

Did the COVID-19 transform consumers' orthodox behavior?: A systematic literature review



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ABSTRACT

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Keywords

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The study aimed to explore new aspects and dimensions of consumer behavior during COVID-19. Hence, significant changes in consumer behavior were identified, and the characteristics, similarities, and differences of these behavioral approaches were discovered to obtain the purpose. The systematic literature review was conducted using the PRISMA-ScR method, which is a systematic procedure for screening and analyzing the chosen literature. The study found four major changes in consumer behavior; panic buying (large volume, short-run), stockpiling (large volume, long-run), impulse buying (small volume, short-run), and sustainable buying behavior (small volume, long-run). Moreover, this study explored the correlations and differences among these behaviors. The authors constructed an innovative framework that examines the characteristics of panic buying, stockpiling, impulse buying, and sustainable buying behavior, drawing upon existing work in the field. As this paper explains the characteristics and underlying reason for the transformed behavior, this paper can contribute to the literature on consumer behavior during uncertain situations. This study can help marketers, government, and policymakers to understand consumer behavior changes and their causes in any emergency circumstance. Furthermore, using this study's findings, decision-makers could develop and adopt inventory management, supply chain management, and sustainable consumption policies and strategies to address the crisis.

Contribution/ Originality: This study expands knowledge of COVID-19 consumer behavior evolution by exploring its multifaceted dimensions, where previous research focused on specific consumer behaviors only. This study also found distinct patterns and trends in transformed consumer behavior approaches, providing valuable insights for firms, policymakers, and academics to navigate uncertain and challenging times.

1. INTRODUCTION

In the past, there have been several epidemic outbreaks that have had an influence on human behavior in two ways: firstly, consumer behavior (Miri, Roozbeh, Omranirad, & Alavian, 2020) and secondly, health risk mitigation behavior (La Torre, Di Thiene, Cadeddu, Ricciardi, & Boccia, 2009). In March 2020, COVID-19 outbreaks worsened into a pandemic, which created a health hazard and instigated factories to pause production, interrupted the supply chain, increased the unemployment rate, and caused a shortage of raw materials (Tanveer, Hassan, & Bhaumik, 2020). Business sales and marketing activities have suffered due to these numerous restrictions and regulations. Moreover, customer demand and spending patterns have dramatically decreased. The diverse groups of consumers responded to COVID-19 differently in terms of age groups, economic conditions and locations.

In most cases, the uncertainty triggered the consumer to seek and take innocuous actions (Brug, Aro, & Richardus, 2009). Hoarding, improvisation, repressed demand, digital technology, and simple consumer-retailer contact were instant responses to this uncertainty (Sheth, 2020). There is diverse research on consumer behavior; however, very few studies have been published to explore the characteristics and the interrelationships among the transformed consumer behavior approaches. This study used a systematic literature review method to review the published articles focusing on relevant themes. This study's main objective was to explore the new aspects and dimensions of consumer behavior during the COVID-19 pandemic. Therefore, the research questions were: (a) What were the significant changes in consumer behavior during the pandemic? and (b) How could these variations in consumer behavior be explained? The answers to the research questions achieved the following objectives- (a) to identify the major changes in consumer behavior, and (b) to discover the characteristics of these major transformations in consumer behavior and to find the similarities and differences among the different behavioral approaches. This study is distinct as it reviewed only the academic published research, explored the critical attributes of the consumer behavior approach, and found the connections and differences among those theories. The findings may assist policymakers and marketers in taking proper initiatives and provisions in case of any uncertainty.

2. CONSUMER BEHAVIOR AND COVID-19

2.1. Factors Influencing Consumer Behavior

Consumer behavior studies examine social, cultural, economic, personal, and psychological aspects and decision-making processes before buying a product or service (Schiffman & Kanuk, 2004). At the time of the COVID-19 pandemic, consumers faced various complications of risk, uncertainty, anxiety, and fear that changed their regular or systematic behavior, which did not fluctuate much before the pandemic (Palau-Saumell, Matute, Derqui, & Meyer, 2021). They used COVID-19 emergency measures like cautious spending and product swifts, picking nutritional, healthful, and eco-friendly products. Some consumers' emotions and habits remained unaltered. Others reduced expenditure and consumption to save money, a few spent more to handle temporary emergencies, and a few bought more luxury goods at lower rates. Conversely, during the pandemic, the act of stockpiling food was found to be a significant factor contributing to a rise in overall food waste (Brizi & Biraglia, 2021). Despite their concern for maintaining a healthy diet during the pandemic, consumers turned to processed food as a coping mechanism for their anxiety (Rodrigues et al., 2021). In addition, the increased consumption of pre-packaged take-out meals and home-delivered groceries has led to a resurgence in the use of single-use plastic (Ali, Bhuiyan, & Gayen, 2021; Sharma et al., 2020). In Bangladesh, most families reduced their grocery shopping by weekly or bi-weekly during the COVID-19 pandemic; most families avoided junk foods and amplified their fruit consumption (Mandal et al., 2021).

2.2. Technology and Consumer Behavior

Invariably, technology is essential in digital transformation and accelerating contemporary solutions in the new normal. The "new normal" is the situation in which the consumers feel like continuing the new living habits they started to maintain during the COVID-19 outbreak (Yuan, Li, Zhao, & Xu, 2021). During this pandemic, consumers were eager to adopt digital technologies such as social media and entertainment sites (Facebook, Twitter, YouTube, WhatsApp, TikTok, Instagram, Netflix), online payment, and e-commerce (Afridi, Jan, Ayaz, & Irfan, 2021); mobile commerce (Kao & L'Huillier, 2022); wireless internet-enabled gadgets (Kang, Wang, & Ramizo, 2021) e-grocery (De Magalhães, 2021); mobile payment system (Khanra, Dhir, Kaur, & Joseph, 2021) internet banking (Bechlioulis & Karamanis, 2023) and E-business (Luo, 2021). Several factors contributed to increasing the use of the online platform; these factors are age, family size, gender, buying capacity, fear appeal, availability and need of products, payment method, pricing strategy, time-saving factor, security factor, administrative factor, psychological factors,

health aspect, trust aspect, and place (D'Adamo, González-Sánchez, Medina-Salgado, & Settembre-Blundo, 2021). Therefore, instead of replacing each other, retailers tried to give equal emphasis to the brick-and-mortar stores and online stores and combined as omnichannel (Timotius & Octavius, 2021). On the other hand, research by Zhang, Leng, and Liu (2020) confirmed the correlation between consumers' emotions and impulsive purchase intentions. Amidst the COVID-19 pandemic, the rise in popularity of mobile shopping has eliminated the constraints of time and space on shopping behavior. Consequently, impulse purchases have become more prevalent, primarily driven by effective personalized marketing, visually appealing content, and a well-functioning mobile platform.

