I Must Buy So I Don't Die – Panic Buying and Change in Consumer Behavior During COVID-19 in the Pune Metropolitan Region

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Abstract

Purpose : This article was written with the sole objective of deepening understanding of the relationship that exists between COVID-19 and its effect on the panic buying (PB) behavior of consumers. The study would help in determining factors influencing consumer buying in a pandemic situation. The study hypothesized that psychological factors, perceived product scarcity, and prevailing social conditions (during COVID-19) would trigger PB behavior. This type of consumer behavior could be commonly seen during crises, catastrophic events, epidemics, natural disasters, and public and private health emergencies.

Research Design : The type of research is descriptive and conclusive research. We adopted a cross-sectional and deductive approach along with the quantitative research method for evidence-building, accomplished the set research objectives, and gathered relevant data. Structural equation modeling (SEM) was used for model validation. A model comprised of three exogenous variables (perceived fear due to COVID-19 and perceived product scarcity due to COVID-19, prevailing social conditions during COVID-19), one moderating variable (gender,) and one endogenous variable (PB behavior), validated using confirmatory factor analysis (CFA) and SEM. The sample size was justified using the mean method. A convenience sampling technique was used since the sample frame was unavailable.

Findings : According to the CFA and SEM, PB behavior arises when negative emotions, including stress, anxiety, and general social unease, directly lead to the creation of fear, social conditions, and perceived scarcity considerations. This influences consumers to make larger purchases than they otherwise would. The gender of an individual plays a very significant role in influencing PB behaviors. The study determined that in the case of men, perceived fear (during COVID-19) positively influenced PB behavior (b = 1.008, p < 0.001), while in the case of women, the relationship between perceived fear and PB behavior (b = 0.177, p < 0.01), the relationship between perceived product scarcity and PB behavior (b = 0.243, p < 0.05), and the relationship between prevailing social conditions (during COVID-19) and PB behavior (b = 0.298, p < 0.001) were significant.

Practical Implications : The results of this study would help in influencing retail business policies and understanding the customer better. The study would assist managers in understanding and forecasting the purchasing patterns of both male and female consumers in any pandemic scenario by utilizing the model's links. The model might be further examined for a variety of samples, and the framework could be re-evaluated in the absence of a pandemic.

Originality : This study provided an original scale for measuring the four-model construct to highlight the short- and long-term effects of consumer sentiments. The study was also original and unique in terms of three direct linkages and the moderating effect of gender. It talked about significant managerial implications for industry and theoretical contributions through modeling to the existing body of knowledge.

Keywords : **panic buying, COVID-19, buying behavior, impulsive buying, confirmatory factor analysis, structural equation modeling, moderating effect**

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COVID-19 has changed the way in which people think, shop, and utilize the resources that are available to them. Consumers did not practice normal buying behavior as the experience they underwent during the lockdown periods marred their rational thinking to a great extent. Most of us cannot make new immunity or establish new strategies. However, the one activity that we all can do well, and that still feels like we are accomplishing something great, is to pile up and accumulate new supplies (Bhasin, 2020). Purchasing in a panic is a normal reaction to a stressful situation. Since PB is now widely acknowledged as normal consumer behavior and is still prevalent across most social classes in most countries, it can be used as a tool to address the real and reasonable concerns connected with COVID-19. There is, however, not much research data available in the Pune region to help understand the science behind panic buying.

To understand how PB behavior affects the psychological, scarcity, and social elements that are directly related to the customers, it is possible to investigate the numerous factors that influence PB behavior. Examined and researched is the part gender plays in moderating the relationships between (a) perceived product scarcity during COVID-19 and PB behavior, (b) psychological factors (fear) during COVID-19 and PB behavior, and (c) prevailing social conditions during COVID-19 and PB behavior. The effect of COVID-19 and the moderating effect of gender on consumer sentiment and shopping behavior have also been explored in greater detail to provide further valuable insights. Among various demographic profiles, it was mostly students and medical care experts who found themselves encountering excessive pressure, nervousness, and discouragement as compared to any other groups (Rehman et al., 2021). Consumers were influenced by their fear and anxieties to a large extent because of the uncertain conditions that altered the psychology of the consumers, as could be seen in malls, supermarkets, and hypermarkets in Pune. Retail chains and government authorities encouraged people against this mass hoarding and accumulation of products and panic buying.

Panic factors contributed to a large extent in creating superficial scarcity as consumers rushed to buy products from the shops, thinking that they may face product shortages in the future as there was no clarity regarding the pandemic situation. Consumer behavior during the COVID-19 pandemic demonstrated that psychological and behavioral elements, particularly fear, had a significant impact on purchasing behavior. The main factors that contribute to PB have been identified and recorded through this research survey that has been undertaken. The research also concludes that in the future, shopping patterns and behaviors will be influenced and shaped to a large extent directly by factors like unemployability and decreasing personal incomes, which, unfortunately, became a reality during the pandemic situation for many consumers. Also, as reckless purchasing decisions caused supply shortages and disruption of inventory network and supply chain adversities, the COVID-19 pandemic raised issues with respect to whether shoppers could be better taught to keep away from such practices in instances of inescapable future shocks and emergencies (Loxton et al., 2020).

The main objective of this research is to explore in detail the direct effect of the COVID-19 pandemic on consumer behavior and how it resulted in panic buying. Despite government advisories, fears over the novel coronavirus incited individuals all over the planet to clear retail store racks of day-to-day necessities, particularly toilet paper (Jankowicz, 2020). The primary purpose of marketing research at such a critical time is to measure the status quo and consumer characteristics. Purchasing of everyday home groceries and food across India expanded astoundingly when the lockdown was declared. This demonstrates a gigantic rush in PB behavior among individuals. Most of them were frightened to see the limitations of products at stores and thought that the scarcity could go a long way while the future would remain certain. In the present study, the effects of COVID-19 on the psychology of consumers and their buying behaviors have been analyzed in detail for consumers belonging to the Pune region. The research paper also delves into understanding the role played by consumers' gender as an influencing factor in moderating the relationship between psychological factors (fear), perceived product scarcity, and prevailing social conditions during the COVID-19 pandemic and its impact on the concept of panic buying. This disease's global spread made people feel anxious and panicked, which led them to prioritize their own needs

and those of their immediate family. This created a panic-buying culture that destroyed the earlier notions of community service and living that once existed throughout the world.

