

# **CAN THE MEMORY TRAIL TELL A STORY TO ANTICIPATE THE FUTURE PANIC BUYING BEHAVIOR OF ELDERLY CONSUMERS? A MIXED-METHODS APPROACH**

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## **ABSTRACT**

*This study examines why elderly customers in developing countries tend to buy more goods than they need during crises, often called panic buying. We used a mixed-methods approach, including interviews with elderly consumers in emerging markets and analyzing their past experiences during crises. Our study identified several aspects contributing to panic buying among elderly consumers, including anxiety, fear, concern for family, feelings of scarcity, peer influence, media exposure, and price sensitivity. The broad variables that influence elderly consumers to engage in panic buying are found to be psychological, environmental, economic, and social. Policymakers and marketing organizations in developing countries can use this study's findings to gain better insights into the variables contributing to panic buying among senior citizens. By monitoring their thoughts and interactions during future crises, marketers can improve their ability to target senior customers. This study can also help identify areas of concern and pain points, enabling marketers to enhance satisfaction among elderly consumers.*

## **INTRODUCTION**

The COVID-19 pandemic has affected every aspect of our lives (McKinsey & Company, 2020; Naeem & Ozuem, 2021), from travel restrictions, social distancing, wearing masks to adopting healthier habits while adapting to a new normal. Unemployment and layoffs were also common, impacting the country's economy. During the early stages of the pandemic, consumers made irrational purchases and hoarded essential items due to concerns about price increases and product shortages in stores (Yuen et al., 2020). The demand for groceries, healthcare items, and other essential goods often exceeded the available supply. To prevent future repercussions, consumers began purchasing large quantities of goods, temporarily and indefinitely stockpiling them (Taylor, 2021), exhibiting panic buying. Panic buying is commonly considered as a consumer behavior in which individuals purchase large quantities or a wide range of products in anticipation of an uncertain adverse event (Chua et al., 2021). The COVID-19 pandemic brought noticeable changes in consumer purchasing (Mehta et al., 2020). Lund and Maurya (2022) have identified different information-seeking behavior of elderly individuals in the United States and India amidst the COVID-19 outbreak. Older adults reported divergent encounters in both emerging economies and developed nations concerning the categories of information sought, sources utilized, and obstacles encountered (Meiners et al., 2021; O'Connell et al., 2021).

The United Nations (2019) predicts that by 2050, there will be more than 2 billion individuals worldwide who are 60 or older, up from around 0.6 billion at the start of the twenty-first century. By 2050, the percentage of adults, 60 and older, will rise to 21.5% which was only 8.0% in 1950 (Bundeszentrale für politische Bildung, 2017; Meiners et al., 2021). This age group spends significantly more on consumer goods than younger consumers, who demand higher-quality products, spend on literature, travel more frequently, and are more interested in financial investments (Dobbs et al., 2016; Meiners et al., 2021). As a result, senior customers will rank among the most significant customer segments in the ensuing decades and play a

significant role in the commercial success of several businesses (Meiners et al., 2010). According to Fengler (2021), senior consumers are playing a crucial role in the economy and making significant contributions to its success, thanks to their growing purchasing power. This phenomenon is commonly known as the Silver Economy. However, researchers haven't paid much attention to capturing the behaviors of senior clients (Lloyd 2020). Therefore, more study is necessary to emphasize the significance of this elderly consumer segment (Meiners et al., 2021). Typically, the term 'senior' or 'elderly' refers to individuals who are at least 60 years old or, on average, 65 years old (Berg & Liljedal, 2022; Guido et al., 2022; Lambert-Pandraud et al., 2005; Swimberghe et al., 2018). However, some studies cite lower threshold ages, such as 55 years (Sherman et al., 2001; Stephens, 1991) and 50 years (Jahn et al., 2012; Sudbury & Simcock, 2009). In this current study, the age of 60 and above is considered as the threshold age for the elderly consumer group.

Li and Mutchler (2020) have identified a correlation between the COVID-19 pandemic and the economic challenges that impacted the elderly population. During the COVID-19 pandemic, elderly consumers faced considerable challenges, experienced elevated levels of anxiety, and displayed panic buying behavior than other younger customer segments (O'Connell et al., 2021). This can be attributed to a range of socio-economic challenges, uncertainties, and crises, among other contributing factors (Wang et al., 2020). These factors also contributed to considerable emotional and mental stress, which in turn triggered panic buying among elderly consumers (Yuen et al., 2021). The impact of panic-buying is significantly more pronounced in causing post-purchase emotional distress and regret (Cham et al., 2023; Chua et al., 2021; Kim, 2023) and particularly severe among the elderly population (Naeem, 2021; O'Connell et al., 2021).

The impact of social norms on panic buying behavior is an under-explored phenomenon (Yuen et al., 2020). Social proof gives rise to a psychological and social signal that impacts an individual's attitude and subsequent behaviors and most effectively steers people to follow the behavior of the majority (Salmon et al., 2015). Furthermore, social-psychological factors, consumers' sensitivity towards the risk, consumers' perception of threat, sense of uncertainty, and materialism can drive individuals' panic buying behavior (Arafat et al., 2020).

Several studies have proposed various antecedents of panic buying, including crisis severity, media exposure, fear of COVID-19, perceived scarcity, faith in government, and beliefs regarding social distancing (Hita et al., 2022; Herjanto et al., 2021; Prentice et al., 2022). However, there is a significant opportunity for conducting a comprehensive study to explore potential factors and their impact on consumer panic buying behavior. The existing studies have demonstrated how consumer panic buying behavior can be interpreted from psychological, cultural, socio-economic, political, and societal viewpoints (Arafat et al., 2020; Lindenmeier et al., 2021). Nevertheless, the field of empirical studies that have proposed psychological and social drivers that can appreciably control consumer panic purchasing behavior is still in the rudimentary stage (Hita et al., 2022). In this context, most researchers have focused on developed countries, such as the United States (e.g., Herjanto et al., 2021; Prentice et al., 2022), Australia (Prentice et al., 2022), Germany (Lindenmeier et al., 2021), and the United Kingdom (Naeem 2021). Several studies indicate the necessity for further empirical research to comprehend the connection between antecedents and identify the key variables impacting panic buying behavior (Lavuri et al., 2023; Li et al., 2020; Omar et al., 2021; Prentice et al., 2022; Tsao et al., 2019; Waseem et al., 2022; Yuen et al., 2020). There is a scarcity of studies that specifically examine panic buying behavior in emerging markets during crisis situations such as the COVID-19 pandemic (Singh et al., 2023). There is a lack of academic research on the panic buying behaviors of elderly consumers in emerging economies, specifically examining their experiences during the COVID-19 crisis. The gap in the existing literature has inspired this current study to focus on effectively managing future crises, mitigating panic buying among elderly consumers, and prioritizing their well-being. This study

comprehensively analyses the memories of the COVID-19 crisis and explores how it led elderly consumers to participate in panic buying in anticipation of future crises or disruptive events. Exploring the panic-purchasing tendencies of older consumers could help marketers, and policymakers prepare for future emergencies or disruptive situations that might trigger panic buying in this demographic. This insight could assist organizations in addressing the challenges and difficulties that might arise in ensuring better engagement with elderly customers, which can lead to stronger relationships with this demographic segment.

The current study revolves around the following research questions to fill the gaps in the existing literature:

**RQ1:** *Which variables can trigger panic buying behavior among elderly consumers in developing economies who have experienced and have memories of the COVID-19 pandemic?*

**RQ2:** *How can such identified variables help develop a conceptual model that can guide marketing organizations and policymakers to prepare themselves better for addressing the panic buying behavior among elderly customers?*

By interacting with elderly customers in two stages and using a mixed-method research methodology, the study captured their experiences and opinions to identify the important variables that lead to panic buying. A few theories have guided this study, namely prospect theory, resource scarcity theory, and compensatory control theory, to find answers to the identified research questions. Businesses can use these findings to create plans to help older consumers during a crisis, which can help them build stronger relationships with this important customer segment.

