

Research Article

Bibliometric Analysis of Impulse Buying Research in the Context of TikTok Shop as E-Commerce

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Abstract: The development of e-commerce and social media has influenced consumer behavior, creating the phenomenon of impulse buying. TikTok Shop, as a new form of social commerce, has become a medium that encourages spontaneous consumption through various features such as flash sales, live shopping, and algorithmic recommendations. The purpose of this study is to map the scientific landscape related to impulse buying in the digital era using a bibliometric approach. The analysis was conducted on 30 scientific documents from 2020 to 2025, which were visualized through a keyword density map, co-occurrence network, and countries' scientific production and authors. The results show that impulse buying is greatly influenced by psychological factors such as FoMO, impulsiveness, and perceived enjoyment; social factors such as social influence and social commerce; and digital platform factors such as TikTok. Research on this topic has experienced rapid growth with an annual growth rate of 69.52%. This indicates the urgency of this topic in the study of modern consumption behavior. This research contributes to mapping the direction of future research related to impulse buying

Keywords: Bibliometric; E-Commerce; FoMO; Impulse Buying; TikTok Shop.

1. Introduction

Advances in information and communication technology (ICT) have brought about fundamental changes in the way people interact and conduct transactions in the digital age. The digital transformation over the past decade has transformed many aspects of life, particularly consumer behavior. Social media has become extremely popular today due to its unique characteristics that distinguish it from other media, such as ease of access, interactivity, and the ability to reach a very wide audience (Amir et al., 2024). Social media is a very fast and easily accessible channel that disseminates news and information every day; most people access and interact through social media. Social media has now become a network that facilitates the exchange of information and serves as a communication tool among its users (Yulianda et al., 2024) Furthermore, social media functions not only as a communication tool but has also evolved into a commerce platform that combines social interaction, entertainment, and the shopping experience within a single space. The phenomenon of social commerce has emerged as a result of the integration between social media and e-commerce, enabling users not only to interact socially but also to make direct purchases within a single platform (Huang & Benyoucef, 2017).

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Product marketing via social media now plays a crucial role for companies, as it helps build brand image, increase consumer awareness of the brand, and reach target markets in an efficient, effective, and interactive manner (Lailia & Dwiridotjahjono, 2023). In line with this, social media—particularly TikTok—has also expanded communication channels by offering efficiency in terms of time and cost. This enables various parties, including both companies and individuals, to reach a wider audience, convey messages in more creative and engaging ways, and increase interaction (Yulianda et al., 2024).

TikTok is a social media platform that allows users to create, share, and discover short videos, typically ranging from 15 seconds to three minutes in length. TikTok has quickly become one of the most popular apps globally (Rimadias et al., 2021). TikTok features TikTok Shop, a form of integration between entertainment and social commerce that offers an immersive shopping experience through short videos, live shopping, and an algorithm-based recommendation system. The visually appealing interface and ease of access to purchasing features on TikTok Shop further reinforce the emotional impulse to make spontaneous purchases. Research by Rahmawati (2022) indicates that the intensive visualization of promotional content can increase the tendency toward impulsive buying, particularly among young consumers who are active on social media.

The increasing ease of making purchases has sparked a phenomenon that has caught the attention of academics: impulse buying on TikTok Shop and e-commerce platforms. Impulse buying behavior is a significant phenomenon in the study of consumer behavior, particularly in the context of online shopping. Impulse buying is the act of purchasing an item spontaneously without prior planning and without thoroughly considering its function, purpose, or impact. In other words, a person makes an impulsive purchase due to a specific impulse that influences their buying decision. This impulse may arise from the strategic placement of products or from attention-grabbing promotional strategies. Impulse buying can serve as an apt illustration of complex online shopping behavior (Lavuri, 2021). This behavior occurs when a person makes a purchasing decision without careful consideration and disregards the consequences of that decision (Naeem, 2020).

