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The intellectual structure of impulse buying behavior in online commerce : Evolution, key contributions, and emerging themes.

Auteur 1 : MOUMEN Houda.
Auteur 2 : ABAAOUKIDE Kamar.

MOUMEN Houda (PhD student), L-QUALIMAT-GRTE-DS, Polydisciplinary faculty of Marrakech, Cadi Ayyad University, Morocco. https://orcid.org/0009-0002-5334-183X

Pr ABAAOUKIDE Kamar (Professor), L-QUALIMAT-GRTE-DS, Polydisciplinary faculty of Marrakech, Cadi Ayyad University, Morocco

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Abstract

The paper gives a structured examination of the intellectual, conceptual and thematic evolution of research related to online impulse buying behavior (OIBB) in the context of online commerce. Based on a bibliographic dataset of more than 190 peer-reviewed articles indexed in Scopus between 2000 and 2024, the study explores the most cited publications, major contributing authors, countries and journals while identifying the emerging intellectual structure of the field. The research reveals using VOSviewer and keyword co-occurrence analysis seven distinct thematic clusters. These clusters reveal the role of the SOR and TAM models in explaining online impulse buying behavior and highlight OIBB as a multidisciplinary field. They also reflect the importance of hedonic motivations, trust, social commerce, real-time engagement and technological innovation and the findings of this study offer practical implications for marketers and researchers aiming to create better consumer experiences in online shopping environments. They also consolidate online impulse buying behavior as an emerging field of study and present a roadmap for future research.

Keywords : Online impulse buying behavior, Online commerce, Consumer psychology, bibliometric study, S-O-R

African Scientific Journal
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Introduction

The dominance of digital technologies in the retail sector nowadays is leading to new patterns in consumer behavior notably online impulse buying (Leong et al., 2018). The evolution of online commerce in its different forms such as e-commerce, mobile commerce and social commerce have generated environments containing visual, emotional and social stimuli thus creating unique purchasing contexts. In addition, the COVID-19 pandemic generated unprecedented interest and growth in online shopping platforms and altered purchasing habits (Sheth, 2020; Koch et al., 2020). Recent industry statistics show that impulse buying now represents between 40% and 80% of all online purchases (Statista, 2023). Consequently, online impulse buying behavior "OIBB" has become a major field in scientific research at the intersection of psychology, marketing, information systems and behavioral economics (Wu et al., 2016; Chen & Yao, 2018).

Research on OIBB has evolved increasingly over the past two decades, it initially unraveled the role of platform design on the impulse purchases (Parboteeah et al., 2009), and later included more dimensions (e.g., psychological, social, technological). Despite the increasing interest and relevance of OIBB, the intellectual landscape is still fragmented within several disciplines and journals and the need for systematic reviews persists to help structure the intellectual and conceptual framework of the domain due to the rapid evolution of research output and the acceleration of digital consumption behaviors post-2020 (Donthu et al., 2021).

This study's objective is to offer a structured analysis of the of the intellectual, conceptual, and thematic evolution of research linked to online impulse buying behavior (OIBB). The aim of this bibliometric study is to provide answers to the following research questions, including identifying the most cited articles, analyzing the evolution of publications between 2000 and 2024, defining major contributing countries and journals, and outlining the current intellectual structure of the OIBB field. To realize its intended goals, this study traces a bibliographic dataset of over 190 peer-reviewed articles indexed in Scopus, using VOSViewer and keyword co-occurrence analysis to uncover seven distinct thematic clusters. It also clarifies the current state of knowledge for both scholars and practitioners and provide future research directions in this rapidly evolving field.

RQ1. *What are the most cited articles on impulse buying behavior in online commerce?*

RQ2. *How has the publication of research articles on impulse buying behavior in online commerce evolved between 2000 and 2024?*

RQ3. *Which countries have published research on impulse buying behavior in online commerce?*

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

RQ4. *Which journals have published research on impulse buying behavior in online commerce?*

RQ5. *What is the intellectual structure of current research on impulse buying behavior in online commerce?*

1. Literature review

Online impulse buying behavior has gained significant attention in the consumer's behavior research field, especially with the rise of e-commerce and social commerce platforms. The digitalization of shopping environments added new stimuli that influence consumers' impulsive buying behavior because, unlike the traditional brick-and-mortar context, the online commerce platforms provide more accessibility and convenience and the spontaneous nature of online transactions and the reduced tangible interaction leads to a unique decision-making framework that is different from traditional shopping contexts (Sharma et al., 2018). In addition, the visual appeal, ease of navigation and responsiveness of websites play a crucial role in increasing user engagement thus leading to OIBB (Wells et al., 2011).