## **THEORETICAL BACKGROUND AND LITERATURE REVIEW**

### *Theoretical background*

Several theories have been embraced to analyze and comprehend consumers' panic buying behavior amid crises like the COVID-19 pandemic. These authors have used several prominent theories to establish their arguments about what drives consumers to panic buying. For example, Waseem et al. (2022) investigated panic buying and mental health, focusing on security. This study investigates how COVID-19 caller ringback tone (CRT) impacts panic buying behavior, which is influenced by health, social characteristics, and decision-making. Prentice et al. (2022) investigated panic buying during the COVID-19 epidemic, including its causes and consequences. This study employs resource scarcity theory (Griskevicius et al., 2011) and fear of missing out (FOMO). In their study, Lavuri et al. (2023) applied the dual-factor theory (Herzberg et al., 1996) to assess the influence of external and internal variables on panic and impulsive buying behavior in times of pandemics. The study analyses external and internal variables to elucidate consumer behavior during crises. During the COVID-19 outbreak, Omar et al. (2021) investigated how ambiguity, severity, scarcity, and anxiety influenced consumer panic buying. The study investigates how these characteristics influence consumer panic buying. This study used the behavioral inhibition system (BIS) concept. Singh et al. (2023) investigate panic purchasing during the COVID-19 pandemic from a developing country's perspective. The study used the Theory of Planned Behaviour (TPB), Privacy Calculus Theory (PCT), and Protection Motivation Theory (PMT) to investigate the socio-economic, cultural, and psychological aspects that drive panic buying under these situations. Using game theory, Soltanzadeh, Rafiee, and Weber (2024) investigate disruption, panic purchasing, and pricing dynamics. Their study looks at how interruptions affect panic buying

and pricing. They use game theory to uncover strategic decisions by analyzing retailer-consumer behavior during crises.

In the present study, a few relevant theories have been employed to substantiate the research arguments. This research has employed Kahneman and Tversky's (1979) prospect theory to examine how consumer situational uncertainty affects their mental equilibrium and perceived risk during the COVID-19 pandemic. In 1979, Kahneman and Tversky presented prospect theory, explaining how people make decisions when faced with uncertainty by considering potential gains and losses concerning a particular reference point. During the COVID-19 pandemic, researchers indicated its unanticipated impacts on consumers' mental health and risk perception (Chua et al., 2021; Herjanto et al., 2021). Changes in consumer decision-making were influenced by shifts from pre-pandemic life, including alterations in income, work status, and health concerns. It is worth mentioning that situational uncertainty has significantly influenced consumer purchasing behaviors (Herjanto et al., 2021). Prospect theory explains why people are more sensitive to losses than rewards, influencing how they perceive risks during the pandemic. Consumers assess their risk of infection by considering personal characteristics and previous interactions. Over time, people may adjust to continuous risks, impacting their mental health and ability to adapt as they accept new standards and behaviors. Our study explores how consumer panic buying behavior during the COVID-19 epidemic affects their mental equilibrium and perceived risk, drawing on Kahneman and Tversky's (1979) prospect theory. In 1988, research conducted by Sternberg revealed various categories where consumers categorize their knowledge and intelligence. According to Abu-Hussain and Abu-Hussain (2018), consumers should opt for the most effective approach when handling specific information or situations, especially in times of crisis. This research paper considers the resource scarcity hypothesis (Oxenfeld & Kelly, 1969) to explore the impact of panic buying behavior among consumers. Furthermore, the study employed compensatory control theory (CCT) to explore the impact of the pandemic on consumer views of uncertainty, concern, and dread, resulting in a diminished sense of control (Chen et al., 2017). Compensatory Control Theory (CCT) provides valuable insights for comprehending panic buying behavior, particularly during crises such as the COVID-19 pandemic. According to CCT, people aim to regain a sense of control when dealing with uncertainty or threats to their well-being. In times of crisis like the pandemic, increased uncertainty, concern, and fear may result in consumers feeling a lack of control (Chen et al., 2017). Feeling a lack of control leads people to seek ways to regain stability and security in their lives. When panic buying occurs, CCT proposes that people might buy too much to feel more in control of their surroundings. Consumers try to reduce feelings of vulnerability and uncertainty during the crisis by hoarding essential items. This behavior offers a sense of reassurance and preparedness, providing psychological comfort in the face of perceived threats (Cham et al., 2023). Moreover, CCT emphasizes how perceived threats drive compensatory behaviors. The COVID-19 pandemic, with its unpredictable nature and potential health risks, poses a significant threat. Consumers might engage in panic buying as a way to cope with anxiety and feel more in control of their situation (Hita et al., 2022). The study tried to explore panic buying behavior during crises by utilizing Compensatory Control Theory (CCT) to enhance comprehension of the psychological variables influencing consumer decision-making. This research aims to understand how people try to regain control in uncertain situations to develop strategies that can help reduce panic buying and encourage more effective responses in times of crisis.

### *Panic Buying*

According to Tsao et al. (2019), panic buying is the act of purchasing a notably large quantity of products in reaction to or in expectation of a specific event. Aside from Malaysia, panic buying has been reported in various countries, including Australia, the USA, Hong Kong, Singapore, and China (Arafat et al., 2021). Panic is an individual, emotional condition

experienced by individuals that greatly impacts their actions. Buying in a panic is considered socially unacceptable, irrational, and illogical (Omar et al., 2021). It occurs when a significant number of customers store essential items during times of uncertainty and fear to protect against a perceived potential risk (Yuen et al., 2020).

Dholakia (2020) suggests that impulsive, irrational, and unplanned consumer reactions to a perceived loss of control during a crisis characterize panic buying. Crisis-related psychological reactions include uncertainty, worry, dejection, regret, guilt, irritability, social isolation, trauma, and stigmatization (Sim et al., 2020). Consumers often engage in panic buying, purchasing more than their usual needs in anticipation of adverse situations (Arafat et al., 2020). Negative emotions like fear and panic often drive panic buying (Lins et al., 2020) or feelings of insecurity (Arafat et al., 2020; Yuen et al., 2021). It is also influenced by herd mentality (Loxton et al., 2020). Panic-buying has various consequences, such as affecting store inventory and distribution systems, increasing consumer panic levels (Yuen et al., 2020), impacting freight transportation and logistics, and causing repercussions for both large-scale and small-scale industries (Rahman et al., 2023). Panic buying results in inflated prices, leading to a cost surge and making locating products more challenging. It exacerbates feelings of worry, powerlessness, and emotional turmoil (Lufkin, 2020; Tsao et al., 2019). During times of crisis, numerous consumers tend to participate in panic purchasing, a pattern that intensified during the COVID-19 pandemic (Ovezmyradov, 2022; Rahman et al., 2023). This study revolves around the panic buying behavior of older customers in developing countries by capturing the voices of this segment that experienced this phenomenon during COVID-19.

#### *Anxiety and panic buying*

Anxiety is a common feeling of unease, tension, worry, or apprehension about future events. Anxiety can significantly impair a person's cognitive abilities (Lins et al., 2021; Sherman et al., 2021). Fear and anxiety are closely connected (Lins et al., 2021). Mental stress and depression may contribute to anxiety and related conditions (Sim et al., 2020). Additionally, there is a significant link between intolerance of uncertainty and anxiety and depression (Anderson et al., 2019; Sherman et al., 2021). Research studies in marketing have found that panic buying and excessive spending are often linked to negative emotions, stress, and psychological disturbances (Lins et al., 2020; Sherman et al., 2021). The COVID-19 pandemic has impacted senior citizens, causing them to experience heightened anxiety and distress (Yuen et al., 2021). This study examines the impact of anxiety and uncertainty on the purchasing habits of older customers in the context of emerging nations.

#### *Perceived uncertainty in panic buying*

Perceiving uncertainty is crucial for panic buying (Chua et al., 2021). According to Anderson et al. (2019), uncertainty is a psychological state that occurs when someone lacks awareness or knowledge about something. During the COVID-19 crisis, limited vaccine supply, lockdowns, and unpredictable infection surges have harmed consumers' mental well-being and created uncertainty. This may cause customers to stockpile or panic-buy due to their aversion to uncertainty (Arafat et al., 2020). Extreme inconvenience in ambiguous situations can often result in consumer dilemmas (Herjanto et al., 2021). They intend to make impulsive purchases to relieve mental stress and anxiety in uncertain times. Therefore, it provides an opportunity to assess how it has influenced the consumption outlook of senior customers during crises.

