Antecedents of panic buying in supermarkets during the early phase of the Covid-19 pandemic: The direct effect of Perceived Scarcity, Emotions, and Social Media Information Overload

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ABSTRACT

One of the main factors that cause panic buying is a crisis situation. The global Covid-19 outbreak has prompted consumers to panic buying. Especially experienced by consumers of retail stores in the city of Padang (West Sumatra-Indonesia). This phenomenon prompted researchers to examine the effect of perceptions of product scarcity, emotions, and social media consumption on panic buying in the city of Padang. Total of 125 samples were obtained through an online survey questionnaire. The data were analyzed using the Structural Equation Model with the SmartPLS statistical tool. The results of the study show that emotions and social media information have a positive and significant influence on panic buying. However, the perception of scarcity has no significant effect on panic buying. The results of the study are then discussed and have implications for the development of theory and practice.

INTRODUCTION

Corona virus has become a global pandemic. It was reported as of 27 April 2021, that there were more than 147 million confirmed global cases of Covid-19 (WHO, 2021). This outbreak has triggered panic buying and each individual is trying to secure a massive stock of their daily needs. The phenomenon of panic buying has been observed in several countries, namely the United States, England, Italy, Spain, Australia, Singapore, and Japan (Sim et al., 2020). Thus, the spread of the Covid-19 virus throughout the world was also accompanied by the phenomenon of panic buying.

Panic buying is consumer behavior in buying products suddenly in large quantities in response to anticipating price increases or shortages of certain products during or after a disaster (Yuen et al., 2020). When the impact of the corona virus is getting higher, consumers are starting to hoard various important daily necessities for

their households. This condition was also exacerbated by the government's lockdown policy which caused panic buying of a large number of people's daily needs.

It was reported from almost all over the world that in several periods consumers queued at supermarkets to buy items ranging from masks, hand sanitizers to multivitamins to increase body resistance (Thukral, 2020). Not only health and hygiene products, residents also buy basic necessities in large quantities to anticipate scarcity during life during a pandemic.

Based on data from IRI POS regarding the stock of retail goods in the US, UK, and Italy until April 2020, there was a significant increase in retail store sales ranging from 4% to 20%. Some other countries are also experiencing gradual panic, some early and others slower as Covid-19 cases have increased significantly over different periods around the world.

While in Indonesia, the government has issued a policy to inhibit the spread of the corona virus through Large-Scale Social Restrictions (PSBB). The community responded to this policy by panic buying at certain numbers of retail centers. In several retail centers, many consumers stockpile daily necessities such as staple foods, instant noodles, and cooking oil. Consumers are willing to wait for other visitors to finish shopping because they do not get access due to crowded visitors (Izzaty, 2020).

Consumers who predict that in the future there will be a shortage of goods due to a short spike in demand triggers panic buying. Panic buying encourages consumers to spend more time and resources on shopping, and also has an impact on psychological states such as anxiety and stress (Keane & Neal, 2020). The impact of the corona virus has caused uncertainty in the stock of goods for a certain time. To avoid the risk of scarcity of goods in the future, consumers tend to stockpile (Yoon et al., 2017). people are encouraged to do panic buying to anticipate shortages of life necessities that may occur in the future.

Panic buying can occur because of the emotion of fear caused by future threats. Fear arises as an adaptive emotional response that encourages energy to overcome potential threats that can cause people to lose control of their emotions (Mertens et al., 2020). Most people think of the corona virus as an invisible threat and can infect anyone, anytime and anywhere. This results in people feeling powerless to stop viral infections. In this situation, anxiety arises that makes people think only of themselves and their families which leads to anticipatory action, so they feel the need to provide a long-term stock of necessities of life during periods of movement restriction. This condition is felt by most people, who at the same time they then make purchases in large quantities then panic buying occurs.

Social media is also observed to be an agent that contributes to making people panic buying and piling up goods. Social media continuously disseminates information which results in Information Overload. Uploads of photos and content that show the condition of empty goods in supermarkets, hampered supply due to motion control, and comments from residents who panic to buy goods can trigger people to do the same. However, some positive and fear-reducing information shared on social media also plays a major role in

controlling panic buying (Arafat et al., 2020). So that the role of social media can be said to be large in influencing social perceptions of product scarcity and supply chains (Arafat et al., 2020).

In conditions as unusual and unpredictable as the Pandemic, it is difficult to rely entirely on cognitive knowledge today. People cannot react and adapt optimally to what is happening until they can understand and manage current information (Laato et al., 2020). This influence is transmitted to other consumers, especially to consumers who receive incomplete information on the availability of goods and are full of uncertainty.

