Research Article

Bibliometric analysis of empirical studies on the subject of COVID-19 in consumer behaviour researches between 2020-2021 with visual mapping technique

2020-2021 yılları arasında yapılan COVİD-19 konulu ampirik tüketici davranışı araştırmalarının görsel haritalama tekniği ile bibliyometrik analizi

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Abstract

This study visually presents bibliometric analyses for quantitative, qualitative and mixed empirical consumer behaviour research on COVID-19 published in various leading research journals with Scopus, ESCI and/or SSCI indexes in 2020 and 2021. For this aim, bibliometric analyzes of 50 studies selected for this study were performed using the VOSviewer software. According to the results obtained from the study, it was observed that primarily multi-author empirical studies were conducted at the national or global level regarding the changing consumer behaviour during the COVID-19 pandemic. In the studies conducted by the researchers, consumer behaviours were evaluated multidimensionally by using different theoretical models. For this, data were collected from consumers with other demographic characteristics by various methods and different analysis methods were used to analyse the collected data. The study provides implications as well as directions for future studies.

Keywords: COVID-19, Consumer Behaviour, Bibliometric Analysis, Literature Review

Jel Codes: M30, M31

Öz

Bu çalışma, 2020 ve 2021 yıllarında Scopus, ESCI ve/veya SSCI indekslerinde taranan önde gelen çeşitli araştırma dergilerinde yayınlanan COVİD-19 ile ilgili nicel, nitel ve karma ampirik tüketici davranışı araştırmalarına yönelik bibliyometrik analizleri görsel olarak sunmayı amaçlamaktadır. Bu amaç için seçilen 50 çalışmanın VOSviewer yazılımı kullanılarak bibliyometrik analiz gerçekleştirilmiştir. Çalışmadan elde edilen sonuçlara göre COVİD-19 pandemisi sürecinde değişen tüketici davranışlarına ilişkin ulusal veya küresel düzeyde çoğunlukla çok yazarlı ampirik çalışmaların yapıldığı gözlemlenmiştir. Araştırmacılar tarafından yapılan çalışmalarda farklı teorik modeller kullanılarak tüketici davranışları çok boyutlu olarak değerlendirilmiştir. Bunun için farklı demografik özelliklere sahip tüketicilerden çeşitli yöntemlerle veriler toplanmış ve toplanan verilerin analizinde farklı analiz yöntemleri kullanılmıştır. Çalışma, gelecekteki çalışmalar için yönlendirmelerin yanı sıra çıkarımlar da sunmaktadır.

Anahtar Kelimeler: COVİD-19, Tüketici Davranışları, Bibliyometrik Analiz, Literatür Taraması

JEL Kodları: M30, M31

Introduction

One of the main questions for marketers to answer is the factors that affect the behaviour of consumers. Other factors shape consumer behaviour besides marketing activities. These are the consumer environment's economic, technological, and social factors. These factors affect consumer attitudes and preferences, attitudes towards the brand, and what, when, where, and how much the consumer buys (Kotler, Armstrong, Harris, and Piercy, 2017). These factors, which have been affecting consumer behaviour for the last two years, have been dramatically affected by the COVID-19 pandemic.

The COVID-19 pandemic affects all areas such as health, education, and the economy. These effects have caused changes in people's social lives, psychology, consumption habits and almost all their lives. During the pandemic, people buy more products such as supplements, healthy foods, disinfectants for virus protection, cologne, cleaning products, masks by sitting at home more, shopping less often, ordering more products online, stocking durable food, especially in the early stages of the pandemic. On the contrary, they started living and consumption habits in a pretty different way by purchasing fewer products such as clothing, motor vehicles, accommodation services, travel, entertainment, and ready-made food (Aydın, 2021a). Some factors affect the purchasing behaviour of consumers in this period. Self-isolation and cyberchondria in the COVID-19 pandemic significantly affect people's unusual purchases (Laato, Islam, Farooq and Dhir, 2020). Consumer self-isolation also impacts online purchasing behaviour (Gu, Ślusarczyk, Hajizada, Kovalyova and Sakhbieva, 2021). In addition, factors such as fear of curfew, peer purchases, product shortages in markets, limited supply of essential food products, panic buying during the COVID-19 pandemic are adequate on purchasing behaviour (Ahmed, Streimikiene, Rolle and Pham, 2020).

