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Article

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MARKETING | RESEARCH ARTICLE

Discovering panic purchasing behavior during the COVID-19 pandemic from the perspective of underdeveloped countries

Muhammad Jawad^{1*}, Sohail Rizwan¹, Saba Ahmed², Haris Bin Khalid³ and Munazza Naz⁴

Abstract: The research seeks to uncover characteristics that affect buyers' panic purchasing behavior in COVID-19 pandemic. The data were analyzed by using the structural equation modelling of 2,697 individuals from 20 developing countries. Consumers' opinions are favourably connected with the predicted personal consequence, whereas projected community-related consequences have a negative influence on buyers' opinions. Buyers' panic purchasing intentions were found to be favourably influenced by opinion, instinctive norms, inadequacy, time restriction, and recognized competition. Furthermore, inadequacy and time restrictions were found to have a favourable effect on recognized competition but felt social detection risk had a negative effect on consumer panic purchasing intentions.

Subjects: Cognitive Psychology; International Business; Industry & Industrial Studies;

Keywords: COVID-19 pandemic; panic purchasing behavior; behavioural risk; behavioural control

1. Introduction

In early 2020, the World Health Organization (WHO) proclaimed coronavirus (COVID-19) an international pandemic (Khanra et al., 2021), triggering big panic purchasing. As governments ordered lockdowns to cease the virus from spreading, many humans rushed to stores to accumulate crucial resources. According to mainstream media, social media, and scientific research, human beings hoarded food, medication, and sanitary merchandise out of difficulty of inadequacy (Norberg & Rucker, 2020). Residents hoarding supplies left most shop aisles bare, a dependency when natural mess ups such as storms or bloodless climate strike (Kitching, 2016). For example, when an essential storm (Nepartak) used to be expected to method in 2016, Taiwanese human beings have located purchasing requirements in full-size portions (Tsao et al., 2019). The SARS pandemic in 2003 in China led humans to stock up on rice vinegar and clinical supplies. Other outstanding public emergencies encompass the H1N1 virus in China, Hurricane Sandy in the USA, the nuclear catastrophe in Japan, and the earthquake in Haiti.

This subject highlights the want of comprehending customer behavior in the case of a worldwide epidemic. Even though many corporations and agencies are concerned in catastrophe response, records and lookup on the consequences of mess-ups and crises on buyer buying conduct are sparse. According to experts, there are limited, conflicting, and inconclusive research on compulsive shopping for conduct (Islam et al., 2021). Many meal cabinets in the course of the world have been left barren as an end result of COVID-19, elevating the query of how well-equipped retail marketplaces are for counter-measures. Most researchers positioned that this place opens up increased dialogue for retail markets, such as whether or no longer uncommon purchases affected

buyers' monetary purchasing energy or why some products go out of inventory. There have to be a redevelopment of insurance plan policies to mold buyers' opinions, instinctive norms, and recognized behavioral control.

The majority of disaster and catastrophe lookup are carried out in developed countries, such as New Zealand, China, India and Pakistan (Prentice et al., 2020a, b), the United States, Britain, and China. Due to variants in culture, economy, education, and money, shoppers in growing international locations act in a distinctive way from buyers in industrialized ones (Slack & Singh, 2020). As a result, examining empirical data from creating global areas to apprehend changes in patron conduct at some stage in an international pandemic is essential. The search for appropriate theory ends on the threat comparison theory and it is utilised due to COVID-19 pandemic scenario. Based on this concept, diagnosed inadequacy and recognized time boundaries are introduced to the TPB. Due to the risk of COVID-19, customers have been combating amongst themselves to reap essential objects before stockpiles ran out. As a result, a new variable known as Recognized opposition was added to the TPB. In society, hoarding conduct geared at bettering one's self-interest at the fee of others would be frowned upon. As a result, a social detection chance has been delivered to the TPB. This comprehensive mannequin for assessing buyers' panic shopping for behavior used to be developed in reply to a lookup question on what factors have an effect on buyers' panic buying intentions.

As an end result of the end result of this research, the following contributions will be made. First, our lookup contributes to the modern physique of expertise through giving a comprehensive clarification of panic purchasing by shoppers all through a pandemic. Second, by discovering the penalties of shortages triggered by way of a global epidemic, our research provides to the existing physique of knowledge. This is the first research to seem at how inadequacy and time restrictions have an effect on aggressive purchaser conduct to accumulate items before they run out of stock. Third, this is the first research to seem to be into panic purchasing amongst a developing country's clients (Venkatesh et al., 2012). The relevance of assessing research fashions and tools in various contexts has been highlighted and bolstered by using the literature on theoretical improvement (Jawad et al., 2022). It would be difficult to extend retail market techniques from industrialized countries to creating ones. Fifth, this lookup contributes to a higher understanding of buyers' opinions via incorporating projected community-related effects and anticipated private consequences as antecedents of opinion toward panic purchasing. This is the first research to appear at how social detection threats affect consumer buying decisions (Sharma et al., 2020a). By broadening the frontier of data on client behavior, these contributions will aid retailers and regulators in devising techniques to limit panic purchasing.

