

## BIBLIOMETRIC ANALYSIS OF CONSUMER BEHAVIOR IN THE DIGITAL AGE

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### ABSTRACT

The objective of this study is to examine consumer behavior in the context of the digital era using a bibliometric methodology. The advent of the digital age has brought about a profound transformation in the manner in which customers engage with products, companies, and information. Within this particular context, the utilization of bibliometric research has emerged as a pertinent approach for discerning patterns, areas of research emphasis, influential contributors, and advancements pertaining to consumer behavior within the digital realm. This research methodology involves the acquisition of data from scholarly articles that are indexed in the Scopus database. The data is subsequently subjected to examination by bibliometric methods, including citation analysis, keyword analysis, and data visualization employing VOS Viewer. The anticipated outcomes of this investigation are poised to unveil evolutionary patterns in consumer behavior research within the context of the digital era, ascertain the most often discussed topics, and identify the principal contributors within this domain. The results obtained from this research can offer significant contributions to scholars, professionals in the business sector, and legislators in understanding the most recent advancements in consumer behavior inside the digital realm. The anticipated outcomes of this study are likely to contribute to an enhanced comprehension of the transformation in consumer contact within the digital era. Furthermore, these findings are predicted to have significant strategic consequences for businesses and marketing practices in this dynamic and evolving landscape.

**Keywords:** *Consumer behavior, Digital age, Bibliometric analysis, Research trends, Influential authors, Seminal papers, Emerging research areas.*

### 1.0 Introduction

The quantitative method of bibliometric analysis is used to study academic literature. To understand research qualities and patterns, publications, citations, and bibliographic data are examined (Goodrum et al., 2001). This methodology is important in academic and research communities because it measures research impact, evaluates collaborative efforts, identifies influential contributions, and informs resource allocation and research policies (Goodrum et al., 2001). Scholars gather publishing data in order to examine patterns in research productivity, encompassing aspects such as the quantity of publications, their distribution across various journals and academic fields, as well as their geographic dispersion. This endeavor provides a holistic perspective of the research environment. Citation analysis is an essential element that aids scholars in comprehending the impact of academic literature through the examination of citation patterns. The examination of co-authorship networks provides insights into the dynamics of

collaboration, whilst the analysis of keywords and topics indicates the research focus and trends within a specific academic discipline (Goodrum et al., 2001; Uddin et al., 2011).

Consumer behavior has gained heightened significance in the digital era, mostly because to the profound influence of the internet, social media, e-commerce platforms, and digital gadgets on consumers' engagement with products and services. The advent of these technologies has revolutionized the manner in which consumers make decisions and interact with brands. Hence, it is imperative for enterprises and marketers to conduct an in-depth analysis of consumer behavior within this framework, with the aim of comprehending the evolving preferences, requirements, and anticipations of their target demographic. Heinonen (2011) underscores the significance of understanding these alterations to maintain competitiveness and relevance within the market. According to Heinonen (2011),

The study of customer behavior holds significant importance in the digital era due to its role in the development of effective marketing strategies (Heinonen, 2011). The impact of social media on customer behavior in the digital era is substantial (Dimitriu & Guesalaga, 2017). The phenomenon of digital piracy behavior has emerged as a noteworthy facet of consumer behavior in the contemporary digital era (Vida et al., 2012). The advent of the digital era has also resulted in alterations in consumer behavior within the retail industry (Kalashnikova et al., 2023).

Understanding the scholarly environment on bibliometric consumer behavior in the digital age is the main goal of this study. In the digital age, bibliometric studies seek to identify noteworthy patterns, influential studies, and emerging fields of consumer behavior research. This study analyzes scholarly publications, citations, and bibliographic data in this field. This project is likely to yield significant findings for researchers and practitioners in the field. To fully represent the academic sector, this study uses bibliometric analysis to explore research concerns. This will help researchers, practitioners, and policymakers make informed judgments and comprehend digital consumer behavior.

Except for Gil-Gomez et al. (2020), Hollebeek et al. (2021), Srivastava and Sivaramakrishnan (2021), Vivek et al. (2014), and Zhao (2022), consumer behavior scholarship lacks bibliometric studies. Due to the recent increase in consumer behavior research, a full bibliometric study is needed to appreciate its significance. This study examines consumer behavior scholarly articles from 1993 to 2023 using bibliometrics.