Recommendations and promotions also drive impulsive buying through the formation of a sense of urgency and exclusivity (Liu et al., 2013). As stated by Lo et al. (2016), the website attributes create virtual atmospherics as an equivalent of the sensory cues in physical stores which does enhance immersion and emotional engagement (Shen & Khalifa, 2012). On another level, technological advancements (e.g., artificial intelligence, augmented reality) have accentuated OIBB. In fact, AI-driven chatbots and personalized product suggestions based on machine learning algorithms respond to individual preferences and AR provides immersive experiences and fills the gap between digital browsing and physical experiences, both contributing to more pleasure and impulsivity in online shopping (Poushneh & Vasquez-Parraga, 2017).

Regarding s-commerce platforms, most of their attributes contribute heavily to OIBB. First of all, the omnipresence of user-generated content (e.g., customer reviews, ratings, testimonials) and its authenticity increases trust and reduces risk within consumers (Farivar et al., 2017) Secondly, social interactions create more visibility, peer influence and social validation (Chen et al., 2019) which is favorable for OIBB (Sokolova & Kefi, 2019)Moreover, parasocial interactions are a distinct attribute of social commerce platforms that allow consumers to create one-sided connections with influencers and brands and such relationships foster both trust and emotional attachment (Labrecque, 2014) and the influencer credibility and authenticity are crucial to generate purchase intention (Lou and Yuan., 2019).

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

Live streaming commerce is rapidly expanding channel due to its combination of entertainment, social interaction and transactional possibilities (Wongkitrungrueng & Assarut, 2020). The synchronous nature of these events creates excitement and a sense of urgency that accelerate decision-making and reduce the cognitive capabilities of website visitors (Sun et al., 2019). Regarding affective states, feelings (e.g., stress, boredom, the desire for instant gratification) are predictors of OIBB. The accessibility of online platforms offers instant relief and emotional regulation, making them favorable conditions for impulse buying (Verhagen & Van Dolen, 2011). The anticipated satisfaction generated by the immediate gratification and ownership of products through online commerce enhances the likelihood of OIBB.

Concerning hedonic motivations (e.g., pleasure-seeking, novelty, escapism), these elements heavily contribute to OIBB by increasing the experiential aspects of online shopping (Ozen & Engizek, 2014). The consumers primarily motivated by hedonic factors show higher impulsive buying tendencies in comparison to those with predominantly utilitarian shopping goals. Individual variations (e.g., personality traits, demographic characteristics, situational factors) are heavily influential when it comes to OIBB. A consumer's personality traits (e.g. impulsivity) make him more susceptible to OIBB (Verplanken & Herabadi, 2001) which is linked to low self-regulation during online browsing and higher susceptibility to environmental triggers, while demographics (e.g. age, gender, cultural background) condition individuals buying behaviors (Dittmar et al., 2004), younger consumers are more impulsive when it comes to online shopping due to higher digital fluency, stronger peer influence and lack of financial responsibility (Dhaundiyal & Coughlan, 2016). Coley and Burgess (2003) also unraveled that women show greater emotional involvement in impulse purchases.

As online commerce evolves, sustaining research will help acknowledge the dynamics of impulse buying in online environments and craft efficient and ethical strategies. Comprehending OIBB is crucial for marketing professionals and UX designers because strategies (e.g., personalized products, user-friendly interfaces, social proof) can enhance consumer engagement and increase sales while maintaining ethical considerations (Roberts & Manolis, 2012).

2. Methodology

2.1. Selection of the bibliometric database

Web of Science (WoS) and Scopus bibliographic databases are commonly used in bibliometric research since they provide reliable data about the scientific landscape and help with its analysis, yet Scopus was selected for this bibliometric study due to its larger coverage in the fields of social sciences, marketing, and consumer behavior.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

In fact, Scopus provides up to 30% broader coverage compared to WoS in social sciences and humanities and includes more regional journals thus providing a larger representation of scientific research from economically emerging and non-western regions. Scopus indexes more than 20,000 peer-reviewed journals and offers advanced filtering and export tools thereby increasing the efficiency of data management and analysis (Donthu et al., 2021) while also facilitating the identification of research trends through temporal citation pattern analysis.

In addition, its compatibility with VOSviewer which is the bibliometric tool used for this study reinforced its suitability for this research (Van Eck & Waltman, 2010). VOSviewer ensures the sophisticated visualization of the following: Co-citation networks revealing the intellectual structure of the research, co-occurrence networks defining the conceptual structures and co-authorship networks demonstrating collaboration patterns.

2.2. Keyword strategy and search query

The purpose of this search strategy was to collect all of the relevant literature in the field of impulse buying behavior in several online commerce contexts. The corresponding query included a broad range of terms linked to OIBB and online shopping environments and they were connected using the boolean operators AND and OR to ensure the pertinence of the results. This methodological strategy was established to obtain the terminology used across multiple disciplines that examine online impulse buying including marketing, consumer psychology and behavioral economics.