2.3. Innovation and Transformation in Consumer Behavior

Some community-based innovative market models were developed to inflate producer markets, stabilize rural retail businesses, distribute locally produced food, and improve rural food access (Sitaker et al., 2020). Sustainable consumption is another kind of consumption practice that considers financial motives, ethical and individual beliefs, and communal issues (Vătămănescu, Dabija, Gazzola, Cegarro-Navarro, & Buzzi, 2021). According to Watson and Cug (2021) COVID-19 has changed food purchases and retail grocery sales forever, and pricing ranges are uncontrollable. These led customers to adopt sustainable shopping habits and convenient purchase conditions to improve satisfaction and quality of life. Birtus and Lăzăroiu (2021) examined food demand variations during the COVID-19 pandemic and hypothesized that consumers and households with distinct consumer cognition and decision-making styles, such as panic buying and stockpiling, may have varied results. The authors found that stores used alternative distribution routes to avoid panic buying and stockpiling during COVID-19.

3. METHODOLOGY

This study aims to investigate novel aspects of consumer behavior amidst the COVID-19 pandemic. Therefore, a systematic literature review method was adopted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines (Moher, Liberati, Tetzlaff, Altman, & Group*, 2009; Tricco et al., 2018). This method was chosen to conduct a comprehensive analysis of the existing information in a specific field of study (Torraco, 2005) and to review a considerable database at a certain period, setting inclusion and exclusion criteria (Sierra-Correa & Kintz, 2015). Furthermore, employing a scoping review is a highly efficient method for identifying relevant information about a specific subject matter, as it serves to restrict the potential scope of literature coverage and assess areas where knowledge is lacking (Tricco et al., 2015). The scoping review framework consists of five stages: (a) identifying research questions, (b) conducting a thorough search for relevant papers, (c) selecting studies based on specific inclusion and exclusion criteria, (d) arranging the collected data, and (e) summarizing and reporting the findings (Arksey & O'Malley, 2005). In order to carry out the scoping review, the Joanna Briggs Institute Methodology Guide for Scope of Reviews utilized a framework that did not involve the assessment of quality (as described by Peters et al. (2020) in the study by Motamed-Jahromi, Meshkani, Mosavi-Negad, Momenabadi, and Ahmadzadeh (2021)). By following the framework, this study initiated the systematic review process in March 2022. Consequently, in accordance with the study inquiries, this work conducted a thorough search of two prominent journal databases, namely Scopus and Science Direct, to locate the pertinent literature. The criteria for inclusion and exclusion of literature were determined based on the type of literature, language, and timeframe (see Table 1), and the studies were scrutinized by searching important terms associated with consumer behavior and COVID-19 (see Table 2).

This study's systematic review was undertaken according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) criteria (Moher et al., 2009; Tricco et al., 2018). In this study, the PRISMA-ScR method was adopted to conduct the systematic review because this method defines the research questions by examining a substantial database at a specific time via identifying inclusion and exclusion

criteria (Sierra-Correa & Kintz, 2015). This study used the systematic literature review methodology because it enables the researcher to thoroughly analyze the state of knowledge in a specific field of study (Torraco, 2005). In addition, Tricco et al. (2015) suggested that a scoping review is an effective technique to locate evidence on a particular topic because it limits the possibility of coverage of a body of literature and analyzes knowledge gaps. This scoping review framework contains five stages: (a) finding research questions, (b) searching pertinent articles, (c) selecting the studies based on inclusion and exclusion criteria, (d) charting the data, and (e) organizing, summarizing, and reporting the findings (Arksey & O'Malley, 2005). To conduct the scoping review, Joanna Briggs Institute Methodology Guide for Scope of Reviews used the framework where the quality appraisal was not performed (Peters et al., 2020) mentioned in Motamed-Jahromi et al. (2021). The study intends to explore new dimensions of consumer behavior during COVID-19. Therefore, based on the research questions, this article searched two key journal databases- Scopus and Science Direct to identify the relevant literature. The inclusion and exclusion measures were fixed by literature type, language, and timeframe (see Table 1). The systematic review process was executed in March 2022. The process was initiated by identifying keywords related to consumer behavior and COVID-19 (see Table 2).

Table 1. Inclusion and exclusion criteria.

Criterion	Inclusion	Exclusion
Literature	Research-based articles	Chapter in book, book series, book, conference proceeding
Language	English	Non-English
Timeframe	2020, 2021, 2022 (March)	<2020

Table 2. The keywords for the systematic review process.

Database	Keywords	No. of articles
Scopus	Title-Abs-Key ("Consumer behavi*" OR "consumer attitude" OR "customer attitude" OR " customer behavi*") and ("Buy*" OR "purchas*") and ("Covid*" OR "pandemic*" OR "lockdown")	242
Science direct	("Lockdown" OR "COVID-19" OR "pandemic") and ("Purchase" OR "buy") and ("Consumer behavior" OR "consumer attitude" OR "customer attitude" OR "customer behavior")	52

This study found 2217 articles in Scopus and Science Direct databases by searching those keywords. After removing 129 duplicate articles, 2088 were suitable to review. At that point, the eligibility was confirmed by checking the full article accessibility and inclusion and exclusion criteria, resulting in 294 suitable articles. Then, based on the research questions, the titles and the abstracts of retrieved articles were examined, focusing on whether the articles discussed the new aspects of consumer behavior during COVID-19. Afterward, 167 articles were assembled with the first author, publication year, country, methodology, keywords, and mentioned new approaches to consumer behavior. Finally, the review procedure yielded 34 papers eligible for qualitative analysis (see Figure 1). At this stage, 34 articles were evaluated and examined to get the answers to the formulated research questions using a thematic scoping review (see Table 3). Consequently, the abstracts and full articles (in-depth) of those articles were studied to identify and classify appropriate themes considering publication database source, year, country, methodology, citation, keywords, and new approaches to consumer behavior during COVID-19. Finally, to visualize the network among keywords, these 34 articles were saved in the form of *.ris format and imported to VOSviewer software.

