Jurnal SIASAT BISNIS

Exploring Indonesian panic buyers' typologies in time of Covid-19 pandemic

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Article Info	Abstract
	Purpose – This study aims to investigate hitherto unresearched panic buyer (shopper) typologies among Indonesian consumers as a result of the Covid-19 outbreak. In this study, a panic buyer (shopper) is described as a customer who worries about their stock during a pandemic and decides to purchase things in bulk or in greater quantities at the start of the pandemic. **Design/methodology/approach** – To identify probable groupings of the items, an exploratory factor analysis is carried out using principal component analysis and varimax rotation. Then to identify consumer groups, a two-step cluster analysis was conducted. Last, an ANOVA test is run on the whole set of variables to identify differences between the detected clusters in order to validate the cluster solutions. **Findings** – Five components that served as the foundation for the typology emerged from exploratory factor analysis. Using behaviour and attitude factors including "consumption savers," "adapters reluctant," "preservers of social consciousness," "online shopping shifters," and "all-around adapters," five clusters were then defined. **Research limitations/implications** – This study contributes significantly to the body of knowledge on consumer behavior during health crises (Covid-19) by putting into context the frantic shoppers that we frequently observe during these situations. It's noteworthy that throughout the epidemic, no panic buyers (shoppers) voiced worry about health problems. **Practical implications** – This study provides essential practical information for marketing professionals. For instance, it may be necessary to consider research showing that panic buyers (shoppers) tend to be consumption savers during a pandemic when developing a price plan. **Originality/value** – Despite the fact that there have been many studies on panic behavior during COVID-19, most of them tend to concentrate on medical problems. There are now a few studies that examine several sorts of panic buyers (shoppers) based on their purchasing behaviors and attitudes. By categorizing various categories of panic buyers (shoppers) among 121 decision-makers in families, this study aims to close this literature gap. *Keywords:* Typology, Panic buyers, Covid-19, shopping behavior and attitudes, Indonesia

Introduction

Panic buying is one of the numerous unique scenarios brought on by the COVID-19 that causes worry, fear, panic, and agitation (Arafat et al., 2021). The phenomena of panic buying during the Covid-19 pandemic has been studied extensively, but the majority of the research has been done outside Indonesia, for instances Australia (Prentice et al., 2020), India (C. K. Singh & Rakshit, 2020), Malaysia (Omar et al., 2021), Singapore (Chua et al., 2021), United Kingdom (Naeem, 2021), and USA (Arafat et al., 2020). Unfortunately, there is little empirical evidence that panic buying during COVID-19 affected Indonesian consumers. In addition, panic buying is a new and understudied field of consumer behavior study from a research standpoint (Tan et al., 2022).

The present theoretical knowledge of panic buying behavior is expanded upon in this study. Examples of Covid-19 studies with a connection to consumer behavior are as follows. Covid-19 and its effects on food waste in households (Jribi et al., 2020); food supply chains during the Covid-19 pandemic (Hobbs, 2020); households' consumption and debt responses to an outbreak using transaction-level household data (Baker et al., 2020) and the economic impact of Covid-19 and the financial vulnerability of workers who have lost their jobs as the impact (Mogaji, 2020). When the number of cases of Covid-19 rises, people drastically change their spending patterns across a variety of areas, including retail, credit card spending, and food purchases (Baker et al., 2020). In order to stockpile the essential household commodities, consumers panic-buy crucial items as a result of demand-side shock to the food supply chain (Hobbs, 2020). Customers who become pantry stockers as a result of the panic buying may need to do so during the Covid-19 outbreak. The consumers who are in a panic can be categorized as having a high-risk attitude and a high-risk perception using the risk attitude and risk perception criteria. These customers are now experiencing stress. They are extremely risk-averse and will try to reduce the danger. When a crisis occurs, these consumers often overreact. It is anticipated that looking into this matter will shed light on the impact that households' stockpiling and spending habits play in influencing their purchasing decisions. Expenditure significantly rose to buy groceries for the home in anticipation of being unable to shop at stores. This causes consumers to make impulsive grocery purchases and shift their eating habits away from restaurants and toward meals cooked and enjoyed at home (Hobbs, 2020). Customers also change their buying patterns, leading to an increase in online purchases, a decrease in in-store visits, an increase in out-of-stocks, and stress on the supply chain (Nielsen, 2020).