The final query used in Scopus was:

("IBB" OR "impulse buying" OR "impulsive buying" OR "impulse purchase" OR "unplanned purchase")

AND ("social commerce" OR "online purchase" OR "online shopping" OR "e-commerce" OR "ecommerce" OR "scommerce" OR "s-commerce" OR "digital commerce")

This boolean search strategy used a two-component structure:

- The first component included variations in terminology for impulse buying behavior
- The second component ensured focus on digital commercial environments

Terms like "mobile commerce" or "m-commerce" were excluded since most of the studies that analyze impulse buying in mobile contexts overlap with the e-commerce or social commerce studies, particularly when the platform is accessible via mobile devices. Terms such as "compulsive buying" and "spontaneous purchasing" were excluded as well because of the lack of substantial addition to the relevant literature.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

2.3. Inclusion and exclusion criteria

To ensure the relevance of this dataset, we applied the following criteria:

- **Time frame:** Only articles published between 2000 and 2024 were added since they align with the emergence of e-commerce as a mainstream retail channel and the evolution of s-commerce platforms.
- **Document type:** Only peer-reviewed journal articles were retained since they represent the most valid scholarly contributions (Ramos-Rodríguez & Ruiz-Navarro, 2004) since they undergo a rigorous evaluation by the experts in the field and enhance the validity and relevance of the bibliometric analysis.
- **Language:** Articles had to be written in English to guarantee linguistic consistency and simplify the comparability process thus aligning with standard principles in bibliometric analyses.
- **Disciplinary focus:** Only articles related to marketing, digital commerce, consumer behavior and social sciences were included; documents from technical fields (e.g., computer science, humanities and psychology) were excluded manually. The objective is to maintain thematic relevance. Fields such as computer science can provide valuable insights but their methodological approaches and theoretical frameworks are different and can distort the conceptual integrity of this research.

After screening, 197 articles met the inclusion criteria and were retained for analysis.

2.4. Data analysis and visualization tools

VOSviewer is the data analysis and visualization tool that is used to run this bibliometric analysis (Van Eck & Waltman, 2010), this open-source tool helps build and visualize bibliometric networks and is widely known for being user-friendly and ability to map large amounts of scientif data. It also creates relationships between several bibliometric elements (e.g., keywords, authors)

The study emphasized on the two following approaches:

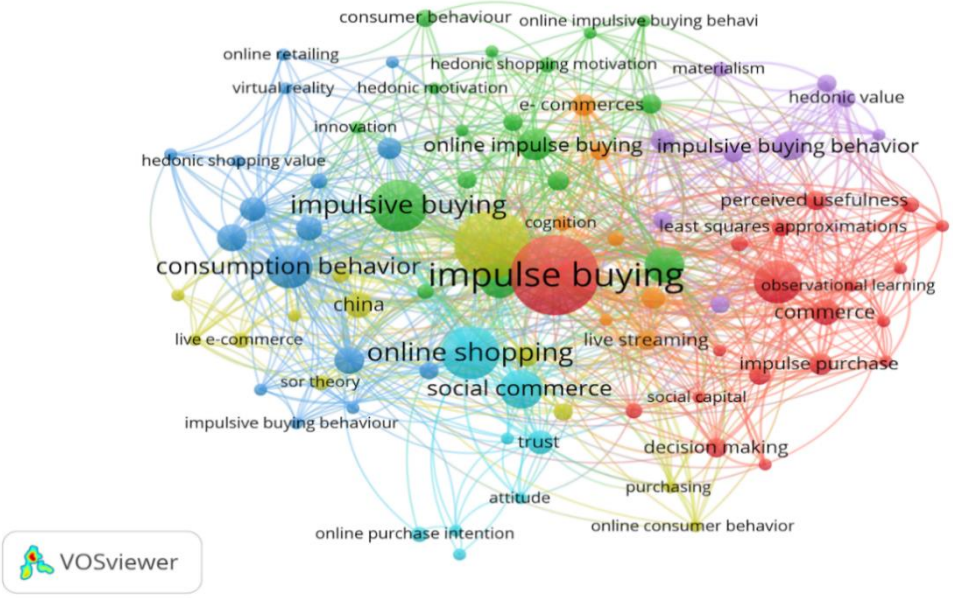
- **Performance Analysis:** In order to determine the most influential and active contributors to the field of impulse buying in an online context such as authors, journals, institutions, articles and countries.
- **Science Mapping:** To reveal the intellectual, conceptual and social structure of the domain through keyword co-occurrence and co-citation analysis and ensure the comprehension of the organization of the research. (Donthu et al., 2021)

2.5. Keyword co-occurrence analysis

A co-occurrence analysis of author keywords was implemented in VOSviewer, the inclusion criteria was the threshold of 3 occurrences per keyword to ensure that the terms retained were

relevant and recurrent across the dataset. This analysis identifies the conceptual frameworks, dominant themes and topics in the field. The selection criteria was the co-occurrence frequency. The co-occurrence analysis resulted in finding 50 keywords categorized into 7 thematic clusters as shown in figure 1. and each one represents a specific field or a theoretical current (Small, 1973) related to IBB and online commerce. These clusters prove the multidimensional nature of this research field. Once these clusters are interpreted, they will provide insights about the evolution of the field and the roots behind the current research trajectories.

