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THE EFFECT OF INFORMATION DISSEMINATION IN SOCIAL MEDIA ON CONSUMER STOCKPILING BEHAVIOR DURING COVID-19 PANDEMIC

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Abstract

During the Covid-19 pandemic, stockpiling became a common phenomenon, when people flocked to markets or supermarkets to buy various needs ranging from food to the need for health equipment. Therefore, it is important to explore the stockpiling behavior that occurs in order to get a clearer picture of this phenomenon. This study aims to find out how the dissemination of information on social media containing stimuli affects consumer perceptions of perceived benefits of stockpiling until the consumer decides to stockpile in the end. This study is a survey study collected through a questionnaire employed online through social media (Whatsapp and Instagram). The data is analyzed quantitatively utilizing the PLM-SEM app. The results of this study show that received risk, perceived severity, and perceived scarcity do not have a significant effect on the perceived benefits of stockpiling and stockpiling, but social norms have a significant effect on the perceived benefits of stockpiling. The result can become a reference for determining policies in the face of the panic buying phenomenon which leads to stockpiling. Therefore, the media must realize that the content they publish must be free from exaggerated news so that they can provide real information to the public.

Keywords: Stockpiling Behavior, SOR Model, Social Media, Perceived Risk

INTRODUCTION

The use of social media in Indonesia is quite large. With 170 million social media users in 2021, it means that 61.8% of Indonesia's total population uses social media. The average time for using social media in Indonesia is 3 hours and 14 minutes. In addition, the percentage of use of social media for work reaches 60% (Hootsuite, 2021). Social media has the opportunity to sensationalize and misinterpret information from various parties such as political officials, non-profit organizations, and state institutions. When people are aware of a problem but have little information about it, it causes a negative outlook and creates a sense of uncertainty (Gesser-Edelsburg et al., 2017). Social media plays an important role in creating or disseminating perceived risk through social interaction, dissemination of global and local information, and interpretation of public opinion in general. The amount of contradictory information from various parties regarding Covid-19 from the government level to the lower institutions, Wang et al., (2019) and Smith, (2020) said that information that deserves to be received and trusted is information that comes from parties who have the right information. In today's era, social media owns and creates content that encourages high engagement from its users. With the uncertainty and risk of Covid-19, negative content spreads quickly. Furthermore, Wang et al., (2019) and Smith, (2020) said that with the increase in social media users during the pandemic, the spread of sensationalist content also increased. Content that is emotional and surprising is very appropriate to be used to get people's attention.

According to data compiled by WHO (2022) as of January 2022, there have been 305,914,601 positive cases of Covid-19 from around the world and there have been 5,486,304 deaths due to Covid-19. Then according to WHO statistics (2022), there have been 4,266,649 positive cases of Covid-19 in Indonesia with a death rate of 144,136 people from January 2020 to January 2022. The high number of positive cases and deaths caused by Covid-19, the Indonesian government issued a Government Regulation (PP) Number 21 of 2020 and signed by President Joko Widodo in order to accelerate the handling of Covid-19 in Indonesia which is called Large-Scale Social Restrictions or known as PSBB. During the PSBB period, Indonesian people are required to limit all activities outside the home and

are required to stay at home for a while (Yulianti et al., 2020). The outbreak of Covid-19 has brought many changes to various aspects of life such as financial problems, stress due to isolation, loss of livelihood and health problems both physically and psychologically (Isham et al., 2020 ; Lobritto et al., 2020; Arafat et al., 2021). The result is that people feel feelings of uncertainty, anxiety, fear and high stress, so people stockpiling for themselves and their families. Retail entrepreneurs in Indonesia admit that not long after the government confirmed the existence of Covid-19 and the PSBB policy was implemented, there have been three panic buying actions by several people. The first period of panic buying occurred when the Indonesian government officially announced two positive Covid-19 patients on March 2nd, 2020, the second when an advisory was issued to work from home and a two-week holiday from studying on March 14th, 2020 and the third when the announcement of positive cases of Covid-19 reached 308 cases with 25 fatalities (Putri, 2020).

It has been observed that hoarding can be explained as an idiosyncratic behavior driven by external environmental factors and leading to stockpiling behavior through the internalization of some factors. A research by Li et al., (2021) found that the health belief model and anticipated regret have an influence on the formation of panic buying behavior. The factors are perceived severity and susceptibility of Covid-19, outcome expectation of panic buying behavior, exchange of information from social media, and self-efficacy that cause panic buying, mediated by perceived scarcity and anticipated regret. To provide a greater understanding on factors that impacting stockpiling behavior, the research utilizes Stimulus-Organism-Response (SOR) model. The first element is a "Stimulus" that triggers a response from consumer behavior (Chen & Yao, 2018). Things that can be a stimulus for consumers include applying social cues around them or there is something that can affect perceptions so that it motivates them to respond according to what is happening (Islam et al., 2020; Loureiro et al., 2020). In this study, perception of risk, perception of scarcity, perception of severity, social influence and social norms as stimuli. The second element is the "Organism". Organisms are internal factors that bridge between stimulus and response (Islam et al., 2020). After consumers receive a stimulus, they will translate the stimulus into

information. Then they make decisions by understanding their surroundings based on that information. In this study the organism is the perceived benefit of hoarding. Then the third element is response. Response is the result or decision of several consumer considerations of stimuli. The response in this research is stockpiling behavior.

