

Jawad, Muhammad; Rizwan, Sohail; Ahmed, Saba; Khalid, Haris Bin; Naz, Munazza

Article

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

Cogent Business & Management

Provided in Cooperation with:

Taylor & Francis Group

Suggested Citation: Jawad, Muhammad; Rizwan, Sohail; Ahmed, Saba; Khalid, Haris Bin; Naz, Munazza (2022) : Discovering panic purchasing behavior during the COVID-19 pandemic from the perspective of underdeveloped countries, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 9, Iss. 1, pp. 1-19, <https://doi.org/10.1080/23311975.2022.2141947>

This Version is available at:

<https://hdl.handle.net/10419/289329>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

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

Muhammad Jawad, Sohail Rizwan, Saba Ahmed, Haris Bin Khalid & Munazza Naz

To cite this article: Muhammad Jawad, Sohail Rizwan, Saba Ahmed, Haris Bin Khalid & Munazza Naz (2022) Discovering panic purchasing behavior during the COVID-19 pandemic from the perspective of underdeveloped countries, Cogent Business & Management, 9:1, 2141947, DOI: [10.1080/23311975.2022.2141947](https://doi.org/10.1080/23311975.2022.2141947)

To link to this article: <https://doi.org/10.1080/23311975.2022.2141947>



© 2022 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.



Published online: 01 Nov 2022.



Submit your article to this journal [↗](#)



Article views: 2101



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 2 View citing articles [↗](#)



Received: 07 July 2022
Accepted: 27 October 2022

*Corresponding author: Muhammad Jawad, Department of Commerce, Fatima Jinnah Women University, Old Presidency, The Mall, kachari Chowk, Rawalpindi, Pakistan
E-mail: muhammad_jawad85@yahoo.com

Reviewing editor:
Teresa Villace, Business. Marketing Area, Universidad Rey Juan Carlos, Spain

Additional information is available at the end of the article

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 (Laatoh 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 Golcic (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 (Billlore & 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.

Acknowledgment

The corresponding author appreciated the efforts of its research team to this task which will help out the policy-maker for better implementation of policies.

Funding

The author(s) reported that there is no funding associated with the work featured in this article

Author details

Muhammad Jawad¹
 E-mail: muhammad_jawad85@yahoo.com
 ORCID ID: <http://orcid.org/0000-0003-3663-2256>
 Sohail Rizwan¹
 Saba Ahmed²
 Haris Bin Khalid³
 Munazza Naz⁴
¹ Department of Commerce, Fatima Jinnah Women University, Rawalpindi, Pakistan.
² Department of Public Administration, Fatima Jinnah Women University, Rawalpindi, Pakistan.
³ Department of Management Sciences, Capital University of Science and Technology, Islamabad, Pakistan.
⁴ Department of Mathematical Sciences, Fatima Jinnah Women University, Rawalpindi Pakistan.

Disclosure statement

The authors declare that they have no conflict of interest.

Ethical approval

This article does not contain any studies with human participants performed by any of the authors. This article does not contain any studies with human participants or animals performed by any of the authors.

Citation information

Cite this article as: Discovering panic purchasing behavior during the COVID-19 pandemic from the perspective of underdeveloped countries, Muhammad Jawad, Sohail Rizwan, Saba Ahmed, Haris Bin Khalid & Munazza Naz, *Cogent Business & Management* (2022), 9: 2141947.