In Indonesia, panic buying occurs in almost all regions, including the city of Padang. The PSBB regulations imposed have caused Padang residents to stockpile goods in supermarkets. Panic Buying increases sales of shopping centers significantly from 10% to 15% compared to normal days (Izzaty, 2020). In addition, several pharmacies in the city of Padang experienced a shortage of mask stocks and the prices of health products also doubled from normal prices (Haluan, 2020). Many customers started shopping in massive quantities at several shopping centers as soon as the government announced the PSBB policy.

The Covid-19 pandemic has affected almost all aspects of life, including consumer buying behavior. Panic buying is a form of consumer behavior when faced with a crisis, where the information obtained cannot be managed properly, is not clear, and even too much information is received so that consumers in massive quantities simultaneously hoard products. If this situation continues, to a certain extent it can cause disruption of the supply of goods (Zheng et al., 2020). Panic buying is becoming a major global phenomenon and of great importance for economic, social and psychological studies. However, there are still few studies that discuss this phenomenon, especially those related to the influence of social media that forms panic buying. Therefore, this study examines the influence of perceptions of product scarcity, emotions and social media consumption that trigger consumer panic buying in the city of Padang in the early phase of the COVID-19 pandemic.

LITERATURE REVIEW

Consumer Behavior

Consumer behavior is explained from different perspectives by experts. Engel, et al. (1986) defines consumer behavior as an individual's activity in the decision-making process to obtain and use a product. Solomon et al. (2006) also explain consumer behavior as a process of individuals or groups choosing, buying, using or disposing of products, services, ideas or experiences to fulfill needs and wants. A similar concept was also developed by Kotler & Keller (2012) explaining consumer behavior as the study of how an entity, whether an individual, group, or organization in choosing, buying, using and leaving goods, services, ideas, or experiences to fulfill their wants and needs. Further Priest et al. (2013) describe consumer behavior as the

mental, emotional, and physical activities that people do when choosing, buying, using, and disposing of products and services to fulfill their needs and wants.

By reviewing from all these definitions, two aspects can be highlighted. Firstly, consumer is the main actor in the market scene. At this sense, the "people" "individual" or "group" stated on the definitions are the one who take role as the consumer. However, there are also other types of agents who interact with the consumer and contribute to the decision process. It means consumer as the main actor also belong to many different group that influence their behavior. Secondly, the action is made to gain satisfaction. Some actions are mentioned in the definitions such as buying, using, selecting, disposing, these are the behavior carried out by the consumer in order to reach certain level of satisfaction. In this case, certain product, services or ideas also involved as the item to put on the market for the consumption. Overall, consumer behavior can be defined as how individuals or group as consumer involved in the process of selecting, buying, using, and disposing products, services, experiences, or ideas to satisfy the needs and how this process can impact the consumer and society.

Consumer behavior can be divided into three approaches, namely psychological, sociological, and economic (Valaskova et al., 2015). the psychological approach is related to the psychological condition or personality of the individual. The sociological approach explains consumer behavior in different situations or situations that are influenced by several social opportunities. The economic approach is based on basic knowledge of microeconomics in determining their needs.

During pandemic, consumer behavior will change in terms of their purchase decision. The pandemic creates a sense of potential scarcity towards consumer and many people bought a lot of non-essential needs because of several factors that influence their buying decision (Alexander & Adenike, 2021). Some of these factors could be brought up by social influence, for example by seeing a friend or peer has stockpiled some product to keep at home. Another factor possibly comes from social information about potential scarcity of certain product that spread in mass media.

Panic Buying

Panic buying is defined as an act of buying consumers in very large quantities in a relatively short time span when facing a disaster or crisis to anticipate high price increases (Yuen et al., 2020). Panic buying is a phenomenon that often occurs in abnormal situations, such as when a natural disaster or social chaos occurs due to human behavior. This is a form of impulsive behavior that can lead to scarcity of goods and price increases due to spikes in demand in a short time.

During the time of crises or natural disasters, consumers tend to stock up on goods that commonly exceed the levels of purchase in normal times (Keane & Neal, 2020). There were several panic buying periods caused by epidemics, natural disasters and extraordinary events in some countries, such as influenza A/H1N1 as a

pandemic in 2009 which triggered panic buying for vaccines and antivirals in Poland, Hurricane Sandy stroke the New York City in 2012, Hurricane Katrina in the U.S. Gulf Coast region in 2005, earthquake and nuclear crisis in Japan in 2011 (Wijaya, 2020). According to Keane & Neal (2020), explaining in a psychological perspective that hoarding goods can help consumers gain a sense of control over uncertain situations. In addition, the act of hoarding goods in a crisis situation is a natural human urge as a response to survival.