Perceived risk is defined as an individual's perception of how likely they are to contract Covid-19, which is an important cause of the panic buying phenomenon (Cheng et al., 2020). At the beginning of the emergence of the Covid-19 pandemic, people witnessed and felt the phenomenon of morbidity and mortality around them, resulting in a great sense of uncertainty and anxiety about their lives. Perceived severity is a perception of negative consequences as a result of contracting Covid-19 which is fatal to a person's life both on one's welfare, namely the loss of a job so that it affects the economic condition and one's relationship with his family. Botchway & Fazel, (2021) and Shoib & Yasir Arafat, (2020) said that the presence of Covid-19 had an impact on mental health problems such as depression. Perceived Scarcity can be defined as a perception formed by individuals or groups regarding the limited supply of an item (Chatterjee et al., 2020). This encourages people to increase the amount of goods they buy because of urgency or the increasing value of an item (Teubner & Graul, 2020). This may be caused by an event that limits the freedom of a person. This encourages people's sense of awareness and interest in rare items, thus making people to pursue substitutes which will also become rare (Gupta & Gentry, 2019). Social Norm is a collection of rules and laws that are adopted and agreed upon by individuals and groups, which in nature guide or limit social behavior without any written legal rules (Chung & Rimal, 2016). Social norms are believed to be important factors of human psychology that work explicitly or implicitly (Dempsey et al., 2018). Expectations, cues and behavior of other social members can influence an individual because individuals tend to obey social norms in order to be recognized in their group (Albrecht et al., 2017).

Social Influence refers to how the influence of information from external parties and phenomena that occur in the environment affect the thoughts and decisions of an individual (Ozdemir et al., 2017). In psychology, this is an important determining factor because it can

affect a person's emotions and behavior change. Perceived Benefits is a person's belief about something positive perceived from the response to a perceived threat. Perceived benefits are most often described in the form of normal and specific shopping behavior towards individual perceptions of the perceived benefits when carrying out certain shopping behaviors. Sheth, 1983 argues that the personal determinants of traditional shopping can be influenced by functional and non-functional motives (Nguyen & Khoa, 2019). Functional motives are related to utilitarian functions such as convenience, merchandise variety and quality, and price, while non-functional (hedonic) motives are related to social and emotional needs for a pleasant and interesting shopping experience. Forsythe explained that there are four perceived benefits of shopping online, namely: shopping convenience, product selection, ease/comfort of shopping and hedonic/enjoyment.

The aim of the current study is to determine whether stress and strain stimuli such as perceived risk, perceived rarity, social norms, and social influence affect consumption on the perceived benefits of stockpiling during Covid-19 pandemic and to see how it affects people's judgment. The perceived benefits are tested as mediating variables.

REVIEW OF LITERATURE

Perceived Risk and Perceived Benefits

According to Wen et al., (2020), people when they are in a health crisis, have a tendency to form a risk perception of the crisis. In such situations, the media including social media provide direct information about the disease and the current situation (Zeballos Rivas et al., 2021). Thus, enabling people to understand the risks. News in various media said negative things such as many people dying from Covid-19, hospitals and crematoriums running out of space, making it enough for people to understand the severity of the ongoing situation (Figueroa et al., 2021). Several studies have explored the impact of social media information during various epidemics and their effect on people's risk perceptions (Oh et al., 2021). Depoux et al., (2020) stated, during the Covid-19 Pandemic, the media disseminated information faster and had a role as a party to spread fear and the risks. Susceptibility is a measure of the likelihood of contracting Covid-19. Then severity is the consequence of being exposed to the Covid-19 virus, forming a threat

visualization that ultimately determines the perceived risk level of an event (Chua et al., 2021). If this level of risk is perceived as high for people during a disaster, they tend to form a self-protection behavior that can protect them and their own families (Sheu & Kuo, 2020). Correspondingly, when people perceive a higher level of risk of being infected with Covid-19, they may form a stockpiling behavior that they feel will save and protect them from being infected because they will not travel to crowded places. This hoarding will aim as a form of securing supplies of life necessities and will help them in avoiding stock-out situations that may occur in the future (Shukla, 2020). The research hypothesis is:

H1: Perceived Risk will have a significant impact on Perceived Benefits

Perceived Risk and Stockpiling

People feel that the risk of being infected with Covid-19 can be minimized if they buy large quantities of necessities for life in a single purchase. This will reduce the mobility of those who often go to various stores to buy back these items. During COVID-19, media including social media also advised people to stay in their respective homes, as this would give them a sense of security by reducing one-to-one contact (Shukla, 2020). Arden & Chilcot, (2020) argue that, people tend to behave evasively when facing a pandemic. This includes reducing contact with people by avoiding crowded places or public transportation. This behavior is likely to increase with perceptions of pandemic risk. This will eventually trigger the phenomenon of panic buying. Therefore, during Covid-19, where there is a very high perception of the risk of being infected with the virus, it can be assumed that people may be stockpiling to minimize their risk. The research hypothesis is:

H2: Perceived Risk will have a significant impact on Stockpiling

Perceived Severity and Perceived Benefits & Perceived Severity and Stockpiling

Covid-19 causes an economic recession as many companies factories will be closed and many jobs will be lost due to the economic downturn (Barua, 2021). When an individual becomes aware of serious adverse consequences associated with a pandemic like prolonged social distancing enforcement, increased factory closures, and supply chain disruptions tend to undermine confidence in future pandemic recovery and supply chain replenishment, resulting in productivity constraints and product unavailability accordingly.

In addition, lower product range expectations lead to lower consumer confidence in purchasing merchandise, thus leading to emotional insecurity.

H3: Perceived Severity will have a significant impact on Perceived Benefits

H4: Perceived Severity will have a significant impact on Stockpiling

Perceived Scarcity and Perceived Benefits

The public's belief in the difficulty of accessing certain products due to limited availability during the Covid-19 pandemic due to limited supply and due to limited movement and lockdown is referred to as perceived scarcity (Chua et al., 2021). The concept of perceived scarcity is based on reactance theory. This theory assumes that perceived scarcity is a condition that threatens the freedom of consumers because there are restrictions or lack of access to them (Maghsoudi et al., 2018). The result is to cause reactance from their psychological side. Therefore, people become motivated to procure goods in bulk which may also be unavailable in the near future due to health crises, including Covid-19 (Gupta & Gentry, 2019). Furthermore, news of scarcity displayed in the media also acts as a strong stimulant for consumers and makes them form their own perceptions of the situation they are experiencing (Shukla, 2020). Such perceptions can lead them to consider the benefits of panic buying (Shukla, 2020), Therefore, people will believe that hoarding is the right thing to do because they believe that stockpiling will prevent them from scarcity of supplies and will also reduce the risk of getting infected with the virus because they buy a lot of supplies at one time (Chua et al., 2021). The research hypothesis is:

H5: Perceived Scarcity will have a significant impact on Perceived Benefits

Perceived Scarcity and Stockpiling

The Covid-19 pandemic has caused a shortage of supplies. This happened because of the lockdown regulations, the closing of borders between countries, restrictions on mobilization which resulted in disruption to the supply chain. Then, the media plays an important role in shaping perceptions about a situation that occurs during the Covid-19 Pandemic, various social media platforms allowed people to share and exchange information regarding possible shortages of various medical goods and supplies. The result

is especially for those who feel fear and anxiety about Covid-19 believe the information and start hoarding it (Islam et al., 2020). Furthermore, when consumers feel strongly about the scarcity of goods and supplies or when they feel vulnerable to being infected with Covid-19, they tend to take protective measures to protect themselves. As a result, they will start buying supplies in large quantities so as not to leave the house too often to shop. They believe this will reduce the chances of getting infected by the virus. This psychological reactance will motivate them to hoard items that they consider scarce. In addition, people also try to anticipate feelings of regret when they do not have goods when they are needed because of the scarcity phenomenon in the market (Gupta & Gentry, 2019). Wang et al., (2019) predict that more people will regret their decision not to stockpile supplies during the pandemic. The research hypothesis is:

H6: Perceived Scarcity will have a significant impact on Stockpiling

Social Influence and Perceived Benefits

Changes in people's behavior to follow the demands that occur in their social environment are referred to as social influence. Community activities in the panic buying trend during the Covid-19 period were also influenced by several social impulses because they considered panic buying to be an important thing to do. The first is from social media, which has a huge impact on their behavior. Barger et al., (2016) stated that the media significantly influences the consumer decision-making process. Although social media provides up-to-date information on what people should do in the face of Covid-19, it is also vulnerable to misuse. disinformation, spreading rumors and suggestions for hoarding can affect people. This information can cause them to panic buying (Frank & Schvaneveldt, 2016). They may believe that stockpiling will be of great benefit to them as it will reduce their chances of infection and will not deplete them of supplies. Second, people try to adapt to new behaviors as conveyed by others in order for them to accept them. This is known as normative influence, Therefore, suggestions that come continuously from family and relatives to hoard can motivate them to hoard. In that way, they feel that the decision to hoard will be something important for them to do because it will reduce the frequency of going out of the house. Third, a person's behavior is also influenced by their past

experiences which are based on the results of their respective observations (Zhang et al., 2021). If they observe the behavior of people who hoard when the initial wave of Covid-19 is in favorable conditions, it will automatically strengthen their urge to do the same.

H7: Social Influence will have a significant impact on Perceived Benefits

Social Influence and Stockpiling

People's behavior to hoard goods during a pandemic such as Covid-19 is strongly influenced by various factors such as social media, normative power and the results of observations of each individual. When lockdowns are implemented and people's mobility is restricted, they rely on social media as a reliable source of information and can also spread rumors about future out-of-stock situations. Such information can motivate people to hoard to avoid such situations (Frank & Schvaneveldt, 2016). There are media narratives about people scrambling in various shopping places to get products and buyers lining up in the morning to buy basic necessities through pictures, stories, and videos, encouraging people to hoard. During a pandemic, people may be compelled to behave as family and friends do. These people may motivate them to hoard because it is believed that it will save them from being infected with the virus from traveling outside. In addition, people's behavior during the pandemic is also influenced by the results of their respective observations. When people observe that during Covid-19, other people are also stockpiling for saving them from infection and out of stock situations, they may also be motivated to do the same. The research hypothesis is:

H8: Social Influence will have a significant impact on Stockpiling

Social Norm, Perceived Benefits, Social Norm, and Perceived Stockpiling

Social norms refer to the rules and standards that are understood by individuals and groups, which are guiding or limiting social behavior without any written legal rules. Social norms are believed to be important factors of human psychology that work explicitly or implicitly (Cookson et al., 2021). Expectations, cues and behavior of other social members can affect an individual because individuals tend to obey social norms in order to be recognized in their group. During this pandemic, the recognized social norm among the community is the activity of hoarding necessities and supplies. Before the pandemic, people

generally shopped for necessities only when they needed them or when supplies ran out. However, the threat from Covid-19 has triggered the emergence of a new behavior in society to buy more products than needed. Based on emergent norm theory, panic buying behavior is interpreted as a collective reaction to the fear of a pandemic. The change in behavior was influenced by information that out of stock of products in the market might occur due to a pandemic, and the way in which information was conveyed that product unavailability could affect normal life. Therefore, the perception of the benefits of stockpiling products is formed. The research hypotheses are:

H9: Social Norm will have a significant impact on Perceived Benefits

H10: Social Norm will have a significant impact on Stockpiling

Perceived Benefits and Stockpiling

People's perceptions of the benefits of something they do are referred to as perceived benefits. These benefits motivate customers to adopt or engage in certain behaviors. During Covid-19, people may decide to hoard only if they can experience some of the benefits of hoarding. They believe that hoarding can save them from possibly running out of supplies in the future. In addition, hoarding can also reduce their chances of contracting Covid-19 because they will not often visit crowded places so that it gives them a sense of security and comfort and will make them feel less stressed and anxious (I. A. Wang et al., 2019). During the pandemic, supply chains are certainly disrupted due to several factors. Hence, people prefer to hoard supplies because they find it beneficial to them which can save them from running out of supplies in the future. The research hypothesis is:

H11: Perceived Benefits will have a significant impact on Stockpiling

Perceived Benefits as Mediator

When people really feel the risk of getting infected with Covid, they tend to hoard because they can feel the many benefits of stockpiling, because it will reduce the risk of contracting the virus by not going out a lot (Chua et al., 2021).Then, when people feel the shortage of goods during the pandemic, they can decide to buy necessities in bulk. This hoarding is considered profitable because they are saved from a potential stockout situation.