Literature Review

Consumers flocked in a panic to raid the stores to purchase items that were essential while also picking up items that were not necessary as they feared that the item would not be available in the future (Arafat et al., 2020). There is strong evidence that a new disease like COVID-19 can cause widespread fear, panic, anxiety, and xenophobia (Chakraborty, 2020). PB is a typical consumer behavior induced by crisis and understanding how purchasing is triggered through shopping behaviors that are rooted in fear. Anxiety and terror connected to COVID-19 predicted consumer behavior toward necessities, while non-necessities were the cause of despair. Anxiety was caused by COVID-19 behavior, and PB was used to resolve the dispute (Sim et al., 2020).

PB is dangerous in any case. It significantly strains the supply systems of grocery store merchants. Furthermore, it restricts communities and individuals who are in much need of the items and products (Southey, 2020). Shopping is susceptible to numerous disruptions even today that can be brought about by bad weather, strikes, natural disasters, and government policy changes (Tsao et al., 2019). The pandemic situation that arose because of the widespread infection of COVID-19 created unprecedented fear and anxiety among consumers to a large extent, especially in areas related to the availability of food and nutrients during this phase. The COVID-19 pandemic significantly impacted the buying behavior of consumers (Gupta et al., 2021). It also led to changes in the behavior of retailers (Roggeveen & Sethuraman, 2020).

According to a study conducted by Yuen et al. (2020), panic attacks have a significant impact on shopping. The causes of consumer panic are explained by the following research study (Dholakia, 2020): General awareness of the risks associated with health crises and product shortages; fear of the unknown brought on by negative emotions and anxiety; behavior in which panic attacks are thought to reduce anxiety and control seizures; and psychosocial factors explaining the influence of social networks on individuals. Feelings of nervousness and anxiety often trigger PB, and consumers feel that taking control of this one aspect will give them a feeling of accomplishment.

Consumers react to other people's purchases in panic as it is a visible characteristic of crowd behavior. Put simply, when consumers shop while experiencing worry, their purchases are the outcome of their personal decisions. When purchases are made in response to perceived shortages, this may cause customers to feel embarrassed, as has been found. This could be a concerning tendency for the future. A research study by Sim et al. (2020) listed various reasons that can cause panic buying in consumers – a manifestation of the potential conflict between the desire to maintain a regular schedule and the uncertainty of the duration of the pandemic, way to deal with unsatisfactory stressful situations, response to social pressure to lose control and adapt to similar behaviors in the future. Ultimately, consumers panic about purchases, which become behavioral responses to future (suspect) losses. There are many ideas as to why consumers turn to PB; one suggests that it stems from a deep-seated distrust of the government, while another suggests that group behaviors and herd mentality play a role. Unfortunately, the idea of panic buying has now come to be closely linked to the coronavirus, much like the disease's typical fever and dry cough (Altstedter & Hong, 2020).

It was found that the COVID-19 pandemic affected all business sectors in several ways. Technology adoption was the only way out for business survival during the pandemic (Abed, 2022). Economic instability is a result of expansion, rivalry, and economic integration in any market (Mehta et al., 2020). Risks in supply chains during COVID-19 were further impacted by the worldwide shock to supply and demand brought on by the pandemic (Trautrims et al., 2020).

There has been a lot of research that has been conducted in order to examine in detail the relationship between consumer behavior and cognitive learning behavior and its influence on consumer decision-making. Social media

contributed significantly to the global panic buying among consumers by disseminating information about the coronavirus, whether it was accurate or not.

Results and findings revealed the fact that vulnerabilities and weaknesses of verification, purchasing as an influence, item inaccessibility evidence, specialists' government correspondence, worldwide rationale, and opinions of social media influencers are some of the prime reasons behind the development of the alarming situation of PB behavior during COVID-19 emergency (Naeem, 2021).

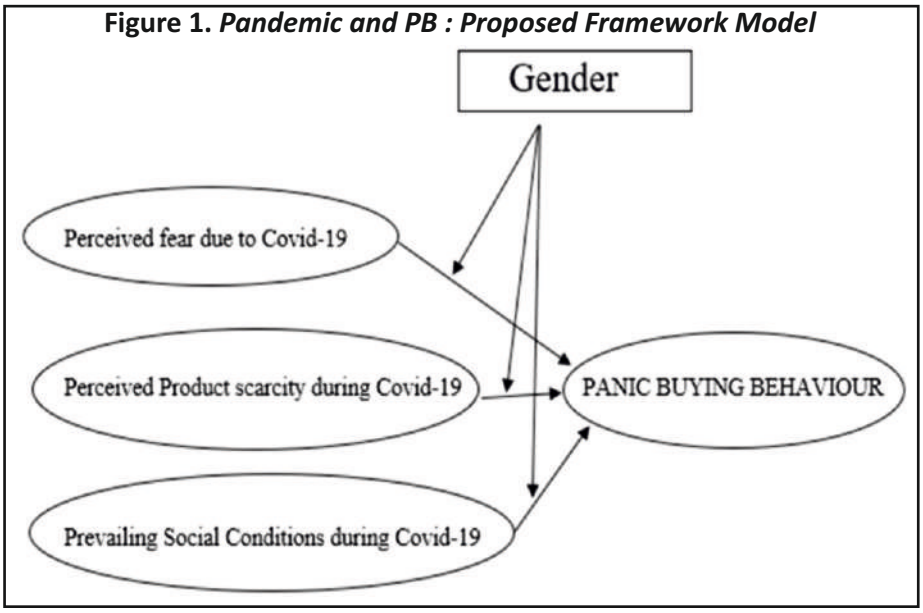
News broadcasted to consumers through various media outlets about deficiencies of essential commodities increases the tendency to PB among consumers (Roy et al., 2020). Coronavirus and consumer buying behavior toward brands and online tools were largely unknown, and this pandemic will leave a mark in the long run on both. This research includes literature on psychological factors such as uncertainty, fear, and anxiety in addition to the theory of consumer behavior in order to provide a better understanding of the research goals and problems. The data collected during this research will focus on and emphasize the variables of consumer behavior theory and the psychological factors, which will be incorporated into the final findings and recommendations.