References

- Aggarwal, P., Jun, S. Y., & Huh, J. H. (2011). Inadequacy messages: A consumer competition perspective. *Journal of Advertising*, 40(3), 19–30. <https://doi.org/10.2753/JOA0091-3367400302>
- Aggarwal, P., & Vaidyanathan, R. (2003). Use it or lose it: Purchase acceleration effects of time-limited promotions. *Journal of Consumer Behavior*, 2(4), 393–403. <https://doi.org/10.1002/cb.116>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Almoussa, M. (2011). Recognized risk in apparel online shopping: A multidimensional perspective. *Canadian Social Science*, 7(2), 23–31. <https://doi.org/10.3968/jcss.1923669720110702.003>
- Amin, S., & Mahasan, S. S. (2014). Relationship between consumer recognized risks and consumer trust: A research of Sainsbury store. *Middle-East Journal of Scientific Research*, 19(5), 647–655. <https://doi.org/10.5829/idosi.mejsr.2014.19.5.13624>
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Anwar Saddiqi, S., Jawad, M., Naz, M., & Khan Niazi, G. S. (2018). Exchange rate, fiscal policy and international oil prices impact on oil prices in Pakistan: A volatility and granger causality analysis. *Review of Innovation and Competitiveness: A Journal of Economic and Social Research*, 4(1), 27–46. <https://doi.org/10.32728/ric.2018.41/2>
- Arafat, S. M. Y., Kar, S. K., Menon, V., Kaliamoorthy, C., Mukherjee, S., Alradie-Mohamed, A., Sharma, P., Marthoenis, M., & Kabir, R. (2020). Panic purchasing: An insight from the content analysis of media reports during COVID-19 pandemic. *Neurology Psychiatry and Brain Research*, 37, 100–103. <https://doi.org/10.1016/j.npbr.2020.07.002>
- Barclays, D. W., Higgins, C., & Thompson, R. (1995). The partial least squares (PLS) approach to causal modeling: Personal computer adaptation and use as illustration. *Technology Studies*, 2(2), 285–309.
- BBC News. (2020). *Coronavirus: How do I get a food parcel?*, available at: <https://www.bbc.com/news/business-51737030> (accessed 11 April 2020)
- Bhutto, T. A., Farooq, R., Talwar, S., Awan, U., & Dhir, A. (2020). Green inclusive leadership and green creativity in the tourism and hospitality sector: Serial mediation of green psychological climate and work engagement. *Journal of Sustainable Tourism*, 1–22. <https://doi.org/10.1080/09669582.2020.1867864>
- Billore, S., & Anisimova, T. (2021). Panic purchasing research: A systematic review of literature review and future research agenda. *International Journal of Consumer Studies*, 45(4), 777–804. Vol. ahead. Vol. aheadofprint No. aheadofprint. <https://doi.org/10.1111/ijcs.12669>
- Brock, T. C. (1968). Implications of commodity theory for value change. In A. G. Greenwald, T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of opinions*. Academic Press.
- Byun, S. E., & Mann, M. (2011). The influence of others: The effect of recognized human crowding on recognized competition, emotions, and hedonic shopping value. *Clothing and Textiles Research Journal*, 29(4), 284–297. <https://doi.org/10.1177/0887302X11422820>
- Byun, S. E., & Sternquist, B. (2008). The antecedents of in-store hoarding: Measurement and application in the fast-fashion retail environment. *International Review of Retail Distribution and Consumer Research*, 18, 133–147. <https://doi.org/10.1080/09593960701868241>
- Byun, S. E., & Sternquist, B. (2011). Fast fashion and in-store hoarding-the drivers, moderator, and consequences. *Clothing and Textiles Research Journal*, 29(3), 187–201. <https://doi.org/10.1177/0887302X11411709>
- Cai, R. R., Lu, L., & Gursay, D. (2018). Effect of disruptive buyer behaviors on others' overall service experience: An appraisal theory perspective. *Tourism Management*, 69, 330–344. <https://doi.org/10.1016/j.tourman.2018.06.013>
- Castro, I. A., Morales, A. C., & Nowlis, S. M. (2013). The influence of disorganized shelf displays and limited product quantity on consumer purchase. *Journal of Marketing*, 77(4), 118–133. <https://doi.org/10.1509/jm.11.0495>
- Chandran, S., & Morwitz, V. G. (2005). Effects of participative pricing on consumers' cognitions and actions: A goal theoretic perspective. *Journal of Consumer Research*, 32(2), 249–259. <https://doi.org/10.1086/432234>

