trustworthiness level of consumers since it positively relates to attitude toward using and intention to use. Moreover, since perceived risk also positively affects consumers' attitude toward using, it is important to make sure that consumers always get the best experiences.

In order to mitigate risks and improve hygiene and security, online food delivery services should also give socialization to the food and beverage providers

and drivers to be cautious and stay hygienic in terms of packaging, cooking, and delivery process. They may also do some investigations, to ensure that merchants and drivers follow the health protocol.

Delivery service providers need to boost promotions, especially in the evening since it is the prime time that consumers usually use the services.

Consumers agree that online food delivery services have brought perceived relative advantage to their lives by helping to get their things done more easily. Furthermore, it also positively affects their attitude toward using the services. Therefore, it is suggested that providers can keep improving the services in terms of timeliness (delivery time) and by giving loyalty points of rewards to consumers every time they use the services.

The research may have some limitations as the respondents are only people living in Jabodetabek. Moreover, the survey is conducted during Coronavirus outbreak only, so it may have limited scope.

The respondents are surveyed through online questionnaires. In the future, other studies may enlarge and obtain in-depth information if they adopt qualitative method. The research have five variables, so it will be more helpful if future research can also include other different elements of online food delivery services and human behavior to investigate the vital aspects that may alter consumers' intention to use some services.

Consequently, future research may expand their coverage to other areas as well, for example big cities in Indonesia to capture greater perceptions and understand the consumers' behavior due to broader backgrounds, cultures, and habits. Besides, the questionnaires can also be used, developed, and elaborated for future research.

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