It is essential to investigate the reasons for the changes in consumer behaviour caused by a global problem that dramatically affects consumer behaviour. Researchers have not been indifferent to such an important issue, and many studies have been carried out on this subject. For example, changes in consumers' shopping behaviour (Ellison, McFadden, Rickard and Wilson, 2021; Gu et al., 2021; Pham, Do Thi and Ha Le, 2020; Ali Taha, Pencarelli, Škerháková, Fedorko and Košíková, 2021; Y. Wang, Xu, Schwartz, Ghosh and Chen, 2020), negative emotions such as fear and anxiety, (Di Crosta, Ceccato, Marchetti, La Malva, Maiella, Cannito, Cipi, Mammarella, Palumbo, Verrocchio, Palumbo and Di Domenico, 2021; Eger, Komárková, Egerová and Mičík, 2021; Hesham, Riadh and Sihem, 2021; Jeżewska-Zychowicz, Plichta and Królak, 2020; J. Li, Jin, Zhao and Ma, 2021; Mason, Narcum and Mason, 2020; Naeem, 2021; Aydın, 2021a; Aydın, 2021b), behaviours towards product scarcity (Ahmed et al., 2020; Islam, Pitafi, Arya, Wang, Akhtar, Mubarik and Xiaobei, 2021; Y. Li, Yao, and Chen, 2021), changes in consumer intentions (Alaimo, Fiore and Galati, 2020; Kim, Giroux, Gonzalez-Jimenez, Jang, Kim, Park, Kim, Lee and Choi, 2020; Laato et al., 2020; Kursan Milaković, 2021; Rao, Saleem, Saeed and Haq, 2021; Roșu, Ianole-Călin, Dinescu, Bratu, Papuc and Cosma, 2021), the effects of future hopes on consumer behaviour (Ali, Khalid, Javed and Islam, 2021) ; Foroudi, Tabaghdehi and Marvi, 2021; Kim, Yang, Min and White, 2021), whether demographic characteristics cause a difference in consumer behaviour (Valaskova, Durana and Adamko, 2021; Bender, Badiger, Roe, Shu and Qi, 2021; Butu, Brumă, Tanasă, Rodino, Dinu Vasiliu, Doboș and Butu, 2020; Huterska, Piotrowska and Szalacha-Jarmużek, 2021; Janssen, Chang, Hristov, Pravst, Profeta and Millard, 2021; Kitz, Walker, Charlebois and Music, 2021; de Medeiros, Marcon, Ribeiro, Quist and D'Agostin, 2021), changes in consumer attitudes (Bolek, 2021; Goswami and Chouhan, 2021; Mejía-Trejo, 2021; Ong, Cleofas, Prasetyo, Chuenyindee, Young, Diaz, Nadlifatin and Redi, 2021; Park, Kim, Lee, Kim, Voyer, Kim, Sung, Jimenez, Fastoso, Choi and Yoon, 2021; Zafar, Maqbool, Cioca, Shah and Masud, 2021), changes in hedonic consumption (Espinoza-Ortega, Martínez-García, Rojas-Rivas, Fernández-Sánchez, Escobar-López and Sánchez-Vegas, 2021; Koch, Frommeyer and Schewe, 2020; Vázquez-Martínez, Morales-Mediano and Leal-Rodríguez, 2021), changes in consumer habits (Ben Hassen, El Bilali and Allahyari, 2020; Jribi, Ismail, Doggui and Debbabi, 2020; Marinkovic and Lazarevic, 2021; E. Wang, An, Gao, Kiprop and Geng, 2020), the effects on brand trust (Jian, Yu, Yang and Zeng, 2020) etc. very important issues in terms of marketing literature and the business world have been researched.

It is seen that many empirical studies investigating consumer behaviour from different perspectives have been conducted during the COVID-19 pandemic period, and it is thought that bibliometric analyzes of these studies will make significant contributions to the literature. Therefore, this study aims

to create a bibliometric analysis of the leading research articles produced during the pandemic period and show the theories, research countries, data collection methods, analyses, variables, and the interconnections of these articles.

Method

This study aims to make a general visual mapping of the quantitative, qualitative and mixed empirical studies conducted to explain consumer behaviour in the context of COVID-19 between 2020-2021 and bring it to the marketing literature. For this purpose, fundamental studies were chosen as reference sources. Therefore, studies scanned in Scopus, ESCI and/or SSCI indexes were considered. However, considering only the studies included in these indexes are thought to be important in terms of the specificity and originality of the study subject.

Among the studies between 2020-2021, a literature search was conducted using the keywords "COVID-19, consumption, consumer and empirical study and their combinations" in the google scholar database.

The studies reached were examined by the authors of this study one by one, and which of these studies could be selected for this study. Finally, some of the studies reviewed were chosen for this study. After this selection, content analyzes of the studies were made. Notes were kept for the identity, theoretical background, methodology, and, if any, study model of the selected studies. The letters were re-read and revised. As a result, the authors have data coded for each chosen analysis. Then, the data related to that study was manually coded into the downloaded EndNote files for each study. Encodings were made to EndNote files for all studies. At the same time, tables were created on the word file for the coded data.