- Chang, A. C., & Kukar-Kinney, M. (2011). The effects of shopping aid usage on consumer purchase decision and decision satisfaction. *Asia Pacific Journal of Marketing and Logistics*, 23(5), 745–754. <https://doi.org/10.1108/13555851111183110>
- Chang, H. J., & Watchravesringkan, K. (2018). Who are sustainably minded apparel shoppers? An investigation to the influencing factors of sustainable apparel consumption. *International Journal of Retail and Distribution Management*, 46(2), 148–162. <https://doi.org/10.1108/IJRDM-10-2016-0176>
- Chen, L. (2020), “Supermarkets urge people to stop purchasing online”, available at: <https://www.rnz.co.nz/news/national/412425/supermarkets-urge-people-to-stop-panic-purchasing> (accessed 3 July 2020)
- Chiu, C.-M., Hsu, M.-H., & Wang, E. T. G. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision Support Systems*, 42(3), 1872–1888. <https://doi.org/10.1016/j.dss.2006.04.001>
- Chung, J. E. (2011). Social networking in online support groups for health: How online social networking benefits patients. *Journal of Health Communication*, 19(6), 639–659. <https://doi.org/10.1080/10810730.2012.757396>
- Chung, N., Song, H. G., & Lee, H. (2017). Consumers’ impulsive purchasing behavior of restaurant products in social commerce. *International Journal of Contemporary Hospitality Management*, 29(2), 709–731. <https://doi.org/10.1108/IJCHM-10-2015-0608>
- Cialdini, R. B., & Trost, M. R. (Eds). (1998). *Social influence: Social norms, conformity, and compliance*. McGraw-Hill.
- Compeau, D. R., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal research. *MIS Quarterly*, 23(2), 145–158. <https://doi.org/10.2307/249749>
- Connell, K. Y. H., & Kozar, J. M. (2012). Social normative influence: An exploratory research investigating its effectiveness in increasing engagement in sustainable apparel-purchasing behaviors. *Journal of Global Fashion Marketing*, 3(4), 172–179. <https://doi.org/10.1080/20932685.2012.10600847>
- Consumer Council of Developing countries. (2020), “COVID-19-council urges consumers to be considerate”, available at: <http://www.consumersdevelopingcountries.org/press-releases/press-releases-2020/covid-19-council-urges-consumers-to-be-considerate> (accessed 2 July 2020)
- Coskun, M., Gupta, S., & Burnaz, S. (2020). Store disorderliness effect: Shoppers’ competitive behaviours in a fast-fashion retail store. *International Journal of Retail and Distribution Management*, 48(7), 763–779. <https://doi.org/10.1108/IJRDM-06-2019-0193>
- Danziger, P. M. (2020), *After panic purchasing subsidies, will coronavirus make lasting changes to consumer psychology?*, *Forbes*, available at: <https://www.forbes.com/sites/pamdanziger/2020/03/08/first-comes-panic-purchasing-but-afterwards-will-the-coronavirus-leave-lasting-changes-to-consumer-psychology/?sh5369f801677e8> (accessed 4 August 2020)
- Debiec, J. (2020), “Evolution explains why we’re falling victim to fear contagion as COVID-19 spreads”, available at: <https://www.fastcompany.com/90488140/mit-has-an-ambitious-plan-to-detect-if-youve-been-exposed-to-the-coronavirus> (accessed 10 April 2020)
- Deng, Y., Wang, M., & Yousefpour, R. (2017). How do people’s perceptions and climatic disaster experiences influence their daily behaviors regarding adaptation to climate change? – A case research among young generations. *The Science of the Total Environment*, 581, 840–847. <https://doi.org/10.1016/j.scitotenv.2017.01.022>
- Drury, J., & Alfidhli, K. (Eds). (2019). *Social Identity, Emergencies and Disasters*. Royal College of Psychiatrists.
- Drury, J., Novelli, D., & Stott, C. (2013). Representing crowd behaviour in emergency planning guidance: ‘mass panic’ or collective resilience? *Resilience*, 1(1), 18–37. <https://doi.org/10.1080/21693293.2013.765740>
- Drury, J., & Reicher, S. (2012). Collective action and psychological change: The emergence of new social identities. *British Journal of Social Psychology*, 39(4), 579–604. <https://doi.org/10.1348/014466600164642>
- El-Bar, K. (2020), *UK Gov’t urges end to panic purchasing as virus deaths hit 233*, *anadolu agency*, available at: <https://www.aa.com.tr/en/europe/uk-govt-urges-end-to-panic-purchasing-as-virus-deaths-hit-233/1774353#> (accessed 4 April 2020)
- Evans, M., Donelle, L., & Hume-Loveland, L. (2012). Social support and online postpartum depression discussion groups: A content analysis. *Patient Education and Counseling*, 87(3), 402–410. <https://doi.org/10.1016/j.pec.2011.09.011>
- Faarup, P. K. (2010). *The marketing framework: international marketing and sales*. Fairchild Books.
- Fishbein, M., & Ajzen, I. (1975). *Belief, opinions, intention and behaviour: An introduction to theory and research*. Addison-Wesley.
- Frajtova Michalikova, K., Blazek, R., & Rydell, L. (2022). Delivery apps use during the COVID-19 pandemic: Consumer satisfaction judgments, behavioral intentions, and purchase decisions. *Economics, Management, and Financial Markets*, 17(1), 70–82. <https://doi.org/10.22381/emfm17120225>
- Godinho, S., Prada, M., & Garrido, M. V. (2016). Under pressure: An integrative perspective of time restriction effect on consumer decision-making. *Journal of International Consumer Marketing*, 28(4), 251–273. <https://doi.org/10.1080/08961530.2016.1148654>
- Gupta, S., & Gentry, J. W. (2016). The behavioural responses to recognized inadequacy – The case of fast fashion. *International Review of Retail Distribution and Consumer Research*, 26(3), 260–271. <https://doi.org/10.1080/09593969.2016.1147476>
- Hair, F. J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Prentice Hall.
- Hamilton, R., Thompson, D., Sterling, B., Chaplin, L. N., Griskevicius, V., Goldsmith, K., Zhu, M., John, D. R., Mittal, C., O’Guinn, T., Piff, P., Roux, C., Shah, A., & Zhu, M. (2019). The effects of inadequacy on consumer decision journeys. *Journal of the Academy of Marketing Science*, 47(3), 532–550. <https://doi.org/10.1007/s11747-018-0604-7>
- Hassandoust, F., Akhlaghpour, S., & Johnston, A. C. (2021). Individuals’ privacy concerns and adoption of contact tracing mobile applications in a pandemic: A situational privacy calculus perspective. *Journal of the American Medical Informatics Association*, 28(3), 463–471. <https://doi.org/10.1093/jamia/ocaa240>
- Hassan Ramey, M., Jawad, M., Naz, M., Küçük Yılmaz, A., & Yazgan, E. (2019). The impact of employee engagement on job insecurity by moderating role of psychological empowerment to enhance corporate performance. *International Journal of Asian Business and Information Management (IJABIM)*, 10(4), 72–88. <https://doi.org/10.4018/IJABIM.2019100106>
- Hausman, A. (2000). A multi-method investigation of consumer motivations in impulse purchasing