Impulse buying differs from planned purchasing. Impulse buying occurs spontaneously without prior planning and is often influenced by emotional, social, and situational factors. On the TikTok Shop platform, users are drawn to visual content, quick reviews, FOMO (the fear of missing out) on a trend, or limited-time promotions such as flash sales. These factors increase the likelihood of impulse buying. According to Miao et al. (2020), consumers who make impulse purchases typically act quickly even though they had no prior intention to buy. Therefore, for marketers, it is important to understand the various factors that can trigger impulse buying behavior so that marketing strategies can be more effective. In the digital context, impulse buying often arises from a combination of visual stimuli, easy access to product information, and urgent promotions like Flash Sales. According to Verhagen & Dolen (2011), factors such as an attractive interface design, trust in the platform, and the perception of shopping enjoyment also increase consumers' tendency toward impulsive behavior. Additionally, exposure to repetitive content on social media can reinforce the emotional urge to purchase products immediately, particularly among Generation Z, who are known for their high reactivity to digital stimuli (Pratama & Nurhadi, 2023).

In addition, impulsive buying can also be negatively influenced by several factors, such as emotions, desires, and impulses. When a person's emotions are unstable—for example, when they feel stressed, bored, or sad—the likelihood of making a purchase without rational consideration increases. However, at the same time, these negative emotions can also lead to regret after the purchase is made, thereby negatively impacting consumer satisfaction. Excessive desire for a product can lead to uncontrolled consumer behavior. The impulse itself acts as a spontaneous reaction to external stimuli such as promotions, product displays, or time-limited offers (time pressure). However, if these impulses are not balanced by self-control, individuals tend to make purchases without a real need. In practice, impulse buying relies more on feelings than logic. Therefore, impulse buying has negative consequences for the buyer because someone who engages in impulse buying purchases products based on desire rather than need.

Previous studies have largely focused only on analyzing the factors driving impulse buying behavior and its impact on society, while more holistic analyses using a bibliometric approach—which can provide insights into research trends, dominant keywords, and thematic clusters in the literature—remain very limited. A bibliometric approach is necessary to map research developments, identify major trends, and understand the direction of researchers' contributions in this field. Bibliometric analysis has become an important approach in scientific research, enabling researchers to evaluate and map existing literature across various disciplines. The concept of bibliometric analysis was first introduced by Otlet in his book titled "Traité de Documentation" and applied by Pritchard in 1969 to analyze the academic parameters of published literature (Ilyasaf et al., 2023).

This article will provide a comprehensive bibliometric analysis based on visualizations of recent research from 2020 to 2025. The study aims to analyze a keyword density map to identify the most frequently occurring keywords in the relevant literature, conduct a keyword network analysis to illustrate the relationships between interconnected keywords, identify countries that have made significant contributions to scientific production in this field, analyze the most cited countries, and identify the most relevant authors who have made significant contributions to this research. Through this analysis, it is hoped that a deeper understanding of the development of impulse buying research within the context of TikTok Shop as an e-commerce platform can be obtained.

2. Materials and Method

This study employs a bibliometric analysis approach using collected secondary data. Bibliometric analysis is a method used to measure the quality and quantity of research for authors and research fields (Amir et al., 2025). In other words, this analysis provides an objective overview of the number of studies conducted in a particular field and the extent of their impact and influence on the advancement of scientific knowledge. Bibliometric analysis has evolved into one of the key analytical techniques in scientific research, enabling researchers to evaluate and map existing literature across various disciplines (Suryopratomo, 2025). The concept of bibliometric analysis was first introduced by Otlet in his book "Traité de Documentation" and later applied by Pritchard in 1969 to analyze the academic parameters of published literature (Ilyasaf et al., 2023). Since then, this analysis has undergone significant development, with quantitative approaches used to evaluate publications, citations, and collaborations among authors (Nur et al., 2023). This method not only helps measure research

productivity but also serves to identify trends, patterns, and developments within a specific field, thereby providing deeper insights into the dynamics of knowledge (Türkmendağ, 2021).