The bibliometric analyzes of the selected studies were visualized using the VOSviewer visual mapping technique. "The two main components of VOSviewer are the mapping technique used for constructing maps and the viewer used for examining maps. VOSviewer uses the VOS mapping technique, where VOS stands for visualization of similarities." (Eck and Waltman, 2009). The study results and the evaluations made are given on the following pages.

Results and evaluations

Table 1 shows the studies selected for this study and their numbers.

Table 1: Studies Selected for This Study and Their Numbers

Year	Selected Studies	f	%
2020	Ahmed et al. (2020); Alaimo et al. (2020); Butu et al. (2020); Ben Hassen et al. (2020); Jeżewska-Zychowicz et al. (2020); Jian et al. (2020); Jin, Li, Song and Zhao, (2020); Jribi et al. (2020); Kim et al. (2020); Koch et al. (2020); Laato et al. (2020); Laguna, Fiszman, Puerta, Chaya and Tárrega, (2020); Mason et al. (2020); Pham et al. (2020); E. Wang et al. (2020); Y. Wang et al. (2020)	16	32
2021	Bender et al. (2021); Bolek (2021); Di Crosta et al. (2021); Ali et al. (2021); Dsouza & Sharma (2021); Eger et al. (2021); Ellison et al. (2021); Espinoza-Ortega et al. (2021); Foroudi et al. (2021); Goswami & Chouhan (2021); Gu et al. (2021); Hesham et al. (2021); Huterska et al. (2021); Islam et al. (2021); Janssen et al. (2021; Kim et al. (2021); Kitz et al. (2021); J. Li et al. (2021); Y. Li et al. (2021); Marinkovic & Lazarevic (2021); de Medeiros et al. (2021); Mejía-Trejo (2021); Kursan Milaković (2021); Naeem (2021); Ong et al. (2021); Orîndaru, Popescu, Căescu, Botezatu, Florescu and Runceanu-Albu, (2021); Park et al. (2021); Rao et al. (2021); Roşu et al. (2021); Sunarjo, Nurhayati and Muhardono, (2021); Ali Taha et al. (2021); Valaskova et al. (2021); Vázquez-Martínez et al. (2021); Zafar et al. (2021)	34	68
	Total	**50**	**100**

The number of studies conducted between 2020-2021 and selected for this study is 50 in total. Among these 50 studies, it is seen that the number of studies conducted in 2021 is higher (n=34; 68%).

Figure 1 shows a visualization of co-authorship analysis for selected studies.
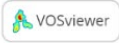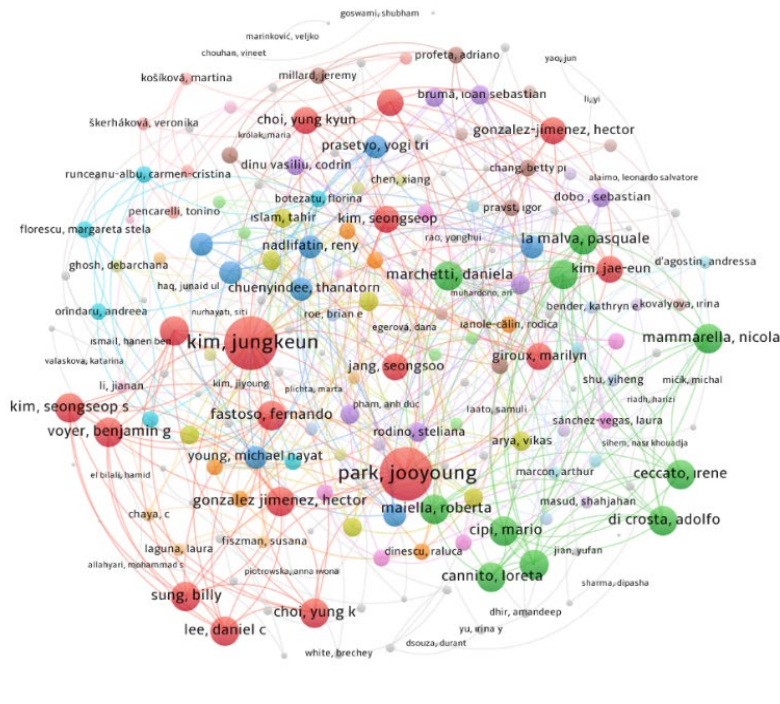
Figure 1: Co-Occurrences for Authors

Depending on the authors' dataset of the studies selected for this study, Kim, Jungkeun, and Park, Jooyoung have more co-authorships. In addition, these two authors have co-authorships.