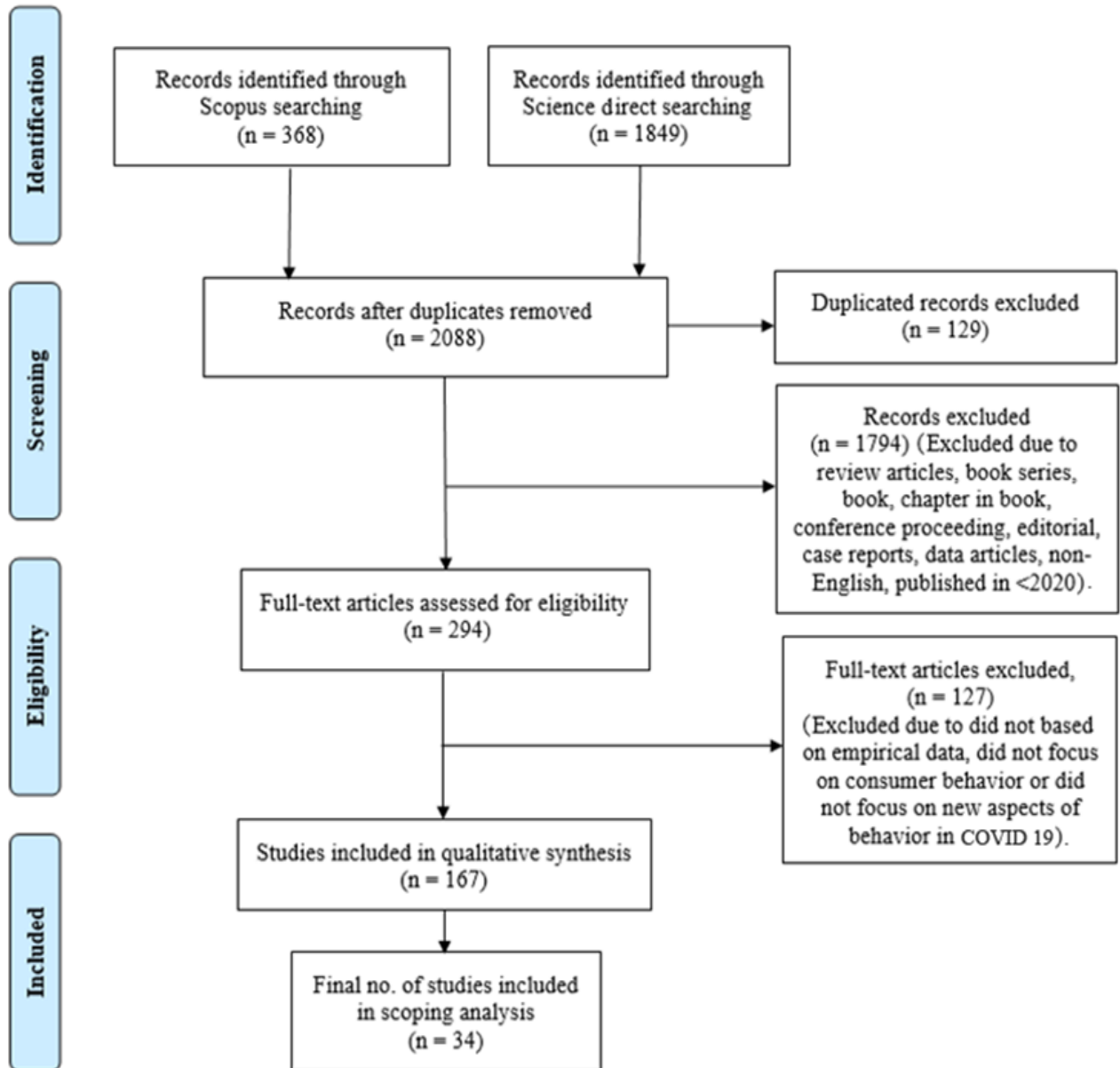


Figure 1. PRISMA flowchart of the study selection process.

Table 3. Characteristics of selected articles (Based on science direct and Scopus data).

Sl no.	Database	Authors	Year	Country	Research method	New approach to consumer behavior	Cite	Author keywords
1.	Science direct	Eger, Komárková, Egerová, and Mičík (2021)	2021	Czech Republic	Quota sampling, multiple regression	E-shopping, OS	142	Conbehav; Generational perspective; COVID-19 pandemic; Theory of fear
2.	Science direct	Prentice, Chen, and Stantic (2020)	2020	Australia	Semantic analysis and big data secondary data search.	PB	117	COVID-19; Government interventions and measures; Panic buying; Semantic analysis; big data; Secondary data
3.	Science direct	Lins and Aquino (2020)	2020	Brazil	Factorial exploratory and confirmatory analysis	PB, IB, STB	73	Psychology; Fear; PB; Psychometric properties; Conbehav; COVID-19; Consumption; Validity; Reliability
4.	Science direct	Guthrie, Fosso-Wamba, and Arnaud (2021)	2021	France	Descriptive single-case research design	OS, resilience purchase	56	Pandemic; COVID-19; Environmentally imposed constraints; electronic commerce
5.	Science direct	Billore and Anisimova (2021)	2021	Other	Quantitative surveys and mathematical modeling.	PB, compulsive buying, adoption	42	Consumer perspective; COVID-19; Future research agenda; PB; Retailer perspective; Systematic literature review.
6.	Science direct	Cavallo, Sacchi, and Carfora (2020)	2020	Italy	Secondary data analysis	Comfort food consumption, SB	41	COVID-19; Lockdown consumption; crisis food behavior; Home meal preparation; Consumer sensory research; Qualitative research in food marketing; Agricultural science
7.	Science direct	Vătămănescu et al. (2021)	2021	Italy	Questionnaire-based survey, structural equation modeling (SEM)	SB	34	Corporate social responsibility; Sustainability; COVID-19 pandemic; Strategic communication; Corporate reputation; Fashion companies.
8.	Scopus	Leung et al. (2021)	2021	Other	Random sampling, qualitative analysis	Anxiety buying, PB	31	Anxiety; COVID-19; Pandemic; pb; Psychological phenomena; Snowball effect; Social-media
9.	Scopus	Du, Yang, King, Yang, and Chi (2020)	2020	USA	Google trends, multiple regression	Protective behaviors and PB	27	COVID-19; Fear; Health knowledge; Internet search; PB; Protective behavior
10	Science direct	Cruz-Cárdenas, Zabelina, Guadalupe-Lanas, Palacio-Fierro, and Ramos-Galarza (2021)	2021	China	Quantitative method, Co-occurrence analysis	PB, IB, STB	24	COVID-19; Conbehav; Literature review; Technology; PB; Disruptive events
11.	Scopus	Lehberger, Kleih, and Sparke (2021)	2021	Germany	Semi-structured questionnaire, multiple regression	PB, STB	23	Concurrent triangulation design; Hoarding; Neuroticism; Perceived scarcity; Personality traits