Perceived Scarcity

Scarcity is a common economic problem which arises when resources are being limited. Hamilton et al. (2019) describes scarcity as a threat to consumers' ability to fulfill their needs and desires due to the lack of opportunity and space to get a product whose availability is limited. As cited by Gupta & Gentry (2016), scarcity can influence the consumer's perceptions towards a product by increasing their attractiveness and desirability. People are attracted to rare products because the product value tends to increase, so the desire to own products also increases, the purchase volume increases, the duration of searching for product information is shorter, and the satisfaction is higher in obtaining the product.

Perceived Scarcity is one of factors in consumer behavior that triggers panic buying. According to previous studies, perceive scarcity of goods influences consumers to involve in panic purchasing products in regards to anticipated regret and psychological reactance (Yuen et al., 2020). At this sense, certain goods that are perceived to become unavailable soon due to a disease or crisis is a signal that would likely stimulate consumer's psychological reactance and anticipated emotions to protect their behavioral freedom when they feel tension of thread or restricted. During a disease outbreak, many people worry about the scarcity of supplies. Consumers in scarcity conditions tend to take an immediate decision to buy the scarce product which further leads to hoarding behaviors (Gupta & Gentry, 2016). Perceived scarcity evokes the desire to own certain items immediately. This may result in real shortages because people buy more than they really need. In other words, the fear of scarcity can create real scarcities.

Emotions

In social phenomena, the emotions experienced by a person play an important role. Many researches are still proposing the theories to define "emotions". Emotion is a feeling that gives direction to memory, intelligence, and physical activity to pursue certain goals (Das, 2018). According to (APA), emotion is defined as a complex reaction pattern of synchronized evaluative physiological, behavioral and subjective responses which usually distinguished from feeling, mood and affect. Feeling arise from an emotional experience that may be a result from memories, beliefs and other factors. A mood is a generalized emotional state that is extended in time. Meanwhile, feelings and moods are the effects that often described in terms of positive affect or negative affect.

Emotions have powerful influences on the context of other cognitive and behavioral processes (Bericat, 2015). In other words, emotion creates signals and consciousness of an individual as responses to a condition as responses to a conditions or events. Bercat also characterizes emotions into two parts, primary emotions (fear, anger, depression, and satisfaction) and secondary emotions (guilt, shame, love, resentment, disappointment, and nostalgia). Primary emotions are universal, biologically and neurologically innate. Primary emotions are universal, biologically, and neurologically innate. Meanwhile, secondary emotions have been resulted from a combination of primary emotions and influenced by the social and cultural environment.

During a crisis, people may experience a wide range of emotions. People may feel fear, anxiety, confusion, and intense dread. As quoted by Jin et al. (2016), emotion refers to an organized cognitive-motivation-relational configuration whose status changes when there is a change in the person-environment relationship as perceived and evaluated.

Studies have found that during a crisis people tend to engaged in conative coping rather than cognitive coping (Jin et al., 2016). For example, in dealing with psychological stress as result of a crisis situation, people are more likely take actions rather than learning about what happened and trying to make sense of the situation. People often act irrationally during a time of crisis. During an emergency, people absorb and respond on information differently compared to nonemergency situations. Emergencies create threats which lead to anxiety, stress and the need to do something. These reactions are often described as "panic". Panic is a relatively uncommon and infrequent phenomenon in contrast to other emotional responses to extreme events (Li et al., 2017). Therefore, many studies have been conducted to examine various human emotional responses to crises using various methods and resources.

Social Media Information Overload

Social media is a means of linking people across the globe digitally. According to Chen et al. (2017), social media is a digital platform for users to create and share information through virtual communities and social networks. This means, social media are the platforms and websites that make it possible for people to engage in social networking and to communicate online. The content created by the user spreads through online media communication. People can instantly share photos, locations, events, personal interests and other activities to other people through social media

Social media has broad ecosystems with complexity of network relationships, variety of social networks and level of interactions (Dessart, 2017). Consequently, the idea of social media has been implemented in a broad variety of different ways. Social media involves social networking sites as web-based services that allow people to: 1) develop public or semi-public profiles in restricted programs, 2) define lists of other users to share connections with, and 3) follow their content including those created by others. within the system

(Warner-søderholm et al., 2018). Social media and social networking are two interrelated concept in creating online connection. Abdallah et al. (2017) addressed both terms in which social networking could be identified as platform or site used by its users with common interest and utilization of social media tools which enable the users to broadcast and approach more people to give influence on them.