Table 2 shows the results for the countries where the selected studies were conducted.

Table 2: Countries in Selected Studies

Subject of COVID-19								
2020-2021								
N=50								
Countries	f	%	Countries	f	%	Countries	f	%
Andorra	1	2	Germany	4	8	Russia	1	2
Brazil	2	4	India	3	6	Saudi Arabia	1	2
Canada	2	4	Indonesia	1	2	Serbia	1	2
Chile	1	2	Italy	3	6	Slovakia	2	4
China	5	10	Japan	1	2	Slovenia	1	2
Croatia	1	2	Mexico	2	4	South Korea	1	2
Czech Republic	1	2	Pakistan	3	6	Spain	2	4
Denmark	1	2	Peru	1	2	Tunisia	1	2
Developing Countries	1	2	Philippines	1	2	Turkey	1	2
England	1	2	Poland	2	4	USA	13	26
Finland	1	2	Qatar	1	2	United Kingdom	3	6
France	2	4	Romania	3	6	Vietnam	1	2

Among the 50 selected studies, most were conducted in the USA (n=13; 26%). China is another country where most studies have been completed (n=5; 10%). In contrast, Germany is the third country with the most consumer research conducted by researchers during the COVID-19 pandemic (n=4; 8%).

Figure 2 shows the analysis results for the co-countries in which the selected studies were conducted.
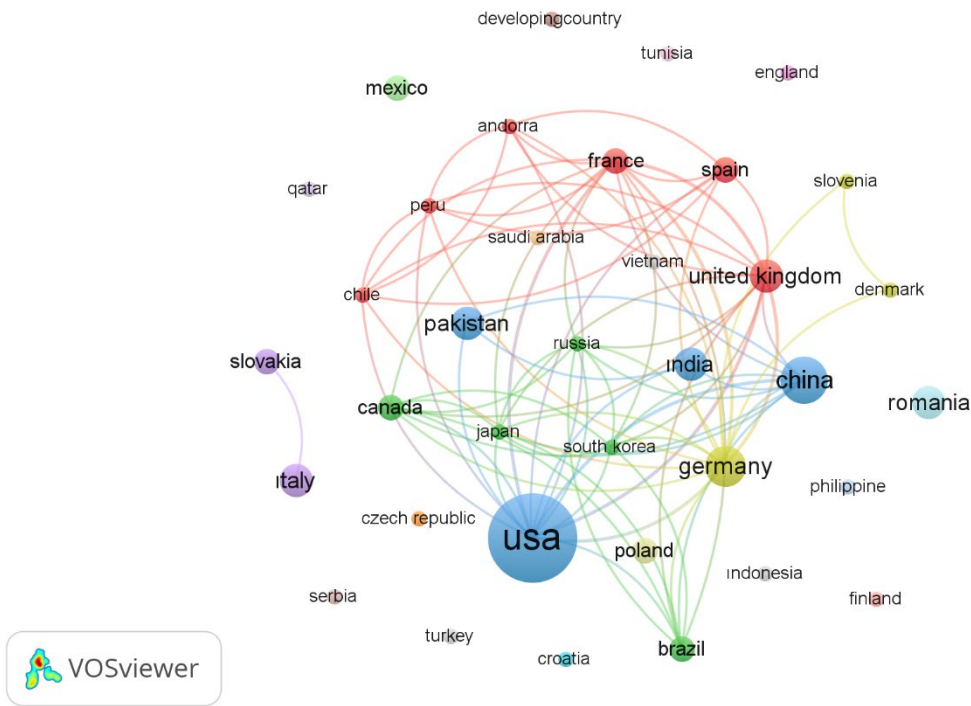
Figure 2: Co-Occurrences for Countries