2. Literature review

2.1. Theoretical framework

The theory of deliberate behavior (TPB) was once utilized to describe the elements influencing buyers' panic purchasing conduct during COVID-19 in creating nations. In addition to the three TPB antecedents of recognized behavioral control, opinion, and subjective standards, by including antecedents from other behavioral theories, such as the privateness calculus principle and the appraisal theory, the model is enhanced (Hassandoust et al., 2021). The privacy calculus idea shows that people balance diagnosed dangers and projected rewards in a unique scenario (Pahayahay & Khalili-Mahani, 2020). As a result, the prevalence of "anticipated personal repercussions" and "expected communal effects" is related to purchasers' views about panic purchasing. The appraisal hypothesis describes a psychological system that takes place when a character is uncovered to an external input (Cai et al., 2018). When confronted with a stressor, it is a concept that humans make an initial contrast of its importance, doable benefits, and hazards.

To recognize buyers' opinions about panic buying, the antecedents recognized inadequacy and recognized time restriction, recognized competition, and social detection threat were included. The

examination of literature and concepts revealed that increasing antecedents inside the TPB could lead to a more entire clarification of these phenomena due to differences in the focal point of more than a few theories. As a result, a comprehensive model for assessing buyers' panic purchasing conduct used to be developed by combining key antecedents from TPB, privacy calculus theory, and appraisal principle to tackle the research query of what factors have an effect on buyers' panic buying intentions in the event of an international pandemic.

2.1.1. Theory of planned behavior

In this research, use of the TPB, is helpful to significantly recognize the purchaser behavior. The wish to have interaction in a positive activity, according to TPB, is the quality predictor of authentic behavioral performance (Ajzen, 1991). Consumers' possibility of engaging in such endeavor is influenced by using their understanding of behavioral control, opinion, and instinctive norms in such situations. Buyers are more probable to take part in such things to do if they have a strong desire to do so (Jawad et al., 2012). As a result, the purpose of the lookup is to apprehend extra about purchasers' intentions to interact in panic purchasing (Moon, 2021). There has been evidence displaying that such intentions can affect buyers' behavior either immediately or not directly. Recognized behavioral management relates to how individuals verify and judge the recognized outcome of their moves based totally on prior experiences, whereas opinion refers to how people consider and judge the recognized outcome of their actions. Instinctive norms, on the other hand, are a person's feel of the normative stress exerted on them socially via folks they see as essential. The researchers located that recognized behavioral manipulation refers to buyers' capacity and ease of obtaining extra things than they require in the course of a pandemic for the sake of this research. Buyers' views of extensive members' beliefs about buying more merchandise than they require for the duration of COVID-19 are described as an opinion, whereas instinctive norms are defined as buyers' perceptions of essential members' beliefs about buying greater products than they require all through COVID-19.

2.1.2. Privacy calculus perspectives

According to the privateness calculus theory, whilst making a decision, a persona weighs the benefits and risks related with the action (Sharma et al., 2020b). The benefit and risk assessment, on the different hand, is situation-dependent. This hypothesis was once used to observe purchaser behavior in the course of COVID-19. Buyers' views about panic buying would be affected via means of anticipated personal repercussions of panic buying as proper as perhaps community-related results of panic buying as an end result of this theory.

2.1.3. Protection motivation theory

The protection motivation precept (PMT) is used to look at an individual's social behavior by Rogers (1975). Threat assessment and coping evaluation are the two elements of the PMT (Itani & Hollebeek, 2021). This suggests that an individual's safety reason movement especially based totally on a Recognized threat is induced via chance and coping evaluation (Rather, 2021). The PMT is used to analyze male and female behavior at some point of the COVID-19 epidemic. As a consequence, the PMT is a practicable approach for assessing the threat posed by way of capacity of COVID-19 (Kim et al., 2021a, b).

2.2. Panic purchasing behaviour

Panic shopping is a compulsive habit in which consumers purchase massive parts of items to get away true or recognized shortages (Herjanto et al., 2021). According to existing research, panic buying can be precipitated with the aid of neurological factors (anxiety and depression), social elements (social networking), and environmental factors (supply inadequacy; Yuen et al., 2020). According to research, how an individual perceives the disaster and their situation of item shortages has a gorgeous effect on their buying behavior (Yuen et al., 2020). Rowland (2022) synthesizes prior study findings, suggesting that behavioral intention and continued use of contactless delivery services might influence customer perception, purchase choice, experience, satisfaction, and loyalty. Panic purchasing is a coping method for those who pick to manage their