#### *Self-efficacy in panic buying*

In their study, Chua et al. (2021) found that consumers with higher self-efficacy are more adept at employing effective risk-reduction strategies. Self-efficacy is how consumers see their ability to protect themselves and adapt to crises and their consequences (Rajkumar &

Arafat, 2021). This study examines how self-efficacy relates to the buying habits of older consumers. This study also examined how elderly consumers perceive their self-efficacy in the face of crises.

#### *Perceived severity in panic buying*

Panic purchasing is the act of customers buying a significant quantity of things to prevent potential shortages in the future (Herjanto et al., 2021). Researchers have argued that perceived severity and susceptibility are factors that impact fear, depression, anxiety, and mental stress (Dsouza et al., 2020). Studies have discovered that panic purchasing is a multifaceted occurrence influenced by several variables, including psychological elements such as fret, as well as contextual aspects like limited availability. These findings have been supported by research conducted by Frost et al. (2009), Grisham et al. (2007), and Tsao et al. (2019). Studies have shown that people from many nations and areas had a significant rise in fear and dread about their safety, physical health, and livelihood during the initial phase of the COVID-19 epidemic (Evidation, 2020; Jungmann & Witthöft, 2020; Li et al., 2020). Panic buying is considered a deliberate and self-protective behavior aimed at reducing anxiety. By stockpiling sufficient quantities of goods like food and medical supplies, individuals feel safer and can minimize their visits to stores, thereby reducing the risk of contracting the virus. Additionally, having an ample supply of essential items serves as a practical basis for practicing precautionary measures such as handwashing and wearing masks (Yuen et al., 2020). Several research have investigated the correlation between perceived danger and behavior linked to panic buying (Herjanto et al., 2021). In their study, Song et al. (2020) established a correlation between materialism and the perception of mortality risk. When individuals perceive the possibility of their own mortality, they tend to exhibit materialistic tendencies and are more likely to engage in hedonic purchasing behavior. This is because materialism, often associated with riches and money, serves as a crucial means for consumers to safeguard themselves against the fear of death. Consumers may hastily buy safety products to protect themselves from potential harm (Omar et al., 2021). Bentall et al. (2021) conducted research during the first stage of the COVID-19 epidemic in the UK and the Republic of Ireland. The study focused on several forms of anxiety (general, death-related, and COVID-related) and how individuals perceived their own danger and the risk to others. This research explores how the perception of severity motivates immediate buying decisions among elderly consumers, helping to alleviate negative emotions and fears associated with potential negative outcomes.

#### *Perceived scarcity in panic buying*

Perceived scarcity refers to the belief that a product will become unavailable after a crisis (Sheu & Kuo, 2020). Scarcity plays a crucial role in generating anticipated regret and emotions, particularly when buyers compete (Yuen et al., 2022). According to Yuen et al. (2020), when customers believe there is a greater risk of freight disruption, they also believe there is a greater likelihood of stockouts, as was experienced during the COVID-19 pandemic. Customers' perceptions of scarcity intensify, resulting in heightened anxiety and panic buying (Sim et al., 2020). Perceived scarcity and anticipated regret increase consumer competitiveness and create a sense of price insecurity for the available inventory. Customers may see panic buying as a means to reduce the likelihood of facing negative outcomes (Chua et al., 2021). This may also apply to elderly consumers. The present study examines how this phenomenon has impacted senior customers.

#### *Social influence on panic buying*

Consumer choices may be influenced by a larger group's collective attitudes, ideas, and beliefs (Yuen et al., 2020; Chua et al., 2021; Naeem & Ozuem, 2021). The contagion idea

suggests that the phenomenon of "mass panic" occurs when people try to understand and share the emotions of others, especially those they have close personal relationships with. Zhang et al. (2017) found that peers substantially affected consumers' emotions. Worries and fears about shortages might cause others to have the same emotional reaction, resulting in a phenomenon of excessive buying behavior (Prentice et al., 2022). Individuals with little exposure to similar situations are more likely to imitate their peers' behavior as a social norm. Fear spreads and accumulates via its distribution. This research aimed to examine the impact of friends, family, and media, along with other factors, on panic purchasing behavior seen in senior clients.

### *Price Sensitivity in Panic Buying*

Price significantly impacts buying behavior during crises due to job insecurity and an uncertain economy (Hampson et al., 2013). During the COVID-19 pandemic, there has been a significant increase in demand for essential products and services. Suppliers raised prices on essential goods or services to take advantage of consumers' vulnerability or were forced to do so due to major supply chain disruptions. According to Vancic et al. (2020), people have reduced their spending, saved more, and avoided non-essential purchases in order to manage their finances during the COVID-19 pandemic. Inflation, which leads to higher prices, also makes people unable to afford essential items and reduces their consumption. This study investigates how price sensitivity affects the purchasing behavior of older customers, particularly from emerging economies, specifically whether their price sensitivity remains consistent over time.

## **METHODOLOGY**

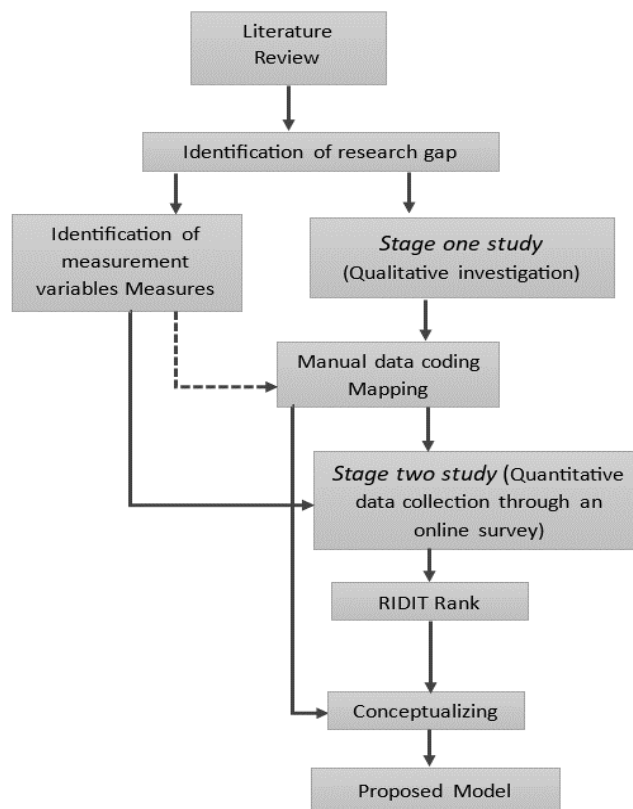
This empirical research used the mixed-method research (MMR) methodology, in which researchers combine qualitative and quantitative research methods in a single study (Johnson & Onwuegbuzie, 2004) to investigate a phenomenon in depth and provide greater soundness (Jogulu & Pansiri, 2011; Shi et al., 2020). MMR may help enhance the generalization of the results (Cronholm & Hjalmarsson, 2011). Herz et al. (2017) demonstrated a mixed-method study as an inductive method for consumer behavior research. Traditional qualitative research focuses on induction and exploration, whereas quantitative research focuses on deduction, theory/hypothesis testing, and explanation (Johnson & Onwuegbuzie, 2004). The current study used an exploratory qualitative method to identify potential variables that trigger panic buying behavior among elderly consumers, followed by a quantitative method to rank the variables and conceptualize a framework for explaining panic buying among elderly customers, thereby answering the research questions through the MMR approach. Among the different mixed-method research designs put forwarded by Johnson & Onwuegbuzie (2004), the present study used QUAL □ QUAN (sequential) having equal status. Figure 1 depicts the methodology framework followed in the current study.