The USA has the most networks among country networks. The USA has links with China and Germany for the consumer research that has been done. It is seen that the USA is the subject of consumer research together with China and at the same time the USA with Germany.
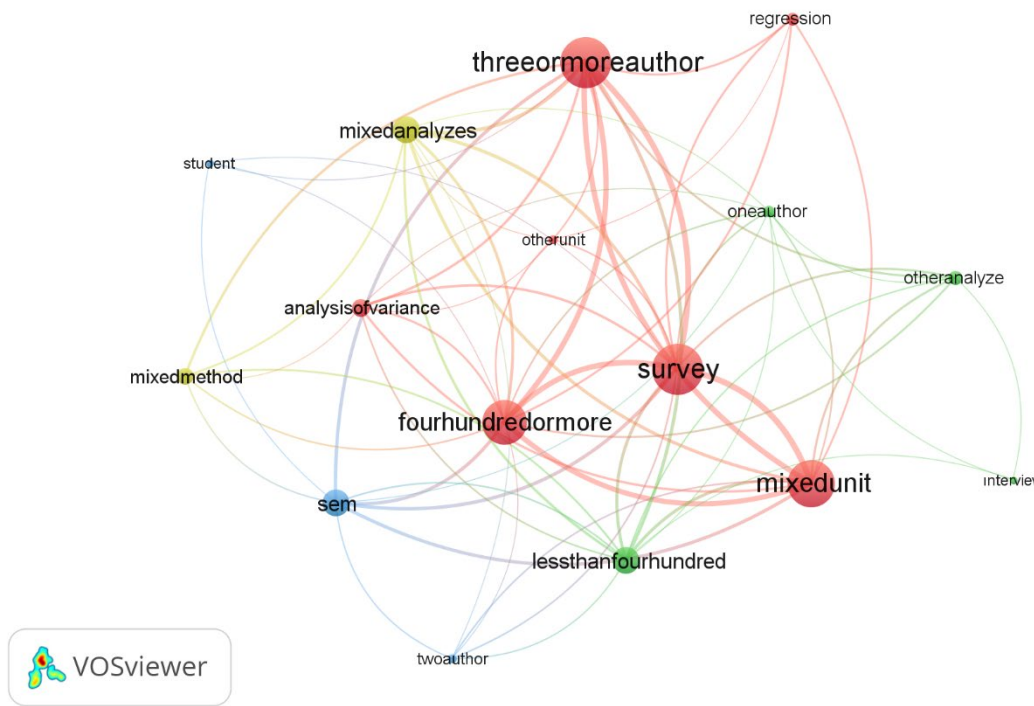
Table 3 shows the results regarding the bibliography/methodology of the selected studies.

Table 3: Bibliography/Methodology of Selected Studies

Subject of COVID-19			
2020-2021			
N=50			
Bibliography/Methodology		**f**	**%**
Number of authors	One author	4	8
	Two authors	3	6
	Three or more authors	43	86
Sample unit	Student	1	2
	Another unit	3	6
	Mixed unit	46	92
Data collection method	Survey	42	84
	Interview	1	2
	Mixed method	7	14
Sample size	Less than four hundred	15	30
	Four hundred or more	35	70
Data analysis method	Regression	5	10
	Analysis of Variance	8	16
	SEM	15	30
	Other analyzes	6	12
	Mixed analyzes	16	32

According to the 50 selected studies, most have three or more authors (n=43; 86%). In addition, while the sample unit of the majority of the studies is mixed (n=46; 92%), the data collection method is a survey (n=42; 84%), and the sample size is four hundred or more (n=35; 70%), mixed analyzes are used for data analysis in most of the studies (n=16; 32%). However, it should be noted that the number of studies using SEM for data analysis (n=15; 30%) is very close to the number of studies using mixed analyses.

Figure 3 shows a visual map of the analyses for the co-bibliography/methodology of selected studies.

Figure 3: Co-Occurrences for Bibliography/Methodology

The most co-occurrences in the selected studies are three or more authors, mixed sample units, survey data collection method, a sample size of four hundred or more participants, and combined analyses for data analysis. In other words, according to the bibliography/methodology, analyzes of selected studies; three or more authors, mixed sample unit, survey, sample sizes of four hundred or more, and mixed analyzes are co-keywords with relationships between them.

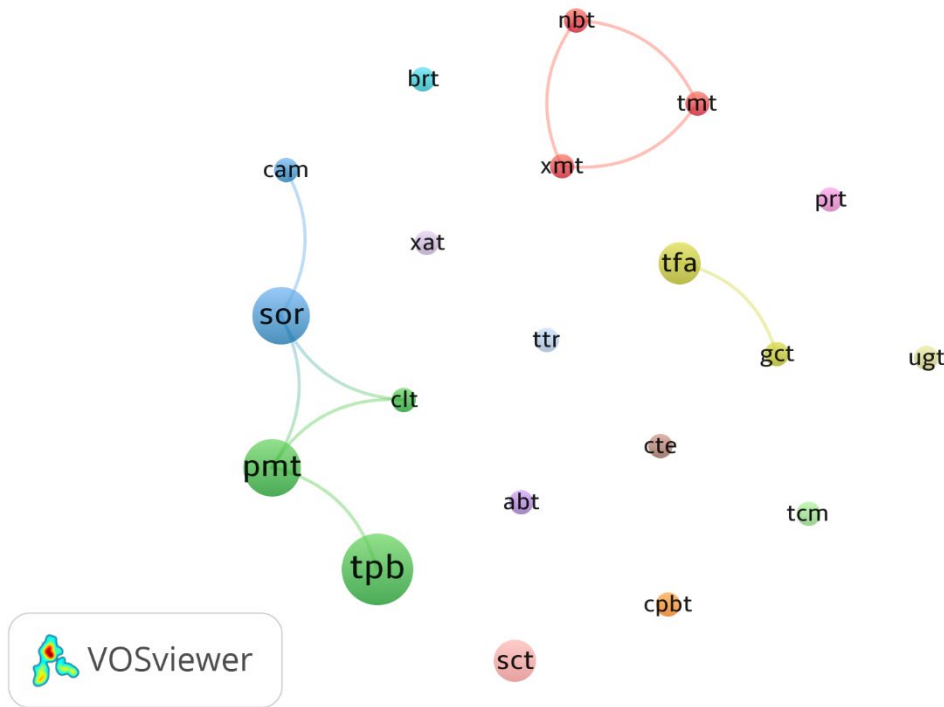Table 4 shows the results regarding using theories/models used in selected studies.