anxiety while simultaneously enhancing their food security (Novemsky, 2020). While some research point out hoarding's hedonistic character, similar actions may additionally be used to exhibit care, protection, and affection for oneself and one's family (Arafat et al., 2020). In close-knit organizations, persons enhance a feel of collective persona or unity main to extra collaboration and sustenance for specific neighborhood contributors (Drury & Reicher, 2012; Reicher & Haslam, 2009). Many research has proven a correlation between psychosocial factors and panic purchasing behavior, on the other hand, Herjanto et al. (2021) accept as true with that more research is wished into the impact of cognitive function on panic buying behavior, in specific in one-of-a-kind cultural and financial contexts (Drury & Alfadhli, 2019). Zvarikova, Gajanova, Higgins et al. (2022a) synthesize prior study findings demonstrating that a reduction in customer risk perception might increase the adoption of food delivery applications. Customers' behavioral intents to utilize food delivery applications during the COVID-19 epidemic were explained by demonstrating that online buying on food delivery platforms may influence user perception, happiness, and loyalty.

2.2.1. Inadequacy

Inadequacy is considered to be a key predictor of buyer behavior in several client psychologies and behavioral economics theories (Chung et al., 2017 and Jawad et al., 2021). Buyers are extra interested in acquiring unique objects or offerings. A feeling of inadequacy has brought on many customers to make hasty purchases. Inadequacy indicators such as "few items left" or "last ultimate item" have long been used via advertisers to have an impact on consumer buying decisions. In the context of social trade, inadequacy would possibly take the shape of a limited quantity of time.

Watson (2022) outlined earlier study findings demonstrating that continuation purpose and performance expectations of food delivery applications influence risk perception about COVID-19. They add to the research on consumer risk perceptions, behavioral intents, and purchase habits regarding delivery apps by demonstrating that behavioral emotions and purchasing decisions, choices, and habits shape the food delivery ordering experience when mobile applications are used. A constrained volume relates to the number of gadgets available for purchase, whereas a time restriction refers to how lengthy a product or provider is accessible. This lookup appears at the recognized inadequacy in terms of extent and charge that emerges as a result of the COVID-19 epidemic (Rice & Keller, 2009 and Jawad et al., 2021). This is the first research to observe panic purchasing conduct amongst buyers at some point of the worldwide COVID-19 epidemic and the use of the principles of deliberate behavior, privacy calculus theory, and protection theory.

2.3. Hypotheses development

2.3.1. Expected personal consequence

According to Compeau et al. (1999), expected personal consequences refer to the possibilities of receiving rewards or enhanced satisfaction as a result of participating in a certain activity. Some buyers may feel that obtaining goods ahead of the rest of society entitles them to more benefits or rewards. According to the numerous studies by Hsi-Peng and Kuo-Lun (2007, 2009), there is a positive relationship between projected personal success and action. People's social behaviors alter as their ideas and expectations change, according to Raude et al. (2020). The pandemic has influenced the rate of personal results concerning obtaining various items in the marketplace in the context of this research because individuals feel they will earn more. As a consequence, we recommend:

H1: Expected personal outcome influences opinion towards panic purchasing.

2.3.2. Expected community-related consequence

According to preceding research, offering useful resource and sharing memories is a wide-spread way for community persons to come mutually (Kordzadeh et al., 2016; Evans et al., 2012; Chung,

2011). People will take part in conduct if it affords them incentives or benefits. Individuals can act in their self-interest, but in times of crisis, their predisposition for collective self-help is one of the most beneficial devices a society can have (Danziger, 2020). Sharma et al. (2020b) printed that expected private outcomes are positively associated with record sharing intentions for the length of the COVID19 pandemic. In the course of a crisis, the neighborhood has to stay connected, be vigilant, guard themselves, and recognize respectable injunctions defined by Kumalawati et al. (2021). As a consequence, we recommend:

H2: Expected community-related consequences influence opinion towards panic purchasing.

2.3.3. *Opinion*

The way an individual thinks about a precise movement and the penalties it explains is a sturdy predictor of future conduct. The opinion is commonly linked to behavioral intention as a replacement rather than behavior (Chandran & Morwitz, 2005). Buyers' intentions to have interaction in panic purchasing can be linked to an experience of financial security and aversion to the hazard of inadequacy (Talwar et al., 2021; Chen, 2020), primarily to irrational picks at times. According to Laato et al. (2020), panic purchasing behaviour is self-isolation in the majority of clients. Lehberger et al. (2021) explained that some people were against storing commodities, while others believed stockpiling was important. As a consequence, we recommend

H3: Opinion influences panic purchasing intention.