Sl no.	Database	Authors	Year	Country	Research method	New approach to consumer behavior	Cite	Author keywords
12.	Scopus	Qi, Yu, and Ploeger (2020)	2020	China	Semi-structured in-depth interviews,	SB	21	China; COVID-19; Green food consumption; Intention–behavior gap; Purchase intention; Qualitative method
13.	Science direct	Li, Kallas, and Rahmani (2022)	2022	China	Semi-structured questionnaire, binary logistic regressions	SB	20	COVID-19 lockdown; Food purchasing behavior; Sustainable food consumption; Binary logistic regression; Food waste; Healthy diets
14.	Science direct	Lins, Koch, Aquino, De Freitas Melo, and Costa (2021)	2021	Brazil	Snowball sampling technique, Pearson's correlation	PB	13	PB; Anxiety; Depression; Stress; COVID-19 pandemic; Mental health; Conbehav; Fear; Brazil
15.	Scopus	Chua, Yuen, Wang, and Wong (2021)	2021	Singapore	SEM	PB	13	Anticipated regret; COVID-19; Health belief model; Health crisis; PB; Perceived scarcity
16.	Science direct	Li, Zhou, Wong, Wang, and Yuen (2021)	2021	Singapore	SEM	PB	12	Panic buying; Conbehav; Dual-system theory; Stimulus-organism-response framework; Health belief model; Structural equation modelling
17.	Science direct	Jiang and Stylos (2021)	2021	China	Data saturation, coding via Nvivo, hybrid thematic analysis	OS	11	Retailing; Conbehav; Digital transformation; COVID-19; Epidemic crises
18.	Scopus	Ntontis et al. (2022)	2022	UK	Semi-structured questionnaire, reflexive thematic analysis	PB, STB	11	PB, Conbehav, STB
19.	Scopus	Gupta, Nair, and Radhakrishnan (2021)	2021	India	Exploratory factor analysis, confirmatory factor analysis, SEM	STB, PB, IB	9	Conbehav; COVID-19; Crisis; IB; STB
20.	Science direct	Mejía-Trejo (2021)	2021	Mexico	Delphi panel-focus group and analytic hierarchy process (AHP)	OS	8	COVID-19 ads; Purchase intention; Online conbehav; Business activity innovation; Uses and gratification theory
21.	Scopus	He, Liu, Li, and Mai (2021)	2021	China	Experience sampling method, SEM	Unneeded consumption behavior	7	Indulgence; Perceived consumer effectiveness; Recovery level; unneeded conbehav; Work engagement
22.	Science direct	Prentice et al. (2021)	2021	Australia	Kaiser-Meyer-Olkin and Bartlett's test of sphericity indices	PB	7	COVID-19; PB; Consbehav; public policy
23.	Science direct	Febrilia and Warokka (2021)	2021	Indonesia	Purposive sampling method, SEM	IB	7	Consumer traits; Situational factors; Online IB; Pandemic time
24.	Science	Motamed-Jahromi et al.	2021	Others	Self-assessment, thematic analysis	PB	6	PB; COVID-19; Causes; Factors;

Sl no.	Database	Authors	Year	Country	Research method	New approach to consumer behavior	Cite	Author keywords
	direct	(2021)						Strategies
25.	Science direct	Dulam, Furuta, and Kanno (2021)	2021	Japan	Semi-structured questionnaire, multiple regression	STB	6	Conbehav; STB; Decision-making; Agent-based model; disaster
26.	Science direct	Yuen, Leong, Wong, and Wang (2021)	2021	Singapore	SEM	PB	5	PB; Causes; COVID-19; Survival psychology; Maslow's hierarchy of needs
27.	Science direct	Lahath, Omar, Ali, Tseng, and Yazid (2021)	2021	Malaysia	Convenience sampling, SEM	IB, overbuying	5	Food waste; Social media usage; IB; Neuroticism; COVID-19
28.	Science direct	Kao and L'Huilier (2022)	2022	USA	Confirmatory factor analysis (CFA), SEM	Mobile shopping, OS	4	Mobile commerce; COVID-19; conbehav; Technology adoption; HCI; theory of planned behavior
29.	Scopus	Showrav, Hassan, Anam, and Chakrabarty (2021)	2021	Bangladesh	Judgmental sampling technique, descriptive statistics, factor analysis	In-store shopping, OS	4	factor analysis; Judgmental sampling; OS
30.	Scopus	Radcliffe et al. (2021)	2021	Canada	Collaborative mixed-method evaluation	Online food space, OS	2	COVID-19; Farmers markets; Food system; Sustainability;
31.	Science direct	Goel, Parayitam, Sharma, Rana, and Dwivedi (2022)	2022	India	LISREL Hayes process	e-IB, OS	2	Customer satisfaction; E-shopping; E-IB; India; COVID-19; Intention to continue
32.	Scopus	Qi, Tian, and Ploeger (2021)	2021	China	SEM	OS	1	Certified food; Chinese consumer; COVID-19; OS intention; TAM; TPB
33.	Scopus	Matušinská and Zapletalová (2021)	2021	Czech Republic	Stratified random sampling, Pearson's coefficient and Cramer's V coefficient	High involvement, low involvement, PB	1	Conbehav; Emotional and rational appeal; Foote-cone-beld-ing model; Hierarchy of effects models; Marketing communication
34.	Scopus	Ardyan, Kurniawan, Istiatin, and Luhgiatno (2021)	2021	Indonesia	Partial least square structural equation modeling (PLS-SEM)	PB	1	Attitudes toward negative eWOM; Brand switching; COVID-19; Customer PB activity; customer satisfaction

Note: Conbehav=Consumer behavior, eWOM= Electronic-word-of-mouth, IB=Impulse buying, LISREL=Linear structural relations, OS= Online shopping, PB=Panic buying, SB=Sustainable buying, STB=Stockpiling buying, TAM= Technology acceptance model, TPB= Theory of planned behavior.