This study analyzes events across 30 years, revealing traits not found in shorter-term studies. This study may also contribute to academic scholarship by identifying gaps in the literature and suggesting further research. Researchers can guide future studies and shape this academic field by identifying and analyzing new trends and exploring understudied consumer behavior.

## 2.0 Literature Review

Bibliometrics is a field of study that originated in the early twentieth century (Godin, 2006). Its key methodological developments occurred in the 1960s (Price, 1965; Pritchard, 1969; Raisig, 1962). With the advent of comprehensive, searchable databases, such as Scopus, bibliometrics has seen significant growth recently. Bibliometrics has two primary goals: constructing maps showing which parts of literature are most closely connected (Börner *et al.*, 2005) and detecting clusters, which are subsets of literature that are more closely connected internally than to parts outside the cluster (Small and Sweeney, 1985). Clusters detected in the literature imply demic structure in the research field. Researchers have used map-making and cluster analysis to answer

questions about the structure of science as a whole (Boyack *et al.*, 2005), as well as of individual disciplines (Yeung *et al.*, 2017) or inter-disciplinary research areas (Youngblood and Lahti, 2018).

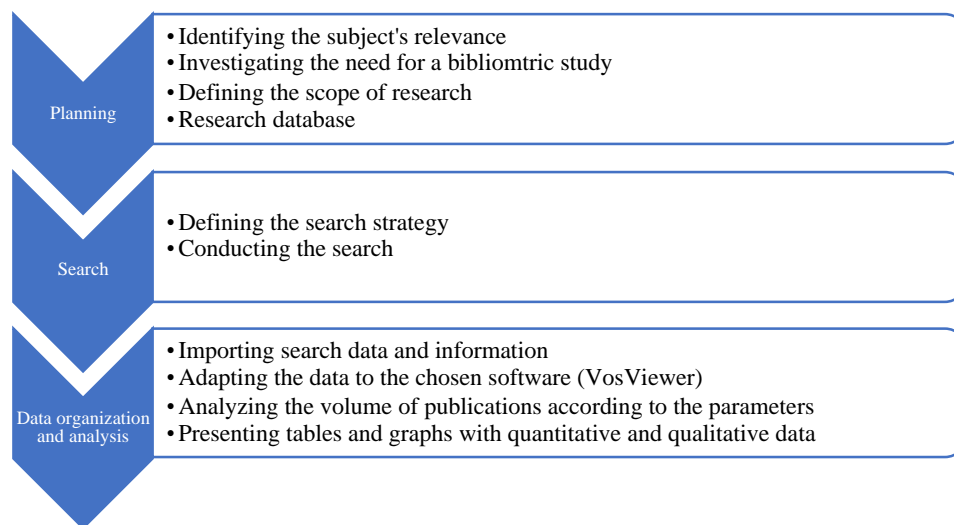
One study by Liu *et al.* (2023) conducted a bibliometric analysis of consumer neuroscience towards sustainable consumption. It highlighted the increasing volume of publications and the interdisciplinary nature of consumer neuroscience research (Liu *et al.*, 2023). Lakner *et al.* (2021) conducted a bibliometric approach to understand food consumer behavior and safety-sustainability triangle. It emphasized the importance of considering different algorithms in bibliometric analysis (Lakner *et al.*, 2021). The study undertaken by Parvathy *et al.* (2022) involved a bibliometric investigation of the phenomenon of gift-giving within the realm of consumer behavior. The study conducted by Parvathy *et al.* (2022) emphasized the significance of review articles in enhancing comprehension of customer behavior in this particular domain.

### 3.0 Methodology

The research methodology employed in this work is bibliometric analysis, a widely recognized way for offering a thorough overview of a certain research topic. The objective of this approach is to provide a quantitative depiction of research data and trends found in scientific papers, primarily targeting researchers within the corresponding field (Maia *et al.*, 2019). This approach additionally aids in the assessment of research productivity and quality through the quantification of citations and publications (Vanti, 2002).

The present study employed a modified bibliometric approach, drawing inspiration from the methodology proposed by Maia *et al.* (2019), and afterwards tailored to align with our specific research goals. In order to accomplish this objective, the methodology was divided into three discrete stages: Planning, Search, and Data Organization and Analysis (Maia *et al.*, 2019). The methodology utilized in the investigation is depicted in Figure 1.