Proposed Model

Various models have helped in understanding consumer buying behavior and in portraying and foreseeing customer responses and customers' innate buying behavior. They expand on what individuals' aspirations and necessities are to seek fulfillment and contentment, not only on an economic level but also on a social, cultural, and emotional level. We have proposed the following model to understand PB behavior :

Figure 1 shows the hypothesized model linking three exogenous variables (perceived fear due to COVID-19, perceived product scarcity due to COVID-19, and prevailing social conditions during COVID-19) and a single endogenous variable (Consumers' PB behavior). The model has one moderating variable, "Gender." It is predicted that felt dread brought on by COVID-19 will highly predict PB behavior. The relationship between (a) perceived fear due to COVID-19 and PB behavior, (b) perceived product scarcity due to COVID-19 and PB behavior, and (c) prevailing social conditions during COVID-19 and PB behavior will be moderated by gender. Perceived product scarcity due to COVID-19 will significantly predict PB behavior, as will the prevailing social conditions during COVID-19.

Figure 1. ***Pandemic and PB : Proposed Framework Model***



Latent Construct and Measured Indicators

Perceived Fear (PF)

- *PF1 :* Since COVID-19, I have given up haggling and have just purchased whatever was on sale at the grocery store.
- *PF2 :* COVID-19 makes people feel uneasy and apprehensive.
- *PF3 :* During self-isolation, I experience anxiety and frustration.
- *PF4 :* Observing widespread PB makes me want to panic shop.
- *PF5 :* I am afraid of dying from COVID-19.

Perceived Scarcity (PS)

- *PS1 :* The products that I want to buy will be minimal during COVID-19.
- *PS2 :* The brand availability for a product will be minimal during COVID-19.
- *PS3 :* The sizes of a product will be minimal during COVID-19.
- *PS4 :* The price of the product will go up if I don't buy it now.
- *PS5 :* Because of COVID-19, if I purchase the merchandise today, I will be in a safe place.
- *PS6 :* The product is quite helpful and significant; therefore, I might not be able to purchase it again during COVID-19.

Prevailing Social Conditions (PSC)

- *PSC1 :* The situation during the COVID-19 pandemic has made me uncomfortable.
- *PSC2 :* I get so worried about COVID-19 that it did not go out of my head.
- *PSC3 :* I worry about COVID-19 so much that it consumes my thoughts.
- *PSC4 :* I worry a lot about problems associated with the COVID-19 pandemic.
- *PSC5 :* I start to feel nervous when I watch the COVID-19 news and stories on TV and social media.
- *PSC6 :* I possess the bravery necessary to tackle the COVID-19 issues.
- *PSC7 :* Usually, when I think about COVID-19, I feel calm.

Panic Buying Behavior (BYNG)

- *BYNG1 :* I often buy things spontaneously.
- *BYNG2 :* Due to COVID-19, I bought more groceries than I actually needed.
- *BYNG3 :* I am having trouble finding certain products at the stores I try to shop at because of COVID-19.

↳ *BYNG4 :* I am purchasing more goods because of COVID-19; otherwise, I wouldn't hoard.

↳ *BYNG5 :* Ordering things online when I would typically buy them in person, postponing receiving goods or services.

↳ *BYNG6 :* My decision to buy was influenced by my fear of losing out on good products.

↳ *BYNG7 :* During COVID-19, seeing empty shelves has affected my decision to buy.

↳ *BYNG8 :* During COVID-19, I felt safer when I bought more groceries than I needed.

↳ *BYNG9 :* I stopped bargaining since COVID-19 and bought whatever was available at the grocery store.

Hypotheses

↳ **Hypothesis 1 :** Perceived fear due to COVID-19 will trigger PB behavior.

↳ **Hypothesis 2 :** Perceived product scarcity due to COVID-19 will trigger PB behavior.

↳ **Hypothesis 3 :** PB behavior during COVID-19 will be triggered by the prevailing socioeconomic conditions.

↳ **Hypothesis 4 :** The association between (a) perceived fear as a result of COVID-19 and PB behavior, (b) perceived product scarcity as a result of COVID-19 and panic PB, and (c) prevailing social conditions during COVID-19 and PB behavior will be moderated by gender.

Research Methodology

Type of Research Design

The kind of research is conclusive and descriptive. To establish evidence, achieve the predetermined research goals, and collect pertinent data, we combined the quantitative research method with a cross-sectional and deductive methodology. Structural equation modeling (SEM) is used for model validation. This is most appropriate considering the multivariate nature of the hypotheses (direct and indirect linkages) with a moderation effect of gender. Construct reliability is assessed using Cronbach's alpha, and construct validity is justified using average variance extracted (AVE) and discriminant validity using the average of the AVE method. The following summarizes the four primary latent variables on which this study concentrated: COVID-19-related perceived dread, perceived product scarcity, prevailing social conditions during the pandemic, and panic buying by consumers.