4. RESULTS

The final 34 retrieved studies were distinctive and covered dispersed features. Out of 34 studies, the highest number of articles, 25, was published in 2021. Five articles were published in 2020 and 4 in 2022 (till March) (see Figure 2). These articles can be classified according to the study location. European countries (Germany, Italy, Czech Republic, United Kingdom, France) and Other Asian countries (Indonesia, Malaysia, Japan, Singapore) published the highest number of articles, that is 21% (See Figure 3). In this study, only Science Direct and Scopus index sources were used to gather the information, where 21 journals were from Science Direct, and 13 were from Scopus (See Figure 4). All 34 articles were cited in different publications, where the highest number of citations was 142 (See Figure 5). These articles mentioned a diverse number of new consumer behavior approaches found among consumers when tackling uncertainty (See Figure 6). Mostly, panic buying was mentioned in 17 articles, and online shopping was mentioned in 9 articles. Other types of consumer behavior were mentioned in 12 articles including protective behavior, anxiety buying, resilience purchasing, compulsive buying, online food space, in-store shopping, etc. The network visualization map of new approaches to consumer behavior research (Figure 7) was created by VOSviewer using the key terms and abstract from the obtained data. For this, the articles were classified into three clusters containing 18 terms in the form of items and 143 total links. Moreover, a density visualization map illustrates term frequency in collected data. The basic indicator of density is color intensity and size. On the map, lighter colors indicate more popular research on the keyword, and the faded or darker color indicates the usage of key terms decreases (see Figure 8). After analyzing the information from the journals, the four consumer behavior approaches were identified. Based on the characteristics of these approaches, Figure 9 was constructed.

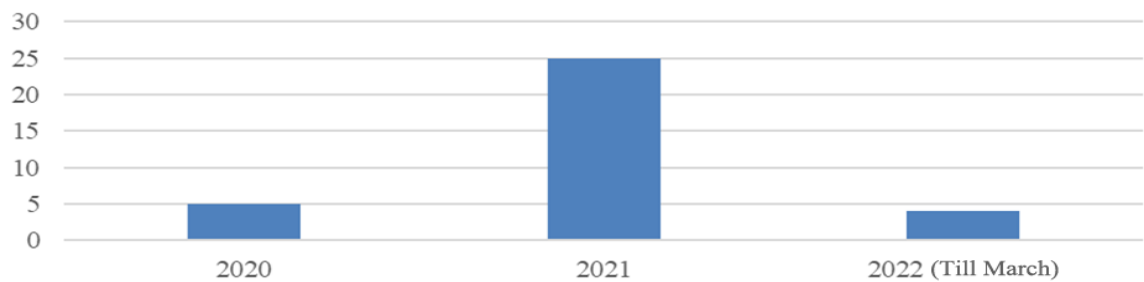


Figure 2. Year of publication (Based on science direct and Scopus data).

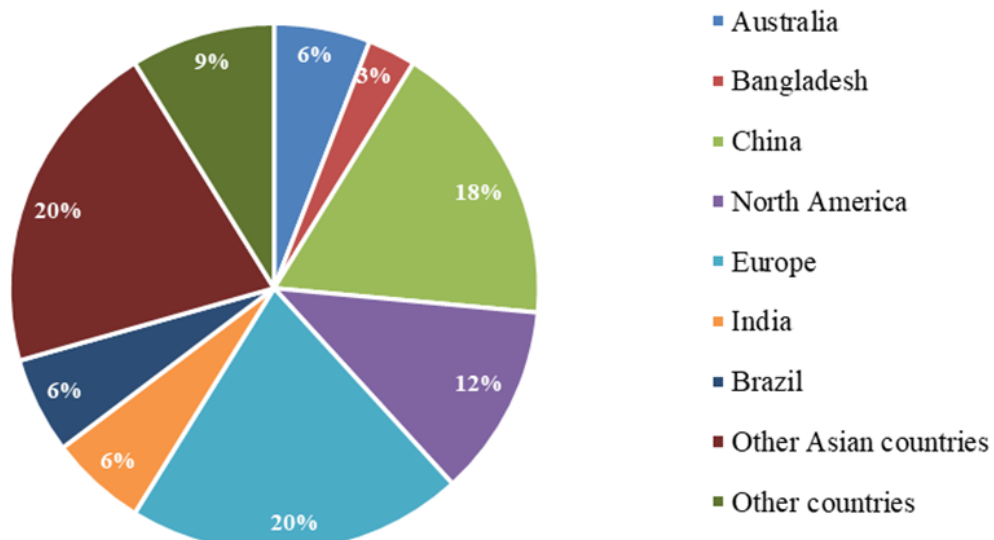


Figure 3. Country-wise articles (Based on science direct and Scopus data).

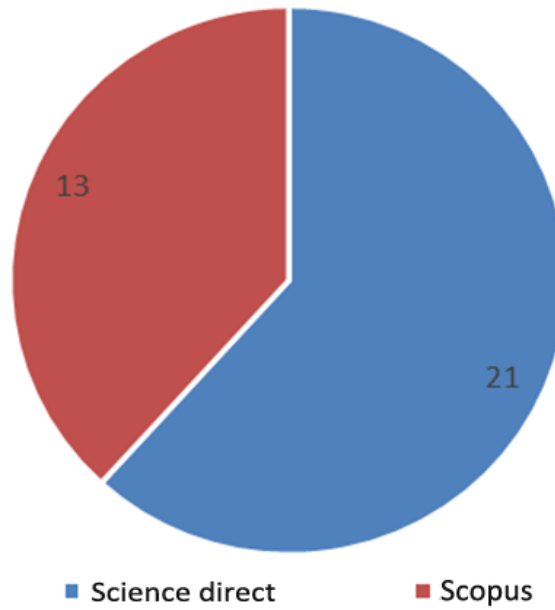


Figure 4. Source of database (Based on science direct and Scopus data).