In addition, when social media, family and closest relatives advise someone to buy in larger quantities to minimize the risk of Covid-19 and out of stock situation, they will prefer to stockpile because it is beneficial for them in dealing with pandemic situations. In addition, people will hoard based on their observations of what other people have done in the past.

H12: Perceived Benefits will mediate the relationship between (a) Perceived Risk, (b) Perceived Severity (c) Perceived Scarcity, (d) Social Norm, (e) Social Influence and Stockpiling

The Conceptual Framework

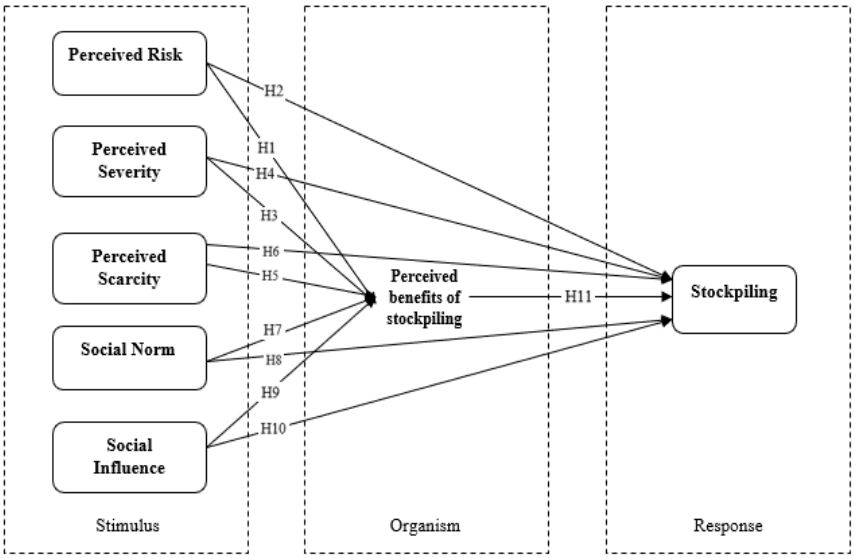

Figure 1
The Conceptual Framework
Source: Authors' Creation (2023)

RESEARCH METHOD

Constructs and Measurement Items

The measurement items of the research are adopted and adapted from previous studies. The constructs consist of seven: Perceived Risk (PR), Perceived Severity (SEV) Perceived Scarcity (PS), Social Norm (NOR), Social Influence (SI), Perceived Benefits (PB), Stockpiling (SP). The "perceived risk" was measured by adapting and modifying from Broadbent et al., (2019). The "perceived severity" was measured by adapting and modifying from (M. Wang et al., 2021). The "perceived scarcity" was measured by

adapting and modifying from Byun & Sternquist (2008). The "social norm" was measured by adapting and modifying from Gong et al., (2019). The "social influence" was measured by adapting and modifying from Shoib & Arafat, (2021) "perceived benefits" was measured by adapting and modifying from Chen, (2017). The "stockpiling" was measured by adapting and modifying from Cook & Yurchisin, (2017). Measurement items and sources are listed in Table 1.

Survey Design and Sampling Process

A questionnaire survey is conducted to collect the data. The designed questionnaire consists of nine sections. The method of data collection was employed by online through social media (Whatsapp and Instagram). The first section briefly introduces the background of the research and the purpose of the research, as well as how confidentiality is maintained. This assurance basically states that the data collected will only be used for academic purposes and that personal information will not be shared with third parties, thus encouraging respondents to answer truthfully. To ensure the data was obtained from the correct sample, it was ensured by asking screening questions: 'are you 18 years of age or more?', 'do you use social media extensively?', are you living/working in DKI Jakarta?' The second section asks for demographic information about the participant, such as gender, age, household income, and housing type. In the third section to ninth section, respondents are asked to rate their agreement with the measurement points in Table 1 from "1 = very low" to "6 = very high".

Demographic Characteristics

Of the 290 respondents who had been collected, it has been found that the highest proportion was women with 153 respondents (52.8%), while men were 137 respondents (47.2%). That way, it shows that in the majority of the people of DKI Jakarta who do more shopping activities are women. Then, the largest age range who participated in this study were respondents aged 18-24 years with a total of 111 (38.3%), 109 (37.6%) came from the age range 25-35 years, 51 (17.6%) in the age range 36-45 years, 14 (4.8%) in the age range 46-55 years and 5 people (1 .7%) from the age range of more than 55 years. Then based on the level of education, the majority of the respondents who participated the most were from

undergraduate backgrounds with a total of 152 (52.4%), high school by 75 people (25.9%), followed by diploma by 61 people (21%), and junior high school by 2 people (0.7%). Then, the most respondents in this study were private workers of 106 people (36.6%), students of 77 people (26.6%), civil servants of 44 people (15.2%), entrepreneurs of 41 people (14 .1%), others 15 people (5.2%) and TNI/POLRI (Armed Forces/Police officer) 7 people (2.4%). Then on the amount of income, most respondents from someone who has an income of Rp. 4,001,000 – Rp. 5,000,000 per month for 80 people (27.6%), followed by someone who has an income of more than Rp. 5,000,000 per month as many as 77 people (26.6%), someone with an income between Rp. 0 - Rp. 999,000 as many as 44 people (15.2%), someone with an income between IDR 3,001,000 - IDR. 4,000,000 as many as 40 people (13.8%), someone with an income between Rp.1,000,000 - Rp. 2,000,000 as many as 29 people (10%), and someone with an income between IDR 2,001,000 - IDR. 3,000,000 as many as 20 people (6.9%). The details of demographic are illustrated in Table 2.

Tools and Techniques

The study utilizes Partial Least Square Structural Equation Modeling (PLS-SEM) to examine the relationships among variables and for testing the various proposed hypothesis.