The previous research on customers' panic buying has been diverse, for examples government action and panic buying time effect (Prentice et al., 2020), the causes of urban consumers' food hoarding habits variables affecting consumers' panic purchases during the COVID-19 pandemic (G. Singh et al., 2023) the factors for the rise in sales of nonperishable goods during the COVID-19 (Lehberger et al., 2021), how psychological elements influence consumers' panic buying behavior (Omar et al., 2021) and the impact of online news on panic buying vehaviour (Tan et al., 2022). Yet, little is known about consumer typologies in modifying their shopping behavior during the virus outbreak that is threatened as a global pandemic. In particular, studies that show panic consumer typologies that are reflected from adaptive purchasing behavior and attitudes are lacking. Therefore, investigating such consumer typologies is interesting since panic buying behavior may differ from that of customers in industrialized nations, it is relevant to investigate this phenomenon in the context of a developing country, such as Indonesia.

Based on a number of shopping attitudes and behaviors that are associated to Covid-19 pandemic sensitive, this study categorizes panic customers. The classification method for consumers was adopted in response to Hampson & McGoldrick, (2013) argument that consumer decision-making and buying are multifaceted activities with a variety of diverse attitudinal and behavioral components. Relevant constructs used to examine the types of consumers during the Covid-19 pandemic include panic buying (Baker et al., 2020; Keane & Neal, 2021; C. K. Singh & Rakshit, 2020), reducing consumption (Ang et al., 2000; Baker et al., 2020; Hampson & McGoldrick, 2013), reducing food waste (Jribi et al., 2020), being price sensitive (Ang et al., 2000; Baker et al., 2020; Hampson & McGoldrick, 2013) shifting on e-grocery shopping (Forster & Tang, 2005; Hui & Wan, 2009), health consciousness (Cullen et al., 2020; Hiremath et al., 2020; Roy et

al., 2020), and willingness to charity donations (Hampson & McGoldrick, 2013).

Finally, this study fills a research gap addressing panic buying among Indonesian consumers during COVID-19, which influences shoppers' attitudes and behaviors, which has not previously been addressed. This study adds new knowledge about how consumer attitudes and behaviors in a developing country context change amid health crises. From a practical standpoint, the panic consumers grouping based on their shopping attitudes and behaviors offers marketing managers a fresh viewpoint on how to comprehend customer groups and the traits that are connected to shifts in consumer behaviors during a crisis.

Literature Review and Hypotheses

Covid-19 and Shopping Adaptation Behavior and Attitude

Consumer behavior during times of crisis changes significantly, according to empirical studies (e.g., recessions). According to several research, consumers alter their purchasing habits amid difficult and stressful economic times (Ertekin et al., 2020; Qaiser et al., 2023; Suvittawat, 2024; Theodoridou et al., 2019) and virus epidemic (Baker et al., 2020; Forster & Tang, 2005; Hobbs, 2020; Hui & Wan, 2009; Jribi et al., 2020; Jung et al., 2016). It is commonly known that the COVID-19 pandemic has an impact on people's psychological reactions, such as worry and dread, which will have an impact on consumer behavior (Pakpour et al., 2021). As a result, constructs are modified to identify the types of shoppers in response to the Covid-19 epidemic. Consumer behavior and attitude related to shopping adaptations during the pandemic are covered in this study. These issues include panic buying, reduced consumption, reduced food waste, increased price sensitivity, switching to online grocery shopping, increased health consciousness, and willingness to donate to charities. No hypotheses are put forth in this study, which is merely an exploratory attempt to identify Indonesian panic shoppers' typologies during the Covid-19 pandemic.