In this study, a bibliometric approach was used to map and analyze the cognitive structure and trends in the literature on impulse buying in the context of TikTok Shop and e-commerce.

a. Data Collection

Data collection for this bibliometric study was conducted using the documentation method, which involves identifying and extracting data from scientific publications obtained from the Scopus database. The data collection process utilized specific keywords tailored to the study's focus, with restrictions on publication year and document type. The obtained data was subsequently stored in a format compatible with bibliometric analysis. In this study, research data was collected from the Scopus scientific database, using a search query that included the keywords “impulse buying” AND “TikTok” OR ‘FOMO’ OR “Flash Sale” within the timeframe of 2020 to 2025.

b. Data Analysis

The data analysis phase was conducted quantitatively and qualitatively using RStudio and Biblioshiny. The analysis steps included: (1) Quantitative Descriptive Analysis to calculate key metrics such as annual growth, author productivity, and collaboration rates, (2) Keyword Density Analysis to identify keywords with high density levels, (3) Network Analysis to visualize the conceptual structure of the literature identified through the co-occurrence analysis of author keywords, (4) Geographic visualizations to map the distribution of scientific output by country of affiliation and to examine authors in relevant studies. The results of this analysis are presented in the form of a Network Map, a Density Map, and a Geographic Choropleth Map, which provide a comprehensive understanding of the main contributors, thematic trends, and collaboration patterns in this field of study, (5) Analysis of the most cited countries in related research and (6) Identification of the most relevant authors who have made significant contributions to this research from 2020 to 2025.

3. Results and Discussion

Overview

This bibliometric analysis is based on a recent dataset covering the period from 2020 to 2025. A total of 30 documents were identified, distributed across 27 different sources (journals, conference proceedings). This indicates that research in this field tends to be scattered across various publications. The average age of the documents in this dataset is very young, at just 0.933 years, indicating that the focus of this research is on cutting-edge topics that have recently emerged in the academic landscape. There is a high diversity of terminology, evidenced by the use of 144 unique keywords by the authors.

This research topic exhibits extraordinary growth dynamics. The Annual Growth Rate (AGR) reaches 69.52%. This extremely high growth rate confirms that studies on this topic have experienced an exponential surge in popularity and relevance over the past few years. This rapid growth underscores the urgency for researchers to map and understand the rapidly evolving structure of this literature.

Scientific productivity in this field involves a total of 93 authors. A clear pattern of collaboration is evident, with an average of 3.27 authors per document, and not a single document found to be single-authored. This underscores the importance of team collaboration in contemporary research. Although the level of collaboration is high, most collaborations are domestic, as only 10% of the documents involve authors from different countries (International Co-Authorship). In terms of impact, despite its very young age, this literature has

accumulated an average of 4.8 citations per document, indicating early acceptance and resonance within the scientific community

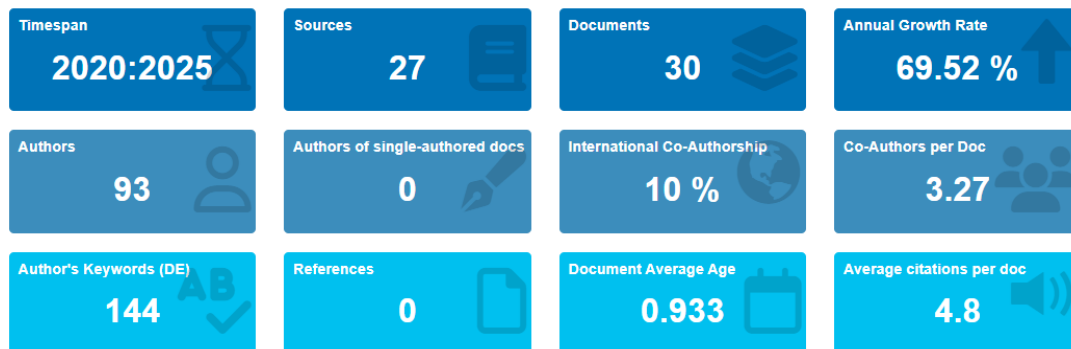


Figure 1. Main Information.

Source: Analysis Result of Biblioshiny

Annual Scientific Production indicates that this field of research has experienced significant exponential growth. Following an initial period of stagnation between 2020 and 2023, article output saw a sharp surge beginning in 2023 and peaked in 2025 (at approximately 13 articles). This surge validates the topic’s status as a cutting-edge trend that is currently dominating academic attention. The growth in scientific output can be seen in the following graph.