2.3.4. *Instinctive norms*

Subjective criteria, in accordance with extant research, have an effect on customer choices and behaviors (White & Simpson, 2013; Connell & Kozar, 2012; Schultz et al., 2007;). Instinctive norms impose social needs on a man or lady to interact in a sure activity and that persona is obliged to comply with these social restrictions without the strength of the law defined by Fishbein and Ajzen (1975) & Cialdini and Trost (1998). Subjective necessities affect people's perceptions of expectations from family, friends, internet talk boards, and the administrative center. According to H.J. Chang and Watchravesringkan (2018). Individuals, effected by societal stress, are frantically accept the COVID-19 to be viewed as active parameter for individuals and societally to engaged in panic shopping, with strains spilling out onto the streets in each and every region in New Zealand, the United Kingdom, Australia, and Singapore (El-Bar, 2020; Lewis, 2020; Yoon, 2020; Hassan Ramey et al., 2019). Subjective standards, according to several studies, have a best affect on buyers' buy selections and conduct (Lee et al., 2009). As a consequence, we recommend:

H4: Instinctive norms influence panic purchasing intention.

2.3.5. *Recognized behavioral control*

The pandemic scenario, according to Khan (2020), may drive purchasers to purchase additional reserve items and services. This is owing to a high degree of pandemic risk perception and knowledge among buyers (Long & Khoi, 2020). The bulk of health and other vital commodities were clearly in limited supply during the COVID-19 epidemic. Panic purchasing had caused an upsurge in demand for the products.

Existing behavioral research based totally on person ride and emotional judgments explains buyer hoarding (Laato et al., 2020 and Deng et al., 2017). Psychological factors such as uncertainty about aid depletion, the inadequacy of items and services, worry about an individual's ability to cope with shortage conditions within their financial means, and panic-inducing herd behavior all affect these judgments (Sterman & Dogan, 2015).

The objective of the systematic review, according to Frajtova Michalikova et al. (2022), is to consolidate and evaluate available information on the use of delivery applications during the COVID-19 pandemic. With rising evidence of app-based sales systems, it is crucial to understand if the perception of control over food delivery applications might improve customer emotions. In this study, it was determined that customer preferences for locating information about ready-to-eat foods and making judgments appropriately have reshaped internet delivery. It is argued that as worry spreads, customers do now not respond logically. The state of affairs in creating nations was not exceptional for the duration of the crisis. Buyers' engagement in purchasing greater merchandise and services has resulted in an uneven furnishing market (Long & Khoi, 2020). Because grocery cabinets are still empty, many people are unable to reap items. As a result of this anxiety, the market gets extra psychologically depressed. As a consequence, every character is financially responsible (Talwar et al., 2021). As a consequence, here is what we might like to propose:

H5: Recognized behavioral control influences panic purchasing intention.

2.3.6. *Inadequacy*

Inadequacy affects people's perceptions of competition and their motivation to buy in a hurry. The previous research has found that the distress, inadequacy, or unavailability of a product might promote panic purchasing. Buyers who see shortage or panic purchasing are more likely to stock-pile products before they are sold to another buyer. According to Coskun et al. (2020) recognized inadequacy and competitiveness affect buyers' in-store behavior. Due to high levels of human congestion, buyers may experience rivalry and shortage at retail businesses (Debiec, 2020). As a result, buyers develop aberrant habits such as in-store concealment and hoarding. Similarly, in developing nations during the COVID-19 crisis, human congestion was high in supermarkets and retail establishments, causing people to rush for essential products (Norberg & Rucker, 2020). Due to a fear of supply shortages, buyers were spotted purchasing large quantities of products. As a consequence, we recommend:

H6A: Inadequacy influences Recognized competition with buyers.

Buyers might claim ownership of the remaining and/or restricted items by participating in activities like in-store hoarding and concealment before other buyers. During times of inadequacy, buyers are more likely to engage in in-store hoarding behaviors while acquiring products and services, according to this research. Before the COVID-19 crisis in developing nations was resolved, buyers felt obliged to acquire necessary items (Hamilton et al., 2019). As a consequence, we recommend:

H6B: Inadequacy influences panic purchasing intention.

2.3.7. *Time restriction*

People's perceptions of competitiveness and willingness to purchase in a panic are influenced via time restrictions (Godinho et al., 2016 and Jawad et al., 2021). According to researchers, when confronted with limited time and complex situations, customers do no longer recognize all of the statistics and are less probably to concede to alternatives ensuing in poor feelings (Sohn & Lee, 2017) and improved impulse purchasing for products. Buyers are negatively influenced by recognized time restrictions and impulsive purchasing tendency and will no longer buy if competitors are closely defined by Oppewal and Holyoake (2004) and Skallerud et al. (2009).

According to Thomas and Golicic (2008), time restriction affects supply chains, increasing friction and limiting collaboration between buyers and retailers, resulting in product acquisition competition. Many consumers in developing nations, for example, were obliged to purchase things quickly

and hastily because of their government-imposed curfew hours and prohibited mobility (A.C. Chang & Kukar-Kinney, 2011). As a consequence, we recommend:

H7A: Time restriction influences recognized competition with buyers.