Nowadays, most people are gathering information from social media rather than from any other resources. Prior studies have found that the ability of individual to process information is limited. Once the capacity of information crosses the limit of a person's processing capability, overload information occurs (Laato et al., 2020). Laato et al. (2020) also stated that information overload is due to receiving too much new information in a short time span and exceeds the individual's ability to process it in memory. In addition, overloading information shared on social media contributes to social media dissemination of information. Once a person receives too much (often contains misleading and contradictory information), they receive information overload and become overwhelmed.

Social media plays an important role in how people learn and communicate about current situation that enables its users not only to access content, but also to create or influence it (Liu et al., 2015). Overload information on social media could be one of strong predictor affecting how people react on current situation. However, sometimes people are not able to filter information on social media. Without the ability to conceptualize and deal with available information, people cannot optimally respond to what is happening. As seen in recent misinformation cases, how to spot misinformation on social media has become an important matter. Social media transparency and timeliness have significantly encouraged the creation and dissemination of misinformation, such as rumors, spam, and fake news (Wu et al., 2019). According to HootSuite's Global Digital Reports (2020), nearly 64% of the Indonesian population is connected to the internet, and 59% of them are social media active users. The transparency of social networking sites, combined with the potential for manipulation, make it possible to easily spread misinformation to a broad number of people, which poses unprecedented challenges (Wu et al., 2019).

Hypothesis Development and Conceptual Framework

A product that is anticipated to quickly become unavailable caused by a health crisis is likely to endanger or limit personal freedom. This signal may stimulate psychological reactance which can stimulate a sense of urgency to purchase as well as hoarding tendency, which has similar meaning with panic buying. For this reason, it implies that product scarcity drives individuals to make panic purchases due to psychological reactance and anticipated regret. (Yuen et al., 2020).

Previously, a study about panic buying by Çinar (2020) has found that, consumer's panic buying and in-store hoarding behaviors were significantly influenced by their perception of scarcity. Gupta & Gentry (2016) also suggest that consumers who experience scarcity manifest buying habits such as urgency to buy which

contributes to uncommon and competitive behavior. Based on these findings, the first hypothesis can be stated as follow:

H1. Perceived Scarcity has a positive and significant effect on Panic Buying during the initial phase of the Covid-19 Pandemic.

During a health crisis, people tend to be emotionally distressed such as anxiety and fear. People's inability to predict the impact of the outbreak causes uncertainty and leads people to make purchases that give them a sense of security, comfort, escape for a moment, and also relieve stress. Mood congruency may also clarify the relationship between fear and increased buying behavior. (Yuen et al., 2020).

COVID-19 has challenged the sense of security of consumers and created uncertainty in global markets. The unusual consumption of individuals driven by fear and anxiety emotions causes them to establish categories of products that they considered essential (Loxton et al., 2020). Previous research studied by Yuen et al. (2020), showed that panic buying was significantly affected by fear caused by negative emotions. Consequently, based on these statements from previous studies, the second hypothesis can be stated as follow:

H2. Emotions has positive and significant effect towards Panic Buying during the early phase of Covid-19 Pandemic

The role of the media in shaping shifting consumer behavioral habits and discretionary spending is increasingly significant. Social media has been highly popular and progressively influential source of news and information (Loxton et al., 2020). On the other hand, information overload on social media can also change people's perception of scarcity through news and visualizations showing empty supermarket shelves causing fear and anxiety (Arafat et al., 2020).

Since the first few months of 2020, information and news headlines about the coronavirus disease (COVID-19) were quickly published and posted on social media and social networking sites. People frequently use social media platforms during lockdown to keep up to date about the current news of COVID-19 (Ahmad & Murad, 2020). At this point, when they scroll on social media, it is possible for them to see portrayal by the media of people engaged in panic buying which can potentially trigger panic buying. Moreover, previous findings by Laato et al. (2020) stated that the overload information in social media about Covid-19 does have significant influence on the intention to unusual-purchase certain product at stores. Based on these statements from previous studies, the third hypothesis can be stated as follow:

H3. Social Media Information Overload has significant effect towards Panic Buying during Covid-19 Pandemic
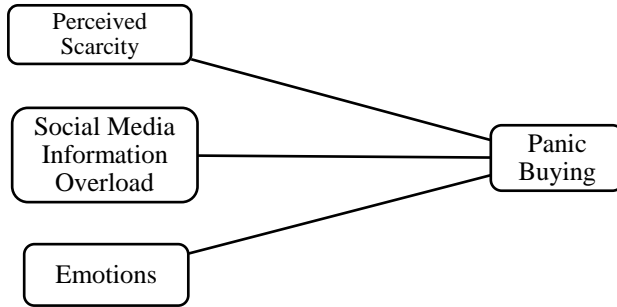
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┌──────────────┐
│  Perceived   │
│   Scarcity   │
└──────────────┘
┌──────────────┐          ┌──────────┐
│ Social Media │          │  Panic   │
│ Information  │──────────│ Buying   │
│   Overload   │          └──────────┘
└──────────────┘
┌──────────────┐
│   Emotions   │
└──────────────┘
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Figure 1

Research Framework

RESEARCH METHOD

This research is a hypothesis-testing study that implements quantitative approach to analyze the influence of dependent and independent variables whether they are related to each other and also to reveal the significance between one variable and another. The primary data of this research was obtained by using questionnaires. In this research, the technique used for sampling is nonprobability sampling technique and purposive sampling technique is used to provide better information.

The research questionnaires were distributed online through Google Form started from February 24th to March 5th 2021. Likert Scale is used to measure the answers by putting 5 scales from 1 to 5 as indication for strongly disagree, disagree, neutral, agree and strongly agree. Respondents for this research were the customers who have shopped in supermarket for more than once in a month to stock up goods during the first stage of Covid-19 pandemic in Padang (March-April 2020), and are active social media users.

Microsoft Excel and SmartPLS 3.3.3 are software or tools used to analyzed the data. The questionnaire data collected in the Google Form was converted by using Microsoft Excel. All of the converted data will be used to analyze the descriptive data of respondents by interpreting the data and revealing the characteristics of the respondents. SmartPLS 3.3.3 was used to test the hypothesis and analyze the relationship between the variables.

RESULT AND DISCUSSION

Table 1
Demographic Profile of Respondent

Demographic Characteristic	Categories	Frequency	Percentage (%)	Cumulative Percentage (%)
Gender	Male	28	22.4	22.4
	Female	97	77.6	100
	Total	125	100	
Age	18 - 25 years old	88	70.4	70.4
	26 - 30 years old	5	4	74.4
	> 31 years old	32	25.6	100
	Total	125	100	
Marital Status	Married	35	28	28
	Not yet married	90	72	100
	Total	125	100	
Educational Background	High school	75	60	60
	Diploma	17	13.6	73.6
	Bachelor degree	27	21.6	95.2
	Master degree	5	4	99.2
	Doctoral degree	1	0.8	100
	Total	125	100	
Occupation	College student	85	68	68
	Entrepreneur	2	1.6	69.6
	Private employee	6	4.8	74.4
	Civil servant	30	24	98.4
	Other	2	1.6	100
	Total	125	100	
Monthly Income	< Rp 1.000.000	54	43.2	43.2
	Rp 1.000.000 - Rp 5.000.000	61	48.8	92
	Rp 5.000.000 - Rp 10.000.000	9	7.2	99.2
	> Rp 10.000.000	1	0.8	100
	Total	125	100	

As a result, 125 responses were collected. The respondents are divided into several categories according to their gender, age, marital status, educational level, occupation, and incomes. In addition, other description of sample profile regarding what kind of products that are mostly purchased by the respondent, and what type of social media they use are also presented in this research to obtain more detailed information.

Descriptive Analysis

1 to 5 Likert Scale was used to assess the responses in the questionnaire. If the Likert Scale mean value is closer to 5, the more positive the respondent's response. On the other hand, if the mean of variable is approaching to 1, it indicates negative response from the respondents. The following tables exhibit the frequencies of response per indicators from each variable.