A closed questionnaire was employed as a quantitative approach and data-gathering tool to determine the research study design. The research was carried out from April 5, 2021, until May 8, 2021. Data from 270 samples—120 males and 150 females—between the ages of 20 and 65 were gathered for the study. The respondents were sent an online survey using Google Forms, which they filled in, and the data collected were analyzed using a convenience sampling technique. The data collected through surveys were analyzed using the IBM SPSS and IBM SPSS AMOS software and presented in tables with order, frequency, and percentage. The questionnaire used for the research study was developed based on the above-mentioned latent constructs. A 5-point Likert scale with the response labels *1-Strongly Disagree*, *2-Disagree*, *3-Neutral*, *4-Agree*, and *5-Strongly Agree* was shown to the responders as possibilities. The questionnaire was framed with a question-response

format that is designed to better understand the purchasing habits of consumers that are displayed along with the anxiety and social issues that are invariably a part of the COVID-19 pandemic.

Population of Interest

The research study was carried out in the city of Pune, belonging to the state of Maharashtra in India. The city of Pune can be divided into five zones comprising 15 ward offices that fall under the preview of the Pune Municipal Corporation (PMC). During the COVID-19 pandemic, the city of Pune witnessed high mortality rates as a result of its high population density. However, the city of Pune has its unique strengths that are seen through its comprehensive and active networks of civil society organizations that have traditionally been involved with the local population, especially with the informal settlements to increase the rate of literacy (86%) in addressing the various challenges that cropped up during the COVID-19 pandemic. The Pune metropolitan region can be further divided into the three cantonment towns of Pune, Khadki, and Dehu Road, and the industrial twin cities of Pimpri-Chinchwad. This study is carried out to explore in detail the buying behavior of the consumers located in the city of Pune using a mix of descriptive, cross-sectional, and conclusive research designs. The respondents were sent an online link that contained survey questions that they had to answer, and their responses were captured for further analysis by us.

Sample Unit and Sample Size Determination

The sample unit includes males and females between the age group of 20 and 65 years residing in Pune, India. With the Pune metropolitan population of 5,057,709 at a 95% confidence level and margin error of 8%, variance 0.43 ($0.66^2 = 0.43$), the ideal sample size is 260. Ten respondents were selected as a buffer sample, and hence, 270 respondents were approached for data collection. The sample size is determined using the mean method and formula $n = (z^2 * s^2)/e^2 = (0.05^2 * 0.66^2)/0.08^2 = 260$.

Data Analysis and Results

Data processing and interpretations are covered in the section that follows. For data summarization, descriptive statistics and frequency distribution have been employed. Table 1 demonstrates that most study participants were female and fell between the 35 and 49 age range.

The mean and standard deviation for each of the measured indicators of the study's constructs are displayed in

Table 1. ***Frequency Distribution Table for the Gender and Age of the Respondents***

No. of Respondents	Frequency	Percentage
Gender		
Male	120	44.44
Female	150	55.56
Age		
Young adults (20–34 years)	88	32.59
Middle adults (35–49 years)	154	57.04
Old adults (50–64 years)	20	7.41
Over 65	8	2.96

Table 2. ***Descriptive Statistics for Interval-Scaled Variables***

Descriptive Statistics							
Items	***N***	**Mean**	**Std. Deviation**	**Items**	***N***	**Mean**	**Std. Deviation**
BYNG1	270	3.99	1.024	*PF1*	270	3.94	0.875
BYNG2	270	3.90	1.090	*PF2*	270	4.06	0.987
BYNG3	270	3.84	1.132	*PF3*	270	3.79	1.163
BYNG4	270	3.98	1.015	*PF4*	270	3.90	0.921
BYNG5	270	3.95	.882	*PF5*	270	3.99	0.956
BYNG6	270	3.79	.984	*PPS1*	270	4.06	0.949
BYNG7	270	3.47	1.159	*PPS2*	270	4.08	0.891
BYNG8	270	3.71	1.134	*PPS3*	270	3.84	0.998
BYNG9	270	3.73	1.110	*PPS4*	270	3.80	1.120
PSC1	270	4.10	1.026	*PPS5*	270	3.91	0.978
PSC2	270	4.09	1.007	*PPS6*	270	3.98	0.952
PSC4	270	3.79	1.103				
PSC5	270	3.68	1.142				
PSC6	270	3.61	1.226				
PSC7	270	3.49	1.293				

Table 2. Every item has a mean value that is greater than the midpoint, or "3," suggesting a favorable reaction. The standard deviation also demonstrates less variation in the data.

Validating the Hypothetical Model

SEM is used to empirically test the model linking perceived fear, perceived product scarcity, and prevailing social conditions (during COVID-19) and PB behavior. The term structural equation modeling (SEM) does not designate a single statistical technique but instead refers to a family of related procedures. Other terms such as covariance structure analysis, covariance structure modeling, or analysis of covariance structures are also used in the literature to classify these techniques under a single label. While noticeable researchers in management have contended for strategic and methodological pluralism, many top management research journals are as yet one-sided toward the inclination of explicit customary research designs that they imagine as sturdier and more relevant. The hypothetical model includes three exogenous variables: Perceived fear, perceived product scarcity, and prevailing social conditions (during COVID-19). One endogenous variable is "Panic buying behavior," and one moderating variable is "Gender." SEM is an advanced statistical test that is used to confirm multivariate casual relationships. It employs maximum likelihood techniques to estimate all the path coefficients simultaneously. Path analysis and confirmatory factor analysis are combined in SEM. Path analysis is used to validate the structural model, while confirmatory factor analysis is used to evaluate the measurement model.