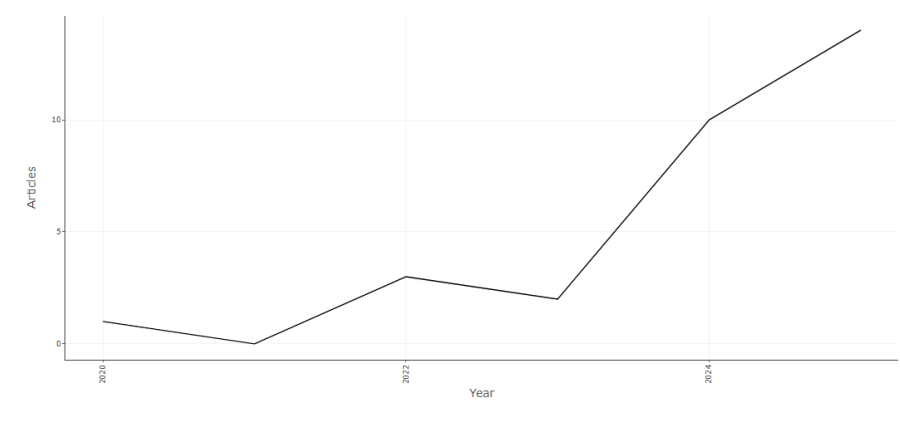


Figure 2. Annual Scientific Production.

Source: Analysis Result of Biblioshiny

Keyword Density Map

Keyword density map is a visualization technique used to examine the density of keyword occurrences within a collection of research documents. In this visualization, the colors and brightness levels on the map indicate how significant or how frequently a particular keyword appears in the analyzed literature.

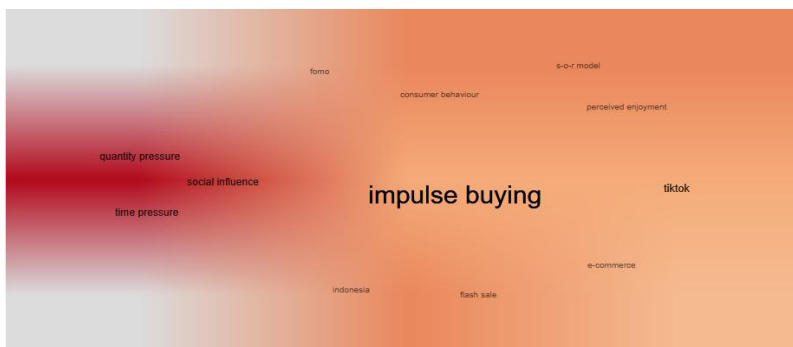


Figure 3. Keyword Density Map.

Source: Analysis Result of Biblioshiny

The density map above shows that the term “impulse buying” dominates the keyword map. This indicates that the core focus of the research is on impulsive purchasing behavior, particularly in a digital context. Other keywords with high density include Social influence, Time pressure, Quantity pressure, FOMO (Fear of Missing Out), Consumer behavior, Perceived enjoyment, and TikTok. The high concentration of red in the area spanning “social influence” to “FOMO” indicates a strong correlation between psychological and social factors as triggers for impulse buying. The presence of the terms “flash sale” and “TikTok” reinforces the role of digital platforms as the primary stimulus.

Co-occurrence Network

Keyword Co-occurrence Network Analysis is a visualization technique used to map all the main ideas or concepts within a research field. The primary goal of co-occurrence analysis is to identify interconnected topics and the main areas of focus among researchers (Saeed et al., 2024). By measuring how frequently two keywords appear together in the same document, this analysis helps identify central themes. Co-occurrence analysis is an integral part of broader bibliometric analysis that helps researchers delve deeper into the dynamics of knowledge and innovation within the field under study (Liu & Avello, 2021). This analysis uses the VOSViewer software, which allows researchers to visualize networks of keywords that frequently appear together, thereby facilitating an understanding of the research structure and trends within a field. This technique can be used to reveal patterns of communication and interaction between concepts that may not be apparent in traditional analyses (Yan et al., 2022).

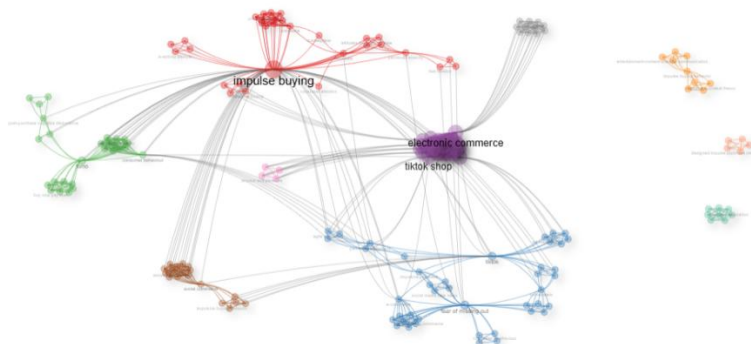


Figure 4. Co-occurrence Network.

