Consumers' Perceived Risk and Dining-out Behavior during Covid-19 Pandemic

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Consumers' Perceived Risk and Dining-out Behavior during Covid-19 Pandemic

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Abstract: The purpose of this paper is to examine the effect of perceived risk on consumers' dining-out behavior using the Theory of Planned behavior (TPB) and their intention to eat in a restaurant during Covid-19 pandemic. A sample of 156 respondents from Malang, East Java participated in this study which were collected using online survey between January and March 2021. Partial Least-Squares Structural Equation Modelling (PLS-SEM) was performed to investigate the influence amongst the constructs. The results indicate that risk perception of Covid-19 has a negative significant influence on both consumers' attitude and perceived behavioral control, which in turn influences food consumption intention. Furthermore, subjective norm is significantly and positively associated with consumers' perceived risk but insignificantly related to intention to dine-in at a restaurant. The results confirmed the previous studies to verify the TPB model to predict consumers' behavior and their consumption intention during a pandemic.

Keywords: Perceived Risk; dining-out behavior; theory of planned behavior; Covid-19 Pandemic

1. Introduction

The Covid-19 pandemic is a worldwide outbreak that has altered various aspects of human life. The outbreak that started in China at the end of 2019 has spread to hundreds of countries all over the world. The hospitality and tourism business are vulnerable and can get affected by natural disasters including the current Covid-19 pandemic [1]. In most cases it can also result in significant financial losses [2]. The restaurant industry is one of the several industries that have suffered the tremendous losses due to Covid-19, even more because of the dread that has arisen due to the push for social distancing [3]. Travel restrictions and mobility restrictions have lessened people's interest to dine-out. This condition has led to a significant decline in sales, particularly in the food and beverage industries in Indonesia, which experienced a strong impact during the pandemic since people prefer not to go out to dine [4]. The hotel industry suffered a loss of 30 trillion rupiah and the restaurant business suffered a loss of IDR 40 trillion from January to April 2020 due to the outbreak of the corona virus [5].

The Covid-19 outbreak has created a lot of concern because of the drop in demand for food consumption and the avoidance of eating out [2]. This has resulted in changes in human behavior in which they choose to stay at home, buy only necessities, enjoy virtual entertainment at home [5]. Negative perceptions about high risk of infection can cause stress [6] and negative emotions such as dread and worry are common things that many people feel during the Covid-19 [7]. Therefore, it is not surprising that many consumers have reduced their consumption of eating at restaurants because they are overshadowed by the risk of getting infected by the covid-19. According to [8], people will behave protectively in times of a pandemic. Their protective behavior can be attributed to the fear of the risk of getting infected [9]. A study conducted by [10] during the avian flu outbreak in China in 2017 showed that the perceived risk of avian influenza (H7N9) influenced the perceived risk of consuming poultry, which had a direct influence on the interest in consuming poultry meat. [10] employed a consumer behavior approach using Theory of Planned Behavior (TPB) to identify attitudes, subjective norms, and

perceived behavioral control of respondents in China. The results of the study also confirm the TPB as a model that can predict consumer interest in consuming poultry meat during the pandemic. Several studies have been undertaken to investigate the perception of risk in pandemic conditions using the TPB approach to predict the food consumption behavior of consumers [6,7,10,11] but not many have focused specifically on consumers' consumption in restaurants. Thus, researchers are interested in adopting the TPB approach to investigate the effect of risk perception on consumer behavior in restaurants and its impact on food consumption intention.

As stated by [12] that this global pandemic should be seen as a lesson for business owners or operators to get ready and plan the right strategy to be better prepared to enter the new normal era. Although vaccine injections have been carried out in several countries, the impact of this pandemic may still last for quite long time. Therefore, it is very essential to conceive the new patterns of consumer behavior when they are dining out so that food businesses can meet consumer wants and needs more precisely [6]. This research is also expected to contribute to the government and restaurant owners or operators in understanding the changing eating behavior of consumers to survive and recuperate during or after this pandemic.

2. Literature Review

2.1. Perceived risk

[13] was the first to introduce perceived risk concept, which he used to explain consumer behavior in marketing studies. Risk perception, according to Bauer [13] is concerned with subjective perceptions or value judgements about uncertain situations that develop as a result of a risk. Risk perception in the context of customers can be defined as an expectation of the possibility of potential loss and negatively affects attitudes into behavior [14]. The concept of perceived risk is widely employed by researchers since a person's risk perception becomes the main determinant of human behavior [15].