### *Stage One Study (Qualitative Investigation)*

The first stage of the study used a qualitative method to interview senior consumers. As part of the pre-test research, ten individuals aged 60 years and above were contacted, both men and women, via phone calls to request their participation in the semi-structured telephone interview process. However, only four participants agreed to take part in the pre-test. This process helped refine and finalize the question flow for the qualitative investigation. Next, 37 elderly participants were invited to participate in the study. The study used snowball sampling (Naderifar et al., 2017) and convenience sampling (Putri et al., 2021) for data collection. Semi-structured telephone interviews with the elderly respondents were used to explore their personal experiences with the COVID-19 pandemic, particularly in understanding their shopping involvements. The responses of the respondents related to their associations with

psychological states, financial circumstances, intents, and the underlying variables contributing to panic purchasing behaviors seen during the COVID-19 pandemic, along with literature support helped in identifying the aggregated group dimensions as presented in Table 3. The respondents' demographic and other details were collected (see Table 1), ensuring the anonymity of their information. The telephone interviews were conducted in Bengali and Hindi, India's regional languages. The interviews lasted an average of 66 minutes and ranged from 54 to 72 minutes. The interview transcripts were prepared, organized into paragraphs, and analyzed by each author who were fluent in the regional languages. The traditional method of manually coding data is used to determine the causes and antecedents of panic buying behavior. Later, all the authors met to discuss their individual coding and the final coding data was determined through debate and consensus. The codes were then translated into English while keeping their original meaning, as presented in Table 3. The interview guide and list of questions are available in the Appendix-1.

**Figure 1. Methodology Framework**



*Stage Two Study (Quantitative Study)*

In the second stage of the study, data was collected through an online survey. 118 responses were collected from elderly customers using convenience sampling (Putri et al., 2021). The demographic and other details of the respondents are given in Table 2. The survey began by asking if consumers aged 60+ (both men and women) had engaged in panic buying during the COVID-19 pandemic. Only individuals who admitted to engaging in panic buying were eligible for participation in the survey. A brief questionnaire was created using measures found in existing literature (refer to Appendix 3). The participants' responses were recorded using a five-point Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement. Respondents answered the variables mentioned in the questionnaire, which were identified from the qualitative study (see Table 3). RIDIT analysis prioritized and ranked the drivers of panic buying among elderly customers. The RIDIT analysis is helpful for sorting Likert scale items based on their significance level (Bhattacharya, 2019; Wu, 2007).



RIDIT analysis is "distribution-free", so the population's distribution need not be assumed and is a methodical technique for analyzing Likert scale data (Wu, 2007). To determine the score value of each category of preference levels of an item, the RIDIT scoring system uses a known population as the reference group. The computed score for each category is equal to one-half the number of items in the subject category plus the number of attributes in all lower categories, divided by the population size, and is equal to the percentile rank of an item in the reference population. Once the RIDIT scores of the categories have been determined, the RIDIT score of the item is calculated as the total of the RIDIT scores of all categories. The item's computed RIDIT scores are utilized to determine the item's rank. Finally, a non-parametric Kruskal-Wallis W test was used to find the overall significance of the mean RIDIT score. This method also allows for evaluating the connection between variables and their priority levels.

**Table 1: Respondent Profile (Qualitative Research)**

Demographic Variable	Category	Frequency
Gender	Male	21
	Female	16
Age Group	Under 71 years	14
	Over 71 years	23
Profession	Service	11
	Business	12
	Retired	14

**Table 2: Respondent Profile (Quantitative Research)**

Demographic Variable	Category	Frequency
Gender	Male	72
	Female	46
Age Group	Under 71 years	69
	Over 71 years	49
Profession	Service	21
	Business	46
	Retired	51

The hypothesis considered for the RIDIT analysis was:

**H1:** *There are equal contributions of diverse variables that might trigger panic purchasing behavior in older customers.*

The use of RIDIT algorithm analysis (refer to Appendix 2) helped quantify the various variables contributing to panic purchasing among senior customers. This investigation helped to understand the individual contributions of different variables and then assessed them based on the reported impact as perceived by elderly customers. The study's RIDIT analysis results are presented in Tables 4 and 5.

## FINDINGS

The mixed method approach has proven useful in addressing the research questions. In the stage one study, the qualitative observations were analysed. The stage two study involved analyzing quantitative empirical data.

### *Results from Qualitative Study*

In the study's initial stages, a qualitative approach was used. The researchers interviewed elderly consumers and analyzed the data to understand their perspectives on panic buying. The analysis included subjective opinions, key concerns, important variables, and socio-economic and emotional insights. The findings are summarised in Table 3, providing a comprehensive perspective on panic buying by elderly consumers.

This section of the study identified significant variables by analyzing respondents' agreement on traits associated with panic buying. The topics are organized according to their relevance and relationship to the settings. The grounded frequency is the total number of consumers who have mentioned the specific "variable" that matches the "aggregated dimensions." The respondents' mentioned dimensions have a combined impact known as the "frequency percent." The frequency of variables determines the rank of the "Group order." It emphasizes the importance consumers attach to each variable. The study found that consumers' distress and financial situations are essential variables in their decision to buy in panic. People feel apprehensive and fearful because they perceive various risks in their lives, such as physical, emotional, social, and economic risks, which they believe can have unpredictable consequences. Consumers are increasing their spending to tackle the current crisis and endure potential future ones. This leads to increased anxiety and fear, prompting people to buy items in large quantities. Information exchange greatly influences client intentions and purchasing behavior. Unclear information and public opinions exacerbate consumer uncertainty and reactive purchasing, leading to product availability misconceptions.

### *Results from Quantitative Study*

Our research aims to analyze consumer purchasing behavior during panic situations using the RIDIT method (refer to Appendix 2). After conducting a qualitative analysis, we identified the top 15 variables. These variables have been ranked based on their impact using the RIDIT approach. However, several variables such as 'Depression', 'Infection Rate', 'Severity of Disease', 'Self-efficacy', 'Supply problem', and 'Social Media Influence' were excluded from the quantitative analysis phase since they had poor rankings in the qualitative investigation. Microsoft Excel 2019 was used to calculate the skewness and kurtosis to assess the normality of the gathered data set. The observed skewness values range from -0.098 to 0.021, while the kurtosis values range from -0.093 to 0.176. The split-half reliability technique was then used to evaluate the reliability of the data collected. This study aimed to quantify the correlation between the first and second halves of the measurement. A correlation analysis was performed on the even and odd measurement elements to ensure data consistency. An additional measure was added to improve data reliability. The split-half coefficient, also called the half-and-half correlation coefficient, yielded a value of 0.8257. The Spearman-Brown adjusted reliability coefficient for the responses was calculated to be 0.8472. The correlation value for the Split-half coefficient (odd vs. even) was 0.8583, while the gathered data resulted in a Spearman-Brown adjusted reliability coefficient of 0.8816. The data collected shows a high level of validity (Pronk et al., 2022).

**Table 3: Summary of the Qualitative Study (List of Variables, Rankings, and Sample Quotes)**

SL. No.	Variable	Meaning	Source	Grounded Freq.	Agg. Group Dimension	Group Freq. (in %)	Group Rank Order	Overall Rank Order	Sample Quotes of Respondent
1	Anxiety	Apprehension, dread, depression, and unease during COVID-19.	Lins <i>et al.</i> , 2020; Sherman <i>et al.</i> , 2021	26	Consumers' distress	97%	3	5	"I was extremely fearful. That's why we kept ourselves confined at home. It was a dreadful situation. I was worried about family members getting sick, or they will inadvertently spread the virus." -Quote by a person of the age of 72.
2	Depression	Sadness, loss of interest or pleasure in previously loved activities during COVID-19	Sim <i>et al.</i> , 2020; Anderson <i>et al.</i> , 2019; Sherman <i>et al.</i> , 2021	8			5	16	
3	Fear	An unpleasant emotion brought on by the prospect of danger, discomfort, or harm in the context of COVID-19.	Lins <i>et al.</i> , 2020; Arafat <i>et al.</i> , 2020	31			2	2	
4	Concern for family	Dealing with family issues in a fair, effective, and efficient manner.	Lins <i>et al.</i> , 2020; Sherman <i>et al.</i> , 2021	17			4	10	
5	Uncertain situation	Doubt about anything, uncertainty about whether to do something, and wondering what will happen or what the truth is about something.	Anderson <i>et al.</i> , 2019; Herjanto <i>et al.</i> , 2021 ; Omar <i>et al.</i> , 2021	37			1	1	"The level of intensity created an uncertain situation. I was unsure when this would change. When could I operate my business on the full scale?" -Quote by a person of the age of 70.
6	Infection Rate	The rate at which a disease spreads among humans.	Yuen <i>et al.</i> , 2021	5	Perception of severity	82%	2	18	"When the pandemic wave hit us, it was an appalling situation. Many people did not get the ICU beds and oxygen supply. I am still horrified while remembering the raucous sound of the ambulance. Most of the health centers and
7	Severity of Disease	This describes the impact of a disease process on resource use, comorbidities, and mortality.	Chua <i>et al.</i> , 2021	4			3	19	