**Figure 1.** The research employed a methodical procedure.



Source: Adapted from Maia *et al.*, (2019)

The preliminary stage of planning, which took place on August 20, 2023, encompassed a thorough exploration of the Scopus database utilizing the specified keywords "consumer behavior" and

"bibliometric" within the topic domains of business, management, and accounting. This inquiry yielded a total of 12 scholarly publications. Two primary constraints were discovered in the aforementioned investigations. Firstly, they had outdated temporal scopes and did not reflect recent research activity in the field. Secondly, they often focused on specific regions or subtopics within consumer behavior, indicating a lack of comprehensive bibliometric investigations. The study restricted its investigation to a 30-year timeframe and used the Scopus database for its rigorous analysis.

The search phase occurred in September 2023, spanning from 1993 to 2023, with expanded search terms like "consumer behavior," "purchase behavior," "consumer research," and "digital." Filters were applied to refine the search, including specific subject areas, English language, and the document type being articles, resulting in 306 documents (refer to Table 1 for details).

In the data organization and analysis phase, the collected data was imported into VOS Viewer software for quantitative and qualitative bibliometric analysis. The dataset included 306 studies, and various aspects of consumer behavior research were examined, such as publication trends, country distribution, primary authors, and leading academic institutions. The qualitative analysis involved studying keyword occurrences and their relationships over time.

Table 1. Search strategy for the bibliometric review

String	Search fields	Filters	Results
"consumer* behavior*" OR "purchase* behavior*" OR "consumer* research*" AND "digital"	Abstract, Titles and Keywords	Subject area: Business, Management and Accounting + Economics, Econometrics and Finance Language: English Document type: Article Years: 1993 to 2023	718 documents

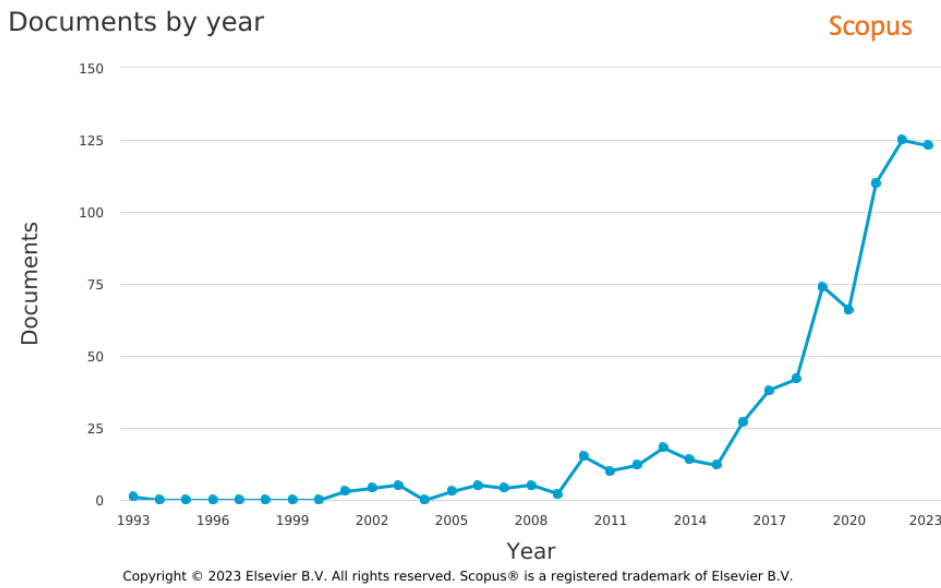
### 3.1. Annual Publication Development Trends and Country Productivity

The number of publications has significantly increased since 2020 compared to the previous year (2021). The total number of publications has grown to 110, a growth rate of over 66%. Although the growth rate tends to fluctuate, it continues to increase consistently. By 2023, the number of identified publications is expected to reach 123.