Figure 1. Co-occurrence network - OIBB



Source: VOSviewer

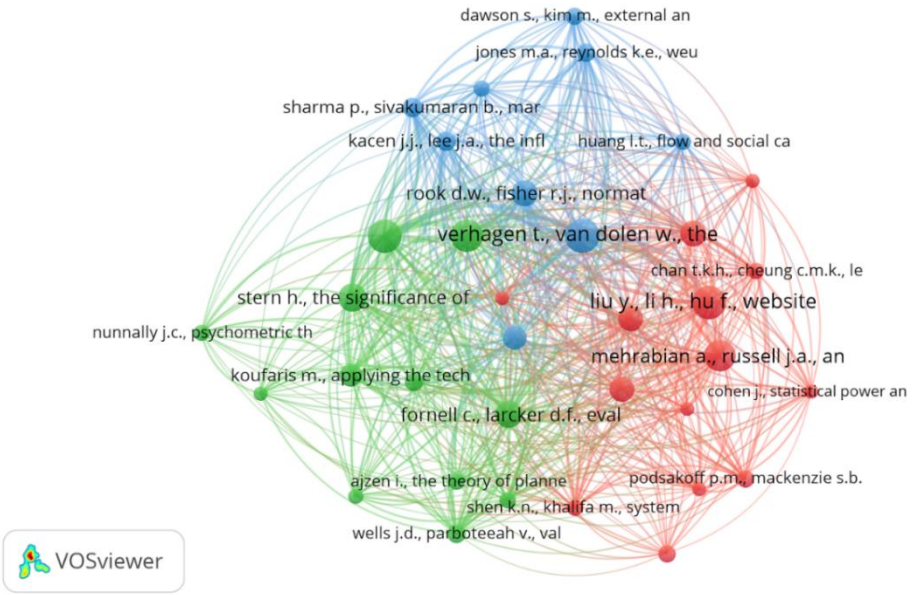
2.6. Co-citation analysis

To enumerate the most influential contributions to the field of online impulse buying behavior, a co-citation analysis was conducted by identifying the references that are frequently cited together in the dataset thus revealing the conceptual relationships and theoretical structures of the field (Small, 1973). The analysis was performed using cited references since they provide a detailed view of the most important intellectual contributions in the field.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

Figure 2. Co-citation network - OIBB

Source: VOSviewer



To implement this analysis on VOSviewer, a co-citation minimum threshold of 10 citations per reference was chosen to guarantee relevance and clarity in the generated network. Based on this threshold, 35 references met the inclusion criteria and were added to the network visualization provided by VOSviewer.

The results revealed in figure 2. demonstrate that Verhagen and Van Dolen's (37 citations) article on the influence of online store beliefs on consumer behavior is the most cited, reflecting a strong interest in the link between trust, user experience and purchase intentions then there is Liu et al. (36 citations) and Beatty and Ferrell (36 citations) were cited equally, the former on the role of website attributes in shaping utilitarian and hedonic experiences, while the latter's motivational related structure remains crucial in understanding impulse buying.

2.7. Outline of the methodological process

To summarize, the bibliometric study was done through a two-phase approach:

1. **Data Collection:** From Scopus database through a query including a combination of relevant keywords then manual filtering to exclude unrelated and irrelevant documents.
2. **Data Evaluation and Visualization:** Bibliometric techniques (i.e., co-occurrence and co-citation analyses) were implemented through VOSviewer. This enabled a clear representation of the field's intellectual structure through bibliometric maps.

This analysis strategy has led to the following results: First of all, the identification of key publications in the field, secondly detection of prevalent research themes and emerging topics and finally, determination of research directions in the field of impulse buying behavior within online and digital commerce environments.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