Table 4: Theories/Models Used in Selected Studies

Subject of COVID-19		
2020-2021		
N=50		
Theories/Models	**f**	**%**
Appraisal Theory (xAT)	1	2
Attitude-Behaviour Theory (ABT)	1	2
Behavioural Reasoning Theory (BRT)	1	2
Cognitive Load Theory (CLT)	1	2
Cognitive Theory of Emotions (CTE)	1	2
Competitive Arousal Model (CAM)	1	2
Consumer Panic Buying Theory (CPBT)	1	2
Generational Cohort Theory (GCT)	1	2
Materialism Theory (xMT)	1	2
Need to Belong Theory (NBT)	1	2
Perceived Risk Theory (PRT)	1	2
Protection-Motivation Theory (PMT)	3	6
Social Cognitive Theory (SCT)	2	4
Stimulus-Organism-Response Theory (SOR)	3	6
Terror Management Theory (TMT)	1	2
Theory of Fear Appeal (TFA)	2	4
Theory of Planned Behaviour (TPB)	4	8
Theory of Technology Readiness (TTR)	1	2
Trust and Confidence Model (TCM)	1	2
Uses and Gratification Theory (UGT)	1	2

According to the content analysis of 50 selected studies, among the twenty theories/models, Theory of Planned Behaviour (TPB) is the one most used by the authors in consumer research during the COVID-

19 pandemic (n=4; 8%). In addition to this theory, the other two most used theories are Stimulus-Organism-Response Theory (n=3; 6%) and Protection-Motivation Theory (n=3; 6%).

Figure 4 shows a visual mapping of the co-theory/model used in selected studies.

Figure 4: Co-Occurrences for Theories/Models

The authors' theory of Planned Behaviour (TPB) is the most co-occurrence for consumer research selected during the COVID-19 pandemic. In other words, as a result of the analysis, the Theory of Planned Behaviour (TPB) is the most used in scientific studies. Moreover, this theory has links to both Protection-Motivation Theory (PMT) and Cognitive Load Theory (CLT).

Table 5 shows the results for the variables used in the selected studies.
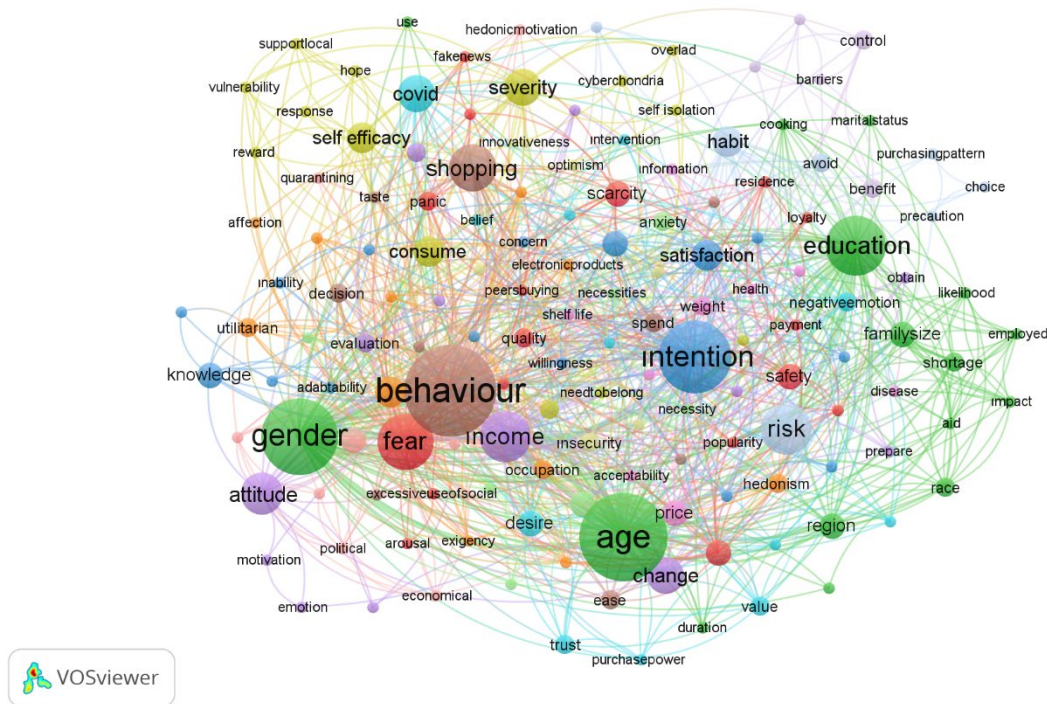
Table 5: Variables Used in Selected Studies