Construct Validity

Construct validity is the extent to which an instrument measures the construct that it is intended to measure. Construct validity is assessed using convergent validity and discriminant validity. Convergent validity is the extent to which the measured indicators converge well while defining the underlying construct. Factor loadings

and AVE are commonly used to confirm construct validity. Factor loading will determine the role played by individually measured indicators in defining the underlying construct. A well-done job is indicated by loading 0.5 and above. The overall contribution of each indicator to the definition of the underlying construct as a single, cohesive body will be ascertained by the AVE. An AVE of 0.5 and above indicates a well-done job.

Factor loading is shown for every measured indicator in Table 3. Since all factor loadings are higher than the 0.5 criteria, the items are strong predictors of the underlying concept. Since the AVE is greater than the 0.5 cutoff, convergent validity is confirmed.

Table 3. ***Factor Loadings and Average Variance Extracted (AVE)***

Measured Indicators	PATH	Construct	Factor Loadings	FL Squared	AVE
PF5	<---	*F1*	0.872***	0.760384	0.65
PF4	<---	*F1*	0.839***	0.703921	
PF3	<---	*F1*	0.723***	0.522729	
PF2	<---	*F1*	0.685***	0.469225	
PF1	<---	*F1*	0.892***	0.795664	
PPS6	<---	*F2*	0.774***	0.599076	0.55
PPS5	<---	*F2*	0.792***	0.627264	
PPS4	<---	*F2*	0.687***	0.471969	
PPS3	<---	*F2*	0.762***	0.580644	
PPS2	<---	*F2*	0.755***	0.570025	
PSF1	<---	*F2*	0.676***	0.456976	
PSC5	<---	*F3*	0.835***	0.697225	0.57
PSC4	<---	*F3*	0.688***	0.473344	
PSC3	<---	*F3*	0.708***	0.501264	
PSC2	<---	*F3*	0.799***	0.638401	
PSC1	<---	*F3*	0.659***	0.434281	
PSC6	<---	*F3*	0.84***	0.7056	
PSC7	<---	*F3*	0.743***	0.552049	
BYNG5	<---	*F4*	0.913***	0.833569	0.58
BYNG4	<---	*F4*	0.782***	0.611524	
BYNG3	<---	*F4*	0.74***	0.5476	
BYNG2	<---	*F4*	0.768***	0.589824	
BYNG1	<---	*F4*	0.727***	0.528529	
BYNG6	<---	*F4*	0.839***	0.703921	
BYNG7	<---	*F4*	0.621***	0.385641	
BYNG8	<---	*F4*	0.749***	0.561001	
BYNG9	<---	*F4*	0.686***	0.470596	

Note. *F1* = Perceived fear *(PF), F2* = Perceived product scarcity *(PPS), F3* = Prevailing social factors *(PSF),* and *F4* = Panic buying behavior (BYNG).

Note. "***" = significant at the 0.1% level of significance.

Discriminant Validity

Discriminant validity is the extent to which constructs of a model are genuinely different from each other. The average of AVEs of the two constructs should be greater than the squared correlations estimate between the two constructs (Fornell & Larcker, 1981). Table 4 demonstrates that all construct pairs have an AVG (AVE) more significant than the correlation square, indicating that discriminant validity is unaffected.

Construct Reliability

Construct reliability measures internal consistency in the scale items measuring a construct. Cronbach's alpha measures the trustworthiness of the instruments measuring the constructs. Internal consistency is used to confirm the reliability of the scales. Cronbach's alpha coefficient is a widely used measure for confirming internal consistency. The range of Cronbach's alpha values is 0 and higher. Any measurement-based research must address accuracy or dependability, often known as measurement dependability (Cronbach, 1951). For every construct, alpha (Table 5) is more than the cutoff value of 0.7. Construct validity is therefore supported.

Assessing the Model Fit

The four fit indices—the comparative fit index (CFI), the root mean square error of approximation (RMSEA), the Parsimony normed fit index (PNFI), and CMIN/*DF* (minimal discrepancies as indexed by Chi-square)—are used to evaluate the fit between the proposed model and the data gathered. CFI serves as a benchmark for comparison. A good fit is indicated by a CMIN/*DF* value of less than 3, which is the most commonly used indication of absolute fit. A good fit is indicated by values greater than 0.9 in the CFI value range, which starts at 0. A good match is indicated by an RMSEA value of 0.1 or less and a parsimony normed match index (PNFI) of greater than 0.5.

Table 4. ***Correlation and Average of AVE***

Construct	Path	Construct	Correlation Coefficient *(r)*	*R*-squared	AVG(AVE)
F1	<-->	*F2*	0.685	0.469225	0.6
F1	<-->	*F3*	0.538	0.289444	0.61
F1	<-->	*F4*	0.629	0.395641	0.615
F2	<-->	*F3*	0.705	0.497025	0.56
F2	<-->	*F4*	0.664	0.440896	0.565
F3	<-->	*F4*	0.586	0.343396	0.575