- behaviour. *Journal of Consumer Marketing*, 17(5), 403–419. <https://doi.org/10.1108/07363760010341045>
- Herjanto, H., Amin, M., & Purington, E. F. (2021). Panic purchasing: The effects of thinking style and situational ambiguity. *Journal of Retailing and Consumer Services*, 60, 102455. <https://doi.org/10.1016/j.jretconser.2021.102455>
- Herrington, J. D., & Capella, L. M. (1995). Shopper reactions to perceived time pressure. *International Journal of Retail & Distribution Management*, 23(12), 13–20. <https://doi.org/10.1108/12>
- Herrington, J. D., & Capella, L. M. (1995). Shopper reactions to recognized time restriction. *International Journal of Retail and Distribution Management*, 23(12), 13–20. <https://doi.org/10.1108/09590559510103963>
- Hsi-Peng, L., & Kuo-Lun, H. (2007). Understanding intention to continuously share information on weblogs. *Internet Research*, 17(4), 345–361. <https://doi.org/10.1108/10662240710828030>
- Hsi-Peng, L., & Kuo-Lun, H. (2009). Gender differences in reasons for frequent blog posting. *Online Information Review*, 33(1), 135–156. <https://doi.org/10.1108/14684520910944436>
- Islam, T., Pitafi, H. A., Arya, V., Wang, Y., Akhtar, N., Mubarik, S., & Xiaobel, L. (2021). Panic purchasing in the COVID-19 pandemic: A multi-country examination. *Journal of Retailing and Consumer Services*, 59(102357), 102357. <https://doi.org/10.1016/j.jretconser.2020.102357>
- Itani, O. S., & Hollebeek, L. D. (2021). Light at the end of the tunnel: Visitors' virtual reality (versus in-person) attraction site tour-related behavioral intentions during and post-COVID-19. *Tourism Management*, 84 (104290), 104290. <https://doi.org/10.1016/j.tourman.2021.104290>
- Jain, N. K., Gajjar, H., & Shah, B. J. (2021). Electronic logistics service quality and repurchase intention in e-tailing: Catalytic role of shopping satisfaction, payment options, gender and returning experience. *Journal of Retailing and Consumer Services*, 59 (102360), 102360. <https://doi.org/10.1016/j.jretconser.2020.102360>
- Javed, S. A., & Javed, S. (2015). The effect of product's packaging color on buyers' purchasing preferences under time restriction. *Marketing and Branding Research*, 2(1), 4–14. <https://doi.org/10.33844/mbr.2015.60293>
- Jawad, M., Malik Tabassum, T., Abraiz, A., & Raja, S. (2012). Empowerment effect the team performance. *SAVAP International*, 3(3), 383–391. [http://www.savap.org.pk/journals/ARInt/Vol.3\(3\)/2012\(3.3-44\).pdf](http://www.savap.org.pk/journals/ARInt/Vol.3(3)/2012(3.3-44).pdf)
- Jawad, M., Maroof, Z., & Naz, M. (2021). Impact of pandemic COVID-19 on global economies (a seven-scenario analysis). *Managerial and Decision Economics*, 42(7), 1897–1908. <https://doi.org/10.1002/mde.3337>
- Jawad, M., Naz, M., & Maroof, Z. (2021). Era of digital revolution: Digital entrepreneurship and digital transformation in emerging economies. *Bus Strat Dev*, 4(3), 220–228. <https://doi.org/10.1002/bsd2.145>
- Jawad, M., Naz, M., Maroof, Z., Waheed, N., & Rashid, T. (2022). Impact of stock investment on economic performance: A comparative study of on developed & developing economies. *Qual Quant*. <https://doi.org/10.1007/s11135-022-01447-0>
- Jawad, M., Naz, M., Rizwan, S., Maroof, Z., & Waheed, N. (2022). Afkar Majeed & Tahani Rashid | David McMillan (Reviewing editor) *Impact of long run investment of stock in developed & developing economies*, Cogent Economics & Finance, Vol. 10, 1. <https://doi.org/10.1080/23322039.2022.2085378>