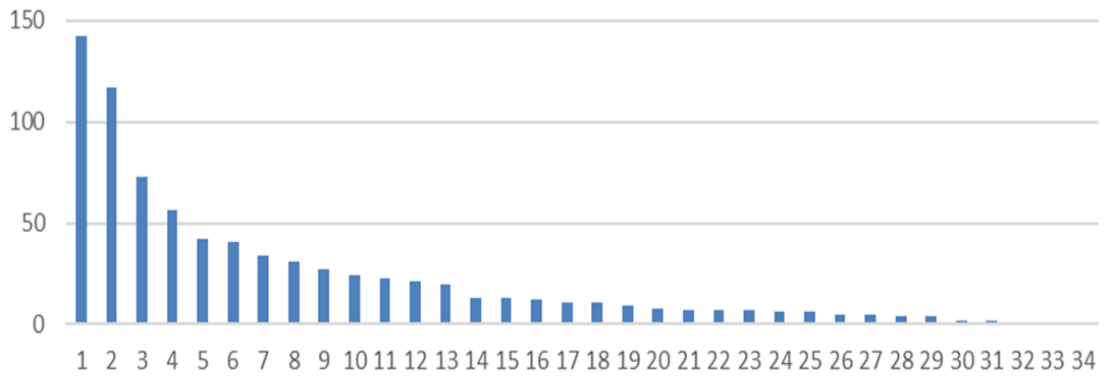


Figure 5. Number of citations (Based on science direct and Scopus data).

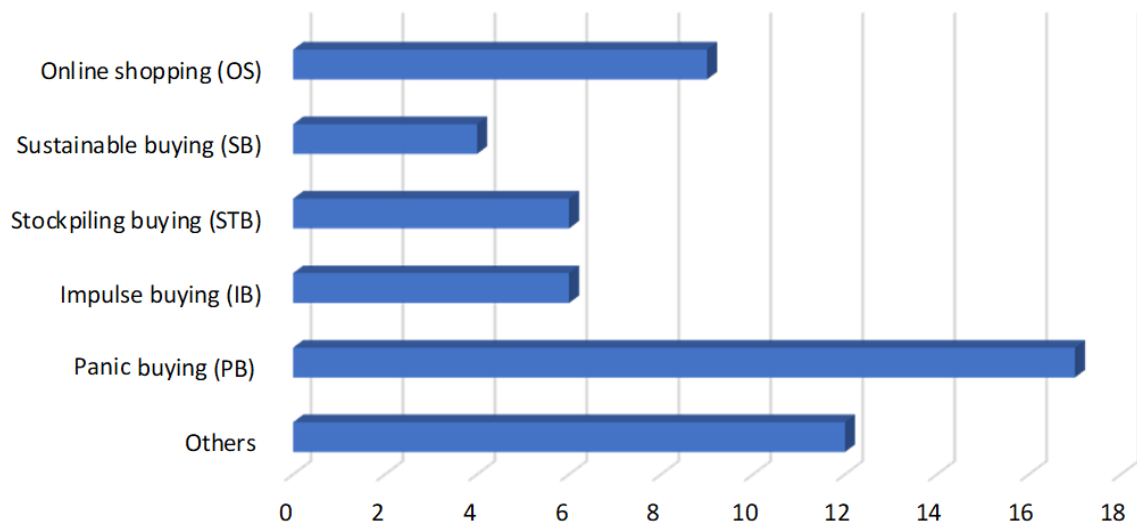


Figure 6. New approaches to consumer behavior (Based on science direct and Scopus data).

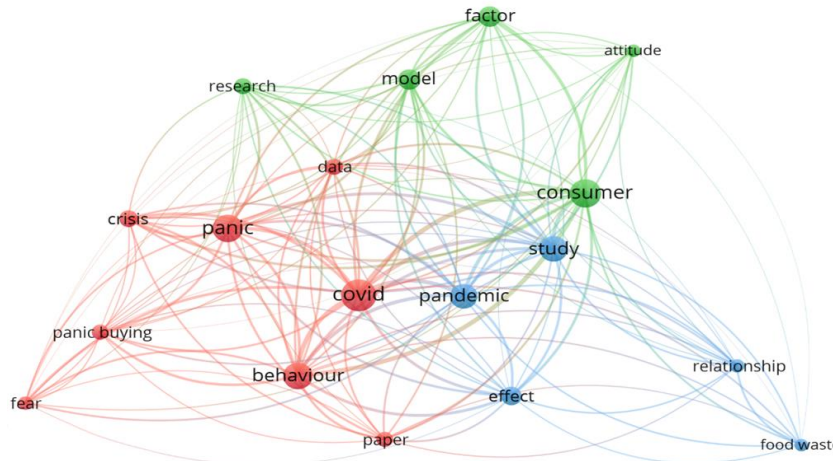


Figure 7. Network map of new approaches to consumer behavior research (Based on science direct and Scopus data).

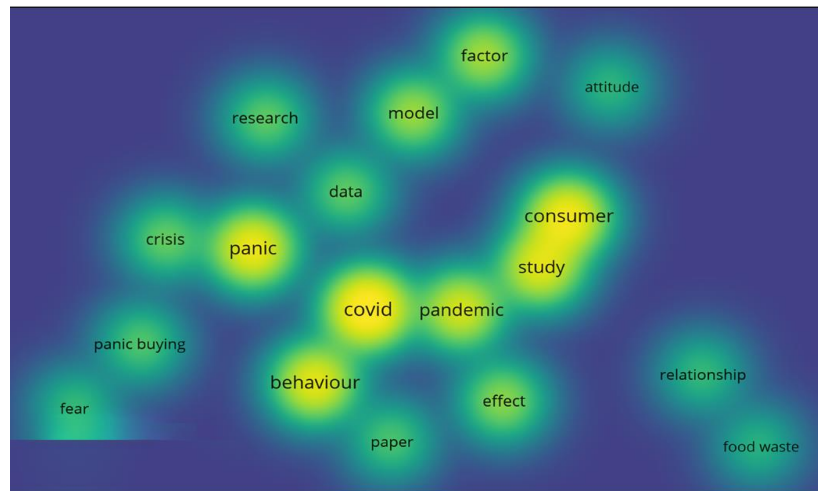


Figure 8. Density map of new approaches to consumer behavior research (Based on science direct and Scopus data).