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Table 2
Variable Analysis Results

Variables	Indicators	Mean
Perceived Scarcity	At the beginning of Covid-19 pandemic in Padang, I saw certain products in the supermarket where I shopped were being sold quickly.	4.35
	At the beginning of Covid-19 pandemic in Padang, I think that the supermarkets where I shop have deliberately created product shortages in certain product by limiting the number of products.	3.33
	At the beginning of Covid-19 pandemic in Padang, I think products scarcity was implemented as a strategic policy in the supermarkets where I shop.	3.52
	At the beginning of Covid-19 pandemic in Padang, I observed that there are a limited number of products in terms of size, weight, and quantity in the supermarkets where I shop during the Covid-19 period.	3.95
	At the beginning of Covid-19 pandemic in Padang, I found that the products I want to buy in the supermarkets where I shop are generally few.	3.84
	At the beginning of Covid-19 pandemic in Padang, I saw that the products I want to buy in the supermarkets I shop are almost out of stock.	4.04
Emotions	The outbreak of Covid-19 makes me feel anxious	4.21
	The outbreak of Covid-19 makes me feel scared	3.98
	The outbreak of Covid-19 makes me feel sad	3.94
	The outbreak of Covid-19 makes me angry	3.58
Social Media Information Overload	I am often distracted by the excessive amount of information about Covid-19 from multiple sources on social media	3.73
	I find that I am overwhelmed by the amount of information about Covid-19 on a daily basis from multiple sources on social media	3.86
	I receive too much information regarding the Covid-19 pandemic on social media to form a coherent picture of what's happening	3.97
Panic Buying	During the early phase of Covid-19 period, when I was shopping at supermarket, I got into the desire to buy products as soon as I found the products I wanted.	3.92
	During the early phase of Covid-19 period, when I was shopping at supermarket, I tended to buy products that I usually do not consider buying	3.464
	During the early phase Covid-19 period, when I was shopping at supermarket, I could not resist buying products that I usually do not need	3.28

Validity Testing

The validity testing in this research conducted two types of validity testing, such as convergent validity and discriminant validity.

Convergent Validity

Table 3
First Outer Loading

	Emotions	Panic Buying	Perceived Scarcity	Social Media Information Overload
E1	0.73			
E2	0.827			
E3	0.838			
E4	0.738			
IO1				0.785
IO2				0.849
IO3				0.732
PB1		0.796		
PB2		0.912		
PB3		0.852		
PS1			0.591	
PS2			0.573	
PS3			0.656	
PS4			0.818	
PS5			0.872	
PS6			0.794	

According to the processed data output in the table, three invalid indicators are found because they did not meet the criteria to be less than 0.7. Those invalid indicators are PS1, PS2, and PS3 with outer loading values of 0.591, 0.573, and 0.656 respectively. Due to this reason, a re-testing is needed until all indicators' outer loadings are valid by eliminating the invalid data and re-processing the valid data only

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Table 4
Final Outer Loading

	Emotions	Panic Buying	Perceived Scarcity	Social Media Information Overload
E1	0.73			
E2	0.827			
E3	0.838			
E4	0.738			
IO1				0.785
IO2				0.849
IO3				0.732
PB1		0.795		
PB2		0.912		
PB3		0.852		
PS4			0.884	
PS5			0.935	
PS6			0.825	

Once all of the invalid indicators are deducted from the process, all constructs of outer loadings have met the criteria of having higher than 0.7 and considered as valid data.

Table 5
Final Average Variance Extracted (AVE)

Variable	Average Variance Extracted (AVE)
Emotions	0.616
Panic Buying	0.73
Perceived Scarcity	0.779
Social Media Information Overload	0.624

The AVE value as seen in table 4.11 above has shown valid research variables that match the requirement of at least 0.5 value of AVE.

Discriminant Validity

In this case, the validity will be revealed through the Fornell-lacker criterion and cross loadings. Detailed illustration for this explanation is shown on tables below:

Table 6
Fornell-Larcker Criterion

	Emotions	Panic Buying	Perceived Scarcity	Social Media Information Overload
Emotions	0.785			
Panic Buying	0.459	0.854		
Perceived Scarcity	0.509	0.388	0.883	
Social Media Information Overload	0.556	0.425	0.481	0.790

It is demonstrated in table 4.12 that the correlation for each variable to the variable itself showed a higher value compared to the correlation of one variable to the other variables. Hence, it can be stated that the Fornell-lacker criterion has fulfilled the requirement and is considered as valid data.