- Jawad, M., Naz, M., & Shamsi, A. M. (2021). Impact of noninterest income on bank risk-taking and bank lending spread. *Review of Pacific Basin Financial Markets and Policies*, 24(4), 04. 2021. <https://doi.org/10.1142/S0219091521500296>
- Khan, M. D. N. A. (2020). Intention to reserve food during COVID-19 pandemic among Bangladeshi internet users: Based on theory of planned behaviour. *European Journal of Medical and Educational Technologies*, 13(2), 1–9. <https://www.ejmet.com/download/intention-to-reserve-food-during-covid-19-pandemic-among-bangladeshi-internet-users-based-on-theory-8299.pdf>
- Khanra, S., Dhir, A., Kaur, P., & Joseph, R. P. (2021). Factors influencing the adoption postponement of mobile payment services in the hospitality sector during a pandemic. *Journal of Hospitality and Tourism Management*, 46, 26–39. <https://doi.org/10.1016/j.jhtm.2020.11.004>
- Kim, J. J., Kim, I., & Hwang, J. (2021a). A change of recognized innovativeness for contactless food delivery services using drones after the outbreak of COVID-19. *International Journal of Hospitality Management*, 93(102758), 102758. <https://doi.org/10.1016/j.ijhm.2020.102758>
- Kim, L. H., Qu, H., & Kim, D. J. (2009). A research of recognized risk and risk reduction of purchasing air-tickets online. *Journal of Travel and Tourism Marketing*, 26(3), 203–224. <https://doi.org/10.1080/10548400902925031>
- Kim, J. J., Yang, K., Min, J., & White, B. (2021b). Hope, fear, and consumer behavioral change amid COVID-19: Application of protection motivation theory. *International Journal of Consumer Studies*, Vol. ahead, Vol. aheadofprint No. ahead No. aheadofprint. <https://doi.org/10.1111/ijcs.12700>
- Kitching, C. (2016). *Hurricane Matthew sparks apocalyptic scenes in supermarkets as panicked shoppers stock up food and water, mirror*, available at: <http://www.mirror.co.uk/news/world-news/hurricane-matthew-sparks-apocalyptic-scenes-8989661> (accessed 19 March 2021)
- Konus, U., Verhoef, P. C., & Neslin, S. A. (2008). Multichannel shopper segments and their covariates. *Journal of Retailing*, 84(4), 398–413. <https://doi.org/10.1016/j.jretai.2008.09.002>
- Kordzadeh, N., Warren, J., & Seifi, A. (2016). Antecedents of privacy calculus components in virtual health communities. *International Journal of Information Management*, 36(5), 724–734. <https://doi.org/10.1016/j.ijinfomgt.2016.04.015>
- Kumalawati, R., Murliawan, K. H., Yulianti, A., Nasruddin, & Nugroho, A. R. (2021). Public communication for Covid-19 disaster mitigation. *Advances in Social Sciences, Education and Humanities Research*, 525, 249–255. <https://doi.org/10.2991/assehr.k.210222.040>
- Kumar, K. (2020). "Developing countries trying to return goods: FCCC", available at: <https://www.fbcnews.com.fj/news/covid-19/developingcountriesans-trying-to-return-goods-fccc/> (accessed 3 August 2020)
- Laato, S., Islam, A. K. M. N., Farooq, A., & Dhir, A. (2020). Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus-organism-response approach. *Journal of Retailing and Consumer Services*, 57(102224), 102224. <https://doi.org/10.1016/j.jretconser.2020.102224>
- Laato, S., Islam, A. K. M. N., Farooq, A., & Dhir, A. (2020). Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus-organism-response approach. *Journal of Retailing and Consumer Services*, 57(102224). <https://doi.org/10.1016/j.jretconser.2020.102224>

- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503–520. <https://doi.org/10.1108/EUM000000000006155>
- Lee, R., Murphy, J., & Neale, L. (2009). The interactions of consumption characteristics on social norms. *Journal of Consumer Marketing*, 26(4), 277–285. <https://doi.org/10.1108/07363760910965873>
- Lehberger, M., Kleih, A. K., & Sparke, K. (2021). Panic purchasing in times of coronavirus (COVID-19): Extending the theory of planned behavior to understand the stockpiling of nonperishable food in Germany. *Appetite*, 1(161, 105118). <https://doi.org/10.1016/j.appet.2021.105118>
- Lewis, H. (2020). “How panic-purchasing revealed the problem with the modern world. The pandemic has shown how just-in-time systems are also fragile”, available at: <https://www.theatlantic.com/international/archive/2020/03/coronavirus-panic-purchasing-britain-us-shopping/608731/> (accessed 11 April 2020)
- Liu, Y., Shi, H., & Amin, A. (2021). Factors influencing Chinese residents’ post-pandemic outbound travel intentions: An extended theory of planned behavior model based on the perception of COVID-19. *Tourism Review*, Vol. ahead of print No. ahead of print, 2020–2458. <https://doi.org/10.1108/TR-09-2020-2458>
- Long, N. N., & Khoi, B. H. (2020). An empirical research about the intention to hoard food during COVID-19 pandemic. *Journal of Mathematics, Science and Technology Education*, 16(7). <https://doi.org/10.29333/ejmste/8207>
- Lu, H.-P., & Hsiao, K.-L. (2007). Understanding intention to continuously share information on weblogs. *Internet Research*, 17(4), 345–361. <https://doi.org/10.1108/10662240710828030>
- Mitchell, V. W., & Papavassiliou, V. (1999). Marketing causes and implications of consumer confusion. *The Journal of Product and Brand Management*, 8(4), 319–342. <https://doi.org/10.1108/10610429910284300>
- Moon, S. J. (2021). Investigating beliefs, opinions, and intentions regarding green restaurant patronage: An application of the extended theory of planned behavior with moderating effects of gender and age. *International Journal of Hospitality Management*, 92 (102727), 102727. <https://doi.org/10.1016/j.ijhm.2020.102727>
- Moon, J.-Y., & Lee, K.-H. (2013). Influence of time restriction on the purchase decision making process in apparel shopping. *The Research Journal of the Costume Culture*, 21(1), 117–128. <https://doi.org/10.7741/RJCC.2013.21.1.117>
- Moran, P. (2020). “Herd Effect”: Social media images of empty shelves fuelling panic purchasing over coronavirus, says prof, CBC, available at: <https://www.cbc.ca/radio/thecurrent/the-current-for-march-3-2020-1.5483657/herd-effect-social-media-images-of-empty-shelves-fuelling-panic-purchasing-over-coronavirus-says-prof-1.5483674> (accessed 24 May 2021)
- Naheed, R., Jawad, M., Naz, M., Sarwar, B., & Naheed, R. (2021). Managerial ability and investment decisions: Evidence from Chinese market. *Manage Decis Econ*, 42(4), 985–997. <https://doi.org/10.1002/mde.3287>
- Newton, D. A. (Ed.). (1967). *A marketing communications model for sales management*. Harvard University Press.
- Nichols, B. S. (2010). *Exploring and explaining consumer competition: A mixed-methods approach to understanding the phenomenon*, available at: <https://trace.tennessee.edu/> (accessed 3 July 2020)
- Nichols, B. S. (2012). The development, validation, and implications of a measure of consumer competitive arousal (CCAR). *Journal of Economic Psychology*, 33(1), 192–205. <https://doi.org/10.1016/j.joep.2011.10.002>
- Norberg, M., & Rucker, D. (2020). “Psychology can explain why coronavirus drives us to panic buy. It also provides tips on how to stop”, The Conversation, available at: <https://theconversation.com/psychology-can-explain-why-coronavirus-drives-us-to-panic-buy-it-also-provides-tips-on-how-to-stop-134032> (accessed 6 April 2020)
- Novemsky, N. (2020). “Why a pandemic leads to panic purchasing”, available at: insights.som.yale.edu/insights/why-pandemic-leads-to-panic-purchasing (accessed 11 April 2020)
- Oppewal, H., & Holyoake, B. (2004). Bundling and retail agglomeration effects on shopping behavior. *Journal of Retailing and Consumer Services*, 11(2), 61–74. [https://doi.org/10.1016/S0969-6989\(02\)00079-6](https://doi.org/10.1016/S0969-6989(02)00079-6)
- Pahayahay, A., & Khalili-Mahani, N. (2020). What media helps, what media hurts: A mixed methods survey research of coping with COVID-19 using the media repertoire framework and the appraisal theory of stress. *Journal of Medical Internet Research*, 22(8), e20186. <https://doi.org/10.2196/20186>
- Papadopoulos, T., Stamati, T., & Nopparuch, P. (2013). Exploring the determinants of knowledge sharing via employee weblogs. *International Journal of Information Management*, 33(1), 133–146. <https://doi.org/10.1016/j.ijinfomgt.2012.08.002>
- Pentina, I., Zhang, L., Bata, H., & Chen, Y. (2016). Exploring privacy paradox in information-sensitive mobile app adoption: A cross-cultural comparison. *Computers in Human Behavior*, 65, 409–419. <https://doi.org/10.1016/j.chb.2016.09.005>
- Prentice, C., Chen, J., & Stantic, B. (2020a). Timed intervention in COVID-19 and panic purchasing. *Journal of Retailing and Consumer Services*, 57(102203), 102203. <https://doi.org/10.1016/j.jretconser.2020.102203>
- Rather, R. A. (2021). Demystifying the effects of recognized risk and fear on buyer engagement, co-creation and revisit intention during COVID-19: A protection motivation theory approach. *Journal of Destination Marketing and Management*, 20(100564), 100564. <https://doi.org/10.1016/j.jdmm.2021.100564>
- Raude, J., Lecrique, J. M., Lasbeur, L., Leon, C., Guignard, R., du Roscoat, E., & Arwidson, P. (2020). Determinants of preventive behaviors in response to the covid-19 pandemic in France: Comparing the sociocultural, psychosocial, and social cognitive explanations. *Frontiers in Psychology*, 11(584500). <https://doi.org/10.3389/fpsyg.2020.584500>
- Reicher, S. D., & Haslam, S. A. (Eds.). (2009). *Beyond help: A social psychology of social solidarity and social cohesion*. Wiley-Blackwell, Oxford.
- Reutskaja, E., Nagel, R., Camerer, C. F., & Rangel, A. (2011). Search dynamics in consumer choice under time restriction: An eye-tracking research. *The American Economic Review*, 101(2), 900–926. <https://doi.org/10.1257/aer.101.2.900>
- Rice, S., & Keller, D. (2009). Automation reliance under time restriction. *Cognitive Technology*, 14(1), 36–44. https://corescholar.libraries.wright.edu/cgi/viewcontent.cgi?article=1100&context=isap_2009
- Rogers, R. W. (1975). A protection motivation theory of fear appeals and opinion change1. *Journal of Psychology*, 91(1), 93–114. <https://doi.org/10.1080/00223980.1975.9915803>
- Rowland, M. (2022). Consumer sentiment, cognitive attitudes, and behavior patterns toward delivery apps.

