Annals of Human Resource Management Research (AHRMR)
ISSN: 2774-8561, Vol 3, No 1, 2023, 55-61 https://doi.org/10.35912/ahrmr.v3i1.1655

The relationship between perceived control and panic buying during the COVID-19 pandemic

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Article History
Received on 13 September 2023
1st Revision on 22 October 2023
2nd Revision on 30 October 2023
Accepted on 20 November 2023

Abstract
Purpose: This study aimed to examine the negative correlation between perceived control and panic buying during the COVID-19 pandemic.
Research Methodology: It was conducted on middle-aged women using WhatsApp were married and were domiciled in Java. The criteria used was convenience sampling with a total of 193 respondents. Perceived control was measured with a questionnaire adapted from Berkenstadt Perceived Personal Control, while panic buying was measured by Lins and Aquino Panic buying Scale. Additionally, a test was conducted to evaluate the correlation coefficient between the two variables.
Result: The results showed that middle-aged women using WhatsApp had moderate perceived control and panic buying, indicating no significant negative correlation between the two.
Limitation: Uneven demographic proportions and a one-year retrospective period in this study may impact data accuracy due to reliance on respondent recall.
Contribution: Providing a new perspective on factors associated with panic buying.
Keywords: *COVID-19 pandemic, perceived control, panic buying, middle-aged women, WhatsApp*
How to Cite: Olivia, O., Jatnika, R., & Sodjakusumah, T. (2023). The relationship between perceived control and panic buying during the COVID-19 pandemic. *Annals of Human Resource Management Research*, 3(1), 55-61.

1. Introduction

At the beginning of 2020, the coronavirus disease pandemic affected industries worldwide, starting with the appearance of an unusual pneumonia case in Wuhan, China, on December 31, 2019. The pneumonia was caused by an unknown virus identified by World Health Organization (WHO) on January 7, 2020 (Al Jazeera, 2020). The virus is called SARS-CoV2, while the disease is known as coronavirus disease 2019, abbreviated as COVID-19 (CDC, 2020). Within three months, the virus had spread and reached 118,000 cases and 4,291 deaths in 114 countries. This prompted WHO to declare it a global pandemic on March 11, 2020 (Bavel et al., 2020).A pandemic is a disease outbreak affecting the global region beyond expectations (CDC, 2020; The Guardian, 2020). Until the end of April 2020, more than 3,000,000 cases, with 200,000 deaths in more than 210 countries due to COVID-19.

In countries with confirmed positive COVID-19 cases, the concerned government-issued policies range from physical distancing, mass testing, and lockdown. Following government policies, there is massive buying by residents, a condition known as panic buying (Shou, Xiong, & Shen, 2013), which did not often occur in previous outbreaks (Sim, Chua, Vieta, & Fernandez, 2020). A member of the Advisory Board of the Indonesian Shopping Center Tenants Association (Hippindo), Tutum Rahanta, identified at least three periods of consumer panic buying in stores during the outbreak (CNBC Indonesia, 2020). The first period was on March 2, 2020, when President Joko Widodo announced the first two positive cases in Indonesia (CNBC Indonesia, 2020; Kompas.com, 2020). The second case was on March 14, 2020, when there was an appeal to work at home and learning activities were

closed for two weeks. The third case was on March 19, 2020, when the announcement of positive COVID-19 cases in Indonesia reached 308 cases with 25 deaths (CNBC Indonesia, 2020).

From a macro perspective, panic buying reduces supply and increases demand for goods (Investopedia, 2019). Executive Director of the Institute for Development of Economics and Finance (INDEF), Enny Sri Hartati, stated that increased purchases reduced goods supply due to the imbalance between supply and demand (Tirto.ID, 2020). This scarcity increased prices and decreased people's purchasing power, negatively impacting Indonesia's economic stability (IDN Financials, 2020; Tirto.ID, 2020). The disadvantaged group from this phenomenon is the lower-class economic community (Yuen, Wang, Ma, & Li, 2020). People with this economic class cannot experience panic buying, making them lose opportunities to get their basic needs (Yuen et al., 2020). Roy Mandey, the General Chairperson of the Indonesian Retail Entrepreneurs Association, stated that this phenomenon robbed important goods from people in need, such as health workers, the vulnerable elderly, and people affected by COVID-19 (BBC, 2020; The Strait Times, 2020). According to Amanda White, a lecturer at the University of Technology Sydney, the risk of mask unavailability is that people with COVID-19 cannot use masks to protect others (Jakarta Globe, 2020).

