






“Buy now or regret later: Social media-induced panic buying of medical supplies during COVID-19”

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BUY NOW OR REGRET LATER: SOCIAL MEDIA-INDUCED PANIC BUYING OF MEDICAL SUPPLIES DURING COVID-19

Abstract

A huge body of research analyzed panic buying during the pandemic; however, there is a dearth of studies scrutinizing social media triggering panic buying of drugs and medical supplies. This study assesses the impact of social media on panic buying of drugs and medical supplies during COVID-19. An online survey was conducted in the Delhi-NCR region (India) using a 5-point Likert scale questionnaire. The data were collected from the respondents (N = 250) who were youngsters considering their pivotal role in the battle against COVID-19. Regression analysis in SPSS was used to process the data. The results manifested a strong impact of social media on buying behavior during COVID-19. Perceived scarcity (p = .000), perceived quality (p = .000), perceived cost (p = .000) of medical supplies, and fear-of-missing-out (p = .000) were found to strongly influence panic buying. Further, perceived scarcity was found to have a significant impact on FOMO (p = .0400). At the same time, perceived cost also had a substantial effect on perceived quality (p = .0100). The results indicated that perceived scarcity did not affect perceived quality (p = .0600). People indulged in hoarding during COVID-19 to remove their fear of missing out. The perception of scarcity of medicines, the quality degradation that may happen later, or the likelihood that costs may increase in the future contributed fairly to people stockpiling. Perceived scarcity also induced fear of missing out, while perception about the quality was dependent on perceived cost.

Keywords

social media, medical supplies, panic buying, scarcity,
FOMO, COVID-19

JEL Classification

M31, M39

INTRODUCTION

The waning end of 2019 caught the world unaware of a virus that was set to alter the course of humankind. A metamorphosis of communication dynamics eventuated as the COVID-19 coup de main continued unabated in subsequent years, leaving no facet of life unaffected. An unprepared human race responded to the unforeseen crisis, armed with technological might, keeping things afloat amidst the ensuing pandemic. Scrambling to keep in touch with each other in the face of coerced social distancing, people beat the lockdown blues and found much-needed solace communicating through social media platforms, along with satiating their daily media diet.

BusinessToday (2020) intimated on March 30, 2020, a reported spike of 87% in social media usage during the first lockdown phase. The news further divulged that 75 percent of people used Facebook, Twitter, and WhatsApp more frequently than the week before the lockdown. Furthermore, research betrays that currently there are 4.62 billion users of social media around the world. Interestingly, 424 million users have joined only in the past year (Chaffey, 2022).

Providing essential and scientific information at the fingertips in the hour of crisis, social media acted as a boon to combat the despondency and despair of disaster. Nevertheless, it entailed a social infodemic, a colossal challenge that World Health Organization had to declare a full-fledged fight against it (Ahmad & Murad, 2020).

An infodemic refers to an illimitable and unrestrained amount of information – often with low reliability – that spreads exponentially and expeditiously, thus rendering the task of achieving viable solutions an uphill one. A disease outbreak may be further intensified or prolonged by an infodemic as people are unsure what actions to take and decisions to make. In the context of a pandemic, the effects of digital technologies (social media in particular) can be menacing. Therefore, it may propagate harmful messages more rapidly and attenuate the efficacy of a health response system (World Health Organization, 2020). Furthermore, publishing erroneous information on social media networks harms general physical and psychological public health (Frenkel et al., 2020; Alshaketheep et al., 2020).

With offices turning work-from-home and educational institutions shifting to online learning, the time spent online with digital devices further escalated. As a result, regardless of age, gender, or other demographic factors, users became involved in social media interactions more frequently. At the same time, teenagers are headed for an ‘overdose’ considering their high proficiency in using such platforms. Subsequently, youth is also more prone to be negatively affected by inappropriate content and even be a victim of ‘FOMO’, triggering depression, anxiety, and loneliness (Nazir, 2021).