Source: Analysis Result of Biblioshiny

Based on the figure above, the co-occurrence visualization reveals several major clusters;

a. Central Cluster (Purple) and Inter-cluster Relationships

The purple cluster, located at the center of the network, consists of the terms “electronic commerce” and “TikTok Shop,” represented by large nodes. This positions “electronic commerce” and “TikTok Shop” as the central and dominant contexts within which the phenomenon of impulse buying is currently being studied. The inter-cluster relationships are very clear, with “electronic commerce” and “TikTok shop” serving as the main bridges connecting most other clusters, including “impulse buying” (upper center) and “fear of missing out” (blue, lower center). This confirms that modern studies on impulse buying are largely mediated by these digital platforms. b.

b. Key Driver Clusters (Blue and Red)

Blue Cluster (Fear of Missing Out): This cluster centers on the key term “fear of missing out” (FoMO). This Blue cluster is one of the largest and most interconnected clusters, indicating that FoMO has become the most frequently studied psychological predictor in the context of impulse buying in the digital world. Its strong connection to the central cluster (purple) suggests that researchers extensively analyze how FoMO is leveraged or amplified by features of e-commerce platforms and TikTok Shop.

Red Cluster (Impulse Buying): This cluster contains the term “impulse buying” itself. Although thematically central, the impulse buying node is grouped with variables representing consumer responses or internal processes, which are often used as mediating variables or primary outcomes in research.

c. Social and Environmental Factors Cluster (Brown)

The brown cluster centers on social influence. This cluster indicates that social influence, including reviews, influencer recommendations, and peer pressure, is a key external factor that directs consumers toward e-commerce and, subsequently, triggers impulse buying. Its connection to the central cluster highlights the importance of social mechanisms within the digital shopping environment.

d. Outcome and Behavioral Variables Cluster (Green)

The green cluster on the left is associated with consumer behavior and likely includes post-purchase variables or outcomes, such as satisfaction or repurchase intention. The presence of this cluster indicates that the literature focuses not only on triggers but also on the consequences of consumer behavior following an impulsive purchase in an e-commerce environment

Overall, this visualization shows that research on impulse buying has shifted from a purely behavioral focus to a complex and contextualized study, in which the roles of e-commerce and TikTok Shop are particularly prominent as environmental stimuli that facilitate and reinforce psychological drivers such as FOMO and social influence.

Countries’ Scientific Production

Countries’ Scientific Production refers to the level and patterns of a country’s contributions to the production of scientific works published in journals, conference proceedings, or other scientific media. This concept is commonly used in bibliometric studies to measure a country’s capacity, productivity, and role in the development of science and technology at the global level. A country’s scientific production is usually measured based on

several quantitative indicators, including the number of publications, the number of citations, the h-index, and international collaboration. In addition to quantity, the analysis of Countries' Scientific Production also considers the quality and scientific impact of the publications produced. This is reflected in the citation rate and the contribution of publications to the development of specific scientific fields. A country with a high number of publications does not necessarily have a significant scientific impact if its citation rate is low; therefore, this analysis focuses not only on volume but also on scientific influence. Thus, Countries' Scientific Production is a key indicator in bibliometric analysis that serves to assess a country's contribution and position within the global science ecosystem