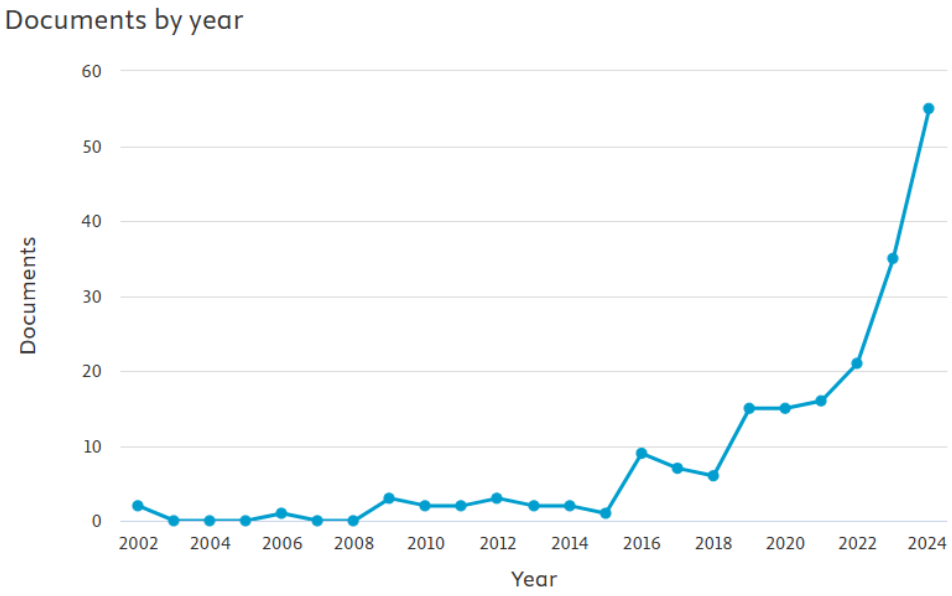
3. Analysis of results

The analysis of this bibliometric study was divided into four sections to thoroughly explore the different aspects of online impulse buying behavior “OIBB” and interpret the conceptual landscape of impulse buying behavior in online commerce.

Firstly, a performance analysis was implemented using VOSviewer to enumerate the most influential authors, journals, institutions and countries contributing to the field (Donthu et al., 2021) which reveals the leading research actors and the evolution of academic contributions. This offers better visibility about the productivity and impact of the scholarly actors in the field, where and by whom key knowledge is generated.

3.1. Evolution of research article publications

Figure 3. Publication trends by year



Source: Scopus

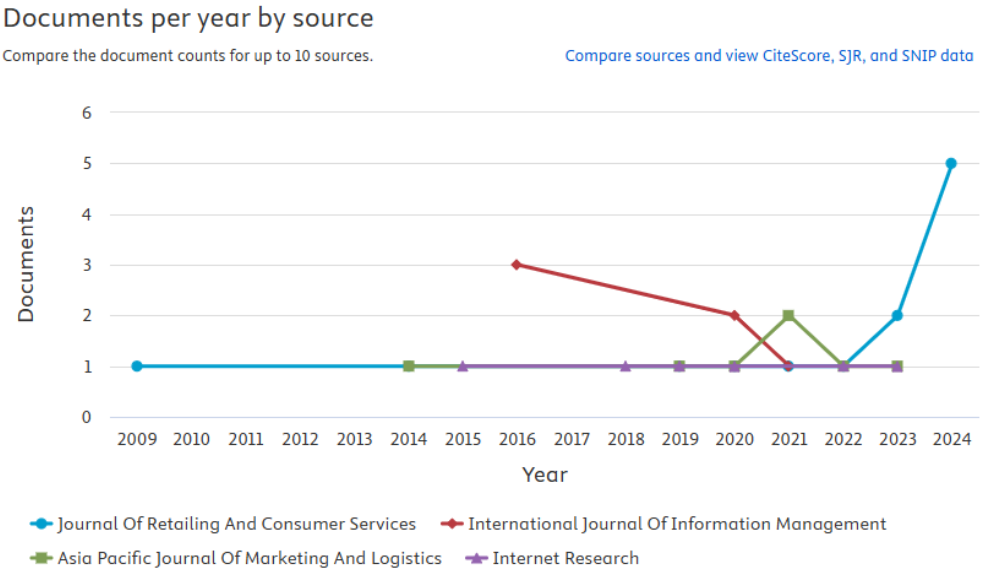
Figure 3 demonstrates the temporal evolution of scientific publications on impulse buying behavior in online commerce from 2000 to 2024. It shows an overall exponential growth when it comes to the interest and publications related to OIBB starting from 2016 when mobile commerce and social platforms became more notable and a part of the customer shopping journey, it also evolved significantly after 2020 which can be attributed to the digital transformation caused by the COVID-19 pandemic and the induced changes in consumer purchasing habits. By 2024, the annual publications number reached more 55 articles thus representing the most productive year to date.

In addition, 70% of the total publications in this field have been published since 2019 which reflects an increasing scholarly interest in understanding impulsive buying behavior in digital contexts (Donthu et al., 2021), it also reveals that it is a rapidly evolving field. This evolution confirms the relevance of conducting a bibliometric study on the subject since it is still expanding.

3.2. Distribution of published articles by journal

In terms of articles distribution across journals, the leading publication outlet is the Journal of retailing and consumer services which has published the largest number of articles on online impulse buying thus confirming its focus on consumer behavior and retail dynamics. Other key journals include the Asia pacific journal of marketing and logistics, the international journal of information management, young consumers and internet research.