This helps know the factors that cause panic buying, which implies an under explored consumer behavior studies, where buying decisions are influenced by emotions, such as fear and anxiety. This is because classical consumer behavior theory may not apply in this context (Yuen et al., 2020). However, the current understanding of panic buying is limited, even when this topic is important during this pandemic. Search results in Scopus, the largest peer-reviewed literature database on academic texts discussing panic buying in a health crisis, only found 27 journal articles (Yuen et al., 2020). Yuen et al. (2020) explained the factors causing panic buying, including perceived threat and perceived scarcity, fear of the unknown, coping behavior, and social-psychological factors. The least explored factor is coping behavior, which explains that panic buying restores a sense of control over the situation.

Panic buying could be utilitarian consumption or the product consumption promoted to meet basic needs or complete a task (Strahilevitz & Myers, 1998). Chen, Lee, and Yap (2017) identified the factors influencing utilitarian consumption in the United States and Singapore. Perceived control is an individual's belief that a person provides a response that affects the negative impact of an event (Thompson & Schlehofer, 2008). Participants' perceived control was also manipulated by allowing them to write an essay about an incident in which they felt like losing control of a situation. Furthermore, they are faced with a choice of utilitarian and hedonic products. According to Chen et al. (2017), participants with low perceived control bought more utilitarian products, thereby promoting them to engage in problem solving activities, and these products are often perceived as solutions. The propensity to the problem also mediates the relationship between low perceived control and the desire to buy products with utilitarian purposes.

Wijaya (2020) indicated that panic buying was mostly performed by women aged 40 years and over. Therefore, initial data collection was carried out on middle adult women (40-60 years) to determine whether there was a change in shopping behavior that indicated panic buying in this group. Specifically, it focuses on middle-aged women who are WhatsApp users who are married and domiciled in Java. The group with these characteristics was determined as the target for the initial data collection based on three assumptions: (1) playing the role of buying daily necessities; (2) reading much information about COVID-19 from WhatsApp; and (3) is closer to the source of the first two cases in Indonesia. The initial data results show that these assumptions are true for respondents with predetermined characteristics. Based on the phenomena and problems, this study intended to know the description of perceived control and panic buying in middle-aged women using WhatsApp and examine the correlation between the two variables.

2. Literature review

The COVID-19 pandemic is a global health crisis that has shaken the entire world, including Indonesia. This pandemic, coupled with the circulating news on WhatsApp, has led middle-aged

women to perceive a threat to their health. Essentially, every individual has an inherent desire to control events in their environment, which is said to be a motivating factor underlying human behavior. However, the COVID-19 pandemic, along with its surrounding news, can diminish the perceived control of middle-aged women over events in their environment. The level of perceived control in an individual is determined by the interaction of its three dimensions: (1) behavioral control, (2) cognitive control, and (3) decisional control. Additionally, perceived control is influenced by personal factors (health and life satisfaction), social factors (social participation), and sociodemographic factors (age, education, and gender).

Unmet needs for control can cause discomfort and anxiety (emotional distress) in middle-aged women (Barnes, Diaz, & Arnaboldi, 2020; Brehm, 1966). Emotional distress can also be caused by the fear of uncertainty about the end of the COVID-19 pandemic (fear of the unknown). When the sources of decreased perceived control cannot be controlled, such as disease outbreaks, middle-aged women will try to enhance their control in other areas, known as a compensatory control strategy (Landau et al., 2015). One way to do this is through problems solving.

In the context of the COVID-19 pandemic, middle-aged women with low perceived control may engage in panic buying of utilitarian goods in large quantities to restore their sense of control and alleviate the perceived emotional distress. This behavior is also driven by their perception of the scarcity of goods (perceived scarcity). According to McDaniel and Zeithaml (1984), products perceived to mitigate certain risks or dangers attract higher purchase figures (McDaniel & Zeithaml, 1984). In addition, individual taste and product selection are influenced by: (1) cultural factors (culture, subculture, social class); (2) social factors (reference groups, family, roles, status, social influence, social trust); (3) personal factors (age, occupation, economic conditions, lifestyle, personality); and (4) psychological factors (motivation, perception, learning, attitude) (Parment, Kotler & Armstrong, 2011; Solomon, 2018; Yuen et al., 2020). Based on the provided explanation, this study hypothesizes that the lower the perceived control, the higher the likelihood of panic buying among middle-aged women who use WhatsApp during the COVID-19 pandemic.