Panic Buying Phenomenon

When the number of cases of Covid-19 rises, people drastically change their spending patterns across a variety of areas, including retail, credit card spending, and food purchases (Baker et al., 2020). In order to stockpile the essential household commodities, consumers panic-buy crucial items as a result of demand-side shock to the food supply chain (Hobbs, 2020). Customers who become pantry stockers as a result of the panic buying may need to do so during the Covid-19 outbreak. The consumers who are in a panic can be categorized as having a high-risk attitude and a high-risk perception using the risk attitude and risk perception criteria. These customers are now experiencing stress. They are extremely risk-averse and will try to reduce the danger. When a crisis occurs, these consumers often overreact. It is anticipated that looking into this matter will shed light on the impact that households' stockpiling and spending habits play in influencing their purchasing decisions. The effects of the Covid-19 epidemic on panic buying have been examined from a variety of angles. Using a health anxiety inventory, (Nicomedes & Avila, 2020) analyse people's panic reactions as well as their perceptions of the worldwide issue.

Reduce and Shift Consumption

For both employed and jobless consumers, meeting basic needs including rent, mortgage, groceries, utilities, and medications during recessions is a problem (Starr, 2010). In this situation, customers are advised to think carefully about their spending and balancing their requirements and wants (Wilson, 2020). Consumers can respond to unemployment and income declines in several ways, such as by spending their wealth, particularly liquid assets, or by borrowing in the financial markets to offset the effects of unemployment on income and so promote steady consumption (Kaytaz & Gul, 2014). Employed consumers experience uncertainty over their ability to maintain their jobs and existing salaries, which results in a decrease in discretionary goods consumption (Kaytaz & Gul, 2014). In the case of Indonesia, Frankenberg et al., (1999) found that consumers shifted a sizable portion of spending towards basic foods like rice in their analysis of the Indonesian crisis.

The poorest households suffered the most when spending on non-essentials, health care, and education decreased.

During the Asian crisis, Ang et al., (2000) studied customers in various Asian nations. They discover that Asian customers shop more comparably, put off buying expensive things, prioritize product utility and durability, move to local and less expensive brands, and shop more frequently at cheap retailers. During the 1997 Asian crisis, Korean consumers tried to maintain spending on food, education, and health while cutting back on luxuries (Kang & Sawada, 2008). In response, customers also prioritize buying needs, change to less expensive brands, and adopt a more logical perspective on advertising. Customers begin evaluating various products and making decisions that compromise quality for cheap (Nistorescu & Puiu, 2009). It is anticipated that Indonesian consumers will respond similarly to the depiction of consumer behavior during the crisis by cutting back on and moving their consumption. These buyers fall under the category of "discretionary thrift" since they choose to cut costs even when they do not have to. They expressed their displeasure with overindulgence. They began to recycle, purchase second hand items, and instill traditional values in their kids (Sharma & Sonwalkar, 2013).

Price Sensitive

Although panic buying due to the Covid-19 outbreak is thought to be a short-term issue, a decline in consumer income is expected to have long-term demand-driven repercussions on food supply chains. This will have an impact on demand and cause changes in different product categories. As a result, we may anticipate that customers will become more price conscious and turn away from more expensive products (Hobbs, 2020). Customers typically become more concerned about price since it is likely to be an essential factor when customers make decisions when uncertainty on jobs and wealth increases and causes income reductions, especially during a recession (Hampson & McGoldrick, 2013).

Shifting on E-Grocery Shopping

Few studies have focused on how customers shop online at grocery stores during the Covid-19 outbreak; instead, most studies have focused on the types of online shoppers (Ganesh et al., 2010; Harris et al., 2017; Huseynov & Yıldırım, 2019; Kau et al., 2003). A study has been carried out to discover and profile the traits of potential online supermarket customers during the Singapore SARS outbreak that is Hui & Wan (2009) study that explored the fundamental characteristics of technology use using the technological acceptance model (TAM). Singapore had a huge surge in online grocery purchases in 2003, particularly during the SARS pandemic in the first half of the year (Hui & Wan, 2009). An additional study looks into how online buying affected the SARS endemic is Forster & Tang (2005) study that shows that demand for online supermarkets grew during SARS in response to the growing fear of infection. The study used data from Hong Kong's largest online supermarket. Although there are currently no empirical studies on the profile and volume of online shopping during the Covid-19 pandemic, we anticipate that this study will be able to shed light on the types of Indonesian consumers who engage in intense online shopping as well as the driving forces behind these activities, particularly the daily consumption of groceries.