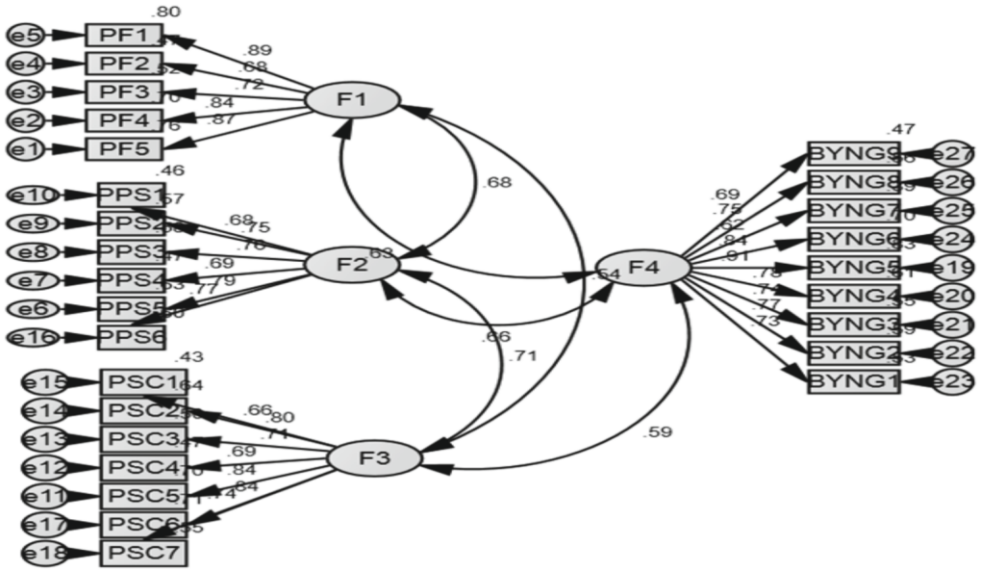
Table 5. ***Cronbach's Alpha***

Construct Code	Construct	Construct Description	No. of Items	Cronbach's Alpha
F1	*PF*	Perceived Fear	5	0.894
F2	*PPS*	Perceived Product Scarcity	6	0.876
F3	*PSF*	Prevailing Social Factors	7	0.902
F4	*BYNG*	Panic Buying Behavior	9	0.921

Significance of Paths and Regression Weights

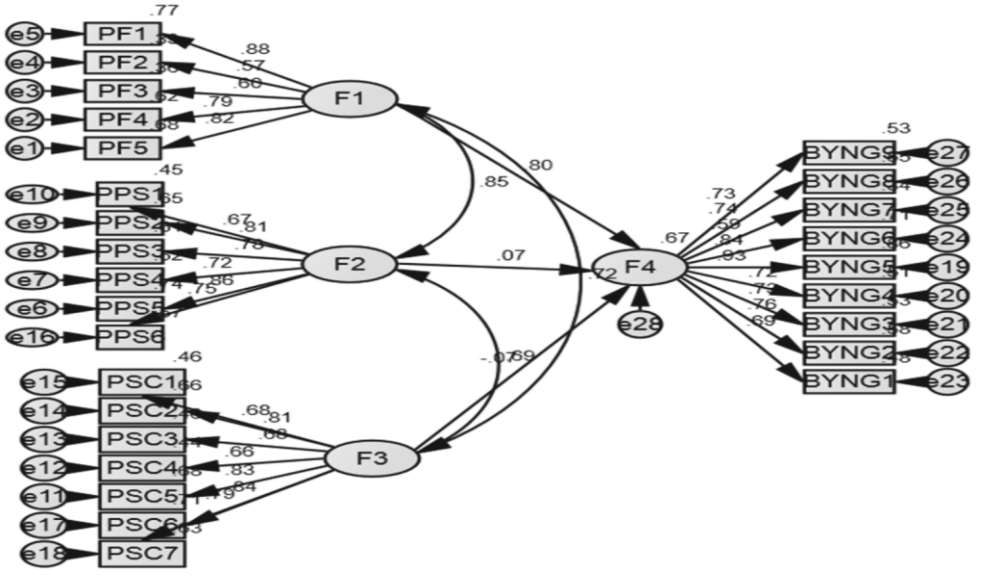
Figure 2 is the measurement model showing the dependence relationship between the constructs and the measured indicators. It is a way of testing reliability and validity. Figure 3 is a structural model for females, and Figure 4 is a

Figure 2. ***Model of Measurement and Fit Indices***



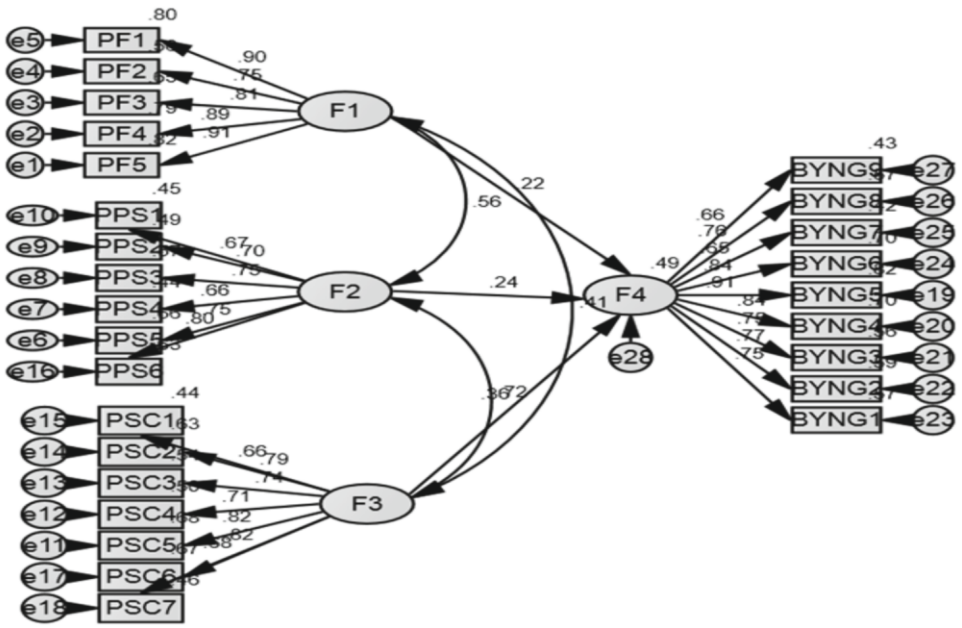
Note. CMIN/*DF* = 3.55, CFI = 0.846, RMSEA = 0.097, PNFI = 0.724.
Note. *F1* = Perceived fear *(PF), F2* = Perceived product scarcity *(PPS), F3* = Prevailing social factors *(PSF),* and *F4* = Panic buying behavior *(BYNG)* is measured in Figure 2 with fit indices.