- Economics, Management, and Financial Markets*, 17 (1), 44–56. <https://doi.org/10.22381/emfm17120223>
- San-Martin, S., Prodanova, J., & Jimenez, N. (2015). The effect of age in the generation of satisfaction and WOM in mobile shopping. *Journal of Retailing and Consumer Services*, 23, 1–18. <https://doi.org/10.1016/j.jretconser.2014.11.001>
- Schultz, A. (2020), “Australia best at panic-purchasing, NZ is almost COVID-free, and the dollar is back, crikey”, available at: <https://www.crikey.com.au/2020/06/03/virus-watch-australia-best-at-panic-purchasing/> (accessed 9 April 2021)
- Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive and reconstructive power of social norms. *Psychological Science*, 18(5), 429–434. <https://doi.org/10.1111/j.1467-9280.2007.01917.X>
- Sharma, R., Singh, G., & Sharma, S. (2020a). Modelling internet banking adoption in developing countries: A developing country perspective. *International Journal of Information Management*, 53(102116), 102116. <https://doi.org/10.1016/j.ijinfomgt.2020.102116>
- Sharma, S., Singh, G., & Sharma, R. (2021c). For it is in giving that we receive: Investigating gamers' gifting behaviour in online games. *International Journal of Information Management*, 60, 102363. <https://doi.org/10.1016/j.ijinfomgt.2021.102363>
- Sharma, S., Singh, G., Sharma, R., Jones, P., Kraus, S., & Dwivedi, Y. K. (2020b), “Digital health innovation: Exploring adoption of COVID-19 digital contact tracing apps”, *IEEE transactions on engineering management*. <https://doi.org/10.1109/TEM.2020.3019033>
- Silayoi, P., & Speece, M. (2004). Packaging and purchase decisions: An exploratory research on the effect of involvement level and time restriction. *British Food Journal*, 106(8), 607–628. <https://doi.org/10.1108/00070700410553602>
- Singh, G., Slack, N., Sharma, S., Mudaliar, K., Narayan, S., Kaur, R., & Sharma, K. U. (2021). Antecedents involved in developing fast-food restaurant buyer loyalty. *The TQM Journal*, 33(8), 1753–1769. <https://doi.org/10.1108/TQM-07-2020-0163>
- Skallerud, K., Korneliussen, T., & Olsen, S. O. (2009). An examination of consumers' cross-shopping behaviour. *Journal of Retailing and Consumer Services*, 16(3), 181–189. <https://doi.org/10.1016/j.jretconser.2008.11.012>
- Slack, N. J., & Singh, G. (2020). The effect of service quality on buyer satisfaction and loyalty and the mediating role of buyer satisfaction. *The TQM Journal*, 32(3), 543–558. <https://doi.org/10.1108/TQM-07-2019-0187>
- Slade, E. L., Dwivedi, Y. K., Piercy, N. C., & Williams, M. D. (2015). Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: Extending UTAUT with innovativeness, risk, and trust. *Psychology and Marketing*, 32(8), 860–873. <https://doi.org/10.1002/mar.20823>
- Sohn, H.-K., & Lee, T. J. (2017). Tourists' impulse purchasing behavior at duty-free shops: The moderating effects of time restriction and shopping involvement. *Journal of Travel and Tourism Marketing*, 34(3), 341–356. <https://doi.org/10.1080/10548408.2016.1170650>
- Sterman, J. D., & Dogan, G. (2015). I'm not hoarding, I'm just stocking up before the hoarders get here: Behavioral causes of phantom ordering in supply chains. *Journal of Operations Management*, 39(40), 6–22. <https://doi.org/10.1016/j.jom.2015.07.002>
- Talwar, M., Talwar, S., Kaur, P., Tripathy, N., & Dhir, A. (2021). Has financial opinion effected the trading activity of retail investors during the COVID-19 pandemic? *Journal of Retailing and Consumer Services*, 58(102341), 102341. <https://doi.org/10.1016/j.jretconser.2020.102341>