The chaos that stemmed from the spread of coronavirus catapulted the public into panic buying when it came to protective equipment like PPEs, masks, thermometers, medicines, and even oxygen cylinders. Medical store owners lamented that since people were hoarding these things for contingency, the demand and supply were severely affected, also causing skyrocketing prices. Moreover, a list of drugs that went viral on social media led to an abrupt shortage of these medicines. People were buying them in large amounts with the slightest hints or almost no symptoms of COVID-19. During the first wave of the pandemic, the government closely monitored the sale of these drugs; the second wave made it a daunting task, with the number of infections accelerating excessively (Lanka, 2021).

While a considerable bulk of studies focused on the phenomena related to panic buying and their various dimensions in different geographical regions around the world, this study attempts to examine the behavior of panic buying of medicines and related equipment among Indians during the second wave of COVID-19. The results will be beneficial in assessing the relationship witnessed between social media usage and the panic buying behavior of Indians during the pandemic.

1. LITERATURE REVIEW

A tectonic shift in human transactions occurred as the world reeled under the relentless onslaught of COVID-19, bringing life on the planet to a screeching halt. The internet ended up being the solitary savior – upholding the sanity of a people grappling with fear and isolation – with socially mediated communication coming to the world’s rescue. Nonetheless, the deleterious consequences of an unprecedented burgeoning of social media usage emerged thereupon.

Social media was flooded with videos, pictures, and posts exhibiting how people were buying things in a state of panic as they saw the worst approaching (Arafat et al., 2021).

An unanticipated deluge of panic buying was witnessed across countries and cultures as a ‘survival mass psychological phenomenon’ during the spell of COVID-19 (Yap & Chen, 2020). Panic buying can be described as a frenzied approach to catch hold of things that risk becoming unavailable in a trice. The perceived imminent paucity of a specific commodity

activates a ‘psychological reactance’ that feels like an emergency, prompting people to pile up things in advance while they are still accessible (Pan et al., 2020). Panic buying triggers a vicious circle – often owing to a natural calamity or epidemic – wherein the demand-supply chain is hampered. Problems are aggravated when people resort to stockpiling, leading to shortages and a substantial price increase (Kaur & Malik, 2020). Encountering health emergencies, people tend to have a perception of reduced control over things, along with a boost in their impulsive consumption patterns (Li et al., 2020). The pandemic-induced anxiety ushered in an unprecedented demand for protective equipment like masks or sanitizers that suddenly went out of stock as people went berserk with panic buying (Das, 2020). The dread of coronavirus disease changed the market equations, as it transformed the definition of what is considered essential and non-essential. Hygiene-related products came to be identified as essential goods, while apparel and garments started being considered ‘discretionary’ (Euromonitor, 2020).

Buckling under immense pressure – in a bid to adapt to the market forces – many companies switched to producing products that had colossal demand in the wake of the COVID-19 pandemic, like personal protection kits, masks, handwash and sanitizers, ventilators, etc. This served as a two-pronged strategy as it amounted to doing community service as well as helping the government in its war against the coronavirus disease (Kharat, 2020). Kharat (2020) observes that the strong demand for preventive products and essential medicines (for allergies, cough, cold, or fever) was quite shocking. He mentions that panic buying is caused due to several reasons. Firstly, frequent market visits pose a threat, so people want to buy more and limit their movement. Secondly, there is a looming fear of shortage, which one wants to overcome. Thirdly, work-from-home increased the consumption of commodities; and fourthly, rumors of scarcity just round the corner intensify people’s fear-of-missing-out leading to stockpiling.

The theories of ‘anticipated regret’ and ‘perceived scarcity’ posit that while making a decision, an individual tries to remove the element of ‘regret’ that he may face in the future. With an item expected to be scarce in the market, a person finds himself foreseeing the risk and tries to exercise positive control by purchasing it when he still has the opportunity. Thus,

he goes on a ‘buying spree’ or panic buying things that he may not necessarily need or in quantities that are out of proportion (Chua et al., 2021).