Table 1
Measurement Items

Construct	ID	Item	Sources
Perceived Risk	PR 1	Information from media makes me I am worried about being infected by Covid-19.	Adopted and adapted from Broadbent et al. (2006)
	PR 2	As per the media, Covid-19 is here to stay for longer	
	PR 3	When I visit a shop/market, I want to pick up things quickly so I can return home soon	
	PR 4	The thought of contracting Covid-19 scares me	
	PR 5	Due to my physical health, I would more probably contract Covid-19	
Perceived Severity	PSEV 1	Dengue fever can cause death.	Abd Rahman, A., Zainuddin, H., Minhat, H. S., Juni, M. H., &
	PSEV 2	Dengue fever can occur without a rash	
	PSEV 3	Fever for 3 days is worrisome to me. I feel that I do not need to wait up to 5 days to get treatment.	
	PSEV	There is a chance that I and the people I know to be infected with	

	4	dengue fever or dengue hemorrhagic fever	Mazeli, M. I. (2014). Sembilan.
	PSEV 5	I have a lot of acquaintance who have recovered from dengue fever, but I'm still afraid of dengue.	
Perceived Scarcity	PS 1	According to media, the products that I am interested to buy will be out of stock in Covid-19	Adopted and adapted from Byun & Sternquist (2008)
	PS 2	Products of interest as per my need will be often scarce in Covid-19 as per media.	
	PS 3	According to media, there will be only limited number of products in Covid-19	
	PS 4	The types of products will be very limited during Covid-19	
	PS 5	I am anxious about the volatility of product prices during Covid-19	
Social Norm	NOR 1	I think about and consider what others expect of me	Adopted and adapted from Gong et al. (2019)
	NOR 2	My friends find it acceptable to stockpile products	
	NOR 3	My family members find it acceptable to stockpile products	
	NOR 4	I don't want to get negative views from my closest environment/family because I don't do stockpiling	
Social Influence	SI 1	The media portrays the public frequently rush into a panic buying for products during Covid-19	Adopted and adapted from Sheu & Kuo (2020); Yuen et al. (2020)
	SI 2	The media portrays public fear for the volatility of product prices and supply shortage during Covid- 19	
	SI 3	The media prompted me to stockpile products at home	
	SI 4	My family prompted me to stockpile products at home	
	SI 5	My friends prompted me to stockpile products at home	
	SI 6	My previous experience prompted me to stockpile products at home	

Construct	**ID**	**Item**	**Sources**
Perceived Benefits	PB 1	Stockpiling products reduces my risk of contracting COVID-19 by minimizing visits to the stores or crowded place	Adopted and adapted from Chen et al. (2013)
	PB 2	Stockpiling products protects me from a stock-out situation	
	PB 3	Stockpiling products will be beneficial	
	PB 4	With the media reporting there will be shortages of goods, I believe stockpiling is beneficial	
	PB 5	My family say there will be shortages of goods, I believe stockpiling is beneficial	
	SP 1	When I took a product, I did not want to place it down even though I was not certain if I would purchase it or not	

Stockpiling	SP 2	I snapped things up during the shopping trip in this shop	Adopted and adapted from Byun & Sternquist (2008)
	SP 3	I had the urge to grab products immediately	
	SP 4	I would regret in the future if I didn't stockpile	
	SP 5	I would feel totally unprepared in facing the Pandemic if I didn't stockpile	

Table 2
Demographic Details

Variables	Levels	No of Respondents	%
Gender	Male	137	47,2
	Female	153	52,8
Age	18-24	111	38,3
	25-35	109	37,6
	36-45	51	17,6
	46-55	14	4,8
	>55	5	1,7
Education	JHS	2	0,7
	SHS	75	25,9
	Diploma	61	21
	Undergraduate & Postgraduate	152	52,4
Occupation	Student	77	26
	Civil servants	44	15,2
	Private	106	36
	TNI/POLRI (Armed Forces/Police officer)	7	2,4
	Entrepreneur	41	14,1
	Other	15	5,2
Monthly Income	0 - 999.000	77	15,2
	1.000.000 - 2.000.000	44	10
	2.001.000- Rp. 3.000.000	106	6,9
	3.001.000 - 4.000.000	7	13,8
	4.001.000 - 5.000.000	41	27,6
	> 5.000.000.	15	26,6

Source: Research Results (2023)

RESULTS AND DISCUSSION

Measurement Model Evaluation

To evaluate the results of the measurement model, this study tested Cronbach's Alpha, factor loading and Average Variance Extracted (AVE) for all measurement variables. The results obtained are that all outer loadings in the study are in the range of 0.8. According to Hair et al. (2017), outer loading on the measurement scale must have a minimum number of 0.708. Then the value of each variable in this study shows high reliability as shown in Table 3, higher than the threshold value of 0.7. Then all AVE values as shown in Table 3 are higher than the threshold which is 0.5. Therefore, the variables for each measurement in this study are valid and reliable.

Then this study uses the Fornel-Larcker Criterion to assess discriminant validity. The process of calculating this method is to compare the AVE roots of each variable against the correlation between one other variable in the research hypothesis. If the AVE root value of each variable is greater than the correlation value between one variable and the other variables, discriminant validity is considered good. Discriminant validity values are illustrated in Table 4.

Hypothesis Testing Results

This study examines the relationships between perceived risk, perceived severity, perceived scarcity, social norm, social influence and stockpiling in the context of purchasing necessities during the Covid-19 pandemic in DKI Jakarta. This study also examines whether the perceived benefits of stockpiling will mediate the relationship between perceived risk, perceived severity, perceived scarcity, social norm, social influence and stockpiling. To examine the structural model and the hypotheses that have been proposed, this study uses the significance of the path coefficient, effect size test (f2) and variance (R2) of the research variables. The standard PLS algorithm method is used to measure the path coefficient, standard error and t-statistics.