Research conducted by [10] stated that the perceived risk of health issues associated with consuming poultry during bird flu outbreak in China has led to consumer aversion to poultry consumption. When consumers believe there is a risk of infection from eating poultry during an outbreak, they are more likely to be concerned about becoming infected and avoid eating poultry. The higher a person's risk perception, the more negative their attitude toward eating poultry will be. When a person perceives a risk, he or she tends to engage in preventive health practices to avoid or reduce the risk [14].

When it comes to eating food at restaurants, consumer's concerns are mainly tied to the physical and psychological hazards of food safety that they face [10]. Physical risks are risks that can arise from consuming certain food and create bodily disruptions. Consumers prefer to avoid danger to their health, perceived physical risks of being exposed to Covid-19 will diminish consumer demand for dining out [6]. While psychological risks are related to anxiety which has a negative effect on behavioral intention [16]. The perceived risk in this study is the consumer's perception of health-related risks when dine-in in restaurants during the covid-19 pandemic.

2.2. Theory of Planned Behavior (TPB)

The TPB model, an extension of TRA (Theory Reasoned Action) model introduced by [17] has been widely used by many scholars to explain and evaluate human behavior. The TPB model identifies a theoretical basis to examine the influence of attitude, subjective norms, and perceived behavioral control on the behavioral intention to consume. This model has been applied in various discipline including in food-related studies [10, 11,18, 19].

Attitude is a positive or negative assessment of individual regarding a particular phenomenon [20]. According to [21], attitude often acts as a useful determinant to predict an individual's behavioral intention. Attitude is also developed by consumer's socio-cultural and economic background [22]. Subjective norms relate to social pressure that drive individuals to generate a particular action [23] and affect their food choices [24]. Opinions dan suggestions from other people who are considered important can affect a person's interest in consuming food [25]. Perceived behavioral control refers to an individual's perception and belief of individual's capabilities to control a situation and manage a

particular action [21]. Many food-related studies have also found that perceived behavioral control is relevant to examine behavioral outcome regarding food consumption intention [26].

2.3. Research model and hypotheses

Based on TPB model, food consumption intention to dine-in at a restaurant is examined using three aspects of TPB including attitudes, subjective norms, and perceived behavioral control. As for the antecedent of the TPB model, this study argued that consumers' risk perception has an essential role to affect individual's behavior that lead to food consumption intention. The research framework can be seen in Figure 1.

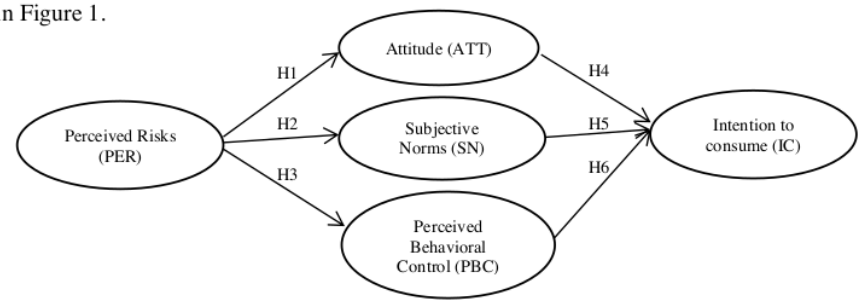

Figure 1. Research Model

Risk perception and the elements of TPB

Prior studies have shown that an individual risk perception determines his or her behavior both from attitude, subjective norms and perceived behavioral control which ultimately affects his behavioral intention [7,10,27]. The Covid-19 pandemic is a global crisis that has affected many people in many countries. An individual's behavior changes when he or she has a negative perception of the dangers of getting infected with the corona virus, particularly the health implications. The fear of Covid-19 has developed a negative attitude toward dining out in a restaurant. The higher the risk perception of Covid-19, the more unfavorable attitudes toward food consumption and the more difficult it is to control the situation when dining-out in a restaurant. Furthermore, the perception of elevated risk during pandemic will cause consumers to be more considerate to suggestions and comments from their family and significant others [28].

Hypothesis 1: Risk perception of Covid-19 pandemic has a significant influence on attitude.
Hypothesis 2: Risk perception of Covid-19 pandemic has a significant influence on subjective norms.
Hypothesis 3: Risk perception of Covid-19 pandemic has a significant influence on perceived behavioral control.

The elements of TPB and food consumption intention

Individual behaviors, namely attitude, subjective norms, and perceived behavioral control are determined by individual behavioral intention [7]. Previous studies have investigated these three variables and behavioral intentions and the results confirmed the validity of the TPB model during a crisis [7,10,11]. In the context of predicting consumers' interest to consume during the Covid-19 pandemic, attitude is an evaluation in the context of food consumption behavior. When an individual has a positive attitude, then their interest of something is getting high [29].