Figure 4. Publication trends by journal



Source: Scopus

These journals are oriented towards marketing, consumer psychology and e-commerce which consolidates the interdisciplinary nature of the domain (Verhagen & Van Dolen, 2011).

On the other hand, journals such as International Journal of Information Management and Electronic Commerce Research and Applications show high citation averages despite their limited publications proving the quality and influence of the work they include, thus confirming that the number of publications does not always reflect scholarly influence and that high-impact contributions often come from journals with selective thematic alignment and meticulous editorial processes.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

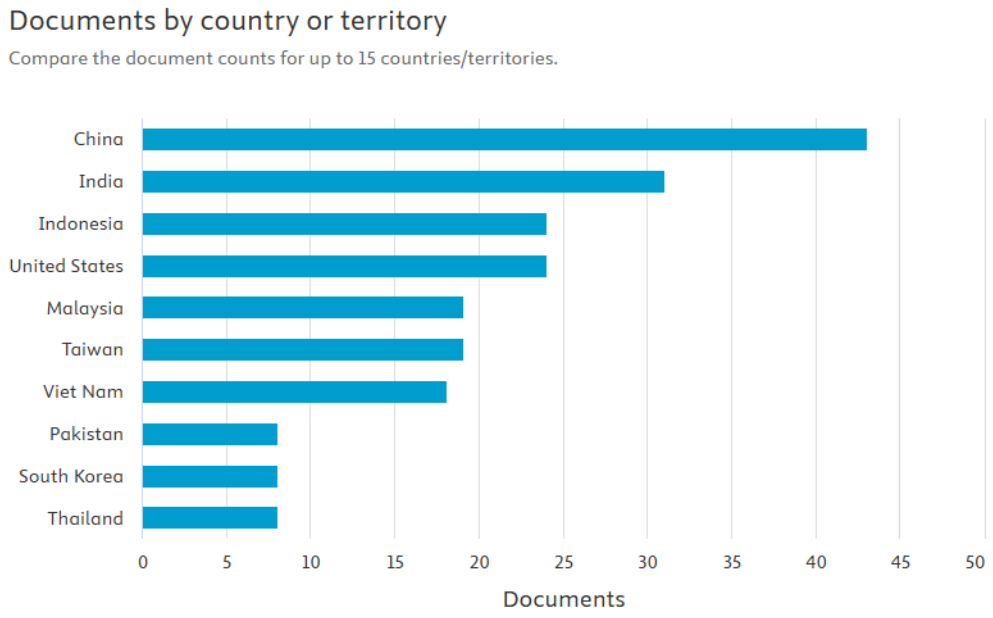
The bibliometric insights indicated in figure 4. demonstrate the divergence between productivity (i.e., number of publications) and impact (i.e., citations per paper) and that a higher volume of publications does not mean greater scholarly impact.

3.3. Geographical distribution of publications

The geographic distribution of the 197 selected articles on impulse buying behavior "IBB" in online commerce unravels an important concentration of research efforts in Asia and North America. As highlighted in Figure 5, China is the leading contributor with more than 40 publications, followed closely by India, Indonesia and the United States. Countries (e.g., Malaysia, Taiwan, Vietnam) are notable contributors as well thus reflecting the relevance of impulse buying in these emerging economies (Akram et al., 2018).

To sum up, this geographical partition aligns with the tendencies in related fields where China, the US and India also dominate publication volumes (Lim et al., 2022). That is to say that countries with developed technological infrastructure, digital populations and renowned academic institutions contribute the most to research related to consumer behavior in digital contexts.