Li et al. (2020) attempted to explore the psychological reasons behind impulsive consumption in China during public health emergencies. It was revealed that the more the pandemic severity, the more it positively affected impulsive consumption. In the case of COVID-19, since the crisis was unprecedented and highly severe, impulsive consumption also shot up, directly linked to impulsive and panic buying. Panic buying of drugs may be catastrophic compared to other items for patients needing such medicines. If such circumstances occur with drugs, the consequences of drug shortages can be catastrophic for patient outcomes (Badreldin & Atallah, 2021).

1.1. Social media usage and panic

During times of past crises (outbreaks of SARS/MERS, H1N1), an exponential increase has been reported in digital connectivity and social media usage. In turn, it expedites the psychological responses of trying to gain control over pressing situations arising in the future or conforming to similar behavior as prevalent in society (Depoux et al., 2020).

When a shortage of utilities is expected (perceived scarcity) in the market, it results in panic buying, leading to an actual scarcity as the supply cannot match the demand (Zeng et al., 2020). As a result, a disruption in a demand-supply chain is caused, negatively affecting the market (Bekiempis, 2020). Previous research documents the phenomenon of FOMO (fear of missing out) – anxiety, frustration, and fear of insufficiency in an individual – to be closely correlated to social media usage. The never-ending involvement in social media often makes people dissatisfied as they are not ‘matching up’ the world’s standards or other people’s behavior (Abel et al., 2016). The sentiment is appropriately described by Miller (2012) that “social media is like kerosene on FOMO’s fire.”

Arafat et al. (2020a) observed that the inconsistent human behavior of panic buying had been reportedly found in 93 countries. Based on mass media reports about panic buying across various countries, they conclude that a looming threat of scarcity of commodities is the primary reason, while fear of

increased prices is another. Other factors associated with panic buying included previous experiences, rumors, pro-safety behavior, reducing anxiety, exercising control, trust deficit, government action, and social learning. In a study aimed to assess panic buying in the USA and Australia, as these countries were the ones to report the highest percentage of panic buying, the frequency and quantity of purchase of items in colossal demand (toilet paper, sanitizers, or masks) were analyzed. The findings show that social media had a strong relationship with the behavior of stockpiling and panic buying (Prentice et al., 2022). The pictures of empty shelves in stores and rumors of stocks vanishing posted on social media can heighten fear and anxiety (Arafat et al., 2020b). The phenomenon of 'cyberchondria' also manifested in individual behaviors as people searched for more and more information online. Cyberchondria refers to information overload by frequently searching about a medical condition, thus increasing one's levels of anxiety and triggering panic behaviors. Laato et al. (2020) found strong links between information inundation and cyberchondria, which in turn goaded people to make unusual purchase decisions as they braced up for impending isolation.

Thus, the coronavirus disease threw a massive challenge for the governments to combat panic buying. In the case of medical supplies, problems were exacerbated by vast volumes of misinformation on social media. As the supply chain was severed down, panic buying reinforced the complication, making matters worse.

2. AIM AND HYPOTHESES

A thorough review of existing literature indicates that many studies have focused on social media-induced anxiety triggering panic buying behavior. However, the corpus lacks an empirical study focusing on Indians' buying behavior (of medical supplies) during COVID-19 and their perceptions of socially mediated messages about impending paucity of medicines and allied medical products.

Studying India's case becomes more important as it is a highly misinformation-affected country regarding COVID-19, and social media is the largest peddler. Facebook was responsible for much of

such misinformation (Al-Zaman, 2022). As youth is the most internet-savvy (Basuroy, 2022) and a social-media-addicted faction of society (Chauhan & Yachu, 2022 ; Khaled et al., 2020), assessing its impact on panic buying of medical products warrants the attention of researchers.

The present study aims to analyze the interrelationship between social media usage by individuals and its influence on their buying behavior in the context of taking preventive measures, leading to panic buying of medicines and allied products.