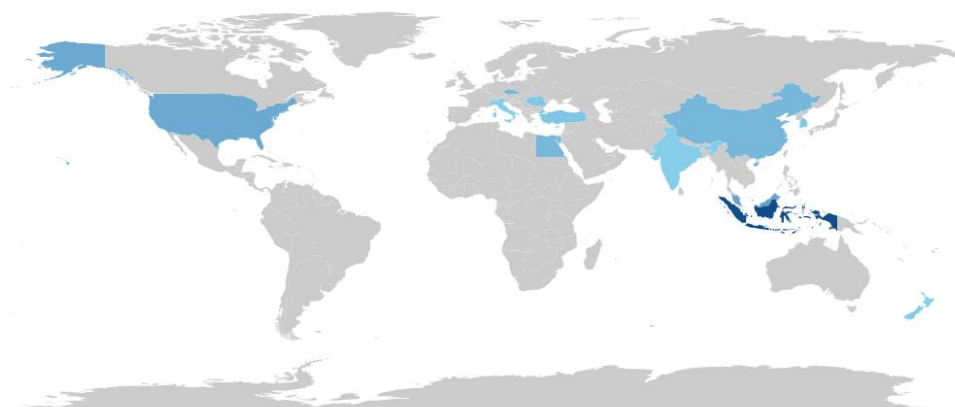


Figure 5. Countries' Scientific Production.

Source: Analysis Result of Biblioshiny

Country	Freq
INDONESIA	20
MALAYSIA	7
USA	6
CHINA	4
CZECH REPUBLIC	4
EGYPT	4
ROMANIA	2
SOUTH KOREA	2
TURKEY	2
CYPRUS	1

Figure 6. Countries' Scientific Production.

Source: Biblioshiny

The two visualizations above provide information on the geographic distribution of scientific contributions in the bibliometric analysis of impulse buying research in the context of TikTok Shop and e-commerce.

a. Dominance and Major Contributions

Table 1 shows that scientific output in this field is significantly dominated by countries in Southeast Asia. Indonesia ranks first with 20 documents, making it the primary research hub. It is followed by Malaysia with 7 documents. This dominance, visually represented by the darkest blue on the map for the Indonesian region, confirms that the phenomenon of impulse buying in e-commerce and social commerce is most intensively

studied and published within the context of the rapidly developing Southeast Asian market.

b. Global and Regional Contributions

Outside Southeast Asia, the United States (USA) ranks third with 6 documents, indicating a substantial contribution from Western research institutions. Other countries showing significant contributions include China (4 documents), the Czech Republic (4 documents), and Egypt (4 documents). This distribution indicates that while the research has a strong geographical focus on Indonesia, its nature remains global, with participation from various continents such as Asia, Europe, Africa, and North America—all of which are interested in the dynamics of consumer behavior driven by digital technology.

c. Geographical Implications

Collectively, the maps and tables suggest that research focus tends to follow the most dynamic market and social trends. The high concentration in Indonesia and Malaysia aligns closely with previous keyword network findings (related to TikTok and e-commerce), implying that the rapid growth of social commerce platforms in the region has attracted intense academic attention, ultimately establishing the region as a primary empirical laboratory for studies on impulse buying.

Most Cited Countries

Most Cited Countries refers to the countries with the highest citation rates for scientific publications produced within a specific field or time period. This indicator is used in bibliometric analysis to assess a country’s influence, visibility, and scientific impact within the global academic community. The “Most Cited Countries” analysis is based on the number of citations received by publications affiliated with institutions in a given country. The higher the number of citations, the greater the publication’s influence on the advancement of science. Thus, this indicator emphasizes scientific quality and impact rather than merely the quantity of publications. Countries in the “Most Cited” category generally have a strong research ecosystem, high-quality research, and intensive international collaboration, all of which contribute to increased visibility and citations of their publications.