3. Research Methodology

This correlational study was conduted using a non-experimental quantitative method design, which aims to measure and determine the degree of relationship between two variables (Christensen, 2007). Specifically, this belongs to the ex post facto study type, where the variables studied are not manipulated directly but already exist or occur before this study is conducted (Christensen, 2007). The respondents' characteristics are women aged 40-60 years, married, using WhatsApp for at least the past year, and domiciled in Java, Indonesia. The technique used to obtain respondents is convenience sampling. The measuring instrument is an adaptation of the Perceived Personal Control (Berkenstadt, Shiloh, Barkai, Katznelson, & Goldman, 1999)(Berkenstadt et al., 1999) and the Panic Buying Scale (Lins & Aquino, 2020). The data collection method is carried out using an online questionnaire. Moreover, data analysis is carried out using Spearman's Rank Correlation test with SPSS 23.0 software.

4. Results and discussion

This study was followed by 193 respondents who are middle-aged women and married, use WhatsApp, and live in Java, Indonesia. This was followed by women aged 40-60 (M = 49.48, SD = 4.23). Respondents are spread across five provinces on Java Island, with the majority coming from West Java (46.6%), Banten (29%), and Jakarta (18.7%). The majority of respondents (68.9%) have an education level equivalent to a bachelor's or diploma, while a small proportion is Senior High School graduates or lower (15.5%); and Masters or higher (15.5%). Respondents are also spread into several groups of socioeconomic status (SES), which are seen based on monthly expenditure as in the study of Christina and Indarini (2011), namely SES A, SES B, SES C, SES D, and SES E. Most respondents (90.2 %) came from SES A group, with monthly expenses above Rp3,000,000.00. Almost all respondents (96.4%) answered that they had received messages in the form of figures, videos, and news about COVID-19 through WhatsApp.

Table 1. Descriptive Statistics of Study Variables

Variable	Range Score	Mean	SD
Perceived Control	1 – 3	2.76	0.33
Behavioral Control	1 – 3	2.82	0.34
Decisional Control	1 – 3	2.79	0.36
Cognitive Control	1 – 3	2.67	0.40
Panic Buying	1 – 5	3.66	1.51

Based on Table 1, the perceived control variable with a score range of 1-3 has an average of M = 2.76 (SD = 0.33), which is included in the medium category. This means that middle-aged women who use WhatsApp are confident that they can provide responses, which reduce their chances of getting COVID-19. There is also the average value for the three dimensions of perceived control is behavioral control of M = 2.82 (SD = 0.34); decisional control of M = 2.79 (SD = 0.36); and cognitive control of M = 2.67 (SD = 0.40). The behavioral and decisional control dimensions are in the medium category, while the cognitive is in the low. This finding is in line with Goodwin and colleagues (2021), which found that the majority of women in Bangkok, Thailand (N = 203, Musia = 39.09) felt that they could control (2.33 out of 3) their chances of being infected with COVID-19. Furthermore, Huang et al. (2020) also found that residents in China (N = 4607, Musia = 23.71, age range: 17-90 years) had moderate confidence in their ability to control the cause of COVID-19 (3.25 out of 5).

The panic buying variable with a score range of 1–5 (Table 4.2) has an average of M = 3.66 (SD = 1.51), which belongs to the medium category. This means that fear, panic, and uncertainty during the COVID-19 pandemic are enough to influence middle-aged women who use WhatsApp to buy more items than usual. Lins and Aquino (2020) stated that a pandemic is a threat that causes fear, anxiety, and uncertainty regarding the supply availability of goods or how long economic instability will last. Buying and holding excessive stock of goods can create higher demands than supply. Therefore, it leads to a shortage of goods during a crisis, and it can even trigger mass panic buying, which causes more instability and anxiety.