Subjective norm refers to social pressure from family members or relatives to perform certain behavior [17]. [10] in their study revealed that subjective norm toward poultry consumption becomes a positive antecedent of individual intention to the poultry consumption during bird flu. During the Covid-19 pandemic, consumers may be given pressure by the family members or close friends not to dine in restaurants, thus they may avoid doing so. In addition, perceived behavior control refers to the perception of individual toward his or her capability to perform a certain action [21]. In the context of

pandemic, if consumers perceive that the restaurant, they are visiting is safe, they are more likely to return to that restaurant.

We argued that the positive association between TPB elements and intention to consume is still valid in a crisis such as Covid-19 pandemic. During the pandemic, consumers may have a negative behavior to dine-in at a restaurant, which in turn causes consumers reluctance to eat in restaurants.

Hypothesis 4: Attitude toward dine-in consumption during Covid-19 pandemic has a significant influence on food consumption intention in a restaurant.

Hypothesis 5: Subjective norms toward dine-in consumption during Covid-19 pandemic has a significant influence on food consumption intention in a restaurant

Hypothesis 6: Perceived behavioral control toward dine-in consumption during Covid-19 pandemic has a significant influence on food consumption intention in a restaurant

3. Material & Methodology

3.1. Measures and data collection

We examined five constructs to investigate consumers' perceived risk and their dining out behavior using the TPB model, including Perceived Risk (PER), Attitude (ATT), Subjective Norm (SN), Perceived Control Behavior (PBC) and intention to consume (IC). The measurement items for each construct were adapted from prior studies and modified to fit the research context. Questionnaire indicators of perceived risk and eating behavior in a restaurant during Covid-19 pandemic were adapted from [10] dan [14]. While the measurement indicators for food consumption intention were adopted from [10]. The measurement scale of a 7-point likert scale was employed that ranging from 1 (strongly disagree) to 7 (strongly agree), except the construct of attitude. Attitude toward dining consumption during the pandemic was measured using 7-point semantic differential scale with seven indicators.

Data was collected by distributing online questionnaires through google form between January and March 2021. Before the main questionnaires were distributed, a pilot study was undertaken in the beginning of December 2020, in which 30 questionnaires were randomly distributed to ensure that all items in the questionnaire were valid and reliable. Based on the result of pilot study, the questionnaire was adjusted and finalized. Questionnaires were distributed to people who live in the city of Malang, which is the second largest city in East Java. A total of 177 responses were collected, of which 159 were valid and used further in the main survey.

3.2. Data analysis

The data collected in this study was analyzed using the Partial Least Square Structural Equation Modelling (PLS-SEM) technique based on SmartPLS version 3. A significance testing using 5000 bootstrapping subsample was used to accept or reject the hypotheses [30]. In accordance with [31], a two-step approach was utilized to examine measurement fit prior to structural fit to test the hypotheses proposed in this research. In the first step, convergent and discriminant validity were assessed to confirm unidimensionality of measurements and then composite reliability assessments were tested to ensure internal consistency. Furthermore, a multicollinearity test was established, and the analysis of R Square was examined to assess predictive accuracy, then Stone-Geisser's Q Square analysis to assess predictive relevance.

4. Results and Discussion

4.1. Profile of respondents

Of the 156 respondents, 85 were female (54%) and 71 were males (46%). The majority of the respondents were young adults aged 17 to 25 (49%), and 26 to 34 (21%) with the level of education of senior high school and undergraduate degree (87%). Most of the respondents were students/college students (42%), employee (28%), and entrepreneurs (20%) with a monthly income of less than IDR 8 million. Prior to the covid 19 outbreak, respondents were most likely to eat out 1-3 times each week (61%). During the pandemic, around 46% dined out only once and 28% never dined out.

4.2. Assessment of measurement model

Table 1 summarizes the measurement properties derived from structural model calculation. Factor loadings, composite reliability (CR) and average variance extracted (AVE) are performed to assess convergence validity of each construct [30]. The result showed that all the items had factor loadings greater than 0.50. Cronbach's alpha which measures the internal consistency reliability of reflected items was estimated, and all the alpha values of all constructs are between 0.614-0.903, indicating that it could be used together as a scale. Table 2 shows that CR values are greater than 0.7 and the AVE scores exceed the threshold value of 0.5 [30]. These lead to the evidence that each construct has met the convergent validity requirements.