The following hypotheses were formulated for a more in-depth study of the set goals:

- H1: *Perceived scarcity of medical supplies evident from social media posts significantly affected impulsive purchasing.*
- H2: *Perceived quality of medical supplies significantly affected panic buying.*
- H3: *Perceived scarcity significantly affected perceived quality of medical supplies.*
- H4: *Perceived scarcity significantly affected FOMO.*
- H5: *FOMO significantly affected panic buying.*
- H6: *Perceived cost significantly affected perceived quality and panic buying.*
- H7: *Social media content about a shortage of medical supplies triggered panic buying.*

3. METHODOLOGY

To fulfill the study objectives, a self-administered questionnaire was prepared on Google Forms and disseminated through various platforms, including social media like WhatsApp, Facebook, Instagram, and emails. A 5-point Likert-scale questionnaire comprising 29 questions to measure was created both in English and Hindi. The participants had the choice to respond in either of the two languages. However, most participants chose to fill out the form in English. As a result, the questions were short and crisp, while the language was kept simple and lucid to avoid confusion.

The data were collected from the Delhi-NCR region. Convenience sampling was used to recruit willing participants to submit their responses. The participants were students and young researchers (from colleges and universities). The reason for choosing youngsters was that they constituted the frontline force in the battle against COVID-19, providing succor to their families and communities (Sundarajan, 2021). They are also the most technologically savvy group of the population and heavy consumers of social media.

The forms were sent to 284 people, out of which 267 responses were received. After weeding out incomplete forms, a total of 250 complete responses were obtained. Regression analysis in SPSS was employed to analyze the collected data and draw valid inferences.

4. RESULTS

4.1. Kaiser-Meyer-Olkin test

The KMO method determines whether the sampling is suitable for the EFA (Barrett et al., 2011). According to Ferry and Leech (2005), the KMO value for sampling adequacy should be greater than 0.50. According to Table 1, the KMO value is 0.674. As a result, this study's sample size is sufficient to perform both the EFA and other tests. Bartlett's test of sphericity is also used to check the relationship between the variables (Tobias & Carlson, 1969). Bartlett's sphericity test should be relevant if $p = 0.001$. The value after Bartlett's sphericity test is 0.000, as shown in Table 1.

Table 1. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.269
Bartlett's Test of Sphericity	Approx. Chi-Square	785.057
	Df	406
	Sig.	.000

4.2. Factor loading

The main focus of data reduction and definition analysis is factor analysis. This mathematical method aids in independently reducing the number of correlated variables. A set of underlying dimensions known as factors or parameters can

be used to analyze the relationship between many different variables. To improve the definition, exploratory factor analysis (EFA) was used to include fewer original variables or factors (Table 2).

Table 2. Factor loading

Variable	Items	Factor loading	Cronbach's Alpha if Item Deleted	Overall
Scarcity	S1	0.61	0.834	0.834
	S2	0.8	0.827	
	S3	0.6	0.825	
	S4	0.61	0.833	
Perceived Quality	PQ5	0.8	0.85	0.827
	PQ6	0.6	0.841	
	PQ7	0.7	0.835	
	PQ8	0.61	0.826	
	PQ9	0.8	0.842	
	PQ10	0.6	0.83	
Fear of Missing Out	FMO11	0.61	0.84	0.825
	FMO12	0.8	0.845	
	FMO13	0.6	0.835	
	FMO14	0.7	0.836	
	FMO15	0.6	0.84	
Perceived Cost	PC16	0.6	0.832	0.833
	PC17	0.7	0.837	
	PC18	0.61	0.837	
	PC19	0.6	0.842	
	PC20	0.6	0.846	
	PC21	0.7	0.837	
Impulsive Purchasing	IP22	0.61	0.839	0.85
	IP23	0.8	0.838	
	IP24	0.6	0.834	
	IP25	0.6	0.848	
Social Media Responsibility	IP26	0.7	0.834	0.841
	IP27	0.61	0.832	
	IP28	0.8	0.825	
	IP29	0.6	0.826	

4.3. Reliability analysis

Nunnally (1967) characterized the measurement results as precision, while the cause of the error is attributed to some influence in distinguishing between measurement situations. The term "reliability" refers to a system's ability to produce consistent results. Cronbach's alpha is a common reliability metric premised on each element's maximum reliability (Hogan et al., 2000). Cronbach's alpha greater than 0.7 is indicated by a wide scale (Hair

et al., 2010). Every Cronbach's alpha value exceeded the agreed-upon amount, as shown in Table 3.

