





A Bibliometric Analysis of Consumer Behavior Research Using Vosviewer Application

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Abstract. The objective of this study was to perform a bibliometric analysis in terms of consumer behaviors using VOSviewer software. A qualitative method was used in the research. The data used in this study were searched based on the keyword “Consumer Behavior Research” on Google Scholar using publish or perish software. From the search results, 998 articles published in the 2018–2022 range were found. The results showed that research on consumer behavior increased in 2018–2021 but decreased significantly in 2022. This study, in particular in the area of consumer behavior, highlights the value of doing bibliometric analysis. It is expected that this research will serve as a guide for future studies in order to conduct and choose the research theme .

Keywords: Bibliometric Analysis · Consumer Behavior · Research · Vosviewer

1 Introduction

The study of consumer behavior includes how people choose, use (consume), and discard products and services, as well as how they react emotionally, mentally, and behaviorally. Concepts from many academic fields, including psychology, biology, chemistry, and economics, are combined to study consumer behavior [1]. The concept of consumer behavior includes two key components: (1) the decision-making process, and (2) physical activity, which all engage people in evaluating, obtaining, and using these goods and services. Consumer behavior is one of the important elements that need to be considered by marketers, because by understanding their consumer behavior, marketers will benefit from useful inputs for their products, how to promote their products, and also other marketing aspects. Moreover, by having a deeper understanding of consumer behavior, managers will recognize new opportunities and then identify them to conduct market segmentation [2]. This study used bibliometric analysis to gain a deeper understanding of the field of consumer behavior. The VOSviewer was utilized, as it has been in many prior bibliometric mapping research [3, 4]. Bibliometric analysis is a meta-analytical approach that analyzes how frequently an article is mentioned by other papers, suggesting major research streams for a topic [5]. It allows researchers and authors to see the structure of a field in detail [6]. The citation graphs are displayed in sketch form by the VOSviewer software, which also emphasizes the most-cited publications [7]. VOSviewer is used

in this study to investigate and execute a bibliometric analysis of highly cited articles' networks.

There was many prior research focused heavily on consumer behavior patterns [8, 9], types [10, 11], processes [12, 13], and outcomes [14, 15]. However, consumer behavior research mapping received less attention. Whereas, the situation and consumer behavior in the digital era has changed, and studies about this issue were abound in the literature. Due to such quickly expanding volumes of knowledge, systematization needs to be conducted. Indeed, to scientifically and objectively analyze tendencies in consumer behavior research, quantitative bibliometric methodologies are needed. By applying Vosviewer in this bibliometric method, information generated in rapidly evolving disciplines does not get fragmented. A broad and general perspective of consumer behavior during the previous five years was developed through theoretical attempts in the past. These initiatives have attempted to explain behaviors by drawing comparisons between traditional and modern consumption patterns or by drawing parallels between behaviors and other crises and disruptive occurrences, such as past pandemics, wars, or natural catastrophes [16, 17]. Therefore, mapping in the domain of consumer behavior is interesting to do. In fact, this paper contributes to reviewing the literature on consumer behavior research.

Based on the previous studies, there are not many studies related to consumer behavior research mapping using Bibliometrics. Therefore, this study integrates mapping with Vosviewer software to undertake bibliometric analysis research in the area of consumer behavior. It is intended that this study will serve as an academic source in directing and deciding on research subjects, especially those related to consumer behavior. The purpose of this analysis is to establish the quantity and newness of the data.

2 Methods

In the process of gathering information, the journals published and included in Google Scholar's index were taken. This is considering Google Scholar is one of the journal sources that can be accessed easily and for free. This study used a bibliometric and descriptive quantitative approach and conducted a literature study on the research topic using Publish or Perish software. The data for this study were derived from journal publication data on consumer behavior gathered through the reference managers program. Publish or Perish was the reference manager application used in this study. Publish or Perish was used to conduct a literature review of the specified topic. As a result, a database of related study themes was built. Publish or Perish was utilized to determine which author was the most referenced, as well as the oldest and most current year of an article [18]. Articles obtained from the reference manager were saved into a file that can be used in the VOSviewer software. Publish or Perish version 8 and VOSviewer version 1.6.17 was used in the research and continued by filtering information based on its relevance to customer behavior. As many as 998 articles on consumer behavior research have been obtained based on the keyword "Consumer Behavior research" according to the title, keywords, and abstract requirements. The publications considered in this study were published between 2018 and 2022. After that, the articles were stored in *.ris format. Then, using VOSviewer software, visualizations were created and trends were analyzed using bibliometric maps. After that, the article data from database sources that

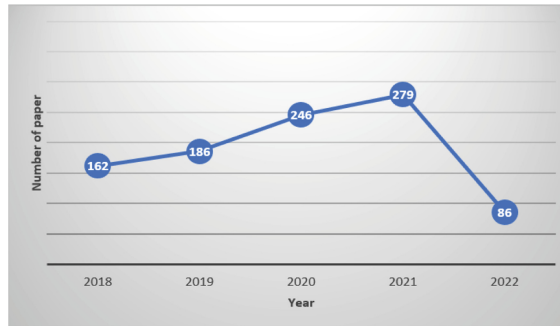


Fig. 1. Levels of development of research on costumer behavior

had been prepared were mapped. Then, the terms included in the VOSviewer mapping visualization were filtered. VOSviewer software mapping data is classified into three types: network, overlay, and density visualization.