8	Social isolation, lockdown	Circumstances of Pandemic like Infection rate, lockdown, and social isolation during the pandemic.	Ventriglio et al., 2020	31			1	2	hospitals were overcrowded.” -Quote by a person aged 67.
9	Social distancing, wearing mask, cleaning hands regularly	Ability to cope with loss, uncertainty, change, crisis, and tragedy, all of which were unavoidable components of existence prior to these unprecedented times.	Hita et al. 2022	4	Self-efficacy	11%	1	20	“I complied with the government's advice. We kept ourselves confined. I maintained social distance outside. We were proactive in new forms of social engagement.”- Quote by a person of the age of 67.
10	Shortage of Goods	Scarcity of necessary products in the market during the COVID-19 time.	Chua et al., 2021	15	Perception of scarcity	45%	1	12	“During the first wave, when I went into a store for groceries, I couldn't get milk or pulse. For some days, mustard oil was unavailable. Even I could not find essential medicines. The supply of goods collapsed due to the prohibition of interstate transport. People became so frenzied that they immediately rushed to the shops to stockpile essential commodities. People did not care about maintaining social distancing while queuing up in large numbers”. -Quote by a person of the age of 73.
11	Supply issue	During the COVID-19 pandemic, there was an uneven or irregular flow of commodities and services.	Zheng et al., 2020	6			3	17	
12	Stockpiling	Fear of not being able to obtain consumable commodities due to the mass purchasing tendency.	Chua et al., 2021	10			2	15	
13	Bulk purchase (food, medicine)	Purchasing food on the basis of speculation during the COVID-19.	Taylor, 2021	24	Customers' shopping habits	76%	1	6	“The pictures of empty shelves haunt me still now. I was so panicked that I was compelled to purchase more than necessary. If I needed one packet of milk, I purchased 3 to 4 packets in fear of stockout. I had to purchase 10 to 12 kg of rice, instead of 5kg.”- Quote by a person of the age of 71.
14	Hygiene products purchase	Preventive requirements for disinfection and hygiene goods	Wright & Blackburn, 2020	24			1	6	
15	Online Shopping	Intention to purchase online in order to maintain social distance and avoid cross-infection.	Grashuis et al., 2020 ; Priluck, 2023	16			3	11	

16	Price volatility	Price issue due to supply-demand gap	Hampson <i>et al.</i> , 2013; Vancic <i>et al.</i> 2020	29	Financial sensitivity	82%	1	4	"I remember the prices of certain products changing frequently, mostly moving upwards, making it difficult for me to manage my monthly budget as I have only my pension to rely on." - Quote by a person of the age of 82.
17	Financial distress	Financial hardships due to issues of lockdown, poor economic conditions		19			2	8	
18	Influence of family, friends	Peer pressure is the direct or indirect influence on members of social groups with similar interests, experiences, or social status. Members of a peer group are more likely to influence a person's beliefs, values, and behavior.	Prentice <i>et al.</i> 2022	19	Influence of Information	53%	1	8	"Opinions of friends and colleagues matter much to me as they share their experiences with me. They are my well-wishers. But I think there was a lot of misinformation and sensationalistic coverage regarding COVID-19 that only led to fear. The prevalence of fake news and the sheer volume of information we received in social media daily during the pandemic made it difficult to figure out what's true." – Quote by a person of the age of 73.
19	Influence of news, TV (mass media)	The media's influence affects many aspects of human life, such as individual viewpoints and beliefs, and skews a person's understanding of the COVID-19 situation in India.	Arafat <i>et al.</i> , 2021	13			2	13	
20	Social Media Influence	How does social media impact forming public opinions during the COVID-19 situation in India?	Hong <i>et al.</i> , 2018; Tan <i>et al.</i> , 2022; Naeem, 2021; Naeem & Ozuem, 2021; Naylor, 2016	3			4	21	
21	Influence of Public Opinions	The public thought process is influenced by public opinion, which shapes knowledge.	Machin, 2016; Yuen <i>et al.</i> , 2022	12			3	14	

*RIDIT Analysis*

Table 4 depicts the RIDIT analysis for the reference data set by following the RIDIT algorithm, which is obtained from an online survey of 118 respondents analyzed accordingly (see Table 5). Respondents' responses related to scale items are observed to be appreciably different. The variables associated with the psychological phenomenon, perception of uncertainty, perception of scarcity, the influence of information, and financial sensitivity, hold different predispositions in the panic buying phenomenon. Table 6 shows Kruskal Wallis W (121.959) is significantly greater than Chi-square (at 14 df) = 23.685, so the hypothesis is rejected (Wu, 2007). Therefore, it can be concluded that various variables that may induce panic buying behavior in older customers do not contribute equally, thus rejecting the hypothesis. Table 5 displays the highest-ranked items, which indicate the essential variables that caused panic buying among senior consumers. Items with an upper bound value greater than 0.5 are more likely to be rated low by the respondents. The lower value of rho\_i indicates that elderly customers highly value these items, leading to increased panic buying tendencies. Therefore, it is possible to prioritize and arrange the variables contributing to panic buying behavior.

**Table 4.** RIDIT Analysis of the Reference Data

Items	Very Important (5)	Important (4)	Neutral (3)	Unimportant (2)	Very Unimportant (1)	Πi
Bulk purchase (food, medicine)	43	61	7	5	2	118
Influence of public opinion	30	66	15	4	3	118
Influence of mass media	38	30	25	19	6	118
Online shopping	28	46	29	13	2	118
Shortage of Goods	60	45	7	4	2	118
Social isolation, lockdown	64	43	7	3	1	118
Hygiene products purchase	40	57	17	2	2	118
Price Volatility	62	49	3	1	3	118
Financial Distress	49	47	13	6	3	118
Anxiety	69	37	7	2	3	118
Uncertain situation	75	34	5	3	1	118
Influence of family, friends	41	48	19	6	4	118
Fear	73	33	8	2	2	118
Stockpiling	44	41	23	7	3	118
Concern for family	48	38	23	6	3	118
<i>f<sub>i</sub></i>	764	675	208	83	40	1770
<i>1/2 f<sub>i</sub></i>	382	337.5	104	41.5	20	885
<i>F<sub>i</sub></i>	382	1101.5	1543	1688.5	1750	
<i>R<sub>j</sub></i>	0.215	0.622	0.871	0.953	0.988	

*Notes:* a) 1- very unimportant, 2- unimportant, 3- Neutral, 4- important, 5- very important

b) The numbers under each column heading 1 to 5 indicate the count of respondents for the respective Likert scales

Table 5 demonstrates that each guiding element's computed W and pi values have distinct impacts on panic purchasing behavior. The following sequential order is derived from a ranking of average RIDITs, indicating the likelihood of being in a favorable tendency. Each

component is assigned a rank. The application of RIDIT analysis has enabled us to rank the several variables linked to panic purchasing behavior among older customers. Table 7 categorizes the 15 variables into three clusters or groups. Cluster 1 has variables with RIDIT rankings ranging from 1 to 5. Cluster 2 and Cluster 3 include variables that have RIDIT ratings ranging from 6 to 10 and 11 to 15, respectively.