Subject of COVID-19					
2020-2021					
N=50					
Variables	**f**	**%**	**Variables**	**f**	**%**
Acceptability	1	2	Knowledge	3	6
Actual purchase	1	2	Like	1	2
Adabtability	1	2	Likelihood	1	2
Adoption	1	2	Limitation	1	2
Affection	1	2	Lockdown restriction	1	2
Age	16	32	Loyalty	1	2
Aid	1	2	Marital status	1	2
Arousal	1	2	Marketing mix	1	2
Attitude	6	12	Materialism	1	2
Anxiety	2	4	Messaging	1	2
Awareness	4	8	Mood	1	2
Available	1	2	Motivation	1	2
Avoid	2	4	Necessities	1	2
Barriers	1	2	Need to belong	1	2
Basic needs products	1	2	Negative emotion	2	4
Behaviour	19	38	Nonbasic needs products	1	2
Belief	1	2	Non-necessities	1	2
Benefit	2	4	Obtain	1	2
Brand trust	1	2	Occupation	2	4
Buying	1	2	Optimism	1	2

Cashless	1	2	Outrage	1	2
Cautious	1	2	Overlad	1	2
Change	5	10	Panic	2	4
Characteristic	1	2	Payment	1	2
Childhood socioeconomic status	1	2	Peers buying	1	2
Choice	1	2	Personality traits	1	2
Citizenship	1	2	Political	1	2
Concern	1	2	Popularity	1	2
Consume	4	8	Positive emotion	1	2
Control	2	4	Precaution	1	2
Cooking	1	2	Price	3	6
COVID-19	5	10	Prepare	1	2
Cyberchondria	1	2	Product type	1	2
Decisions	2	4	Promotion	1	2
Delight	1	2	Purchase power	1	2
Depression	1	2	Purchasing pattern	1	2
Descriptive norm	1	2	Quality	2	4
Desire	3	6	Quarantining	1	2
Discomfort	1	2	Race	2	4
Disease	1	2	Region	3	6
Duration	1	2	Regret	1	2
Ease	2	4	Residence	1	2
Economical	1	2	Resilience	1	2
Economic stability	1	2	Response	1	2
Education	9	18	Reward	1	2
Effectiveness	1	2	Risk	9	18
Electronic products	1	2	Safety	3	6
Emotion	1	2	Satisfaction	4	8
Employed	1	2	Scarcity	3	6
Entertainment traveling leisure	1	2	Sector	1	2
Excessive use of social	1	2	Self-efficacy	4	8
Exigency	1	2	Self-justification	1	2
Experience	1	2	Self-isolation	1	2
Exposure	2	4	Severity	5	10
E-Wom	1	2	Shelf-life	1	2
Evaluation	2	4	Shopping	7	14
Fake news	1	2	Shopping patterns	1	2
Family size	3	6	Shortage	2	4
Fear	9	6	Social comparison	1	2
Food Type	1	2	Spend	2	4
Gender	13	26	Stimulus checks	1	2
Habit	4	8	Stress	3	6
Health	1	2	Subjective norm	3	6
Hedonic motivation	1	2	Support local	1	2
Hedonism	2	4	Taste	1	2
Hope	1	2	Technological	1	2
Household composition	1	2	Threat	2	4
Impact	1	2	Trust	2	4
Impulsively	2	4	Use	1	2
Inability	1	2	Usefulness	3	6
Income	9	18	Use of social media	1	2
Influence	1	2	Utilitarian	2	4
Information	1	2	Wastage	1	2
Injunctive norm	1	2	Weight	2	4
Innovativeness	1	2	Willingness	1	2
Insecurity	2	4	Value	2	4
Intention	14	28	Vulnerability	1	2
Intervention	1	2			

In the consumer research conducted during the COVID-19 pandemic, the first nine variables that were used the most among the one hundred and fifty five variables, respectively, were behaviour (n=19; 38%), age (n=16; 32%), intention (n=14; 28%), gender (n=13; 26%), income, education, fear, risk (n=9; 18%) and shopping (n=7; 14%).