Table 7
Cross Loading

	Emotions	Social Media Information Overload	Panic Buying	Perceived Scarcity
E1	0.730	0.393	0.298	0.304
E2	0.827	0.347	0.368	0.329
E3	0.838	0.387	0.280	0.486
E4	0.738	0.565	0.440	0.460
IO1	0.467	0.785	0.369	0.426

	Emotions	Social Media Information Overload	Panic Buying	Perceived Scarcity
IO2	0.433	0.849	0.352	0.377
IO3	0.417	0.732	0.275	0.329
PB1	0.366	0.271	0.795	0.282
PB2	0.447	0.395	0.912	0.360
PB3	0.359	0.411	0.852	0.346
PS4	0.351	0.401	0.397	0.884
PS5	0.532	0.442	0.364	0.935
PS6	0.504	0.454	0.219	0.825

Data in table 4.13 already displays a higher value of correlation between the values of each indicator with its variable in comparison with the value of each indicator with the other variable. Thus, the data has met the requirement to be considered as valid data.

Reliability Testing

Table 8
Cronbach's Alpha and Composite Reliability

	Cronbach's Alpha	Composite Reliability
Emotions	0.794	0.865
Panic Buying	0.814	0.890
Perceived Scarcity	0.862	0.913
Social Media Information Overload	0.700	0.832

Based on data represented in table 4.14, all value of cronbach's alpha is higher than 0.6 and the composite reliability also came up with value over than 0.7. Therefore, all variables met the standard requirement of reliability and considered reliable.

Structural Model Test (Inner Model)

To test the goodness fit of the model, the first assessment is by examining the value of R-Square for each dependent variable.

Table 9
Assessment of R-Square

	R Square	R Square Adjusted
Panic Buying	0.269	0.251

As seen in table 4.15 above, it can be implied that, the R-square value of panic buying is at 0.269. This means, the independent variables, namely perceived scarcity, emotion, and social media information overload can explain panic buying by 26.9%. Subsequently, the remaining 73.1% is being explained by other factors outside the scope of this research.

Hypothesis Testing and Discussion

Table 10
Path Coefficients (Mean, STDEV, T-Values)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Emotions -> Panic Buying	0.268	0.276	0.099	2.718	0.007
Perceived Scarcity -> Panic Buying	0.155	0.155	0.1	1.541	0.124
Social Media Information Overload -> Panic Buying	0.202	0.217	0.096	2.095	0.037

The Influence of Perceived Scarcity on Panic Buying

In accordance to the data in table 4.16, the P values of and T-statistics of perceived scarcity to panic buying do not meet the criteria. As stated before, to in order to make the hypothesis considered acceptable, the T-statistics value should be more than 1.96 and the P value should be less than 0.05. Meanwhile, the T-statistic value of perceived scarcity on panic buying only appeared at value of 1.541 and P values at 0.124, which are contradicted with the requirements. However, the original sample value showed a positive influence, meaning that the perceived scarcity has positive but insignificant influence towards panic buying during the early phase of Covid-19 pandemic. Based on this result, it can be concluded that the first hypothesis (H1) is unsupported.

This is contrary with result of previous research by Çinar (2020). This could be happened because the timeframe of conducting the data collection of this research was not conducted during the actual and exact period of time in the early phase of Covid-19 pandemic which may create inconsistent response by the respondents. Another reason could be because, according to the respondent profile, most of respondents (80%) stocked products related to daily needs such as oil, sugar, instant noodles, etc. where the availability of these goods are relatively stable during that period. The majority of the respondents are also millennial whom their purchase decisions, especially on daily needs, are mostly still made by their parents. Therefore, most respondents did not feel that much sense of scarcity of daily needs in the supermarket. As consequences, there is no strong correlation between perceived scarcity and panic buying.

The Influence of Emotions on Panic Buying

The data in table 4.16 shows the T-statistic value of emotions towards panic buying appeared to be at value of 2.718 and P values at 0.007, meaning that the results fulfill the requirements and indicates a significant influence between the variables. By looking at the original sample value, it showed a positive influence. Hence, emotions is positively influence panic buying during the early phase of Covid-19 pandemic. In short, it can be concluded that the second hypothesis (H2) is supported.

The significance of emotion (negative emotion) to panic buying can be linked to the respondents' profile who have used various social media. The shared information in social media regarding the severe impact of covid-19 to the people around the world has increased dramatically. It can be seen by how the news frequently give reports regarding the increase of the victim of covid-19 from time to time attacking medical officer, lecturers, celebrities, businessman, and anybody. New clusters also keep appearing in some fields, such as office cluster, campus cluster, market cluster, and even in family cluster. Such information has led to the increase of the negative emotions (sadness, fear, anxiety, and anger) felt by people until it triggered them to do the panic buying.