**Table 5: RIDIT Analysis of the Comparison Data Sets**

Variables	5	4	3	2	1	rho <sub>i</sub>	Rank	LB	UB	W-Calculation
Bulk purchase (food, medicine)	0.079	0.322	0.052	0.04	0.017	0.509	8	0.456	0.562	0.01
Influence of public opinion	0.055	0.348	0.111	0.032	0.025	0.571	13	0.518	0.624	0.599
Influence of mass media	0.07	0.158	0.185	0.154	0.05	0.616	14	0.563	0.669	1.596
Online shopping	0.051	0.243	0.214	0.105	0.017	0.63	15	0.577	0.683	1.991
Shortage of Goods	0.11	0.237	0.052	0.032	0.017	0.448	6	0.395	0.501	0.321
Social isolation, lockdown	0.117	0.227	0.052	0.024	0.008	0.428	5	0.375	0.481	0.609
Hygiene products purchase	0.073	0.301	0.126	0.016	0.017	0.532	10	0.479	0.585	0.123
Price Volatility	0.113	0.258	0.022	0.008	0.025	0.427	4	0.374	0.48	0.625
Financial Distress	0.09	0.248	0.096	0.049	0.025	0.507	7	0.454	0.56	0.006
Anxiety	0.126	0.195	0.052	0.016	0.025	0.414	3	0.361	0.468	0.866
Uncertain situation	0.137	0.179	0.037	0.024	0.008	0.386	1	0.333	0.439	1.532
Influence of family, friends	0.075	0.253	0.14	0.049	0.034	0.551	12	0.497	0.604	0.301
Fear	0.134	0.174	0.059	0.016	0.017	0.4	2	0.346	0.453	1.19
Stockpiling	0.08	0.216	0.17	0.057	0.025	0.548	11	0.495	0.601	0.276
Concern for family	0.088	0.2	0.17	0.049	0.025	0.532	9	0.479	0.585	0.119

*Notes: LB – lower bound of the 95% confidence interval of mean RIDIT rho<sub>i</sub>.  
UB - upper bound of the 95% confidence interval of mean RIDIT rho<sub>i</sub>.*

**Table 6. Model validation**

Kruskal Wallis – W	121.959
Chi-Square (20-1=19 df)	23.685
p-value	0.000

**Table 7: Cluster of Stimuli for Panic Buying of Senior Customers with Corresponding ranks from Stage 1 of the Study**

Cluster 1: Highly important stimulus	Cluster 2: Moderately Important stimulus	Cluster 3: Least Important stimulus
1. Uncertain situation (1) 2. Fear (2) 3. Anxiety (5) 4. Price Volatility (4) 5. Social isolation, lockdown (2)	6. Shortage of Goods (12) 7. Financial Distress (8) 8. Bulk purchase (food, medicine) (6) 9. Concern for family (10) 10. Hygiene products purchase (6)	11. Stockpiling (15) 12. Influence of family, friends (8) 13. Influence of public opinion (14) 14. Influence of mass media (13) 15. Online shopping (11)

**Note:** The figure within parenthesis indicates the rank of the corresponding variable from the stage 1 study

Based on the RIDIT rank score analysis, the three clusters for panic buying among elderly customers are highly important, moderately important, and least important stimuli (see **Table 7**). According to both studies, uncertain situations due to COVID-19, driven by social isolation and lockdowns, led to fear and anxiety among the elderly population. Thus, bulk purchases of foods and medicines and price volatility of certain products were observed. Senior consumers' concern for their family's well-being added to their anxiety. Elderly individuals were concerned that if they couldn't purchase essential items, they would later regret it due to a shortage of goods, and they would have to spend more money, leading to financial distress. The study also discovered a connection between panic-buying by elderly consumers and crowd panic behavior. This behavior is influenced by word of mouth and information sharing among family and friends but has low RIDIT ranks. According to RIDIT rankings, the influence of family, friends, public opinion, and mass media are some of the least essential stimuli, as per the voices of senior citizens. Senior consumers have also moved to online platforms to limit themselves to their homes. Long queues of shoppers stockpiling large quantities of products created the perception of an imminent shortage.

## **DISCUSSION AND IMPLICATIONS**

The qualitative and quantitative investigations in the current study guided the identification of significant variables that represent the constructs that impact the panic buying behavior of elderly consumers. Further, this research proposed a comprehensive model depicting the variables and constructs invoking panic buying behavior, as shown in Figure 2. This conceptual model presents a theoretical framework that illustrates the interrelationships among the variables of interest, encompassing the independent and outcome variables. The variables influencing panic buying behavior among senior customers are psychological, environmental, economic, and social. These are based on the three clusters identified from the RIDIT ranks in stage 2 of the study. These variables lead to panic buying among old customers and manifest in various forms, such as hoarding tendencies, decision-making dilemmas, anticipated regret, and an urgent need to make purchases.

Psychological variables encompass a range of variables that contribute to consumers' distress, such as anxiety, fear, and, to some extent, worry for their families, leading to mental stress. Also, perceived severity and susceptibility (due to COVID-19 in the present scenario) resulted in fear, depression, anxiety, and caused mental stress among individuals (Dsouza et al., 2020). These negative feelings led to a sense of vulnerability among the elderly customers, as they feared that a scarcity of essential items would lead to panic buying. Drawing from CCT, these people bought essential items in excess to reduce their vulnerability and to have a sense of control over the crisis situation, which can impact them and their family members. The study identified that this variable strongly influences elderly customers' panic buying behavior as they are part of Cluster 1 (highly important stimulus), as shown in Table 7. Thus, the following proposition is proposed.

*P1: Psychological variables like fear, anxiety, and concern for their family have a high influence on panic buying behavior among senior customers.*

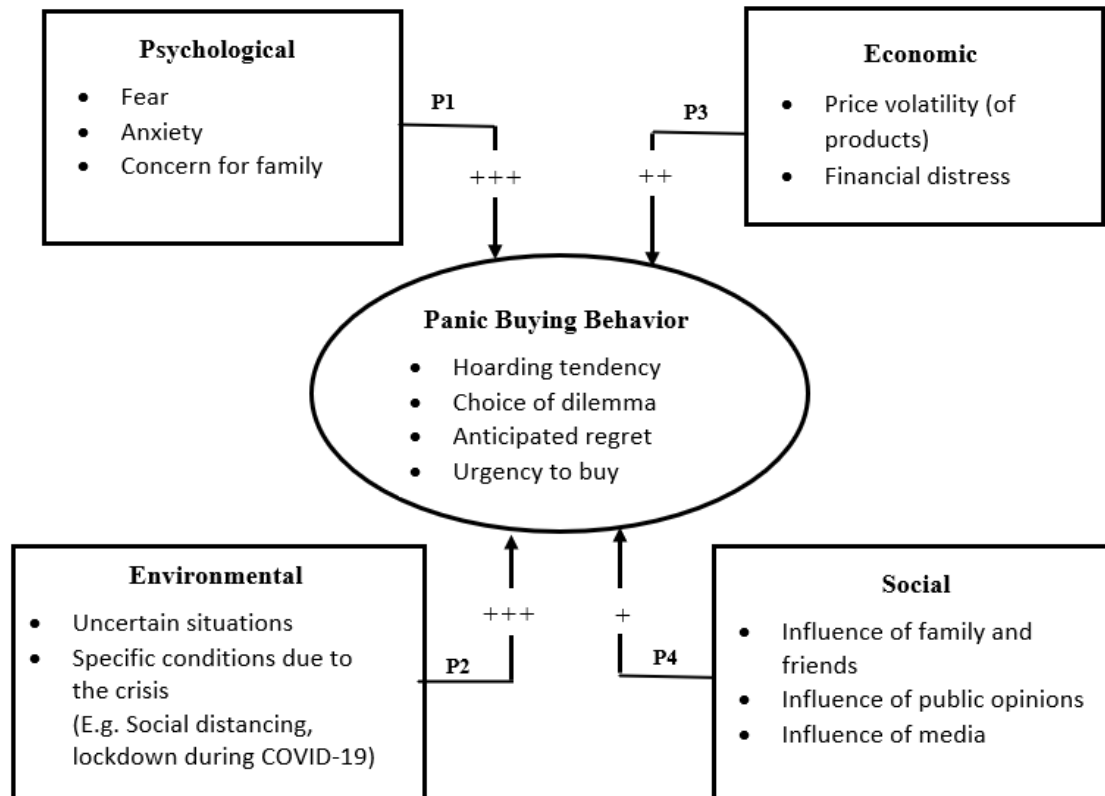
According to the current study, environmental variables significantly triggered panic buying behavior among older customers. The prospect theory guided the study to examine how the perceived severity of the uncertain situation affected the mental conditions of the senior customers, as they lacked adequate knowledge of the prevailing COVID situation. The situational uncertainty and conditions are specific to the COVID-19 crisis, such as lockdowns and social distancing measures, impacted the elderly customers' purchasing behavior, as they were unwilling to venture out frequently or were unable to do so due to lockdowns and thus



went in for hoarding essential products. Here too, the variables are from the “highly important stimulus” from Cluster 1 in Table 7. So, the next proposition is:

**P2:** Environmental variables like uncertain situations highly influence panic buying behavior among senior customers.

**Figure 2:** Proposed Model for the Factors Influencing Panic Buying Behavior among Older Customers



+++ indicates high influence, ++ indicates medium influence, + indicates low influence, as per the clusters of stimuli for panic buying of senior customers

The occurrence of a financial crisis has the potential to impact individuals' impulsive purchase choices. Variables like economic adversity influence the phenomenon of the financial crisis. The research findings also indicated that price sensitivity, encompassing variables such as price volatility, a preference for affordability, and the perception of high costs due to the gap between supply and demand of certain products, leading to resource scarcity, significantly drove panic purchasing behavior among senior customers. So, the next variable is “Economic,” and financial distress and issues of a potential shortage of goods due to bulk purchases by customers that can lead to product price volatility are part of Cluster 2: Moderately Important stimulus (refer to Table 7), thus the following proposition is:

**P3:** Economic variables like price volatility and financial distress have a moderate influence on panic buying behavior among senior customers.

This research suggests that various sources of information, including the influence of family, friends, peers, media, and public opinion, significantly impact the likelihood of senior consumers engaging in panic purchasing. According to contagion theory, "mass panic" occurs when people strive to empathize with others, especially those with whom they have strong interpersonal connections. So, the interactions of the senior customers with their near and dear ones also were instrumental in increasing their apprehensions of the shortage of essential items and the perceived severity of the situation, leading to panic buying behavior. However, the present study has found that these influences are under the "least important stimulus" in Cluster 3 (refer to Table 7). All these variables are clubbed under 'Social factor' with the fourth proposition being:

**P4:** *Social factors which include the influence of friends, family, peers, media have a low influence on panic buying behavior among senior customers.*

In times of crisis, it has been observed that the purchasing behavior of older individuals tends to increase, leading them to acquire a greater quantity of products than their usual consumption patterns. This study has identified multiple factors contributing to this phenomenon. The elderly population tends to experience heightened levels of anxiety when faced with uncertain circumstances. Additionally, external factors like environmental and social can significantly shape their perspectives. Price fluctuations, financial considerations, and the perception of scarcity all contribute to the overall dynamics.

This study employed the fundamental principles of Kahneman and Tversky's (1979) prospect theory to examine how the COVID-19 pandemic's situational ambiguity affects the psychological well-being and perceived risk of older consumers. The present study aligns with the concept of prospect theory, which highlights how individuals tend to be more responsive to losses than rewards, thus influencing their perception of pandemic risks. It delves into their concerns about potential fear, anxiety, financial constraints, and health setbacks, as well as their apprehensions about expenses at a particular juncture. The present research has indicated that when resources become scarce and prices become volatile during crises, panic purchasing behavior among older clients may be influenced by financial distress as a significant variable. This reinforces the argument Abu-Hussain and Abu-Hussain (2018) put forth regarding consumer decision-making in times of crisis and the resource scarcity theory suggested by Oxenfeld and Kelly (1969). The study identified the importance of compensatory control theory (CCT) in comprehending the impact of the COVID-19 pandemic on consumer perceptions of uncertainty, anxiety, and fear, leading to a decline in their sense of control (Chen et al., 2017). Using a mix of qualitative and quantitative methods, this research has indicated that older individuals have actively sought to maintain control over their situation during the COVID-19 pandemic. Older individuals tended to make purchases they didn't need or collect various items, possibly indicating emotional vulnerability.

The act of panic buying may potentially alleviate the apprehension experienced by seniors as they grapple with the unsettling prospect of missing out on essential items during periods of uncertainty. This was highlighted during the present study that captured the COVID-19 experiences of senior citizens from an emerging economy. Nevertheless, this particular behavior has the potential to result in hoarding tendencies, thereby impeding the accessibility of vital products for others. Policymakers, marketers, retailers, and community organizations have a crucial role to play in tackling this issue. They can make a significant impact by disseminating precise information about product availability, promoting responsible purchasing practices and extending support to seniors during times of crisis so that they are less anxious and fearful of the crisis situation. Lower levels of uncertainty and mental stress among elderly customers can act as a deterrent for them to resort to panic buying behavior.

This in turn will not severely strain the demand and supply gap for essential items, thus taking care of the price volatility issue discussed in this study. This will help senior customers endure future crises comfortably compared to their COVID-19 experiences.

In order to enhance the accessibility of online shopping for senior citizens, another variable that was uncovered during the stage 1 and 2 of the research, businesses can devise effective strategies to streamline their search for desired products and services. They can include special services or offers for the senior customer segment and through their actions and policies can try to build a strong relationship with this customer segment based on trust. Policymakers have the ability to develop tailored services and promotions specifically designed to cater to the unique needs of senior citizens. Community organizations can play a vital role in equipping seniors with valuable information about the plethora of resources and support groups that are readily accessible to them. These invaluable resources and groups will serve as a lifeline, aiding seniors in effectively managing and navigating the overwhelming stress and anxiety that often accompany crises.

### **LIMITATIONS AND FUTURE RESEARCH DIRECTIONS**

There were some challenges in conducting this study. We collected data through telephonic interviews with senior citizens, but it was challenging to record their body language. Some participants also shared personal information and became emotional during the interviews. We made sure to keep their privacy in mind while reporting the findings. This study used a convenience sampling method to gather qualitative and quantitative responses from India. Future research should replicate this study in various countries to improve the generalizability of the findings, as consumption behavior can vary due to unique social, cultural, personal, and economic factors. Further study may be required to include the viewpoints of older individuals from disadvantaged socio-economic backgrounds. The conceptual model presented in this study has the potential to be replicated and modified in future studies, enabling additional statistical analysis.

### **CONCLUSION**

This study aims to explore the variables contributing to panic buying among elderly customers in emerging economies, who have vivid memories of the COVID-19 pandemic. The study employs a combination of qualitative and quantitative methods to collect and analyse data, with the objective of addressing RQ1 and identifying the variables that may induce panic buying behavior among elderly consumers in developing economies like India. The study acknowledges that panic buying among seniors is driven by a range of variables that include psychological, environmental, economic, and social influences. It aims to assess the relative impact of these influences on triggering panic buying behavior. The study employs a comprehensive research approach, incorporating interviews and surveys, to gather data from elderly customers in emerging economies. The interviews offer a comprehensive examination of the experiences and memories related to the COVID-19 pandemic, while the surveys provide a more extensive view of the variables that contribute to panic buying behavior among seniors. The study reveals that older customers in developing countries are prone to panic buying during crises for several reasons, including fear of scarcity, desire for control, and a sense of vulnerability. The study also highlights the importance of psychological factors, including anxiety, stress, and uncertainty, in driving panic buying behavior among seniors. This study adds to the current understanding of panic buying among elderly consumers by investigating their firsthand experiences and recollections of the COVID-19 pandemic. By analyzing the results, businesses and policymakers can shape their marketing strategies to support seniors during difficult times, helping to reduce their anxiety and fear and promoting responsible shopping behavior. This can help alleviate the mental strain experienced by this particular

group of customers, enabling businesses to cultivate a lasting rapport with them. Eventually, this study offers valuable insights into the factors that can prompt panic buying behavior among elderly customers in emerging economies like India. The study's findings provide valuable insights for businesses seeking to enhance their understanding of senior customers' needs and develop targeted marketing strategies to address their specific requirements during challenging times such as the COVID-19 pandemic.