Figure 5 shows the co-variables used in selected studies.

Figure 5: Co-Occurrences for Variables

Behaviour is the most co-occurrence in the 50 selected studies. Behaviour has an essential link with co-occurrence shopping in selected studies. On the other hand, there are close links between gender, age, and education, other co-occurrences in the selected studies. Attitude, income, and change are other co-occurrences that have close connections in the selected studies. It should also be noted that COVID-19, fear, risk, and severity are the occurrences that come to the fore in the selected studies.

Conclusion and discussion

This study presents a general typology of these research articles by making bibliometric analyzes of empirical consumer research articles selected for this study conducted in the context of COVID-19 between the years 2020-2021.

With this bibliometric paper, it can be concluded that consumer behaviour has changed due to the COVID-19 outbreak. Researchers have conducted studies at both national and international levels to explain evolving consumer behaviour. While it was seen that the studies had three or more authors, it was seen that the sample units were mixed primarily, not aimed at a particular segment (for example, students or others). In addition, while it is clear that data was collected using the survey method in most studies, it is possible to say that the sample size of most studies consists of four hundred or more participants. The sample sizes of these studies are above the 95% confidence level according to the formula used (Krejcie & Morgan, 1970).

Changing consumer behaviour in the COVID-19 pandemic has generally been explained by researchers using the Planned Behavior Theory. It is also helpful to clarify that 20 different theories were used in the 50 empirical studies selected for this study. In addition, the explanation of consumer behaviour using more than one theory in some studies indicates a link between the theories. So much so that when we look at the visual results of the bibliometric analyzes for the variables used in the studies, it will be seen that some related co-variables are shown with the same colours (for example, the variables shown in yellow in Figure 5).

It was observed that demographic variables such as age, gender, income, and educational status mainly were studied, along with behaviour and intention. In addition, it has been observed that negative emotions such as fear and risk are also learned a lot. In the studies, researching whether there is a difference between demographic characteristics, market segmentation to the business world, and

determination of the target market have provided ideas. In addition, the research of consumer behaviour by considering demographic variables has contributed to the literature also. Because demographic characteristics have been seen as essential variables while researching consumer behaviour since the past, studying consumer behaviour in such an extraordinary period by considering demographic characteristics has provided predictions to marketing academics about how demographic differences among consumers can be shaped in such periods. Considering that during the COVID-19 period, concerns such as economic, social, and famine, especially health, come to the fore, it has been valuable in many ways to work hard on emotions such as fear and anxiety.

Implications

In this study, the review of quantitative, qualitative and mixed research to explain consumer behaviour during the COVID-19 pandemic and the systematization of the literature on these researches leave important recommendations for both theory and practice. First of all, it is remarkable to explain the profound consequences of the global pandemic on consumer behaviour from the marketing discipline/doctrine perspective. This bibliometric study is one of the leading initiatives to provide an overview of the literature typology of quantitative, qualitative and mixed empirical studies to explain consumer behaviour during the pandemic. Second, COVID-19 and factors originating from COVID-19 can impact consumer behaviour. Brands/firms should be aware of changing consumer behaviour during the COVID-19 outbreak. Third, brands should look for ways to be competitive against their competitors. Brands need to instil in potential customers that they are not alone in the pandemic conditions. Selling in online stores and providing convenience in product deliveries during the pandemic period can give brands an edge over their competitors in the competitive environment.

Limitations and directions for future research

The article search for this study was conducted under some constraints to ensure a good balance between quality and scope. Although articles were searched using Google scholar, an extensive database, not all Scopus, ESCI, and SSCI indexes were found. However, this may indicate that the quality of the articles to be accessed is heterogeneous and necessary (Cruz-Cárdenas, Zabelina, Guadalupe-Lanas, Palacio-Fierro and Ramos-Galarza, 2021). According to this, the findings obtained in this study are applicable in the field of consumer research and can be a guide for future consumer research. As can be seen in this study, for example, trying to explain the behaviour of consumers in the context of panic, fear, risk, and severity due to COVID-19 and COVID-19 has attracted the attention of researchers in general. Furthermore, as can be seen in the studies, it is helpful to explain the online and non-online shopping attitudes, intentions, and actual shopping of consumers in the COVID-19 pandemic, both in terms of demographic factors and using theoretical models (for example, see Table 4 and Figure 4).

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