Time restrictions may affect buyers' purchase decisions and behavior. According to Herrington and Capella (1995), purchaser purchasing patterns are influenced at specific stages below awe-some time limit situations. This thought is supported through Hausman (2000), who argues that consumers who are under a lot of time restrictions do not do any enough or prior education and as a substitute purchase on the spur of the moment. According to Sohn and Lee (2017), time restrictions have a substantial effect on emotions, resulting in impulsive purchases. According to Zheng et al. (2020), time restrictions have a substantial effect on the ideology of crew purchasing conduct. Consumers are also harassed with the aid of the time restriction. According to Mitchell and Papavassiliou (1999), on the grounds that they have to manner huge volumes of information in a short quantity of time (Yao & Oppewal, 2015), resulting in customers unintentionally growing their purchase quantity. This thinking may additionally be traced back to the COVID-19 epidemic, which induced many Developing nations and shoppers to rush to stores in search of life-saving medicines. As a consequence, we recommend:

H7B: Time restriction influences panic purchasing intention.

2.3.8. *Recognized competition*

Crowd purchasing in still a sense of competition among many buyers, prompting them to trust they have to acquire the merchandise earlier than they run out. According to Drury et al. (2013), such things to do are brought about with the aid of an emergency or crisis that influences a person's psychological motivation to hoard or panic buy. According to Gupta and Gentry (2016), fear of inadequacy and uncertainty of availability of more than a few merchandises and offerings lead to aggressive behaviors such as in-store hoarding. According to Castro et al. (2013) shoppers may also assume that something is uncommon if there are simply a few merchandises final on the shelf. Moran characterizes this behavior as "following the crowd". This might also be observed in the COVID-19 buying situation in supermarkets in developing nations (Byun & Sternquist, 2011; Naheed et al., 2021). As a consequence, we recommend

H8: Recognized competition with buyers influences panic purchasing intention.

2.3.9. *Recognized social risk*

Recognized social problems takes place when the bad product/service decisions end result in criticism or disappointment from individuals and households. According to Faarup (2010) and Jawad et al. (2022), there are several stages of social risks, and positive consumers, particularly teenagers, are extra sensitive than others to what reference groups believe. According to Newton (1967), shoppers who are uncovered to a higher stage of social chance require comfort from their reference group when purchasing a product or service. According to Almousa (2011), shoppers seek permission or recommendation from reference businesses to avoid social dangers. According to L.H. Kim et al. (2009), product/service tips from family and pals are considered as a key risk-reduction strategy. Close reference companies have a massive have an impact on men and women when it comes to hoarding items for the duration of a pandemic (Billore & Anisimova, 2021). Take, for example, the problem of loo paper hoarding. This thinking relates to COVID-19 spending because many consumers bought merchandise and offerings that may additionally have posed a societal chance (Zheng et al. 2009). As a consequence, we recommend:

H9: Recognized social risk influences panic purchasing intention.

3. Research methodology

3.1. Participants and procedure

The goal of this research is to discover what causes panic purchasing in 20 dynamic developing countries (“Norway, Ireland, Switzerland, Hong Kong Special Administrative Region of China, Iceland, Germany, Sweden, Australia, the Netherlands, Denmark, Finland, Singapore, the United Kingdom, Belgium, New Zealand, Canada, the United States of America, Austria, Israel, and Japan”). Due to the COVID-19 issue, online data collection was chosen as the most practicable option. An online survey was created using SurveyMonkey. The authors of this research employed social media to disseminate links to the questionnaire, such as Google questionnaire and Facebook. Participants were invited to use the snowballing method to distribute the survey link to others in their networks (Pentina et al., 2016). To participate in the survey, participants must be at least 18 years old. Data was collected in developing nations from January 2020 to June 2021. The adoption of an online Google survey method reduced the risk of social desirability biases.

3.2. Measures

TPB categories for Recognized behavioral control, instinctive norms, and opinion were created and modified (Sharma et al., 2021c). Time restrictions were imposed by Oppewal and Holyoake (2004) & Herrington and Capella (2004). Inadequacy was modelled using Brock (1968), while recognized competition was modelled using Gupta and Gentry (2016). Wu et al. (2019) proposed that recognized social detection risk be used. Chiu et al. (2006) gave the anticipated personal outcome as well as the anticipated community-related outcome.

4. Data analysis

SPSS and AMOS were used to conduct the data analysis. Covariance-based structural equation modeling (CB-SEM) was utilized to evaluate the empirical data since it is best suited to examine structured connections (Wu et al., 2019). The use of CB-SEM allowed the link between theory, philosophy, and facts to be made (Anwar Saddiqui et al., 2018). Anderson and Gerbing (1988) recommended that the measurement model be assessed initially using different fit indices. The research’s variables should be validated for their reliability and validity, according to Anderson and Gerbing (1988). During the COVID-19, appropriate tests should be conducted to measure panic purchasing behavior (Jain et al., 2021).

The data screening system covered searching at disinterested responses and these with missing information. The Z-score values had been used to discover and take away 11 outliers from the sample. The data’s normality was once verified using kurtosis and skewness measures. The variance inflation factors and tolerance degrees proved that there have been no multicollinearity troubles (Hair et al., 2010). The last 2,697 responses had been used for in addition lookup after data filtering processes. The variance inflation elements and tolerance values had been all inside the suited range, indicating that multicollinearity was once not current.