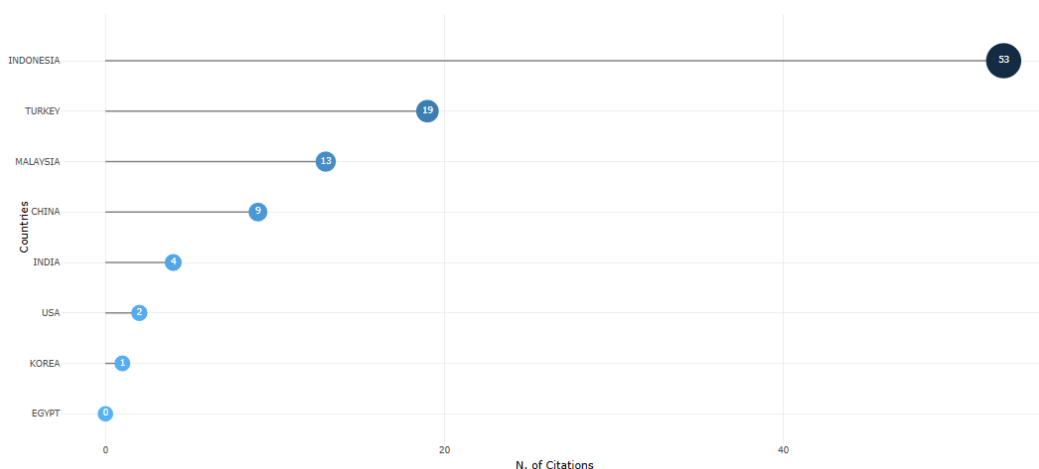


Figure 7. Most Cited Countries.
 Source: Analysis Result of Biblioshiny

The figure above shows a list of countries with the highest number of citations in research related to impulse buying, particularly in the context of e-commerce and platforms such as TikTok Shop. It is evident that Indonesia is the most cited country with 53 citations, indicating that contributions from Indonesian researchers are highly dominant and serve as the primary reference in this study. Turkey ranks second with 19 citations, followed by Malaysia with 13 citations, indicating that Asian countries are the focus of research on the topic of impulsive buying behavior in the digital realm. China, with 9 citations, and India, with 4 citations, also demonstrate significant participation, though not as substantial as the top three countries. Meanwhile, countries such as the USA, South Korea, and Egypt have far fewer citations, indicating that research on impulse buying in e-commerce is developing more extensively in Asia. Overall, this citation pattern suggests that the dynamics of e-commerce and the TikTok Shop phenomenon have a major impact on the development of the literature in Asian countries, particularly Indonesia as the most influential research hub.

To understand the direction of research on impulse buying, it is necessary to map the contributions of authors active in this field. An analysis of the Most Relevant Authors is a crucial step in identifying the most productive and influential researchers, as well as how their work shapes the body of knowledge regarding impulsive buying behavior, particularly in the context of e-commerce and the evolving TikTok Shop phenomenon.

Most Relevant Authors

Most Relevant Authors refers to authors who have made the most significant contributions to a specific field of research based on bibliometric indicators. An author's relevance is generally measured through publication productivity, the number of citations, and the consistency of their contributions to the analyzed topic over a specific time period. In bibliometric analysis, the identification of Most Relevant Authors is typically based on the number of articles published by an author in a particular field of study. Authors with the highest publication frequency are considered to play a crucial role in the development and continuity of research in that field. In addition to publication quantity, other indicators such as total citations, average citations per article, and the h-index are often used to reinforce the assessment of an author's scientific influence. The Most Relevant Authors analysis also enables the identification of key authors who serve as the primary drivers in the development of theory, methodology, and applications within a scientific field. These authors often serve as primary references in the literature and possess extensive collaboration networks, both nationally and internationally.

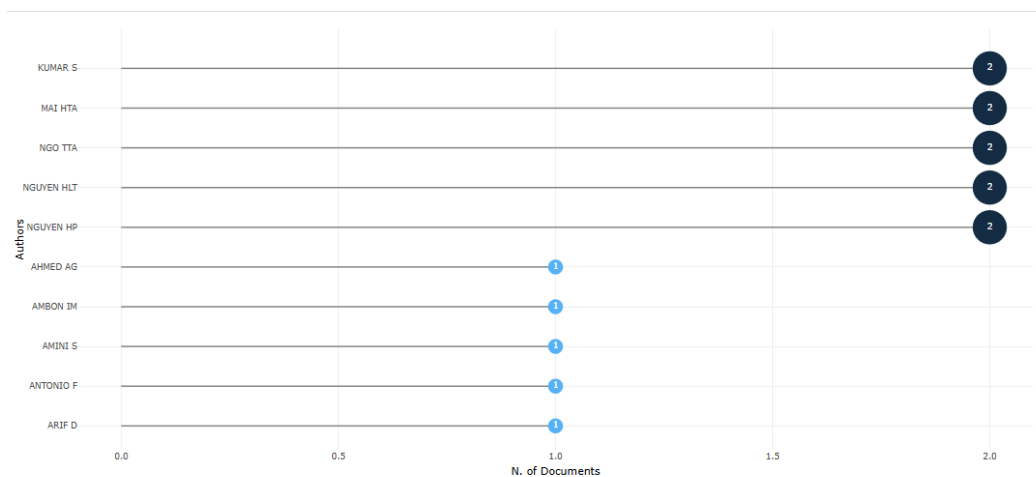


Figure 8. Most Relevant Authors.