- Thomas, R., & Golicic, S. L. (2008). Exploring relational aspects of time-based competition. *International Journal of Physical Distribution and Logistics Management*, 38(7), 540–550. <https://doi.org/10.1108/09600030810900941>
- Tsao, Y. C., Vijaya, P., Raj, P., & andYu, V. (2019). Product substitution with buyer segmentation under panic purchasing behavior. *Industrial Marketing Management*, 77, 209–220. <https://doi.org/10.1016/j.indmarman.2018.09.004>
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.2307/41410412>
- Wang, L., Zhang, Y., & Tuo, Y. (2014), “The effect of product-harm crisis on consumers' panic emotion and risk perception”, *Seventh international joint conference on computational sciences and optimization*, Beijing, pp. 484–488. <https://doi.org/10.1109/CSO.2014.96>
- Watson, R. (2022). Consumer risk perceptions, behavioral intentions, and purchasing habits toward delivery apps. *Journal of Self-Governance and Management Economics*, 10(1), 56–68. <https://doi.org/10.22381/jsme10120224>
- White, K., & Simpson, B. (2013). When do (and don't) normative appeals influence sustainable consumer behaviors? *Journal of Marketing*, 77(2), 78–95. <https://doi.org/10.1509/jm.11.0278>
- Wu, G. J., Bagozzi, R. P., Anaza, N. A., & Yang, Z. (2019). A goal-directed interactionist perspective of counterfeit consumption: The role of recognized detection probability. *European Journal of Marketing*, 52(7), 1311–1332. <https://doi.org/10.1108/EJM-07-2017-0455>
- Yadav, R., & Pathak, G. S. (2016). Intention to purchase organic food among young consumers: Evidences from a developing nation. *Appetite*, 96, 122–128. <https://doi.org/10.1016/j.appet.2015.09.017>
- Yao, J., & Oppewal, H. (2015). Unit pricing matter more when consumers are under time restriction. *European Journal of Marketing*, 50(5/6), 1094–1114. <https://doi.org/10.1108/EJM-03-2015-0122>
- Yoon, S. J. (2020), “Covid-19: Restoring trust in government is key to addressing panic purchasing”, available at: <http://www.japantoday.com/category/features/opinions/covid-19-restoring-trust-in-government-is-key-to-addressing-panic-purchasing> (accessed 11 April 2020)
- Yuen, K., Wang, X., Ma, F., & Li, K. X. (2020). The psychological causes of panic purchasing following a health crisis. *International Journal of Environmental Research and Public Health*, 17(10), 1–14. <https://doi.org/10.3390/ijerph17103513>
- Zheng, P. P., Severijnen, L. A., van der Weiden, M., Willemsen, R., & Kros, J. M. (2009). A crucial role of caldesmon in vascular development in vivo. *Cardiovascular Research*, 81(2), 362–369. <https://doi.org/10.1093/cvr/cvn294>
- Zheng, R., Shou, B., & Yang, J. (2020). Supply disruption management under consumer panic purchasing and social learning effects. *Omega*, 101(102238). <https://doi.org/10.1016/j.omega.2020.102238>
- Zvarikova, K., Gajanova, L., & Higgins, M. (2022a). Adoption of delivery apps during the COVID-19 crisis: Consumer perceived value, behavioral choices, and purchase intentions. *Journal of Self-Governance and Management Economics*, 10(1), 69–81. <https://doi.org/10.22381/jsme10120225>



© 2022 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

***Cogent Business & Management* (ISSN: 2331-1975) is published by Cogent OA, part of Taylor & Francis Group.**

Publishing with Cogent OA ensures:

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

Submit your manuscript to a Cogent OA journal at www.CogentOA.com