Health Consciousness

Health consciousness is one of the effects of Covid-19, according to Nicomedes & Avila (2020) and it is described as "a dominant way of thinking about personal habits, from the nutrition to the lifestyle one leads, such as sleeping patterns and exercise." After the emergence of Covid-19, the need for health and wellness products has risen unnaturally quickly as a result of people being obliged to consider their health and wellbeing (Nielsen, 2020). Customers may reorder their priorities when evaluating a product based on health, safety, and availability, which will affect how health-conscious they are. People can avoid being sick by strengthening their immune systems, which is done while also monitoring their health and eating wholesome foods (Nicomedes & Avila, 2020).

Studies examining consumers' intentions to buy healthy products like organic food tend to focus on their health consciousness (Chen, 2009; Kriwy & Mecking, 2012; Michaelidou, 2008). The idea of consumer health consciousness is drawn from earlier studies on customers' attitudes and behaviors toward healthy foods because there is limited information on the latest problems of how Covid-19 affects consumers' health consciousness. Variables that are explored in how consumer behavior responds to the type of crisis—macroeconomics versus virus outbreak—can be differentiated by health consciousness.

Research Methods

Sample of the Study and Sampling Method

This study was conducted during a six months period from June – December 2020 when the Pandemic COVID-19 was hampering Indonesia. While the data collection was performed three months from June to August 2020. The sample in this study has the following traits: decision-makers in a home, maturity, marriage or prior marital experiences, and regular food shopping. Given these traits, it is anticipated that we will be able to draw conclusions on how Indonesian households make adaptive decisions during the Covid-19 pandemic. Data for this study was gathered quantitatively using a questionnaire-based survey. Questionnaires are made available online in compliance with the Indonesian government's physical distancing policy. Therefore, there was no geographical restriction, all respondents across provinces in Indonesia are eligible to complete the questionnaires. A wide spectrum of Indonesian consumers is reached by the mailing list and several social media platforms used to distribute the questionnaires. A 5-Likert scale is used to evaluate each topic, with 1 denoting "strongly disagree" and 5 denoting "strongly agree." Decision-makers in households will be chosen using a purposive sampling strategy because they typically make shopping decisions.

Variables and Its Operational Definition

All of the variables and metrics used in this study were created and modified based on earlier research to take into account changes in shopping behavior brought on by the Covid-19 outbreak, including panic buying, reduced consumption, increased price sensitivity, shifting to online grocery shopping, increased health consciousness, and willingness to donate to charities. The variables utilized in this study to create operational definitions are defined in the sentences that follow. According to (Singh & Rakshit, 2020) the definition of panic buying is Consumers buy abnormally massive volumes of a product in advance of, or after, a tragedy or perceived calamity, or in anticipation of a larger price increase of shortage. In order to confirm any increase in the volume of foodstuffs purchased during the Covid-19 pandemic, three questionnaire items were used in this study.

Asian consumers' general responses to the financial crisis are categorized as reduced consumption and wastefulness (Ang et al., 2000). A recent study based on an online survey method that was carried out in Tunisia during COVID-19 (Jribi et al., 2020). The investigation of consumer adaptive change related to lowering consumption and wastefulness have been done uses four questionnaire items (Jibri et al., 2020) Two pertinent studies conducted during the SARS epidemic in Asia provide evidence for consumers' transition from traditional (brick and mortar) to internet shopping in the construction industry (Forster & Tang, 2005; Hui & Wan, 2009). Eight questions are suggested for questionnaires to confirm shifting behavior and motive for utilizing e-groceries (Forster & Tang, 2005; Hui & Wan, 2009). One of the most significant topics covered in many Covid-19-based studies is health consciousness (Cullen et al. 2020). The questionnaires used in this study were adapted from those used in earlier research by Cullen et al. (2020); Roy et al. (2020). In this study, seven health consciousness-related items are suggested. The remaining structures, however, are taken from (Hampson & McGoldrick, 2013). Table 1 summaries variables and questionnaires measured in this study.