Source: Analysis Result of Biblioshiny

The figure above shows a visualization of the most relevant authors in the bibliometric analysis, highlighting the authors who have contributed the most to research on impulse buying. This graph shows that several authors, such as Kumar, Mai HTA, Ngo TTA, Nguyen HLT, and Nguyen HP, each have two documents related to the topic, making them the most dominant and productive group of authors in this field of study. Meanwhile, other authors such as Ahmed AG, Ambon IM, Amini S, Antonio F, and Arif D each have one document, indicating additional contributions but not as significant as the main group. This distribution pattern illustrates that research on impulse buying, particularly in the context of e-commerce and platforms like TikTok Shop, remains widely dispersed with relatively even contributions and is not yet dominated by a single author. This reflects that the topic is a rapidly evolving area attracting the attention of many researchers from various countries and institutions.

Gap Research and Recommendation

A bibliometric analysis of the literature on impulse buying in the context of TikTok Shop and e-commerce identifies four major research gaps that require attention in the future:

1) Advanced Technology Integration Gap

Although e-commerce and TikTok serve as the primary context, there is a gap in the integration of advanced technology variables. Existing research has not sufficiently explored the causal and mediating relationships between Artificial Intelligence (AI)-based recommendation systems (including feed algorithm personalization and notification timing) and the mechanisms of impulsive behavior. Future studies should bridge this gap by testing how AI technology specifically manipulates stimuli that trigger impulse buying.

2) Experimental Methodological Validation Gap

The current literature is dominated by non-experimental studies or surveys. Therefore, there is a gap in experimentally based causal validation of real-time driving variables. Research using experimental designs is needed to definitively test the direct impact of time-pressure and social variables (such as those present during TikTok live sales) on

impulsive purchasing decisions, which are difficult to measure solely through observational data.

3) Cross-Cultural Contextual Gaps

Despite significant research in Indonesia, the literature indicates gaps in cross-cultural understanding of key psychological variables. Studies are needed to compare the roles of FoMO and social influence in triggering impulse buying across different cultural contexts (e.g., Western vs. East Asian), to identify whether existing consumer behavior models are universal or significantly moderated by cultural context.

4) Platform-Specific Comparative Analysis Gaps

Research tends to group social commerce broadly or focus on a single platform. This creates a gap in in-depth comparative analysis between specific platforms (TikTok vs. Shopee Live vs. LazLive). This gap needs to be filled with research that dissects the distinctive features or unique interaction mechanisms of each platform to determine which is most effective and why in triggering impulse buying, thereby providing insights with greater practical value.

4. Conclusion

A bibliometric analysis of research on impulse buying in the context of TikTok Shop and e-commerce indicates that the phenomenon of impulse buying in the digital age results from a complex interplay of psychological, social, and technological factors. TikTok Shop holds a dominant position as a platform capable of triggering impulsive behavior through a combination of features such as live shopping, flash sales, algorithmic recommendations, and real-time social interaction. Keyword maps and co-occurrence networks reveal that variables such as FoMO, social influence, perceived enjoyment, and time pressure are the primary drivers of impulse buying, while terms like electronic commerce and TikTok Shop function as the hubs of the digital ecosystem that condition such behavior.

The extremely rapid growth of publications, with an annual growth rate of 69.52%, indicates that research on impulse buying within the digital ecosystem is a highly relevant and rapidly evolving topic in recent years. The dominance of research originating from Southeast Asian countries, particularly Indonesia, confirms that this region has become a primary laboratory for the development of research related to digital consumer behavior. Collaborative writing patterns, a high number of unique keywords, and high citation rates for certain countries further strengthen this topic's position within the global scientific landscape. In addition, the bibliometric findings also identified several research gaps that open up opportunities for further research, particularly regarding the integration of AI-based technologies, the need for experimental research designs, cross-cultural exploration, and comparisons across social commerce platforms. Thus, this study not only maps the development of the literature but also provides strategic direction for researchers to deepen their understanding of the dynamics of impulse buying within an ever-evolving digital ecosystem.

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