The direct and indirect relationship between research variables is shown as illustrated in Table 5. The results are Perceived risk (t-value: 1.308, t-table: 1.96), perceived severity (t-value: 0.718, t-table: 1.96) and perceived scarcity (t-value: 0.268, t-table: 1.96)

have no significant effect on perceived benefits. These results can be interpreted that the hypotheses H1, H2 and H3 are rejected. However, different results are shown by the social norm and social influence variables. These two variables respectively show that social influence (t-value: 4.81, t-table: 1.96) plays the most important role in influencing consumers towards the perceived benefits of stockpiling, followed by social norms (t-value: 2.732, t-table: 1.96). Therefore, the hypotheses H4 and H5 are accepted.

Then next is the relationship between perceived risk, perceived severity, perceived scarcity, social norm, social influence and stockpiling. It was found that perceived risk (t-value: 0.321, t-table: 1.96), perceived severity (t-value: 0.597, t-table: 1.96), and perceived scarcity (t-value: 0.648, t- table: 0.648) has no significant effect on stockpiling, so the H6, H7, H8 hypotheses are rejected. Then the social norm and social influence variables show that these two variables have a significant influence on stockpiling with respective t-values of 2.733 and 3.886 respectively. Then the perceived benefits variable also shows a significant effect on stockpiling with a t-value of 1.988. Then test the mediating effect of perceived benefits which mediates between perceived risk, perceived severity, perceived scarcity, social norm, social influence and stockpiling. It was found that the respective t-values obtained were 1.044, 0.600, 0.267, 1.745 and 1.875. Thus, it can be concluded that hypotheses H9, H10, H11 can be accepted, while hypothesis H12 is rejected because perceived risk, perceived severity, perceived scarcity, social norm, social influence has a significant effect on stockpiling without being mediated by perceived benefits.

Table 3
Result of Measurement Model

Variables	CA	AVE
Perceived Risk	0,861	0,706
Perceived Severity	0,847	0,766
Perceived Scarcity	0,887	0,689
Social Norm	0,848	0,687
Social Influence	0,921	0,718
Perceived Benefits	0,903	0,775
Stockpiling	0,908	0,732

Table 4
Discriminant Validity Assessment

Variables	PR	SEV	PS	NOR	SI	PB	SP	rho A	Sqrt rho A	Desc
PR	0,840							0,864	0,930	Valid
SEV	0,915	0,875						0,850	0,922	Valid
PS	0,926	0,895	0,830					0,887	0,942	Valid
NOR	0,919	0,950	0,909	0,829				0,852	0,923	Valid
SI	0,938	0,926	0,912	0,934	0,847			0,922	0,960	Valid
PB	0,907	0,903	0,895	0,933	0,946	0,855		0,909	0,953	Valid
SP	0,923	0,920	0,898	0,934	0,947	0,934	0,880	0,903	0,950	Valid

Table 5
Results of the Structural Model Analysis

Hypothesis	Relationship	Regression Coefficient	t-Value	t-Table	Decision	R2	F2
H1	PR > PB	0,139	1,308		Not Supported		0.02
H2	SEV > PB	0,084	0,718		Not Supported		0.007
H3	PS > PB	0,026	0,268		Not Supported		0.001
H4	NOR > PB	0,273	2,732		Supported		0.066
H5	SI > PB	0,461	4,81		Supported		0.215
H6	PR > SP	0,037	0,321	1,96	Not Supported	0,92	0.001
H7	SEV > SP	0,101	0,597		Not Supported		0.01
H8	PS > SP	0,074	0,648		Not Supported		0.007
H9	NOR > SP	0,348	2,733		Supported		0.102
H10	SI > SP	0,47	3,886		Supported		0.186
H11	PB > SP	0,224	1,988		Supported		0,051

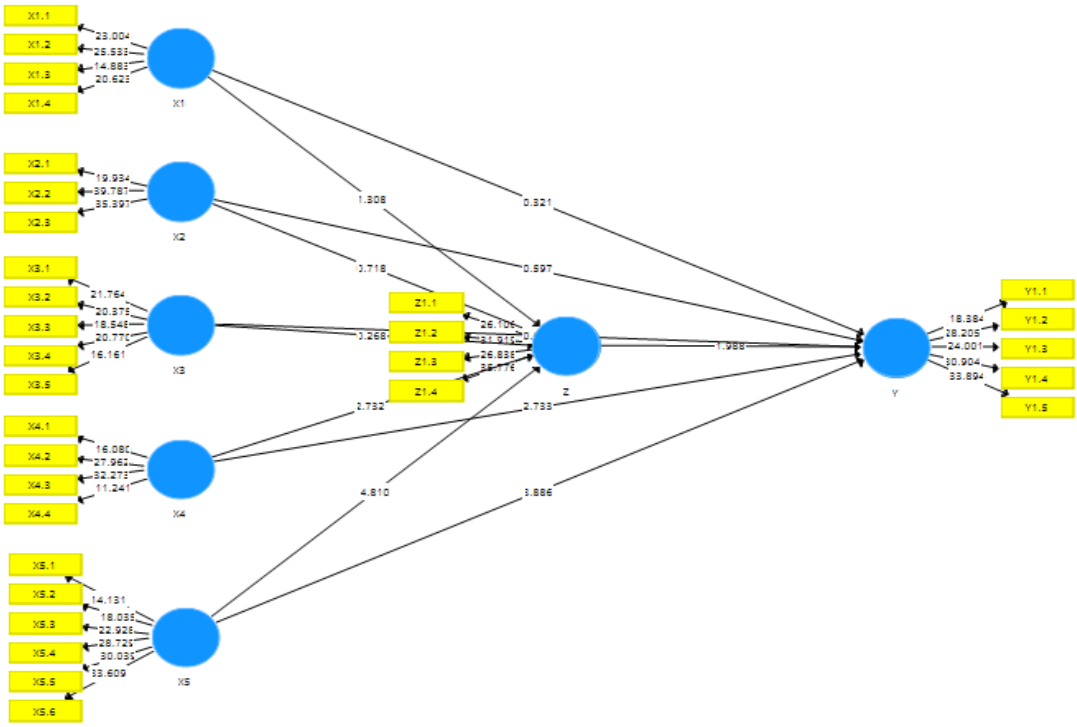

Figure 2
Structural Modelling Result

Validity Test

A questionnaire's validity or reliability can be evaluated using the validity test. Convergent validity and AVE are used in this study's validity testing. If both the outer loading value (> 0.6) and the AVE result are greater than 0.05, the measurement is valid