5. Results

5.1. Common method bias

Because this lookup is based on self-reported data, it is quintessential to consider common technique biases. Using Harman’s single thing test, the variance used to be determined to be 36%. Because this fell under the 50% threshold, it was once concluded that the frequent technique bias problem would have no impact on the research’s findings.

5.2. Measurement model

Cronbach’s alpha tests were used to decide the inner consistency of all variables. Opinion (0.933), Instinctive norm (0.958), Recognized Behavioral Control (0.833), Inadequacy (0.841), Time limit

(0.819), Recognized Competition (0.821), Recognized Social Detection Risk (0.898), and Panic Purchasing Intention had been proven to be the most frequent effects (0.943). These findings proved internal consistency. Content validity was once mounted since the element loadings of the research variables have been greater than 0.60. The extracted average variance is used to be extra than 0.50, implying convergent validity. The discriminant validity of the constructs was once then examined is showed in Table 1. As end result of this test, objects “PSC4, PSC5, and PBC3” were removed to assure discriminant validity. The constructs utilized in this investigation indicated that the AVE is larger than the average shared squared variance and most shared variance (MSV). Tables 2 and 3 show the consequences of the discriminant validity tests and confirmatory factor analysis. Furthermore, none of the HTMT values were greater than 0.90, suggesting discriminant validity (Barclays et al., 1995; Bhutto et al., 2020). The outcomes are proven in Table 3 As indicated by using Hair et al. (2010) the size model was once tested to have an applicable mannequin healthy (CFI = 0.93; GFI = 0.90; TLI = 0.92; RMSEA = 0.068).

The structural model was tested after the measurement model was evaluated, and the following findings were obtained. Buyers’ views toward panic purchasing were shown to be strongly affected by projected personal results ($\beta = 0.777$), whereas expected community-related repercussions had a negative effect ($\beta = 0.219$). Opinion purchasing ($\beta = 0.664$), instinctive norm purchasing ($\beta = 0.261$, $p = 0.001$), inadequacy purchasing ($\beta = 0.614$), time restriction purchasing ($\beta = 0.772$), and Recognized competition purchasing ($\beta = 0.423$) were found to favorably affect buyers’ panic purchase intention. Inadequacy ($p = 0.05$) and time restrictions ($p = 0.001$) were shown to improve recognized competition. The recognized social detection risk was shown to have a detrimental effect on buyers’ panic buy intentions ($\beta = 0.082$). This result suggests that, with the exception of H5, all hypotheses in this research were supported by empirical data. According to the data, the model explained a significant portion of the observed variance in this research ($R^2 = 0.77$).

6. Discussion

According to the findings, the buyer’s expected non-public consequence (H1) has the biggest impact on their opinion toward panic purchasing. Buyers will take part in a set of activities if they attain non-public advantages and incentives, which are linked to an excellent opinion (Compeau et al., 1999). Buyers will purchase objects during a pandemic to preserve their physical and mental well-being, in accordance with a high-quality correlation between expected personal end result and panic purchasing opinions. If restrictions are imposed on a consumer’s questioning in panic shopping behaviors, the wide variety of purchases they might also make may also be reduced. This research’s empirical findings are comparable to Lu and Hsiao (2007) and Papadopoulos et al. (2013). According to Lu and Hsiao (2007), anticipated private outcome had a larger effect on customer opinions (behavioral intentions), prompting buyers to use blogs greater to assume rewards.

Expected advantages to the neighborhood (H2) have a detrimental effect on views. Buyers have been unaware that purchasing extra than they want may harm or downside different buyers. While non-public predicted outcome might also augment and result in predicted community-related benefits, Danziger’s concept was not supported by means of the data. Danziger (2020) determined that community reactions to COVID-19 have been positive, with communities supporting those who were less wealthy. For example, volunteer companies have been fashioned to provide offerings such as meal shopping, supporting disabled humans and their families, and enacting legislative adjustments to accommodate such an effect. Local environmental factors will very definitely affect expected community benefits. Because COVID-19 instances have been uncommon in growing nations, panic purchasing has decreased than in Australia and New Zealand (Schultz, 2020; Kumar, 2020).