5. DISCUSSION

5.1. Panic Buying Behavior

Panic buying is a behavioral phenomenon (Ntontis et al., 2022) of consumers with an unexpected increase in purchasing products (Leung et al., 2021) particularly necessary products (Du et al., 2020) when there is or can be a shortage of supply (Yuen et al., 2021). Mass purchasing usually occurs just before or after some actual or predicted calamity (Ardyan et al., 2021) and often happens in natural disasters, like major snowstorms or hurricanes (Lehberger et al., 2021). According to Li et al. (2021) consumers went through a journey of self-fulfilling anticipation, scared of not getting necessary supplies such as toilet paper, medicine, food items, and other daily necessities. In addition, Lins and Aquino (2020) stated that purchasing a greater quantity can be seen as a method of dealing with the emotions of uncertainty and as a means of self-preservation. Consequently, excessive purchasing and hoarding can lead to a surge in demand that surpasses the available supply, resulting in product shortages during times of crisis, resulting in disruptions in the supply chain (Motamed-Jahromi et al., 2021). According to Yuen et al. (2021) this irrational decision of overbuying is because of fear and anxiety. This inconsistent human behavior (Yuen et al., 2021) was noticed in the initial stage of the COVID-19 pandemic, which triggered feelings of uncertainty about purchasing household items: toilet paper, cleaning supplies, shielding masks, and hand sanitizer (Ntontis et al., 2022) in least 93 countries (Lehberger et al., 2021). The panic buying situation was fueled by factors such as increased demand, interrupted supply chain (Billore & Anisimova, 2021) anticipation of price hike, and perceived scarcity (Lehberger et al., 2021) gaining control, media influence, social behavior (Li et al., 2021) rumors, psychological reactions, lack of belief in authority (government acts), and experience (Yuen et al., 2021).

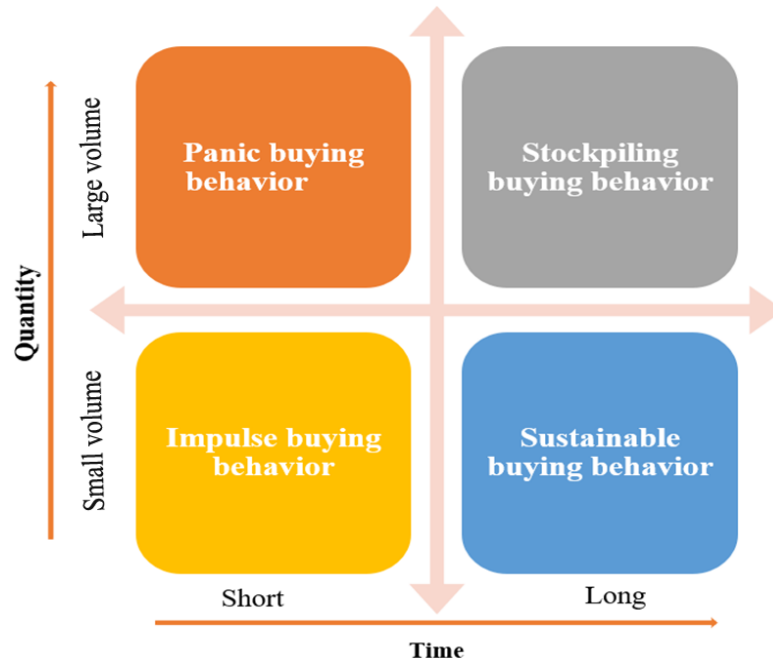


Figure 9. Consumer behavior approaches in COVID-19.

5.2. Stockpiling Behavior

Stockpiling is a type of regular behavior when people prepare for a known or anticipated shortage (Cruz-Cárdenas et al., 2021) and create a reserve for future needs (Gupta et al., 2021). According to Prentice et al. (2020) when stockpilers read about a potential shortage, they plan to stock products and then discard something no longer needed (Lins et al., 2021). This situation increases prices and sometimes creates shortages (Ntontis et al., 2022). That is why usually, people stock products like medicines, emergency items, food items (Gupta et al., 2021) wood for fireplaces, , water, and toilet paper (Prentice et al., 2021). According to Gupta et al. (2021) when people stock unplanned and cannot control it, then it is called hoarding. Prentice et al. (2021) added that the most commonly hoarded items are: clothes, shoes, containers, tools, and mechanical objects like nails and screws, household supplies, newspapers, mail, and magazines. Dulam et al. (2021) added that stockpilers are always indecisive about what item to discard, or they are scared of what item will be needed in the future. Consumer stockpiling in the initial phase of the pandemic can be declared as unconventional inventory accumulation (Ntontis et al., 2022). The study also added that people bought toilet paper, food items, hand sanitizer, water bottles, and disinfectant wipes in large quantities and emptied store shelves for others. This anxiety of people decreased supply, increased prices, and created challenges for retailers and local governments (Gupta et al., 2021). The study by He et al. (2021) added that the coronavirus outbreak may also lead to global shortages, making it difficult for retailers to shift inventory to support regional demands.

5.3. Impulse Buying Behavior

Impulse buying denotes a spontaneous and unplanned decision to make a purchase (Gupta et al., 2021; Mejía-Trejo, 2021). Consumers may engage in spontaneous purchasing behavior, driven by external stimuli, without any premeditated intention. This sudden behavior is unpredictable and cannot be anticipated. In their study, Lahath et al. (2021) identified two primary categories of factors that contribute to impulse buying: endogenous factors, which include individual traits, sensory seeking, motivation, age, and gender; and exogenous factors, which encompass store atmosphere, advertising, product appearance, and price. Consumers may make impulsive purchases driven by their specific desires and requirements, such as chocolate, ice cream, jewelry, cosmetics (Eger et al., 2021) electronic products, clothing, watches (Guthrie et al., 2021) footwear, scarves, artwork, or automobiles (Jiang & Stylos, 2021). In some cases, this abrupt action results in emotions of remorse, disapproval from loved ones, or financial difficulties

(Febrilia & Warokka, 2021). The COVID-19 pandemic has prompted consumers to engage in impulsive buying behavior (Guthrie et al., 2021) as a result of factors such as home isolation, social distancing, travel restrictions, the risk of infection, and mortality (Goel et al., 2022). As per the authors, this alteration has resulted in an increase in adverse emotions and a sense of unpredictability among consumers. Showrav et al. (2021) stated that this uncertainty led to an increase in consumers' inclination towards impulsive buying as a means of seeking psychological and physiological comfort. This comfort was achieved by diverting their attention through excessive eating and indulging in pleasurable food consumption (Gupta et al., 2021). Moreover, the COVID-19 pandemic (Febrilia & Warokka, 2021) has led to the widespread adoption of online shopping, resulting in a surge in impulsive purchasing tendencies.