Table 2. Correlation between Variables

Variable	1	2	3	4	5
Perceived Control	-				
Behavioral Control	0.769**	-			
Decisional Control	0.912**	0.590**	-		
Cognitive Control	0.816**	0.626**	0.636**	-	
Panic Buying	- 0.013	- 0.027	- 0.02	- 0.027	-

**. Significant correlation at p<0,01 (1-tailed)
*. Significant correlation at p<0,05 (1-tailed)

Table 2 shows the results of the correlation between perceived control and panic buying variables, including the dimensions of perceived control. Based on the Guilford correlation category, there was no correlation between the perceived control variable and its components and the panic buying variable ($r < 0.19$). These findings indicate that other factors play a role in the panic buying occurrence. The relationship between perceived control and panic buying is also mediated by the emotional distress experienced by individuals. In the context of this study, it can be said that

individuals with high perceived control will continue to do panic buying if they feel enough emotional distress to promote them to do compensatory strategies. Besides perceived control, emotional distress is also influenced by fear of the unknown, namely uncertainty. Concerning the end of the COVID-19 pandemic, uncertainty causes people to imagine various scenarios and create fear. The above idea is in line with (Averill, 1973) that individuals with behavioral control will continue to experience stress if a decrease does not follow the control in uncertainty. In this case, middle-aged women may feel they have behavioral control to carry out the recommended health protocols but still feel anxious and worried because they do not know when the COVID-19 pandemic will end.

Panic buying is driven by other factors such as perceived scarcity, namely the perception of goods scarcity. Lehberger, Kleih, and Sparke (2021) stated that the main aspect of individuals buying a large stock of goods is their assessment of the future availability of the item. Islam et al. (2021) showed that the perception of limited quantity and time to get an item could increase the sense of panic that promotes panic buying behavior. Furthermore, this can also be explained through the anticipated regret theory (Gupta & Gentry, 2019). For example, people will compare the decision they made to stockpile with the decision they did not make, namely not to stockpile at the onset of the outbreak. Regret will arise if the choice not made turns out to be the better choice, whereas joy will arise if the choice made turns out to result in a better event.

Panic buying is also driven by socio-psychological factors such as social influence. Social influence refers to the way individuals adapt their behavior to meet the demands of the social environment. Islam et al. (2021) showed that media coverage of the panic buying phenomenon and the scarcity of stock items can be an example of behavior for others who watch that news. Roe, Bender, and Qi (2021) stated that individuals seek to reduce their own risk by acting collectively with other members of society. Therefore, this is a group decision (herd behavior). Herd behavior occurs when individuals ignore their beliefs and follow the behavior of others to mitigate risks. In this case, middle-aged women participated in panic buying because they saw people in the media, such as WhatsApp, doing the same thing.

Furthermore, another socio-psychological factor is social trust. Social trust in times of crisis refers to trust in the community and government. Information about panic buying in the media can lead to distrust of other public members, thereby triggering individuals to act individually. Additionally, trust in the government also plays an important role in determining the volunteerism of community members to obey the given rules. For instance, Jokowi urges people not to panic buying. The study by Islam et al. (2021) regarding panic buying in various countries stated that it is more common in countries where the corruption level is high, and the people do not trust the government.

In addition to the various factors described, Kassas and Nayga Jr (2021) also stated that panic buying is related to the desire to reduce the frequency of shopping; and the belief that it is the right thing to be carried out. By stockpiling goods, individuals can feel more secure and prosperous, reduce the frequency of going to the store, meeting other people, and contracting disease. According to Lehberger et al. (2021), panic buying is related to a person's neuroticism (emotional stability).

5. Conclusion

Based on the results and discussion of study on "The Relationship between Perceived Control and Panic Buying during the COVID-19 Pandemic: A Retrospective Study on Middle-Aged Women Using WhatsApp", it can be concluded that middle-aged women feel quite confident that they can provide responses which can reduce their chances affected by COVID-19. Based on the three dimensions of perceived control, these beliefs include (1) their ability to process information about COVID-19, hence, they are not too stressful; (2) the opportunity to select actions that can be taken to prevent them from being exposed to COVID-19; and (3) the ability to respond that can affect their chances of contracting COVID-19. Furthermore, fear, panic, and uncertainty during the pandemic are enough to influence middle-aged women who use WhatsApp to buy more things than usual. Additionally, perceived control does not correlate with panic buying among middle-aged women

using WhatsApp. Based on the results, further study can examine other variables that promote panic buying, such as perceived scarcity, fear of the unknown, and other socio-psychological factors.

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