Table 6
Instrument Validity Test Results

Variable	Indicator	AVE	Outer Loading	Valid
Perceived Risk (X1)	X1.1	0.669	0.919	Valid
	X1.2		0.878	Valid
	X1.3		0.748	Valid
	X1.4		0.806	Valid
	X1.5		0.721	Valid
Perceived Severity (X2)	X2.1	0.679	0.812	Valid
	X2.2		0.811	Valid
	X2.3		0.810	Valid
	X2.4		0.855	Valid
	X2.5		0.833	Valid
Perceived	X3.1	0.677	0.766	Valid

Scarcity (X3)	X3.2		0.837	Valid
	X3.3		0.879	Valid
	X3.4		0.877	Valid
	X3.5		0.747	Valid
Social Norm (X4)	X4.1	0.708	0.834	Valid
	X4.2		0.830	Valid
	X4.3		0.855	Valid
	X4.4		0.848	Valid
Social Influence (X5)	X5.1	0.668	0.728	Valid
	X5.2		0.835	Valid
	X5.3		0.866	Valid
	X5.4		0.899	Valid
	X5.5		0.842	Valid
	X5.6		0.718	Valid
Stockpiling (Y)	Y.1	0.702	0.867	Valid
	Y.2		0.861	Valid
	Y.3		0.855	Valid
	Y.4		0.764	Valid
Perceived Benefits (Z)	Z1.1	0.696	0.790	Valid
	Z1.2		0.843	Valid
	Z1.3		0.841	Valid
	Z1.4		0.847	Valid
	Z1.5		0.850	Valid

Reliability Test

The Cronbach Alpha and Composite Reliability tests are two kinds of reliability tests used by authors. Cronbach Alpha calculates the lowest reliability number (lower bound). If the data's Cronbach Alpha score is more than 0.7, the data is deemed to be reliable. Composite reliability measures a variable's actual level of dependability. A composite reliability score of >0.7 indicates that the data is highly reliable.

Table 7
Reliability Test

	Cronbach's Alpha	Composite Reliability
Perceived Benefits (Z)	0.891	0.920
Perceived Risk (X1)	0.876	0.909
Perceived Scarcity (X3)	0.880	0.913
Perceived Severity (X2)	0.882	0.914
Social Influence (X5)	0.899	0.923
Social Norm (X4)	0.863	0.907
Stockpiling (Y)	0.858	0.904

R-Square Test

The R-Square Coefficient Determination (R-Square) analysis is used in evaluations to determine how much one endogenous factor influences others. The R-Square value is showed in table below based on the research findings done using the SmartPLS program:

Table 8
R-square Test

	R Square	R Square Adjusted
Perceived Benefits (Z)	0.898	0.896
Stockpiling (Y)	0.922	0.920

The results revealed that perceived benefits had a R square result of 0.898, indicating that it must be positively influenced by the perceived risk, the perceived severity, the social influence, and the social norm to a degree of 89.8%, with the remainder impacts emerging from variables not covered in the study. Stockpiling's R square value is 0.922, which suggests that 92.2% of its impact comes from the perceived risk, the perceived severity, the social influence, and the social norm, and perceived benefits, while the remaining portion comes from factors not covered by this study.

Hyppothesis Test

Table 9
Hypothesis Test

	Original Sample (O)	T Statistics (|O/STDEV|)	P Values
Direct Influence			
Perceived Benefits (Z) -> Stockpiling (Y)	0.499	6.034	0.000
Perceived Risk (X1) -> Perceived Benefits (Z)	-0.075	3.140	0.002
Perceived Risk (X1) -> Stockpiling (Y)	-0.081	3.753	0.000
Perceived Scarcity (X3) -> Perceived Benefits (Z)	0.342	5.293	0.000
Perceived Scarcity (X3) -> Stockpiling (Y)	0.177	2.766	0.006
Perceived Severity (X2) -> Perceived Benefits (Z)	0.165	2.670	0.008
Perceived Severity (X2) -> Stockpiling (Y)	-0.020	0.417	0.677
Social Influence (X5) -> Perceived Benefits (Z)	0.203	5.201	0.000
Social Influence (X5) -> Stockpiling (Y)	-0.007	0.182	0.856
Social Norm (X4) -> Perceived Benefits (Z)	0.325	4.991	0.000
Social Norm (X4) -> Stockpiling (Y)	0.362	5.407	0.000
Indirect influence			
Perceived Risk (X1) -> Perceived Benefits (Z) -> Stockpiling (Y)	-0.037	2.593	0.010
Perceived Scarcity (X3) -> Perceived Benefits (Z) -> Stockpiling (Y)	0.171	3.848	0.000
Perceived Severity (X2) -> Perceived Benefits (Z) -> Stockpiling (Y)	0.082	2.532	0.012
Social Influence (X5) -> Perceived Benefits (Z) -> Stockpiling (Y)	0.101	3.975	0.000
Social Norm (X4) -> Perceived Benefits (Z) -> Stockpiling (Y)	0.162	3.624	0.000

H1: With p values of -0.075 (p 0.05) and t statistics of 3.140 (p>1.96), the results of the perceived risk hypothesis testing on perceived benefits demonstrated that there was a negative significant link in between perceived risk variable and perceived benefits. The higher the perceived risk, the lower the perceived benefits. Cook & Yurchisin, (2017) stated

that the least risk shows the many benefits that exist. In this study, if social media is able to spread positive information during the pandemic, the risk of influencing individuals gain less so that stockpiling behavior does not occur.

H2: With p values of -0.081 (p0.05) and t statistics of 3.753 (p>1.96), the results of the perceived risk hypothesis testing on stockpiling demonstrated that there was a negative significant link in between perceived risk variable and stockpiling. The higher perceived risk, the lower stockpiling. Individuals who do stockpiling usually have concerns about social media news.