Our empirical findings additionally reveal that opinion (H3) has a massive and high-quality effect on panic buying behavior. This implies that a person’s opinion toward a positive pastime will have

Table 1. Discriminant validity

	CR	AVE	MSV	MaxR(H)	PSC	EPO	F1	OP	IN	PBC	TC	PCM	PBI	SDR
PSC	0.75	0.5	0.1	0.765	0.709									
EPO	0.92	0.74	0.64	0.927	0.317	0.86								
F1	0.87	0.63	0.22	0.874	-0.02	-0.4	0.793							
OP	0.93	0.74	0.64	0.941	0.22	0.4	-0.47	0.86						
IN	0.96	0.82	0.6	0.963	0.213	0.29	-0.29	0.27	0.91					
PBC	0.71	0.55	0.11	0.716	-0.03	0.17	-0	0.33	0.3	0.74				
TC	0.79	0.56	0.41	0.822	0.287	0.55	-0.14	0.51	0.27	0.16	0.75			
PCM	0.77	0.57	0.41	0.892	0.262	0.28	0.025	0.33	0.38	0.19	0.34	0.75		
PBI	0.94	0.77	0.64	0.949	0.171	0.22	-0.42	0.3	0.43	0.32	0.59	0.43	0.88	
SDR	0.9	0.75	0.14	0.908	-0.04	0.11		0.1	0.16	0.27	0.35	0.38	0.23	0.87

Table 2. Confirmatory factor analysis results

		SL	CR	SMC	AVE	MSV
Expected personal outcome	EPO1	0.898	0.919	0.807	0.739	0.639
	EPO2	0.892		0.796		
	EPO3	0.869		0.756		
	EPO4	0.772		0.597		
Expected community outcome	ECO1	0.759	0.871	0.576	0.629	0.222
	ECO2	0.822		0.675		
	ECO3	0.767		0.589		
	ECO4	0.822		0.675		
Opinion	OP1	0.832	0.934	0.692	0.738	0.642
	OP2	0.854		0.729		
	OP3	0.914		0.835		
	OP4	0.898		0.806		
	OP5	0.793		0.629		
Instinctive norm	IN1	0.854	0.958	0.729	0.822	0.597
	IN 2	0.912		0.831		
	IN 3	0.938		0.881		
	IN 4	0.937		0.877		
	IN 5	0.889		0.789		
Recognized behavioral control	PBC1	0.700	0.705	0.490	0.546	0.107
	PBC2	0.778		0.605		
	PBC3	0.604		0.365		
	PSC1	0.937		0.878		
	PSC2	0.620		0.385		
Time restriction	TC1	0.834	0.792	0.695	0.564	0.410
	TC 2	0.803		0.645		
	TC 3	0.591		0.350		
Recognized competitiveness	PCM1	0.301	0.770	0.090	0.565	0.410
	PCM2	0.889		0.791		
	PCM3	0.902		0.814		
Social detection risk	SDR1	0.812	0.900	0.659	0.750	0.144
	SDR2	0.907		0.822		
	SDR3	0.877		0.769		
Panic purchasing intention	PBI1	0.906	0.944	0.821	0.771	0.642
	PBI2	0.855		0.731		
	PBI3	0.922		0.849		
	PBI4	0.892		0.795		
	PBI5	0.811		0.658		

an impact on whether or not or now not they interact in it (Ajzen, 1991). Buyers' main worries in the case of a pandemic, according to this research, are their security, health, and capacity to fulfill the wishes of themselves and their household members. Buyers experience the epidemic has had an effect on their purchasing patterns, with humans placing their personal wishes over the wishes of the neighborhood (Laroche et al., 2001). The contemporary research's empirical findings are regular with those of Liu et al. (2021), Kim et al. (2021a, 2021b) and Yadav and Pathak (2016).

Table 3. HTMT analysis

	PSC	EPO	F1	OP	IN	PBC	TC	PCM	PBI	SDR
PSC										
EPO	0.36									
F1	0.04	0.36								
OP	0.53	0.26	0.28							
IN	0.25	0.12	0.69	0.07						
PBC	0.13	0.65	0.09	0.29	0.03					
TC	0.41	0.52	0.44	0.28	0.55	0.37				
PCM	0.59	0.66	0.35	0.17	0.51	0.55	0.04			
PBI	0.17	0.27	0.49	0.31	0.33	0.38	0.54	0.62		
SDR	0.26	0.26	0.09	0.31	0.21	0.53	0.29	0.31	0.25	

During COVID-19 and post-pandemic, overseas travel for Chinese tourists, and organic food exports, have a strong association between purchaser conduct and of the opinion in meals provider delivery. Instinctive norms (H4) have proven a fantastic however susceptible sizable relationship in describing panic buying behavior. According to the previous research, humans interact in things to do that are deemed perfect by society (Slade et al., 2015; San-Martin et al., 2015). When contrasted to instinctive norms, however, our empirical data show that panic purchases in growing international locations are most regularly pushed by means of private worry (i.e. predicted non-public consequence). In research, recognized behavioral management has been shown to have a poor impact on panic purchasing intentions. Buyers reply rashly in the match of a pandemic. Buyers in developing nations regularly purchase extra than they require, causing them to request that the extra objects be again to the stores.