5.4. Sustainable Buying Behavior

Sustainable consumption is the consumption of better-quality products (Cavallo et al., 2020) while minimizing the use of natural materials/sources, contaminated ingredients, waste, and pollutants (Vătămănescu et al., 2021) as well as keeping a better future for the next generations (Chua et al., 2021). Kao and L'Huillier (2022) mentioned that better quality of life needs to be ensured while minimizing the negative environmental impacts from consumption and production systems because more and better output can be generated with less input (Li et al., 2022). The concept of sustainable consumption connects several topics, such as well-being, efficiency, waste management (Matušínská & Zapletalová, 2021) poverty alleviation, the transition towards low-carbon and green economies (Chua et al., 2021) increasing resource efficiency, reducing waste and pollution, redefining the quality-of-life concept (Li et al., 2022). Changes in food consumption habits like less food wastage, cooking at home (Qi et al., 2020) eating a healthy diet (Radcliffe et al., 2021) and preferring organic food (Matušínská & Zapletalová, 2021) have been observed during COVID-19. The increase in online shopping has reduced time spent in physical stores (Chua et al., 2021) and the purchase of non-perishable food, hygiene products, and environment-friendly products (Qi et al., 2020) has increased. There has been a significant shift in consumer mobility behaviors, such as less use of public transport, preferring local trips, avoiding congested areas (Li et al., 2022) increase in physical activity and reduction in smoking (Chua et al., 2021).

5.5. Consumer Cognition and Consumer Satisfaction

The changes in market and consumer behavior have resulted in a significant impact on consumer cognition and satisfaction judgment due to the COVID-19 pandemic. Emotional and rational dimensions are typically identifiable in consumer purchasing decision behavior based on the type of satisfaction the buyer seeks. Emotional product buying motives encompass sentiments such as empathy, comfort, pleasure, a need for uniqueness, and fundamental impulses to survive. On the other hand, rationalization and thorough analysis are necessary for rational product motives, which include considerations like affordability, convenience, suitability, durability, and practicality (Cavallo et al., 2020). Amidst the COVID-19 pandemic, both cognitive and emotional factors played a crucial role in influencing consumer behavior by serving as internal mechanisms that facilitated the influence of external factors. The cognitive and emotional processes were put into action by the perception of scarcity and the resulting affective reaction. Perceived scarcity pertains to an individual's perception of the extent to which a product is unavailable during the COVID-19 pandemic, while affective response is defined as an individual's anxiety and fear in response to product shortages (Li et al., 2021). A number of customers, according to Billore and Anisimova (2021) dealt calmly and practically without becoming anxious during this crisis and changed consumer cognition. Those consumers' cognitive responses involved gaining knowledge and educating themselves. These responses encompassed aspects such as social connectedness, engaging in do-it-yourself behaviors, altering perceptions of brands, and adapting consumption and identity in response to disasters. Typically, in a situation where customers are fighting for scarce supplies, rational consumers prefer essential goods and stock up the products and that kind of

reaction is an anticipated move (Gupta et al., 2021). Furthermore, there exists a complex relationship between the instinctive and intellectual reactions of consumers to an external, uncontrollable situation (Yuan et al., 2021). For their instinctive behavior, certain customers exhibited unregulated behavior, such as excessive consumption, as a means of relieving the stress induced by COVID-19. Customers who engaged in this type of buying behavior not only met their basic needs but also experienced the psychological reward of satisfying their impulses. Moreover, consumers prioritized psychological needs such as emotional value or optimistic feelings in the short term rather than rationalizing their purchasing decisions, such as determining if their behavior involves overconsumption (He et al., 2021).

6. RECOMMENDATIONS AND CONCLUSIONS

The COVID-19 pandemic has changed people's lives in many different ways. This study investigated why, how, and what sort of consumers' consumption behavior has changed and found that panic buying, stockpiling behavior, impulse buying, and sustainable buying behavior have been chiefly observed during this catastrophic situation. The conventional consumption patterns changed due to fear, confusion, rumor, lockdown, shortage of consciousness and convenience, isolation, maintaining well-being and physical fitness, and many other reasons. This study may offer recommendations that benefit numerous stakeholders addressing these transitions. After understanding the scenario, government and policymakers can take preemptive steps to control inventories, disrupted supply chains owing to excess buying, stocking, price spikes, daily requirements crises, and unanticipated consumer decisions. The government can also create a quota program to manage commodity shortages and enable direct marketing between local producers and consumers during disasters by establishing trustworthy digital infrastructure. Behavioral scientists might find detailed explanations of the consumer's behavioral change that may assist policymakers and marketers in understanding consumers. Varieties attractive consumer awareness programs can be initiated to teach them how to avoid stockpiling and live a better life by eating a nutritious diet and organic foods, exercising, avoiding smoking, not wasting food, cooking at home, keeping hygiene, and safeguarding the environment. On the other hand, to avoid product shortages, local shops and suppliers can employ sensible assortment and distribution strategies.

7. MANAGERIAL AND THEORETICAL IMPLICATIONS

Businesses, especially marketers, can apply the knowledge of consumer behavioral changes to develop and implement a proper blend of marketing mix strategies to gain a competitive advantage and avoid unnecessary competition, specifically in uncertain situations to deal with consumers' emotions such as anger, fear, happiness which have different effects on decision making. Additionally, companies can expand brand lines to deal with the switching tendency of consumers who look for diversified products.

8. LIMITATIONS AND FUTURE RESEARCH OPPORTUNITIES

This study has some limitations. This analysis was limited to two databases and English-language articles. To prevent panic buying and stockpiling buying behavior, detailed strategies were not suggested. To detect orthodox behaviors, the time following orders made after the lockdown period may have been too short. Nevertheless, this study can serve as an inspiration for researchers and marketers to develop a route to conduct quantitative and qualitative research. Future researchers can use longitudinal research or time series of data to enhance the findings further. The empirical studies can be conducted using social media data and neuroticism factors, which might facilitate a broader understanding of consumer behavior. Further investigations may examine panic, impulsive, sustainable, and stockpile buying avoidance behavior in experimental settings.

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