Table 1. Summary for Reflective Measurement Model

Variable	Loading Factor	AVE	Composite Reliability
Perceived Risk		0.538	0.898
The risk of contracting COVID-19 in the restaurant is high	0.856		
Worry of being infected by COVID-19 when having meals at restaurants	0.830		
The chance of COVID-19 patients dining in restaurant is high	0.856		
Doubt the safety/hygiene of food in restaurants	**0.898**		
The risk of contracting COVID-19 is high when the owners do not apply the health protocol properly	0.469		
The negligence of applying health protocol leads to the spread of COVID-19 pandemic	0.420		
Not trusting the application of the health protocol in restaurants	0.756		
Government's regulation to curb the spread of COVID-19 is not effective	0.614		
Attitude		0.634	0.923
Dine-in during Covid-19 is harmful (1)/beneficial (7)	0.840		
Dine-in during Covid-19 is undesirable (1)/desirable (7)	0.790		
Dine-in during Covid-19 is good (1)/bad (7)	**0.889**		
Dine-in during Covid-19 is fool (1)/wise (7)	0.842		
Dine-in during Covid-19 is unfavorable (1)/favorable (7)	0.668		
Dine-in during Covid-19 is risky (1)/safe (2)	0.774		
Dine-in during Covid-19 is unrecommended (1)/recommended (7)	0.749		
Subjective Norm		0.524	0.766
I consider others' opinion when making decisions to dine-in at a restaurant during Covid-19 pandemic	0.653		
People I know gives consideration when I want to dine-in at a restaurant during Covid-19 pandemic.	0.695		
People I know think that it is better not to dine-in at a restaurant during Covid-19 pandemic.	**0.814**		
Perceived Behavioral Control		0.623	0.829
I feel that I can dine-in at a restaurant safely during Covid-19 pandemic.	**0.891**		
I can easily find a restaurant that implement a safe health protocol.	0.842		
I believe that I can take an action to reduce risk when dine-in at a unsafe/unclean restaurant.	0.605		
Intention to Consume		0.786	0.936
I want to dine-in at a restaurant during Covid-19 pandemic.	0.786		

I intend to dine-in at a restaurant during Covid-19 pandemic.	0.912		
I will dine-in at a restaurant during Covid-19 pandemic in the near future.	**0.925**		
I have a strong willingness to dine-in at a restaurant during Covid-19 pandemic.	0.915		

Table 1 shows that the concerns about food safety or food hygiene in restaurants (factor loading=0.898) and the high possibility of covid 19 patients dining in at the restaurant (factor loading=0.856) are two risk perceptions that consumers are concerned about. Consumers think more about the positive and negative effects of having to dine in at a restaurant (factor loading=0.889) and recommendations from friends and family to avoid eating at restaurants constitute a subjective norm of consumers (factor loading=0.814). Behavioral control, which is essential while consuming food safely in restaurants, shapes consumer behavior when dining out (factor loading=0.891). In addition, consumers want to be able to dine out at restaurants in the near future even though the pandemic is not over yet (factor loading=0.925).

The following test is discriminant validity assessment. This test is performed by comparing the Fornell-Larcker Criterion to the correlation to other variables in the research model, and the Fornell-Larcker Criterion value must be higher than the correlation value to the other variables. Based on the results, the Fornell-larcker Criterion variable value is higher than the correlation value against other variables, hence all variables are considered valid.

4.3. Assessment of structural model

The proposed structural model was tested to examine the causal relationship between constructs and to test the hypotheses. Before testing the goodness of fit model, it is necessary to examine the collinearity among variables in the research model to detect the possibility of multicollinearity among variables. The overall value of the inner VIF is less than 5. The value indicates that there is no multicollinearity and can be used to verify the goodness of fit model.

The goodness of fit model test is used to examine the accuracy of the research model in predicting the actual conditions and the relevance among the variables studied in the research model. To measure the accuracy of the model, the value of Q Square should be examined, where a value higher than 0 indicating that the model has good prediction accuracy. Table 2 shows that all the variable Q Square values are more than 0, implying that this research model has a high level of prediction accuracy. While the R Square value demonstrates the relevance of the variables in explaining its influence on other variables in the model.