Table 1. Variables and its Questionnaires Measured in the Study

Variables	Questionnaires
Panic Buying	When the Covid-19 pandemic emerged, I became worried about my daily supplies. When the Covid-19 pandemic emerged, I immediately shopped for more daily needs than usual. During the Covid-19 pandemic, I shopped for more daily necessities than usual.
Reduce Consumption	During the Covid-19 pandemic, I reduced the volume of consumption of daily necessities. During the Covid-19 pandemic I reduced wasting food scraps (reducing wastefulness). During the Covid-19 pandemic, I looked more for information to make consumption decisions. During the Covid-19 pandemic, I was more careful in making consumption decisions.
Shifting Consumption	During the Covid-19 pandemic, I focused more on basic needs than secondary needs and luxury needs. During the Covid-19 pandemic, I prefer to cook myself. During the Covid-19 pandemic I bought more local products than imported products. During the Covid-19 pandemic, I bought more products in economical or smaller packages. During the Covid-19 pandemic, I was more rational in dealing with promotions.
More Price Sensitive	During the Covid-19 pandemic, I tried to get products at lower prices than before the pandemic. During the Covid-19 pandemic, I was willing to spend more effort to get cheap products than before the pandemic. During the Covid-19 pandemic, I bought a lot of discounted products compared to before the pandemic. During the Covid-19 pandemic, I did a lot of product price comparisons compared to before the pandemic. During the Covid-19 pandemic, I paid more attention to advertisements for discounted prices compared to before the pandemic.
Shifting on E-Grocery Shopping	During the Covid-19 pandemic, I never shopped for daily necessities online. During the Covid-19 pandemic, I shopped online more often for my daily needs. During the Covid-19 pandemic, I made a total switch from shopping at traditional (offline) stores to online stores. I shop for daily needs online to reduce the risk of spreading the Covid-19 virus. I shop for groceries online because it offers a wide variety of products. I find that shopping for groceries online is easy to do. I feel that shopping for daily needs online is easier to check the availability of goods. I feel that shopping for groceries online saves time.
Health Consciousness	During the Covid-19 pandemic, I took vitamins more often to maintain my health. During the Covid-19 pandemic, I exercised more often to maintain my health. During the Covid-19 pandemic, I always followed health protocols when shopping for my daily needs. During the Covid-19 pandemic, I paid more attention to the nutritional content of products when shopping for my daily necessities. During the Covid-19 pandemic, I paid more attention to healthy products when shopping for my daily necessities. During the Covid-19 pandemic, when shopping at traditional stores (offline), I prefer non-cash transactions to avoid the spread of the virus. During the Covid-19 pandemic, when shopping at traditional (offline) stores, I prefer shops that implement health protocols.

Principal Component Analysis (PCA)

To identify probable groupings of the items, an exploratory factor analysis is carried out using principal component analysis and Varimax rotation. Factors with eigenvalues more than 1.0 and items with rotational factor loadings of 0.5 or higher are kept, while items that do not match these requirements are eliminated (Hair et al., 2014). The Kaiser-Meyer-Olkin measure and Barlett's test of sphericity are then put to the test.

Cluster Analysis

The development of a two-step cluster analysis to identify older consumer groups. To improve the cluster solutions, this approach combines a hierarchical cluster analysis using the Ward's method with a non-hierarchical k-means clustering method. To determine the various customer categories, the Ward's technique was used. The agglomeration coefficients were used in this research to calculate the number of segments (Hair et al., 2014). A cluster solution will be the most suitable. The number of people in each cluster is then used to get the overall cluster solution.

ANOVA Analysis

An ANOVA test is run on the whole set of variables to identify differences between the detected clusters in order to validate the cluster solutions (Hair et al., 2014). The results from the cluster results are validated by looking at the between-group variations in all the dimensions using multiple comparisons with Tukey's post hoc test on the discovered clusters. Finally, in order to more accurately identify the key traits of consumer clusters, demographic, attitude, and behavior-related data are taken into account.