3 Results and Discussion

3.1 Research Developments in the Field of Consumer Behavior Research

The development of research on consumer behavior over the last 5 years from 2018–2022 has been published on Google Scholar with a publication index of 998 articles. The number of each publication in the order from 2018 to 2022 is 162, 186, 246, 279, and 86 articles. Figure 1 also shows that the most researched and published articles on consumer behavior are in 2021 with a total of 279 articles and the least research occurs in 2022, which is 86 articles. The average publication for the last 5 years is 191.8. The development of research on consumer behavior is shown more clearly in Fig. 1.

Overall, it can be seen that since 2018 research on this domain has continued to increase. Based on this data 20 articles have been screened with the most citations from 20 different journals (See Table 1).

3.2 Visualization Consumer Behavior Topic Area Using VOS Viewer

The minimal number of relations given in the VOSviewer application is two words [36]. However, in this study, the number of relations in the VOSviewer between terms was 63. So that the results obtained were 40 items with a total of 5 clusters. Based on visualization mapping analysis, consumer behavior research is categorized into five clusters, namely:

- (i) 11 items make up Cluster 1, the 11 items are evidence, information, marketing research, previous research, purchase, research methodology, researcher, sustainability, sustainable consumer behavior, term, and tourism.
- (ii) 9 items make up Cluster 2, the 9 items are business, consumer behavior analysis, data, development, e-commerce, green consumer behavior, literature, methodology, and research question.

Table 1. Most citation journals in consumer behavior

No	Authors	Title	Year	Cites	Refs
1.	Nguyen et al.	Consumer Behavior and Order Fulfillment in Online Retailing: A Systematic Review	2018	218	[19]
2.	Loxton et al.	Consumer Behavior during Crises: Preliminary Research on How Coronavirus Has Manifested Consumer Panic Buying, Herd Mentality, Changing Discretionary Spending	2020	214	[8]
3.	Mehta et al.	The New Consumer Behavior Paradigm Amid COVID-19: Permanent or Transient?	2020	203	[2]
4.	Ismagilova et al.	The Effect of Characteristics of Source Credibility on Consumer Behavior: A Meta-Analysis	2020	200	[20]
5.	Cherubino et al.	Consumer Behavior through the Eyes of Neurophysiological Measures: State-of-the-Art and Future Trends.	2019	82	[1]
6.	Ahmed et al.	Consumer Behavior towards Willingness to Pay for Halal Products: An Assessment of Demand for Halal Certification in a Muslim Country	2018	81	[21]
7.	Alaeddin et al.	From Physical to Digital: Investigating Consumer Behavior of Switching to Mobile Wallet	2018	80	[22]
8.	Spence et al.	Extrinsic Auditory Contributions to Food Perception & Consumer Behavior: An Interdisciplinary Review	2019	77	[23]
9.	Bigne et al.	The Impact of Social Media and Offline Influences on Consumer Behavior. An Analysis of The Low-Cost Airline Industry	2018	66	[24]
10.	Indahingwa et al.	How Digital Technology Driven Millennial Consumer Behavior in Indonesia	2019	64	[25]

(continued)

Table 1. (continued)

No	Authors	Title	Year	Cites	Refs
11.	Chauhan et al.	An Empirical Analysis into Sentiments, Media Consumption Habits, and Consumer Behavior during the Coronavirus (COVID-19) Outbreak	2020	49	[26]
12.	Nezamova et al.	Monitoring Consumer Behavior in the Food Market in the Krasnoyarsk Region Of Russia	2020	46	[27]
13.	Auf et al.	Consumer Buying Behavior: The Roles of Price, Motivation, Perceived Culture Importance, and Religious Orientation	2018	41	[28]
14.	Valecha et al.	Prediction of Consumer Behavior Using Random Forest Algorithm	2018	34	[29]
15.	JÄlkovÄ et al.	Digital Consumer Behavior and Ecommerce Trends during The COVID-19 Crisis	2021	31	[30]
16.	Rizvandi et al.	Sport Consumer Behavior Model: Motivators and Constraints	2019	27	[31]
17.	Chetan et al.	Understanding Consumer Behavior towards Utilization of Online Food Delivery Platforms	2019	26	[32]
18.	Alessa et al.	Impact of COVID-19 on Entrepreneurship and Consumer Behavior: A Case Study in Saudi Arabia	2021	25	[33]
19.	Carter et al.	Internet-Enabled Collective Intelligence as a Precursor and Predictor of Consumer Behavior	2018	23	[34]
20.	Sousa et al.	The Role of Personal Brand on Consumer Behavior in Tourism Contexts: The Case of Madeira	2019	22	[35]