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## **APPENDIX 1**

### *Instruction for the interviewer*

Given below is the flow of questions for semi-structured interviews (Qualitative). Probing questions to be asked as and when required to get a better understanding of the specific topic.

The following questions are grouped under separate headings for better understanding. Interviewers can change the sequence of questions under certain circumstances for better conduction of the interview process. However, all the questions need to be discussed with the respondents.

Dear Respondent,

You are invited to participate in this survey to understand how the pandemic impacted the buying behaviour of elderly people during crisis. Your responses will help organizations to serve you better during future crisis situations. Your participation in this survey is completely voluntary and your responses will be strictly confidential and data from this research will be reported only in aggregate. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point.

It is very important for us to learn your opinions. Thank you very much for your support.

### Personal Details

Name:

Gender:

Your age:

Your profession:

### *The severity of the Pandemic and its impact on individuals:*

- What is your opinion about the severity of this pandemic based on your observations and experiences?
- If you have to list down your feelings and mental state during the pandemic, what will those be?
- How well do you think you have been able to cope with this crisis period (mentally / physically)?
- Do you think that the pandemic caused economic hardships for you?
- Shopping Experience:
  - What has been your experience during shopping in stores amid the pandemic?
  - Have you encountered any challenges or changes in the shopping environment?
  - During the pandemic, what types of products did you generally purchase?
  - Has there been an increase in your shopping basket size compared to pre-pandemic times?
- Product Availability:
  - Were you able to find essential products that you intended to purchase?
  - What is your opinion on product availability during the pandemic?
  - Do you think people were stockpiling unnecessarily during the pandemic?
  - Did you experience any major price variations? If yes, for what type of products.
- Influence of external factors (e.g. social circles, media)
  - How will you rate the influence of the following people/ elements on your lifestyle during pandemic.
- Family and friends

- Mass media (Television, newspaper, radio)
- Social media
- Others (e.g. general public, specialists like doctor)
- Could you please provide some details on how your top 2 choices influenced you during the pandemic?

## APPENDIX 2

### RIDIT analysis process(Algorithm)

The ordinal data is interpreted and ranked using RIDIT analysis — variables have ordered categories on a hierarchical scale. To begin, a RIDIT score linked with each category must be computed from a reference population of the same categories. Every category's score is nothing more than the percentile rank of a variable in the reference population. It equals one-half of the total number of variables connected with the subject category plus the number of variables associated with all lower categories, divided by the test population size. Then, in terms of the comparison groups, RIDIT scores are employed as values of a dependent variable, and the normal distribution is applied (Flora Jr, 1974).

### Algorithm for RIDIT analysis

Below is the steps of RIDIT analysis algorithm (Chien-Ho Wu, 2007) for m items and n ordered categories where the entries are ranked from most to least preferable on the scale.

RIDIT computation for the considered dataset.

A reference dataset containing all survey responses for a Likert scale survey is selected if population identification is challenging. The present study refers to the total number of responses given by artisans.

Frequency  $f_j$  to be computed for each categorical scale, where  $j = 1, \dots, n$ .

Mid-point accumulated frequency  $F_j$  for each category of responses is calculated.

$$F_1 = \frac{1}{2} f_1$$

where,

$F_1$  = Mid-point accumulated frequency for lowest category of response

$f_1$  = frequency of lowest category response

$$F_j = \frac{1}{2} f_j + \sum_{k=1}^{j-1} f_k, \text{ where } j = 2 \dots n$$

Calculation of RIDIT value  $R_j$  for each category of responses.  
n

$$R_j = \frac{F_j}{N}, \text{ where } j = 1 \dots n$$

N: All responses to the Likert scale questionnaire. R's value in the reference dataset is likely to be 0.5 (Bross, 1958).

The results of the above steps for the present study is represented in Table 3

Calculate RIDITs and mean RIDITs for comparison datasets. With m Likert scale items, m comparison datasets will be generated.

RIDIT value  $r_{ij}$  is calculated for every category of scale items.

$$r_{ij} = R_j \times \frac{\pi_{ij}}{\pi_i}, \quad \text{Where } i = 1 \dots m$$

$\pi_{ij}$  is the frequency of category  $j$  for the  $i^{th}$  scale item, and  $\pi_i$  represents the summation of frequencies of all categories for  $i^{th}$  scale item,

$$\pi_i = \sum_{k=1}^n \pi_{ik}$$

$\rho_i$  is the mean RIDIT for every Likert scale item.

$$\rho_i = \sum_{k=1}^n r_{ik}$$

Confidence interval for  $\rho_i$  is calculated. 95% confidence interval of any  $\rho_i$  is given by:

$$\rho \pm \frac{1}{\sqrt{(3\pi_i)}}$$

Kruskal-Wallis statistics  $W$  is calculated to test the hypothesis, as given below.

$$\begin{cases} H_0 : \forall_i, \rho_i = 0.5 \\ H_1 : \exists_i, \rho_i \neq 0.5 \end{cases}$$

$$W = 12 \sum_{i=1}^m \pi_i (\rho_i - 0.5)^2$$

$\chi^2$  (chi square) distribution is followed by  $W$  with  $(m - 1)$  degree of freedom. Values of  $P$  are interpreted as given below :

If  $P_i$  value of a scale item statistically diverges from 0.5, it indicates that there is a substantial difference between the response patterns of the reference and comparison datasets in relation to the considered scale item.

A low  $P_i$  value is considered better than a high  $P_i$  value.

The responses of different scale items having overlapping confidence intervals of  $P$  are considered statistically unrelated to each other.

### APPENDIX 3

#### Panic Buying Behavior: A Consumer Perspective (Survey Form)

Dear Participant,

Thank you for participating in this survey. Your responses will contribute to our understanding of consumer behavior during disruptions and its impact on pricing strategies. Please answer the following questions honestly and to the best of your ability.

---

Demographic Information:

Gender: Male | Female | Other

Age: Under 71 | Over 71

Educational Background:

High School | Bachelor's Degree | Master's Degree | Doctoral Degree | Other (please specify)

Profession:

Service | Business | Retired

Panic Buying Behavior:

During the COVID-19 pandemic, to what extent did you engage in panic buying?

*1-Not at all | 2- Slightly | 3- Moderately | 4- Very much | 5-Extremely (please specify)*

To what extent were each of the following factors influential in your decision to engage in panic buying? (Please specify your opinions for all the below elements on the basis of the following:

*1-Not at all | 2- Slightly | 3- Moderately | 4- Very much | 5-Extremely)*

Fear of scarcity	
Bulk purchase incentives	
Influence of public opinion	
Influence of mass media	
Online shopping convenience	
Shortage of goods	
Social isolation/lockdown	
Financial distress	
Anxiety	
Uncertain situation	
Influence of family and friends	
Influence of mass media	
Concern for family	
Stockpiling	
Purchase of hygiene products	
Price volatility of products	

Perception of Pricing of common daily use items:

Have you observed changes in pricing during the pandemic?

*1-Not at all / 2- Slightly / 3- Moderately / 4- Very much / 5-Extremely (please specify)*

How do you perceive the pricing changes during the pandemic?

*Fair / Exploitative / Necessary / Neutral /Other (please specify)*

To what extent did pricing influence your purchasing decisions during the pandemic?

*Not at all / Slightly / Moderately / Very much /Extremely (please specify)*

Overall Experience:

How would you describe your overall experience with purchasing goods during the pandemic?

*Very negative / Negative / Neutral / Positive / Very positive (please specify)*

Do you have any additional comments or insights regarding panic buying and pricing strategies during disruptions?

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Thank you for your valuable input! Your responses will be kept confidential and used for research purposes only.