Results and Discussion

Characteristics of Panic Buyers

Table 2. Demographic Characteristics (121 respondents)

Characteristics	Freq.	%	Characteristics	Freq	%
Gender			*Jobs*		
Male	56	46.3	Civil servant	40	33.1
Female	65	53.7	State owned enterprise	3	2.5
Status			Private	34	28.1
Single	25	20.7	Entrepreneurs	10	8.3
Married	95	78.5	Others	34	28.1
Divorced	1	0.8			
Age (years)			*Education*		
18-25	11	9.1	High school	2	1.7
26-30	23	19.0	Diploma	0	0
31-40	24	19.8	Undergraduate	41	33.9
41-50	36	29.8	Master	62	51.2
More than 50	27	22.3	Doctor	16	13.2
Religion					
Islam	109	90.1	*Current residence*		
Protestant	6	5.0	Java	86	71.1
Catholic	5	4.1	Bali/NTB/NTT	8	6.6
Hindu	1	0.8	Sumatera	12	9.9
Roles in family			Sulawesi	4	3.3
Husband	46	38.0	Ambon/Maluku	0	0
Wife	49	40.5	Kalimantan	0	0
Son/daughter	26	21.5	Papua	1	0.8
Income (IDR)			Overseas	10	8.3
1-5 million	24	19.8			
6-10 million	40	33.1			
11-15 million	17	14.0			
16-20 million	16	13.2			
More than 20 million	24	19.8			

The study's respondents are described in Table 2 according to their gender, status, age, religion, position in the family, income, education, jobs, place of residence, and whether or not they work from home (WfH). The traits of the responders can be summed up as follows: Of the 121 respondents, it was discovered that women outnumbered men (53.7%); nearly 79% of the

respondents were married; the age range of 41 to 50 years dominated the respondents' age (nearly 30%); the majority of respondents (90.1%) identified as Muslims; and nearly 41% identified as wives in their families. More than half of the respondents (51%) have postgraduate level education, meaning they hold master's degrees. It is important to note that approximately 28% of the total respondents work in the private sector, compared to 33% of respondents who had monthly incomes between 6 and 10 million IDR. Finally, it is quite regrettable that the respondents' places of residence are not equally dispersed; the majority of them (about 71%) reside on Java Island. In this study, a panic buyer (shopper) is described as a customer who worries about their stock during a pandemic and decides to purchase things in bulk or in greater quantities at the start of the pandemic. Such feelings are indicated with a 4 and 5 score on a likert scale of 1 to 5.

Panic Buyer (Shopper) Typologies

Exploratory factor analysis was performed on the panic buyer (shopper) typologies as shown in Table 3.

Table 3. Results of Exploratory Factor Analysis on Panic Buyer Typologies Constructs

Factor Labels & Statement	Mean	Factor Loading	Eigenvalues	% of Variance	Alpha Coefficient
Price Consciousness	3.317		5.44	21.76	0.897
PRICE_SENSI3		.891			
PRICE_SENSI5		.886			
PRICE_SENSI2		.819			
PRICE_SENSI4		.751			
PRICE_SENSI1		.690			
Online shopping shifting	3.792		3.47	13.87	0.804
ESHOP1		.748			
ESHOP5		.739			
ESHOP7		.739			
ESHOP4		.666			
ESHOP6		.663			
ESHOP3		.633			
Health Consciousness	3.876		2.90	11.6	0.725
HEALTH4		.712			
HEALTH1		.696			
HEALTH5		.684			
HEALTH2		.654			
Consumption shift and reduce	4.022		1.39	5.57	0.755
SHIFTING1		.713			
REDUCE2		.707			
REDUCE4		.599			
Social consciousness	4.112		1.32	5.28	0.709
DONATE2		.729			
DONATE3		.722			
DONATE4		.714			
DONATE1		.667			
Cumulative percentage of variance				58.08	
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = 0.764					
Bartlett's Test of Sphericity, p = 0.000					