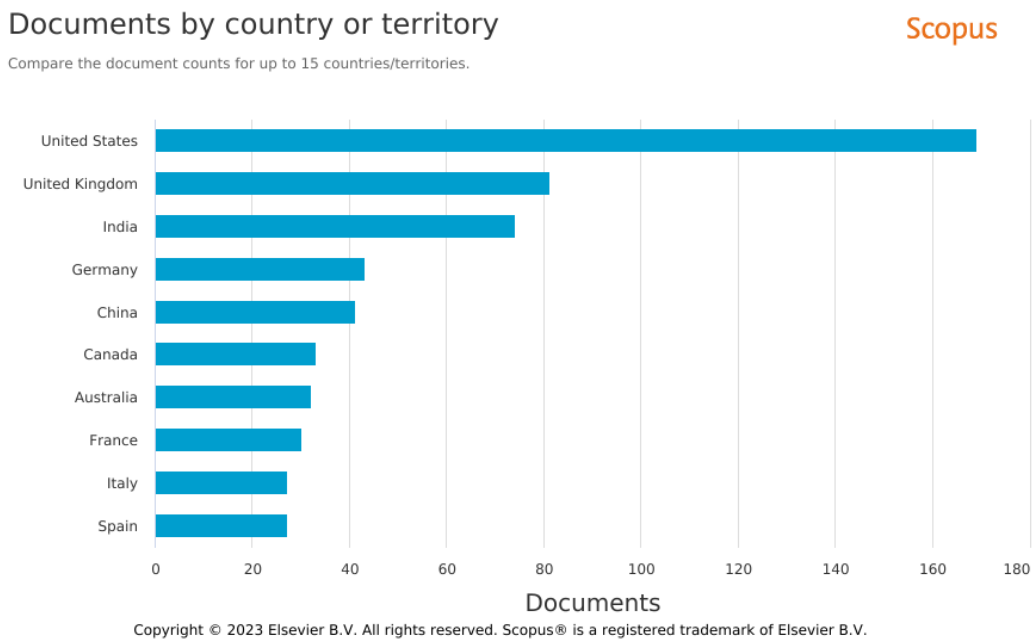
Between 2019 and 2023, publications have been significantly developed, with 498 documents accounting for 69.35% of all the 718 documents published. The most publications occurred in 2022, with 125 documents, equivalent to 17.40%. The graph in Figure 1 shows the development of publications from 1993 to 2023.

Between 1993 and 2023, the United States published the highest number of research papers in this field, with 169 publications, followed by the United Kingdom with 81 publications and India with

74 publications, according to Figure 2.



**Figure 1.** The development of publications every year



**Figure 2.** Distribution and top 10 most published countries

## 4.0 Discussion

### 4.1. Research Productivity and Highly cited papers

The number of researchers who contributed to research on mobile payment and technology acceptance at universities with a minimum of 1 publication was 303 authors. The top ten contributing researchers from 1993 – 2023 in terms of output can be seen in Table 2.

**Table 2.** Top ten authors on customer behavior

No	Author	Documents	Citations
1	belk r.w.	1	926
2	jalilvand m.r.; samiei n.	1	343
3	lu h.-p.; su p. y.-j.	1	319
4	humphreys a.; wang r.j.-h.	1	311
5	arvidsson a.; caliandro a.	1	221
6	hajli n.; sims j.	1	209
7	persaud a.; azhar i.	1	183
8	belk r.w.; kozinets r.v.	1	154
9	wilson j.a.j.; grant j.	1	145
10	kellaris j.j.; kent r.j.	1	143

Sumber: scopus.com (2023)

Table 2 shows the top researchers are belk r.w. and subsequently jalilvand m.r.; samiei n. with 926 and 343 citation publications each.

**Table 3.** Top Ten Journals with The Most Publications

No.	Source	Documents	Citations
1	Journal of consumer research	6	1507
2	Internet research	6	721
3	Journal of research in interactive marketing	9	332
4	Journal of consumer marketing	4	256
5	Journal of fashion marketing and management	5	235
6	Technological forecasting and social change	3	232
7	International journal of consumer studies	6	183
8	Journal of islamic marketing	4	160
9	Consumption markets and culture	3	105
10	Journal of marketing management	6	89