Table 3. Reliability

No.	Variables	Cronbach's alpha	Overall
1	Scarcity	.834	.820
2	Quality	.827	
3	Impulsive Purchasing	.825	
4	Panic Buying	.833	
5	Cost	.850	
6	FOMO	.841	

4.4. Hypotheses testing

The results in Table 4 show that all the seven hypotheses proposed in this study are supported, except for the third hypothesis. First, H1 shows a direct effect of perceived scarcity on impulsive purchase ($p = .000$). This indicates a positive and direct relationship between perceived scarcity and impulsive purchase. The second hypothesis (the impact of perceived quality on panic buying) was supported ($p = 0.000$). The p-value ($p = 0.000$) indicated a positive and direct relationship between perceived quality and panic buying.

The third hypothesis (the impact of perceived scarcity on perceived quality) was not supported ($p = 0.060$). The p-value ($p = 0.060$) indicated a negative relationship between perceived scarcity and perceived quality. The fourth hypothesis (the impact of perceived scarcity on FOMO) was supported ($p = 0.040$). The p-value ($p = 0.022$) indicated a positive and direct relationship between perceived scarcity and FOMO.

The fifth hypothesis (the impact of FOMO on panic buying) was supported ($p = 0.000$). The p-value ($p = 0.000$) indicated a positive and direct relationship between FOMO and panic buying. The sixth hypothesis (the impact of perceived cost on perceived quality) was supported ($p = 0.0100$). The p-value ($p = 0.0100$) indicated a positive and direct relationship between perceived cost and perceived quality. Finally, the seventh hypothesis (the impact of perceived cost on panic buying) was supported ($p = 0.000$). The p-value ($p = 0.000$) indicated a positive and

direct relationship between perceived cost and panic buying.

Table 4. Summary of hypotheses testing

Independent Variable	Dependent Variable	p-value	Result
Perceived Scarcity	Impulsive Purchase	0.0000	Sig
Perceived Quality	Panic Buying	0.0200	Sig
Perceived Scarcity	Perceived Quality	0.0600	Insig
Perceived Scarcity	FOMO	0.0400	Sig
FOMO	Panic Buying	0.0000	Sig
Perceived Cost	Perceived Quality	0.0100	Sig
Perceived Cost	Panic Buying	0.0000	Sig

5. DISCUSSION

The current study endeavors to decode the role played by information shared on social media about a shortage of medical supplies in the market and people going hysterical in unplanned and unnecessary buying during the COVID-19 outbreak in India. As there were news reports and social media posts by people about that even basic medicines, as well as allied products like masks, sanitizers, and PPEs, were vanishing from stores, this further intensified the panic buying and stockpiling by consumers. Similar results were manifested by Ahmad and Murad (2020), as they executed an online survey to scrutinize the impact of social media on spreading panic about COVID-19 in Kurdistan in Iraq. The results evinced a substantial positive correlation between the variables, further elaborating that it even led to psychological effects, particularly for the youth. A study conducted at Boston Children's Hospital in the USA examined how news coverage of medication shortage influenced drug availability, collecting data from Google Health Trends and MediaCloud. The results indicated a strong possibility of the news coverage about vanishing drugs from the market contributing to the shortage, with people and institutions resorting to hoarding and stockpiling (Catillon et al., 2020).

Zhang et al. (2021) reached similar conclusions wherein they found that perceived cost positively influenced the perceived quality and value of a medical protective product in China. Chen and Sun (2014) argued that scarce products should have higher costs. Wu et al. (2012) also highlighted the customers' perception that a product must be more valuable if it is

costly. This also sometimes leads organizations to adjust the prices accordingly to attract more consumers and increase profits by employing the scarcity strategy.