The Influence of Social Media Information Overload on Panic Buying

The T-statistic value of social media information overload on panic buying as seen in table 4.16 showed the is scored 2.095 and P values at 0.037, meaning that the results fulfill the requirements and indicates a significant influence between the variables. By looking at the original sample column, it also showed a positive influence. Hence, the social media information overload is positively influence panic buying during the early phase of Covid-19 pandemic. At this point, it can be concluded that the third hypothesis (H3) is supported.

The significance of information overload can be linked with respondent profile that shows about 75% of them are millennial generation. The lifestyle of this generation cannot be separated from gadget and social media. The usage of social media allows people to received information overload about the pandemic which drive people to do panic buying

CONCLUSION AND RECOMMENDATION

Conclusion of Research

Temuan studi menunjukkan hasil yang bervariasi dalam penelitian ini. Hal ini menjadi menarik karena dapat memberikan kontribusi yang berbeda dan dinamis dalam bidang ilmu pemasaran yang lebih spesifik. Hasil temuan studi lebih lanjut memberikan pandangan sebagai berikut: First, The study findings show that perceived scarcity does not significantly affect panic buying in supermarkets during the early phase of the Covid-19 pandemic. Studies on scarcity show different results in this study because of the different time spans in exploring the phenomenon. However, these different findings are expected to be an interesting and dynamic discussion for further research.

Second, emotions have a positive and significant effect on panic buying in supermarkets during the early phase of the Covid-19 pandemic. This explains that when consumers are involved in high emotions about a pandemic situation, the higher their desire to secure stock availability for certain products.

The excess of information received from social media has a positive and significant effect on panic buying in supermarkets during the early phase of the Covid-19 pandemic. These results confirm that the more information received, the higher the consumer's tendency to panic buying.

Implication of Research

This study contributes to the field of academic research by examining various antecedents of panic buying such as scarcity, emotion, and excessive information received on social media during the early phase of the Covid-19 pandemic. This research is expected to be a theoretical input for the development of future research in the fields of consumer behavior, supply chain and retail management, psychology, especially in crisis situations. Given the lack of scientific research on this topic.

For practitioners, this research proposes some implications in handling the panic buying situation, such as: 1) Panic buying behavior can hurt the financial performance of businesses such as supermarkets or other retail stores. Thus, it is crucial for supermarket managers, retailers, or other relevant stakeholders to understand the importance of maintaining a steady supply and production, public broadcast and communication could effectively minimize the sense of uncertainty and fear in society. In addition, the sales associates of retail stores should be trained to be more responsive and efficient in handling store's merchandise.

Efforts from the government also play an important role in controlling the supply of goods in crisis situations or other emergencies. There are several actions the government can do to minimize panic buying behavior. The government needs to improve the law and regulation as well as public policies regarding covid-19 by establishing prohibition rules restriction and give penalty to business practitioners who stockpile large and excessive amount of inventories. Frist, the power of social media can be utilized to monitor attitudes and address public concerns by issuing clear and transparent information to prevent hoax. In adition, regulation for market mechanism can be made to prevent panic buying through restrictions on number of purchases. Furthere more, encourage positive public optimism and educating the public in effective way to prepare for Covid-19 such as by maintaining physical, mental, and emotional well-being to prevent mass panic and anxiety.

Limitation of Research

This study has several limitations. First, the time of distributing the research questionnaire. Questionnaires were distributed at the end of the third quarter of the Covid-19 outbreak. When collecting the data, the respondents might have adapted to the new normal of Covid-19 as individuals adjust themselves into the new situation and be less impacted by affective problem studied in this research.

This research has limitation in the area of research coverage which is limited to only in a regional area affected by the pandemic. the results of the distribution of the questionnaire collected as many as 125 respondents in one area. this is considered as data that has not been able to represent respondents in other areas.

This study also has difficulty in obtaining statistical data for local residents to support the issue of panic buying. There are still few documents that provide official statistical references about the pandemic situation in the city of Padang. Comprehensive supporting data is needed for strong elaboration results in this study.

This study has limitations in the range of respondents. Most of the respondents' profiles come from students, while the panic buying phenomenon is thought to be experienced not only by students but also by those who are already working.

Research Recommendation

Research areas for future studies can be developed at more diverse locations of respondents to obtain more comprehensive findings. The research model is suggested to be more comprehensive than this study to fully explain the phenomenon regarding the perception of scarcity, emotion, and excessive social media information affecting panic buying behavior.

In addition, the research variables used today can be developed on other variables by continuing to analyze future developments related to global phenomena. Other theories use by relating them to the marketing mix or by explaining the moderating effect in panic buying.

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