- (iii) 8 items make up Cluster 3, the 8 items are consumer buying behavior, covid, determinant, empirical study, insight, pandemic, reference, and research article.
- (iv) 7 items make up Cluster 4, the 7 items are costumer, digital marketing, empirical research, future research, importance, order, and understanding.
- (v) 5 items make up Cluster 5, the 5 items are abstract, internet, online consumer behavior, online shopping, and social medium.



Fig. 2. Network visualization of consumer behavior research

3.3 Network Visualization of Consumer Behavior Topic Area Using VOSviewer Visualization

There are three different forms of mapping for each word in the VOSviewer program; the first mapping is network visualization. This type of mapping can describe the relationship between terms on the map in the form of networks that have different colors or lines that move from one term to another. From the VOSviewer tool, Fig. 2 depicts a network representation of the term “Consumer Behavior”. Each cluster in each of the examined issue areas is seen in Fig. 2. As seen in Fig. 2, cluster 2 includes consumer behavior itself, with a total strength of 9 and a total of 10 occurrence. Consumer behavior is connected to cluster 1, namely the terms research methodology and purchase, then connected to cluster 5, namely the term covid.

3.4 Overlay Visualization of Consumer Behavior Topic Area Using VOSviewer

The next form of mapping found in the VOSviewer application is a form of mapping in the form of an overlay. This form of mapping focuses on the novelty of a term in research. The novelty of a term in research related to consumer behavior can be seen in Fig. 3. The graph below demonstrates how a term’s popularity changes over time. The color difference that is shown in overlay visualization denotes the renewal of a term within a predetermined time frame. In this analysis, the years 2018 through 2022 were used (the last 5 years). A darker, more purple-like hue indicates that the study has been conducted for a while or is getting close to 2018. While a phrase that occurs in recent studies or is approaching 2022 is a lighter color that is closer to yellow. The overlay visualization shows study times updated and the relationship between terms [18].

3.5 Density Visualization of Consumer Behavior

The last type of mapping representation is density visualization. In this mapping, each term will be divided according to its popularity in a study. This type of mapping can be seen from the color that appears in a term. If the colors appear lighter, it means that

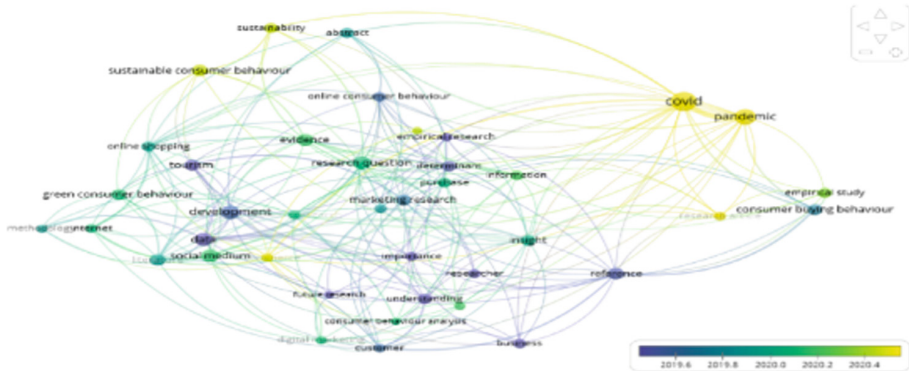


Fig. 3. Overlay visualization of consumer behavior research

research on the term is getting more popular or more. On the other hand, if the color is getting darker or faded, this means that research on the term is getting less popular [37]. There are various yellow patterns with a number of pretty big diameters, as can be observed in the density visualization. Covid, pandemic, data, and social media are these terms. This indicates that these terms are ones that are frequently utilized in earlier research.

4 Conclusion

According to the results of mapping and analysis utilizing VOSviewer, consumer behavior study was largely explored between 2020 and 2021. This bibliometrics contributes to identifying the major themes in each prior study that may be used to measure novelty in future research. To create the mapping data, VOSviewer software which displays network visualizations, overlays, and densities was used. Citations were used to assess the influence of a piece of writing. It contributes to evaluating the article's impact, influence, or attention.

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