The 35-item scale on the various types of panic buyers (shoppers) was broken down into fewer elements using a principal component factor analysis with varimax rotation, and similarity between these variables was also discovered. The measured variables are multivariate normally distributed and fix the model, according to the results of the Chi-square Test for the maximum likelihood solution (p 0.05). Five shopper typologies factors with eigenvalues of one or higher appeared. Since Byrne (2001) argued that "an assessment of model adequacy must be based on multiple criteria that take into account theoretical, statistical, and practical considerations" (p. 88),

a number of criteria were taken into account for the study, including the deletion of items with cross-loading and factor loading below 0.5.

Table 4. Group Differences in The Dimensions of Shopping Behavior and Attitudes

Cluster (type)	1(Consumption savers)	2(Adapters reluctant)	3(Social consciousness preservers)	4(Online shopping shifters)	5(All-round adapters)	Tukey Post Hoc	
						F	p
No (%)	37(30.58)	18(14.88)	21(17.36)	22(18.18)	23(19.01)	F	p
Adaptive shopping behavior & attitudes							
Consumption shifting and reducing	**4.23**	3.22	4.14	3.77	4.45	27.85	.00
Price Consciousness	3.56	*2.94*	*2.40*	*2.75*	*4.11*	50.71	.00
Online shopping shifting	*3.49*	3.07	4.05	**4.17**	4.24	30.64	.00
Health Consciousness	4.06	3.70	4.12	3.56	4.27	8.09	.00
Social consciousness	3.96	**3.82**	**4.60**	3.56	**4.67**	38.05	.00

Note: High scores in bold; low scores in italics

This led to the discovery of five elements, which were then given the names: (1) "Price consciousness", (2) "online shopping shifting," (3) "health consciousness," (4) "consumption shift and reduce," and (5) "social consciousness." The five factors were very reliable, with corresponding Cronbach alpha coefficients of 0.897, 0.804, 0.725, 0.755, and 0.709. Given the exploratory character of the study, it was determined that these parameters had sufficient reliability. The results of the Barlett test of sphericity, which was based on a Chi-square transformation of the correlation matrix's determinant, are significant (p=0.000). Indicating that factor analysis is adequate, the Kaiser-Meyer-Olkin (KMO) value of sample adequacy is 0.764, which is significantly higher than 0.5.

Table 5. Clusters and Its Description

Clusters	Description
Cluster 1: Consumption savers	With 121 participants, this group of panic shoppers represents 30.58% of the sample. Customers that are in a panic tend to change their attitudes and behaviors by shifting and reducing their consumption. The high mean score for shifting and reducing consumption provides evidence of this. This cluster is what we refer to as consumption savers. Surprisingly, when compared to the other clusters, this one has the highest proportion.
Cluster 2: Adapters reluctant	This segment of panic buyers (shoppers) makes up 14.88% of the sample (n=121). The fraction of this cluster is the lowest of the five emerging clusters. All five factors that came from this cluster's members often have low mean scores. People simply find it difficult to adapt their attitudes and behaviors when buying.
Cluster 3: Social consciousness preservers	This segment of panic buyers (shoppers) accounts for 17.36% of the sample (n=121). Given the high mean score on social consciousness, the elder Indonesian consumers in this cluster may have altruistic attitudes. Members of this cluster frequently have a strong desire to give to charity and support those affected by the pandemic.
Cluster 4: Online shopping shifters	This cluster (n=121) comprises 18.18% of the sample. During the epidemic, members of this cluster change their shopping habits by converting to internet shopping (from brick to click). Because online purchasing has so many advantages, cluster members frequently use it.
Cluster 5: All-round adapters	Lastly, 19.01% of the sample (n=121) is made up of the final group of panic consumers. The panic buyers (shoppers) in this cluster have a tendency to adjust their shopping behavior and mindset in response to the Covid-19 epidemic using all five emerging criteria. The high mean scores for all the factors indicate it. As a result, we classified them as all-round adapters.