With shortages hitting hard, there is also an increased risk of counterfeit and sub-standard products coming up to bridge the gap. Alternatives are explored to compensate for the missing supply, causing new suppliers to emerge as providers. However, even governments are reeling under pressure to handle the chaos, and there is a greater likelihood of sub-standard products to make way into the market (Besson, 2020).

Fear of missing out or FOMO is a very relevant phenomenon concerning consumers' urge to make impulsive purchases, as was evident in the case of the US public hoarding disproportionate amounts of toilet paper, sanitizers, and other products. FOMO comes close to the heels of the 'third person effect' witnessed during crises. For example, an experimental study evinced that when shoppers knew that news about a sugar crisis was causing people to buy more sugar, they exhibited a greater desire to buy sugar. The study highlights the 'causal relationship' between how news influences others and how the knowledge of this effect influences the actions (intention to buy) (Flynn, n.d.).

The effect of FOMO on panic buying can be understood in light of the psychological concept of 'loss

aversion theory of decision making' (Perry, 2020; Khaled et al., 2022). The pain of losing is more than the joy of an equivalent gain. In the case of panic buying, one tries to remove the agony associated with not possessing something that could otherwise have been accessible. Such a mental state leads to panic, which translates into panic buying (Seeparsand, 2020).

Similar arguments are raised by Lynn and Bogart (1996), as that news about an ongoing scarcity of an item makes people expect a price rise in the future. Zhang et al. (2021) also posited that in the case of medical protective equipment, perceived value has a positive correlation with impulsive purchases made by consumers. Thus, when these items are considered more valuable, there is a greater tendency to indulge in impulsive buying. Lin et al. (2020) also concluded that impulsive buying of medical protective products online during the coronavirus outbreak depended on the perceived value in China. Gazali (2020) arrived at similar results. Among crucial factors contributing to panic buying in Malaysian consumers were herd behavior and social media exposure.

Arafat et al. (2021) employed an online cross-sectional survey to analyze the influence of social media on panic buying in Kurdistan, Iraq. The study, deliberately conducted in a conflict-prone region, found that social media impacted the public's buying behaviors, and they ended up buying things far more than they needed.

CONCLUSION AND LIMITATIONS

The study explored the effects of information circulating on social media about a shortage of medicines and allied supplies on the panic buying behavior of the masses. The analysis exhibits that owing to the messages on social media about medicines vanishing from the stores, people developed a perception of shortage and indulged in panic buying medicines and allied medical products.

Medical supplies, considered basic lifesavers in times of health crises, assume immense significance whenever a disease outbreak occurs. The COVID-19 pandemic exposed how vulnerable human beings are trying to control the situation by taking proper actions in advance. Unfortunately, this precisely led to panic buying, which disrupted the demand and supply chain.

From the analysis, it can be concluded that in the wake of the perceived scarcity of medical products, people watched others buying unnecessarily and then, from the fear of repenting later, went on to hoard themselves. The quality of products available in the market at the beginning of scarcity seems to be better to the consumers, with concerns about sub-standard and fake products hitting the market soon. Moreover, there are doubts about increased costs in the future, which go hand-in-hand with scarcity. To

acquire good quality products in the nick of time and to avoid exorbitant prices later, people panic buy. Perceived scarcity triggers the fear of missing out, which activates impulsive purchases.

The findings also indicate that perceptions about prices of commodities also played a role in determining perceptions about their quality. If certain supplies were priced high, there was a presumption about their quality being better. However, the general public also believes that social media portals should act responsibly and keep tabs on the information that is spread through their channel, which may cause panic and exaggerate the issue to dangerous proportions.

The study has several limitations, in that no study can be absolute in itself. The study only considered a relatively small sample belonging to the Delhi-NCR region. While the results show the adverse effect of social media on the purchase of medical supplies during COVID-19 in India, Islam et al. (2021) found that social media use and panic buying have a positive correlation in several countries studied, but not in India. This calls for looking into the matter from different perspectives, e.g., larger samples scattered over different geographical areas.

AUTHOR CONTRIBUTIONS

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