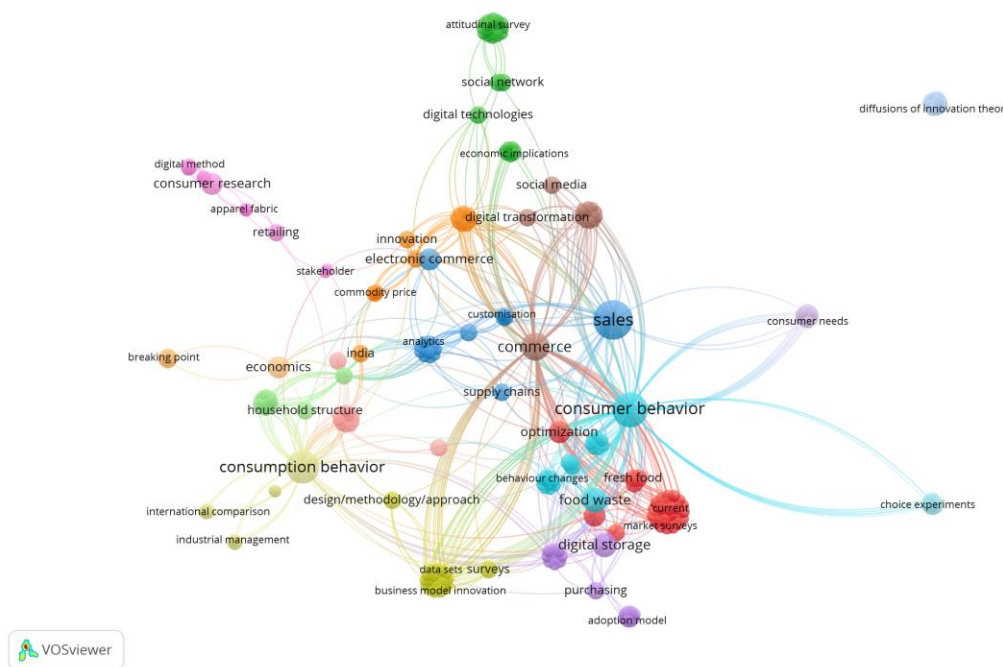
Source: scopus.com (2023)

Table 3 shows that the top journals that published the results of this research were the journal of consumer research with 6 documents with 1507 citations, followed by the internet research with 6 documents with 721 citations, and journal of research in interactive marketing with 6 documents with some sources 332 citations.

#### 4.3 Insights into Consumer Behavior Research

There are 718 documents on customer behaviour in the Scopus database. Based on the authors' keywords, 299 topics were identified. Network visualizations and overlays show subject relationships with lines between descriptors in each field. The closer the relationship between documents, the more strings between descriptors. Conversely, records that still need to be more present have fewer lines. Density visualization shows the relationship between the topic and the colour scale. Yellow indicates a dense or high level of research frequency, while greener indicates rare or low.

A co-occurrence analysis was conducted to determine the latest trends in developing research topics from 1993 to 2023. The minimum number of issues set was one. Figure 3 displays the results of the visualization of the latest topic advancements.



Source: Data processing results (2023)

**Figure 3.** Visualization of current topics for the period 1993 – 2023

Figure 3 displays an overlay visualization that demonstrates the topic/keyword development trend over time (years). Blue represents an early topic/keyword, while yellow indicates a more recent topic/keyword related to customer behaviour. Through the period of 1993 to 2023, a total of 299 topics. The current research topic trends include advanced economies, digital transformation, breakthrough innovations, and consumer demands. These topics are still relatively new and require further research.

## 5.0 Conclusion

Studies on customer behaviour have been conducted, revealing that the first publication on this topic was in 1993. The highest number of publications falls from 2017 to 2023, with 129 (84.31%) out of 718 publications identified until 2023. The countries that dominate research in this field are the United States, the United Kingdom, and India. The Bucharest University of Economics Studies is the most prolific institution, and Watanabe, N.M. is the most prolific writer on this research topic.

Journal of consumer research is the top journal to publish this research topic. In addition, the publication progress map based on co-occurrences consists of 16 clusters. Current research topics include advanced economies, digital transformation, breakthrough innovations, and consumer demands. The synthesis of bibliometric analysis results and content demonstrates the need to investigate the behavior of customer in developing countries.

This study has limitations. First, we only use the Scopus database to collect data and only cover some academic publications like Web of Science or Google Scholar, with the most extensive databases. However, such limitations are unlikely to affect the results identified in this study. In addition, in data search, we only use the additional terms "customer behavior" as search terms, while other words can be used to expand the search scope. While using synonymous search terms can lead to a more accurate dataset on the topic, the results show that our dataset taken from Scopus is acceptable because all the main aspects of customer behaviour are met.

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