Figure 5. Geographical distribution of publication



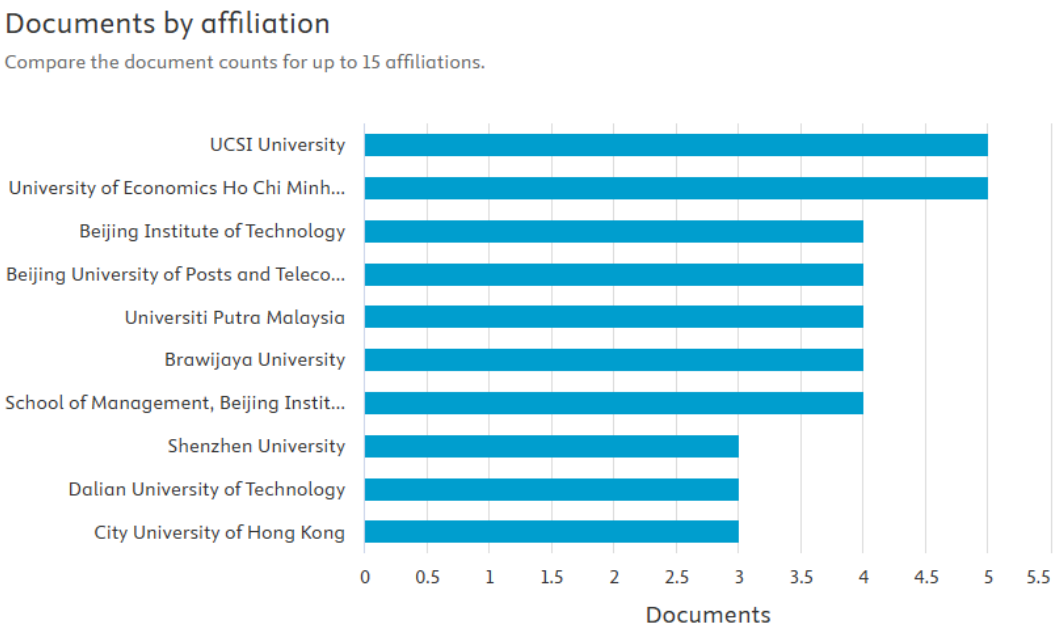
Source: Scopus

3.4. Distribution by publishing institutions

The bibliometric analysis unraveled a moderate distribution of institutions that contributed in the domain of online impulse buying behavior "OIBB". The first contributing institutions are UCSI university and University of economics Ho Chi Minh City with 5 publications each, then Beijing institute of technology followed by Beijing university of posts and telecommunications, University putra Malaysia, Brawijaya university and finally School of management, Beijing

institute of technology each with 4 documents. A significant number of institutions such as Shenzhen university, Dalian university of technology and City university of Hong Kong have each produced 3 publications. Therefore, research on OIBB is the product of a large range of contributors from multiple geographic and academic backgrounds which proves the distribution of this research environment.

Figure 6. Academic affiliations of publications



Source: Scopus

The limited number of publications per institution proves the fragmented yet global nature of academic research about OIBB and global relevance of the subject which perfectly aligns with the tendencies seen in consumer behavior research where interdisciplinary collaboration is increasingly significant (Lim et al., 2022). Overall, figure 6 insights reflect decentralization within research on OIBB and the emergence of the field and the possibility of evolution and cross-institutional collaboration.

3.5. Intellectual structure of current research

This bibliometric study regroups seven major thematic clusters that reflect the intellectual structure of research on online impulse buying behavior “OIBB”, they unravel how several factors influence impulse behavior in an online context such as behavioral and social influences (e.g., peer interactions, platform design), hedonic and technological stimulus (e.g., augmented reality, immersive interfaces), psychological and experiential triggers (e.g., serendipity, emotional gratification) and perceptual mechanisms like trust and perceived value. The clusters also include the influence of consumer attitudes in social commerce and the effects of COVID-19 pandemic on online shopping.

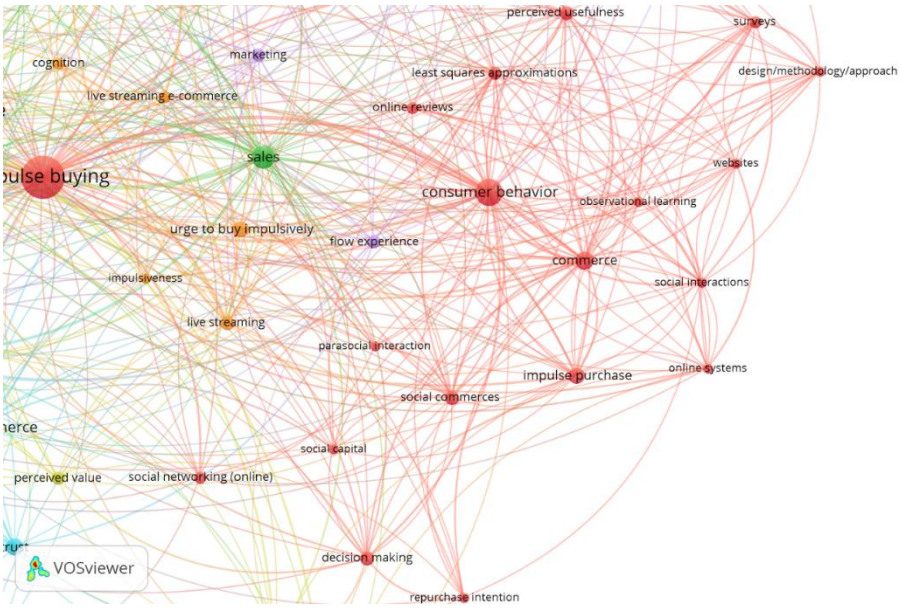
To conclude, these clusters highlight a domain heavily influenced by the merging of technological, emotional and psychological factors in evolving online environments. Despite performing a co-citation and keyword co-occurrence analyses, this bibliometric study forms its thematic clusters solely from the keyword co-occurrence network. This decision results from the objective to capture current research trends and thematic evolutions in the domain since citation analysis only unravels the influential scientific contributions and the intellectual genealogy of the field (Aria & Cuccurullo, 2017).