Comparison of Clusters on Shopping Adaptation

In this section the emerged clusters on shopping adaption based on consumers' attitude and behavior are discussed. The Indonesian panic buyers (shoppers) were then divided into groups

using a hierarchical cluster analysis across the component values. Using similar buying habits and attitudes, homogeneous segments of elderly grocery customers should be found. A five-cluster solution was found to be the most appropriate after an initial cluster analysis that used a single-linkage method to detect outlying observations. The dendrogram and agglomeration schedules of the hierarchical cluster process were interpreted to arrive at the five-cluster solution that was ultimately chosen. The final clusters were then determined using a K-means clustering analysis using the starting seeds supplied by the hierarchical clustering solution. The five clusters were found to differ considerably, as shown by a study of the F-ratios from the ANOVA analysis (see Table 4). Table 5 summaries emerged clusters, its description and comparison.

Discussion and Conclusion

The emerged different clusters on shopping adaptation in this study are relevant and support the previous studies on panic buying in time of pandemic COVID-19 in other countries. The first cluster suggests that customers that are panicked often alter their views and behaviors by shifting and lowering their consumption. This finding supports the previous studies such as (Ahmed et al., 2021; Gordon-Wilson, 2022; Mandal et al., 2021). These result in modifications to consumer behaviors, such as store design and shopping style. The second cluster related to the group of consumers who reluctant to adapt their shopping attitude and behavior during the pandemic. This in line with the study conducted in Indonesia by Amelia et al. (2022) who claim that such consumers as the minimum adapter. The third group of the consumers dealt with consumers who show greater social connectedness during the pandemic which can serve as a protective barrier against hardship and pain, uncertainty and discomfort. The typical of such consumers also found in the study conducted by (Nitschke et al., 2021). The common phenomenon during the pandemic related to consumers behavior is shopping habit shifting from traditional to online and it was also discussed in other studies (Sharma & Jhamb, 2020; Li et al., 2020; Prasad & Srivastava, 2021). The studies show that unexpected lockdown during the pandemic had a significant impact on online purchasing and marketing patterns. The current study reveals that consumer buying habits during the Covid-19 outbreak in response to two factors: perceived dangers of infectious diseases and the advantages of online shopping.

In response to the Covid-19 outbreak, this study intends to identify hitherto unresearched panic buyer (shopper) typologies among Indonesian consumers. Since there has not been any empirical research on panic buyers' (shoppers') typologies during the Covid-19 period, especially in Indonesia context, the study's findings offer some interesting and crucial insights. It is interesting to note that the study found that panic buyers (shoppers) exhibit a variety of responses to health crises, like as the Covid-19 outbreak. Based on consumers' behavior and attitude this study reveals five clusters panic shopper typologies such as "consumption savers," "adapters reluctant", "preservers of social consciousness", "online shopping shifters", and "all-around adapters".

Since there has not been any empirical research on panic buyers' (shoppers') typologies during the Covid-19 period, the study's findings offer some interesting and crucial insights. When researching this topic, health and psychological perspectives are frequently used. Also, the majority of the earlier investigations were carried out in industrialized and developed nations. It is interesting to note that the study found that panic buyers (shoppers) exhibit a variety of responses to health crises, like as the Covid-19 outbreak. The typical method is to reduce consumption.

Theoretical Implication, Managerial Implication and Research Direction

Implications for Research

This study adds to the body of knowledge on consumer behavior, particularly how consumers behave during health crises (Covid-19) by putting the panicky shoppers that we frequently see in times of crisis into perspective. It is interesting to note that throughout the pandemic, no panic buyers (shoppers) expressed concern about health issues. In the future study, it will be interesting if we can compare panic behaviour typologies from different causes, therefore we can generate and compare directly different perspectives of the typologies.

Implication for Marketing Practice

Also, this study offers crucial insights for marketing professionals. For instance, pricing strategy during the pandemic may need to take into account findings that panic buyers (shoppers) tend to be consumption savers during the pandemic. Also, as consumers frequently switch from traditional to online transactions, businesses must develop their online and digital operations.

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