H3: The results of testing the Perceived Severity hypothesis on Perceived Benefits obtained a score (p = 0.165) with a p value of 0.008 (p <0.05) and a t statistic of 2.670 (p> 1.96) indicating that there is a significant positive relationship between the variable Perceived Severity and Perceived Benefits. The better the Perceived Severity, the better the Perceived Benefits. Walrave et al (2020) said that the most important predictor was the perceived benefits of the app, followed by self-efficacy and perceived barriers. Perceived severity and perceived susceptibility were not related to app uptake intention. Moreover, cues to action (i.e., individuals' exposure to [digital] media content) were positively associated with app use intention. As the respondents' age increased, their perceived benefits and self-efficacy for app usage decreased. According to Sulat et al (2018) Perceived barriers and perceived benefits were the strongest predictor, while perceived severity was the weakest. The association between HBM variables and behaviors was moderated by some aspects of behavioral outcomes, the study design and the time interval between measurement of the HBM variables and behavior.

H4: The results of testing the Perceived Severity hypothesis for Stockpiling obtained a score (p = -0.020) with a p value of 0.677 (p <0.05) and a statistic of 0.417 (p> 1.96) indicating that there is no positive relationship between Perceived Severity and Stockpiling. In the study, (Sadus et al., 2022) stated that perceived hoarding barriers, such as financial constraints or regulations at supermarkets, turned out to be the strongest predictors of hoarding.

H5: The results of testing the Perceived Scarcity hypothesis on Perceived Benefits obtained a score (p = 0.342) with a p value of 0.000 (p <0.05) and a t statistic of 5.293 (p> 1.96) indicating that there is a significant positive relationship between the variables Perceived Scarcity and Perceived Benefits. The better the Perceived Scarcity, the better the Perceived Benefits. According to research of Hugeng' , n.d. Threats of "perceived scarcity" during the pandemic were dealt with using the "outcome expectation" which led to the intention of "panic buying behavior". Results and discussion from this paper are given to give new insights to assemble potential solutions and measures which can be applicable to control panic buying in the following health crisis so that perceived benefits.

H6: The results of testing the hypothesis of Perceived Scarcity on Stockpiling obtained a score (p = 0.177) with a p value of 0.006 (p <0.05) and a t statistic of 2.766 (p> 1.96) indicating that there is a significant positive relationship between the variables Perceived Scarcity on Stockpiling. The better the Perceived Scarcity, the better the Stockpiling. According to Tama's research (2021), the findings found that emotions and social media information overload have a positive and significant influence on stockpile. However, the results also show that perceived scarcity has a significant influence on panic buying. In addition, according to Rahmawati & Primanto, 2021's research (2021), the results revealed that perceived scarcity and panic buying were successfully proven to be significant predictors of impulsive buying behavior. However, the direct effect of fear appeals and the mediation role of fear appeals and panic buying in the relationship between perceived scarcity and impulsive buying behavior failed to prove in this study

H7: The results of testing the Social Norm hypothesis on Perceived Benefits get a score (p = 0.325) with a p value of 0.000 (p <0.05) and a t statistic of 4.991 (p> 1.96) indicating that there is a significant positive relationship between the Social Norm variable and Perceived Benefits. The better the Social Norm, the better the Perceived Benefits. In Wahyusantoso, 2020's research stated that on the perceived susceptibility dimension, perceived severity and perceived benefit show a positive relationship with preventive behavior, while perceived barriers show a negative relationship with preventive behavior.

H8: The results of testing the Perceived Risk hypothesis on Stockpiling moderated Perceived Benefits get a score (p = -0.037) with a p value of 0.010 (p <0.05) and a t statistic of 2.593 (p> 1.96) indicating that there is a significant positive relationship between the Perceived Risk hypothesis on Stockpiling moderated Perceived Benefits.

H9: The results of testing the Perceived Scarcity hypothesis on Stockpiling moderated Perceived Benefits get a score (p = 0.171) with a p value of 0.000 (p <0.05) and a t statistic of 3.848 (p> 1.96) indicating that there is a significant positive relationship between the Perceived Scarcity hypothesis on Stockpiling moderated Perceived Benefits.

H10: The results of testing the Perceived Severity hypothesis on Stockpiling moderated Perceived Benefits get a score (p = 0.082) with a p value of 0.012 (p <0.05) and a t statistic of 2.532 (p> 1.96) indicating that there is a significant positive relationship between the Perceived Severity hypothesis on Stockpiling moderated Perceived Benefits.

H11: The results of testing the Social Influence hypothesis on Stockpiling moderated Perceived Benefits get a score (p = 0.101) with a p value of 0.000 (p <0.05) and a t statistic of 3.975 (p> 1.96) indicating that there is a significant positive relationship between the Social Influence hypothesis on Stockpiling moderated Perceived Benefits.

H12: The results of testing the Social Norm hypothesis on Stockpiling moderated Perceived Benefits get a score (p = 0.162) with a p value of 0.000 (p <0.05) and a t statistic of 3.624 (p> 1.96) indicating that there is a significant positive relationship between the Social Norm hypothesis on Stockpiling moderated Perceived Benefits.

CONCLUSION

The purpose of this study is to provide an explanation of the factors driving stockpiling behavior on social media during the Covid-19 pandemic. By applying the stimulus-organism-response framework and modifying previous studies, this research provides a framework that can explain the influences and drivers' consumers engage in stockpiling behavior. Data collection was carried out using a questionnaire which was disseminated online via social media involving 290 respondents. Partial Least Square Structure Equation Modeling is used to analyze the respondent's data. The results of the research are that the elements of stimuli such as perceived risk, perceived severity and

perceived scarcity do not have a significant effect on the perceived benefits of stockpiling and stockpiling, but two other elements of stimuli, namely social norms and social norms, have a significant effect on the perceived benefits of stockpiling and stockpiling. Then perceived risk, perceived severity and perceived scarcity will have a significant effect on stockpiling if not mediated by perceived benefits.

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