Figure 3. ***Structural Model (Female) Fit Indices***



Note. CMIN/*DF* = 2.413, CFI = 0.834, RMSEA = 0.073, PNFI = 0.678.
Note. *F1* = Perceived fear *(PF), F2* = Perceived product scarcity *(PPS), F3* = Prevailing social factors *(PSF), F4* = Panic buying behavior *(BYNG).*

Figure 4. ***Structural Model (Male) Fit Indices***



Note. CMIN/*DF* = 2.413, CFI = 0.834, RMSEA = 0.073, PNFI = 0.678.

structural model for males. Hypothesis 1 is accepted ($b = 0.298, p < 0.001$), confirming that perceived fear due to COVID-19 triggers PB behavior; Hypothesis 2 is also accepted ($b = 0.323, p < 0.001$), confirming that perceived product scarcity due to COVID-19 also triggers PB behavior, and Hypothesis 3 is also accepted ($b = 0.298$, $p = 0.005$), confirming that the prevailing socioeconomic conditions trigger PB behavior during COVID-19. Hypothesis 4 of moderation is also accepted.

Table 6 demonstrates that during COVID-19, men's perceived fear caused PB behavior ($b = 1.008, p < 0.001$). However, there is no significant correlation ($p > 0.05$) between PB behavior and perceived product scarcity or between PB behavior and the prevailing social conditions (during COVID-19). For females, the relationship between perceived fear and PB behavior ($b = 0.177, p < 0.01$), the relationship between perceived product scarcity

Table 6. ***Significance of Paths (Gender)***

Male							
Endogenous Variable	**Path**	**Exogenous Variable**	**Estimate**	**SE**	**CR**	***P***	**Label**
F4	<---	*F1*	1.008	0.225	4.473	***	Sig.
F4	<---	*F2*	0.077	0.173	0.444	0.657	ns
F4	<---	*F3*	–0.063	0.098	–0.641	0.521	ns
Female							
F4	<---	*F1*	0.177	0.066	2.667	0.008	Sig.
F4	<---	*F2*	0.243	0.122	1.996	0.046	Sig.
F4	<---	*F3*	0.298	0.089	3.34	***	Sig.

Note. Sig. = significant, ns = not significant, SE = standard error, CR = critical ratio, *p* = probability of committing type I error, "***" = significant at the 0.1% level of significance.

and PB behavior (b = 0.243, p < 0.05), and the relationship between prevailing social conditions (during COVID-19) and PB behavior is significant (b = 0.298, p < 0.001). Thus, connections between (a) perceived fear during COVID-19 PB behavior, (b) perceived product scarcity during COVID-19 and PB behavior, and (c) prevailing social conditions during COVID-19 and PB behavior can be found to be moderated by gender.

Discussion and Conclusion

The research study is undertaken in order to understand the correlation between anxiety as a result of the COVID-19 pandemic and the PB behavior of consumers and their socio-demographic patterns that are observed in the Pune metropolitan region during the COVID-19 pandemic. The impact of prevailing social conditions, perceived product scarcity, and perceived fear on PB behavior is thoroughly examined in this study. Insofar as the Pune metropolitan region sample of the population is concerned, the literature likewise emphasizes the notion that gender significantly modifies PB behavior. The purpose of this paper is to contribute to a deeper understanding of the pandemic's effects on consumers and how it influences, incites, and disseminates PB behavior. Additionally, the study adds to the corpus of knowledge already in existence regarding the PB habits of people residing in the Pune metropolitan area.

The research data and analysis show that the overall effect of the COVID-19 pandemic on the Indian economy has been very devastating. The number of causalities that have succumbed to this virus has also been very high, raising the tally of the number of people that have been affected by the pandemic. The second wave of the pandemic that struck during the spring of 2021 was very intense as it exposed the weakness of the Indian economy and its failure to implement corrective steps and actions to curb the COVID-19 virus effectively. The Indian economy was forced to close at $2.9 trillion during the quarantine period that was imposed for those afflicted by the virus, as only necessities could be provided. The nation's economy suffered greatly as a result of the closure of shops, eateries, factories, transit services, and other commercial buildings.

Academicians and researchers noted that panic buying behaviors emerged during the COVID-19 pandemic in tandem with the quarantine lifestyle as consumers stocked up on products irrespective of their genuine need, creating a false sense of product scarcity. It is observed that the financial and social conditions of the consumers played a massive role in deciding if they were able to purchase surplus stock. Customers who were unable to get the essential goods during India's lockdown felt more stressed as a result of this. When asked if they would stock up on things owing to COVID-19, something they wouldn't have done otherwise, 62% of the respondents said they would have done so out of fear that the products might not be available in the future. In another survey, 57% of the respondents agreed with the statement, “Due to COVID-19, I am experiencing product shortages at stores I'm trying to buy from,” which directly resulted in creating a false sense of product scarcity, leading to panic among consumers.

In the city of Pune, the State government imposed a strict lockdown to curb the spread of the virus, as the fatality numbers were very high for several months. Quarantine rules and restrictions on traveling, shopping, and stepping out of the house were formed in order to discourage people from unnecessarily roaming around the city. With the ability to purchase all of their necessities while lounging in the luxury of their own homes, internet shopping quickly gained popularity. Additionally, the government promoted online shopping by giving e-commerce businesses a lot of assistance as they carried out their regular business of delivering necessities to customers at their homes. Online shopping has changed the shopping and buying patterns of consumers to a large extent. A survey conducted asking the respondents about “Making online purchases when I would usually shop in-store” showed that 78% of the population answered affirmatively. People are, in general, scared to step out of the comfort of their homes unless there is an emergency that absolutely requires them to go out in person. The survey also showed that 70% of the contacted respondents agreed with the statement, “I am afraid of dying from

COVID-19." This fear factor was the main driving force behind the spread of the PB behavior of consumers in Pune. The statement, "Stocking up on products due to COVID-19, I wouldn't otherwise stock up on," showed 62% of the population agreeing with this fact.