Table 2. Predictive Accuracy and Relevance

	R Square	Q Square
Attitude	0.269	0.159
Subjective norm	0.267	0.121
Perceived behavioral control	0.141	0.080
Intention to consume	0.574	0.442

The significance of the path coefficient for each hypothesis was estimated to support or not support the hypothesis. Table 4 shows that all structural path estimates were significant at $p<0.01$ except hypothesis 5. Thus, hypothesis 5 was not accepted because the p-value was 0.260 (>0.01)

Table 3. Significant Testing Results

	Path Coefficients	*t* Values	*p* Values	Decision
H1: Perceived risk -> Attitude	-0.519	8.149	0.000**	Supported
H2: Perceived risk -> Subjective norm	0.517	6.227	0.000**	Supported

H3: Perceived risk -> Perceived behavioral control	-0.376	5.236	0.000**	Supported
H4: Attitude -> Intention to consume	0.471	8.207	0.000**	Supported
H5: Subjective norm -> Intention to consume	0.071	1.126	0.260	Not Supported
H6: Perceived behavioral control -> intention to consume	0.399	6.941	0.000**	Supported

**$p < .01$

From Table 4, it can be found that perceived risk significantly influenced consumers' attitude, subjective norm, and perceived control behavior (p-value <0.01), supporting H1-H3. The results reveal that attitude and perceived behavioral control were negatively affected by consumers' risk perception, while subjective norm has a positive effect toward the risk perception. According to this study, consumers with a high-risk perception are more likely to have a cautious attitude and it is becoming increasingly difficult to control, particularly when it comes to ensuring that the food provided in restaurants is safe and hygienic. Meanwhile, the opinions of friends and family members have a significant impact when consumers are thought to be at high risk while making dining-out decisions. Consumers are more likely to consider the opinions of others when deciding whether to eat at a restaurant when the risk is higher. Perceptions of risks because of pandemic conditions affect consumer behavior, especially in three elements of the TPB model [10,11]. The results of this study confirmed the previous research conducted by [10] in China during the bird flu pandemic (H7N9). People tend to listen to other people's opinions more during a pandemic to help them decide whether to engage in particular actions [28].

In addition, the path coefficients in Table 4 showed that consumers' attitude and perceived behavioral control have a positive and significant effect on consumers' intention to dine-in (p-value<0.01), supporting H4 and H6. However, opinions of others did not significantly influence consumers' food consumption intention during Covid-19 pandemic (p-value >0.05), rejecting H5. Consumers take other people's opinions into account when assessing the risks associated with dining at restaurants, however opinions from friends or family members do not enhance consumer interest in eating at restaurants, especially during a pandemic. The results of this study were consistent partially with the study conducted by [10]. In [10], Subjective norm has a significant effect on poultry consumption intention, while in the current study, dine-in consumption intention was insignificantly influenced by subjective norm. These different results could be due to different pandemic conditions. Covid-19 pandemic has been going on for about a year since the data for this study was collected. Consumers no longer consider what people around and close friends are saying to be significant because information and updates on the pandemic situations are readily available. Thus, in the context of eating out in restaurant, attitude and behavioral control become the most important determinants when consumers are willing to dine-in in restaurants.

5. Conclusion

People still have a high concern that they will be infected with Covid-19 if they do activities outside their home. The findings of this study reveal that the perceived risk of the impact of the covid-19 pandemic has a significant influence on dining out behavior, namely attitude, subjective norm, and perceived control behavior. Interestingly, consumers' food consumption intention to eat at restaurants during the pandemic is significantly influenced merely by the attitude and the perceived control behavior. While the subjective norm is not significant in influencing one to eat at a restaurant. Consumers continue to believe that the covid-19 virus poses a health risk, which influences their eating behavior. The desire to dine-in at a restaurant is more likely to be caused by the consumer doubts about the desire to eat in a restaurant and the restaurant's preparedness to assure the cleanliness of food that is processed and delivered to consumers. Suggestions and opinions of close friends and family are no longer a consideration for eating out. This could be due to the length of the pandemic, which has allowed consumers to become accustomed to living with the corona virus and thus no longer require the advice of others when deciding to eat out.

The TPB model utilized in this study helps us to understand the consumers' behaviors and their interest to dine-out during the Covid-19 pandemic. This study should benefit the restaurant industry owners or practitioners to understand the current food consumption patterns and what consumers perceive when they decide to eat at a restaurant. Thus, restaurants can improve their readiness to ensure that hygiene and health protocols are followed for the convenience of their consumers. The government is expected to understand consumers eating behavior so that appropriate regulations can be put in place to help the restaurant industry to rebound and prevent the impact of the corona virus.

The risk perception was primarily focused on physical or health risk, however, further research should incorporate other elements of perceived risk, such as psychological risks, cognitive risk, and affective risk. Furthermore, the sample for this study was taken only from one city, Malang city, which may not be taken as the representative of consumers in general. A future study is expected to collect a larger sample in Indonesia's major cities to provide a bigger picture of dining behavior during the covid 19 pandemic.

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