Inadequacy (H6b) has been established to have a full-size and beneficial effect on panic purchasing intentions. During pandemics, there is a constant worry that assets would be insufficient to fulfil everyone's wants and aspirations. Buyers feel compelled to accumulate things immediately quickly, creating a feel of urgency. As a result, clients' purchasing freedom must be confined (Aggarwal et al., 2011). It not solely creates worry of losing out on items in the case of a pandemic, but it also makes it less difficult for shoppers to make snap decisions. Strict attempts to regulate how items are bought can be a useful resource in reducing inadequacy and ensuring that commodities and services are dispersed fairly among clients. Inadequacy, in contrast to its impact on panic buying intentions, has had a high-quality however minor impact on recognized opposition (H6a). The inadequacy of assets was once highlighted as an essential thing in choosing who would win the race (Nichols, 2012).

Buyers' feelings and behavioral responses may additionally be affected by the retail store's inadequacy state of affairs (Nichols, 2010; Byun & Sternquist, 2008). As a result, corporations may also encourage shoppers to compete with one another, allowing customers to get constrained merchandise quickly (Gupta & Gentry, 2016). If shoppers are confronted with limited time and quantity incentives, or if they are undecided about a product, they may also make impulsive purchases. According to lookup via Islam et al. (2021) and Lehberger et al. (2021), inadequacy instills anxiety in purchasers, inflicting them to buy impulsively and compulsively below a COVID-19 scenario. These results have been in line with our present investigation's empirical findings.

According to empirical research, time limit (H7b) has a high quality and large relationship with panic buying intentions. A previous lookup found that when shoppers are pressed for time, they opt to avoid doing research on a product (Reutskaja et al., 2011; Konus et al., 2008; Silayoi &

Speece, 2004). According to the present research, customers will just make purchasing choices without considering whether or not their moves are correct. It is important to say that consumer experience they should pass quickly in order to get the items they want.

Time limit has a big and wonderful relationship with Recognized competitiveness (H7a), and the empirical findings of this research assist prior lookup (Godinho et al., 2016; Javed & Javed, 2015). Consumers' choices are influenced by using time restrictions, as verified through prior studies that compelled customers to make options within a particular time frame. Furthermore, shoppers who are forced for time are more inclined to lean towards appealing product packaging and competition.

According to the present research, shoppers wish to attain products, which produces a demand for commodities in a pandemic. While border restrictions may also decrease supply, as we found at some stage in the COVID-19 epidemic, such restrictions may additionally put consumers at risk of dropping out on crucial goods at some point of a crisis (Moon & Lee, 2013). Time limitations additionally affect buy choices Time limitations can beautify purchase hastening and intention, prompting customers to make hasty choices (Aggarwal & Vaidyanathan, 2003). Governments can higher control such practices by establishing barriers on the quantity of food that man or woman consumers can also buy at supermarkets. This method will now not only limit panic purchasing, but it will additionally help to stimulate the economy and foster an experience of food security with the aid of reducing inadequacy and competition.

The appreciation of social danger has a dangerous impact on buyers' panic buying intentions (H9). Consumers who are confused of how to behave in a crisis may also emulate other individuals, according to research consequences (Prentice et al., 2020a, b; Almousa, 2011). According to recent research, regularly recognized societal risks do now not contribute to panic purchasing. As an end result of panic purchasing behavior amongst COVID-19 buyers who make poor alternatives to survive, the pandemic might also inflict societal shame. Buyers agree with that purchasing at some point of a pandemic poses a social danger because reference groups' guidelines may additionally make buyers feel humiliated or at ease with their purchases (Amin & Mahasan, 2014). Concerns regarding reference agencies end up a motive of anxiousness for the client, influencing his behavior. According to empirical research, buyers' panic buy intentions are positively and appreciably connected to Recognized competition (H8). Human congestion in shops oftentimes leads to the sense of competitiveness, according to modern research (Byun & Mann, 2011; Nichols, 2010), indicating a high-quality connection. The findings recommend that a perception of inadequacy of goods and services may make contributions to competition. Buyers believed they had been competing with different shoppers, however they additionally believed that customers have to be conscious of the buying habits of other buyers.

7. Conclusion

The purpose of this research is to determine what factors influence panic purchasing by consumers during the COVID-19 crisis. Based on survey responses, this research found that buyers' opinions about panic purchasing are positively correlated with recognized personal results, but anticipated community-related consequences are negatively associated with buyers' opinions toward panic purchasing. Inadequacy and time restriction were found to be positively related to buyers' feelings of competitiveness with other buyers. Buyers' panic purchasing intentions were also linked to their opinion, instinctive norms, recognized behavioral control, inadequacy, time restriction, and recognized competitiveness, according to the research. Buyers' panic purchasing intentions were found to be negatively correlated with their sense of the risk of social discovery.

The model created as a result of this research offers a high predictive value (77%) for forecasting buyers' panic purchasing behavior. These findings contribute to the small body of information about buyer behavior during pandemics, and they can aid merchants and governments in devising

strategies to reduce panic purchasing. Despite the research's merits, further research is required to better understand buyer behavior when faced with unanticipated challenges.

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