The survey question asking about social factors, "The situation during the COVID-19 pandemic has made me uncomfortable," was agreed to by 53% of the total population; 58% of the respondents agreed with the statement, "I feel physical symptoms of nervousness when I think about COVID-19." This is a clear indication that the COVID-19 pandemic has created a sense of panic and confusion among the general population, and this was a significant reason why people avoided stepping out of their homes without a valid reason. Only 19% of the surveyed respondents were able to respond positively to the statement, "I have enough courage to face the COVID-19 problems."

The SPSS results reveal the fact that gender also plays an essential and significant role in influencing panic buying behaviour. Table 5 and Table 6 reveal that for men, psychological factors (during COVID-19**)** positively influenced PB behavior ($b = 1.008, p < 0.001$). However, the relationships between perceived product scarcity and PB behavior, along with prevailing social conditions (during COVID-19) and PB behavior, are insignificant ($p > 0.05$). For females, the relationship between psychological factors and PB behavior ($b = 0.177, p < 0.01$), the relationship between perceived product scarcity and PB behavior ($b = 0.243$, $p < 0.05$), and the relationship between prevailing social conditions (during COVID-19) and PB behavior ($b = 0.298, p < 0.001$) is significant. The association between (a) psychological factors during COVID-19 and PB behavior, (b) perceived product scarcity during COVID-19 and PB behavior, and (c) prevailing social conditions during COVID-19 and PB behavior can, therefore, be concluded to be moderated by gender.

Theoretical and Managerial Implications

The results of this study will help in influencing retail business policies and understanding the customer better. The study will help in determining factors influencing consumer buying in a pandemic situation. The study will help managers follow the linkages of the model in order to understand and predict the consumer buying behavior of both males and females in any pandemic situation. This study provides an original scale for measuring the four-model construct to highlight the short- and long-term effects of consumer sentiments. The study is also original and unique regarding three direct linkages and the moderating effect of gender. It talks about significant managerial implications for industry and theoretical contributions through modeling to the existing body of knowledge.

The COVID-19 pandemic has forever changed the lives, attitudes, and priorities of almost everyone from all walks of life. What is sure, in any case, is that we will manage revolutionary changes in customer buying behavior and, considerably more, these progressions will long endure. Maybe the most applicable adage that could portray purchaser conduct in the current scenario is once bitten, twice shy (Oona, 2020). In the midst of an emergency, individuals don't need an intellectual discussion. They need a pragmatic course of action. To mitigate individuals' nervousness and to assist them with recapturing a sensation of control, it really depends on the government to give its citizens proper understanding that they have strategies in place to fight against any contingencies and find convenient ways to resolve the issue (Yap, 2020). Consumer buying behavior has also been affected by this pandemic. The psychological factors, social factors, and scarcity of products from the shelves have resulted in PB behaviors, which are typically seen in all adverse situations. Gender plays a significant role in influencing panic buying behavior. In general, health and economic situations are the top areas that consumers are concerned with as a result of the COVID-19 pandemic. People are different, and this can be seen in the various attitudes, behaviors, and shopping habits that are displayed. Promoting positive psychosocial support to citizens should be the top priority during any epidemic. This can be effectively done by using various media outlets and providing brochures

and leaflets about the nature and effects of COVID-19 on mental health. Mental stress invariably increases during situations like epidemics, pandemics, natural disasters, etc. Hence, awareness programs must be developed that will help people manage their mental and physical health in a better way (Du et al., 2021).

More empirical research can be done to prevent this undesirable phenomenon during a period of public health emergencies until preventive action is taken. Media coverage guidelines can be developed to reduce anxiety and panic among readers, as reports of panic purchases can lead to reduced inventory. Globally, the pandemic has resulted in people feeling anxious about adjusting to new routines as a result of being affected by COVID-19 (Jain, 2022). COVID-19 consequently led to significant disruptions in consumer behavior and made the industry prepare for new norms of consumer behavior.

Fear was rampant among most people as they heard updates about the pandemic and how it affected their family members, friends, and society in various ways. People react differently to crises according to their circumstances, past experiences, and attitudes in life, which affects how they think and act. Chakraborty and Altekar (2021) revealed in their study that all the consumption values positively and significantly influenced the intention to use grocery apps. Anxiety is the primary reason why people panic and respond to crises by running to stores and purchasing products in bulk, especially staple items and health products (Siddiqui & Siddiqui, 2021). The relationship between trust and buying intention was found to be the strongest, and perceived risk was found to have an inverse relation with trust. This insight into consumer behavior can further help retailers and companies who are directly involved in product procurement and supply chain management (Roggeveen & Sethuraman, 2020).

Limitations of the Study and Future Research Directions

The study's temporal component is cross-sectional. This limits the ability to identify causal linkages and track shifts in the target audience's view over time. Both the model and the framework can be further examined for a variety of samples and tested in non-pandemic scenarios. In the current paradigm, additional demographic characteristics can be tested as moderating variables.

Authors' Contribution

The concept was created by Dr. Roshan Kazi, who also created a quantitative design for the empirical investigation. Using an existing literature review, Dr. Firoz Khan, Aneta Szymanska, and Archana Singh identified high-quality research publications and produced concepts and codes pertinent to the study design. Dr. Roshan Kazi and Dr. Archana Singh verified the research methodology and supervised the study. Dr. Firoz Khan collected the data. The mathematical computations were done by Dr. Roshan Kazi using SPSS AMOS 21.0. Dr. Firoz Khan and Dr. Aneta Szymaska wrote the manuscript in consultation with the other two authors.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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