3.6. Cluster 1: Behavioral and social drivers of impulse buying in online commerce environments

This cluster shown on figure 7 demonstrates the behavioral and social aspects of impulse buying behavior in online commerce while focusing on consumer decision-making, social influence and platform design.

Online commerce platforms heavily influence consumer behavior and decision-making by optimizing the design of websites to enhance user experience and perceived usefulness which are proven to trigger impulsive behavior online (Floh & Madlberger, 2013). In addition, online reviews and features (e.g., product recommendations, one click purchases, infinite scrolls) enhance both trust and cognitive ease thus reducing perceived risk and leading to unplanned purchases (Park & Kim, 2006; Lim et al., 2016).

Figure 7. Cluster 1: Behavioral and social drivers of impulse buying in online commerce environments



Source: VOSviewer

When it comes to social triggers, the parasocial link created with influencers motivates consumers to imitate observed behaviors (Lim et al., 2022). This closeness enhances

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

the relational and communal aspect (i.e., peer interactions) and appeal of these platforms and increase impulse purchase intention through peer reinforcement and emotional engagement (Zhang & Benyoucef, 2016).

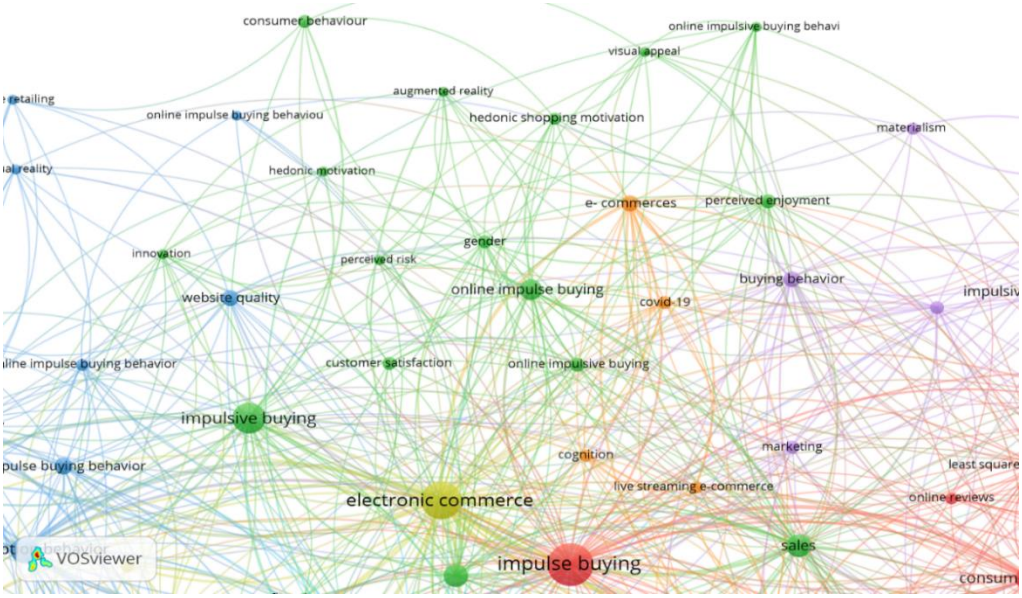
Finally, the online systems that personalize shopping experiences through algorithms, reviews and tracking of behavior tend to offer niche suggestions that align with consumers' needs thus intensifying the impulsivity in online consumers (Chen et al., 2019). Researchers have implemented analytical methods such as least squares approximation and survey-based modeling to prove these connections (Liu et al., 2013).

3.7. Cluster 2: Hedonic triggers and technological improvements in online impulse buying behavior

This cluster reflects the role of hedonic and technological triggers in OIBB and how emotional gratification and sensory stimulation can drive purchases because factors such as perceived enjoyment and visual appeal can lead to unplanned purchases in online commerce environments (Dhar & Wertenbroch., 2000). Combining these factors with digital tools such as augmented reality create immersive shopping experiences and enhance the perceived value and engagement (Poushneh & Vasquez-Parraga, 2017) thus elevating consumer satisfaction and bridging the gap between offline and online shopping.

Flow theory is a crucial element in this cluster because it leads to impulsivity through time distortion and higher involvement (Novak et al., 2000). Innovative and appealing digital platforms increase the immersion of consumers during their browsing or shopping session thus leading to OIBB. The differences between genders also contribute as a moderator in the response of consumers to hedonic attributes and technological features and influence both perceived risk and online impulse buying behavior (Dittmar et al., 2004). Furthermore, promotions serve as an external trigger that, when merged with internal motivations, make impulse purchases more likely (Liu et al., 2013).

Figure 8. Cluster 2: Hedonic triggers and technological improvements in online impulse buying behavior

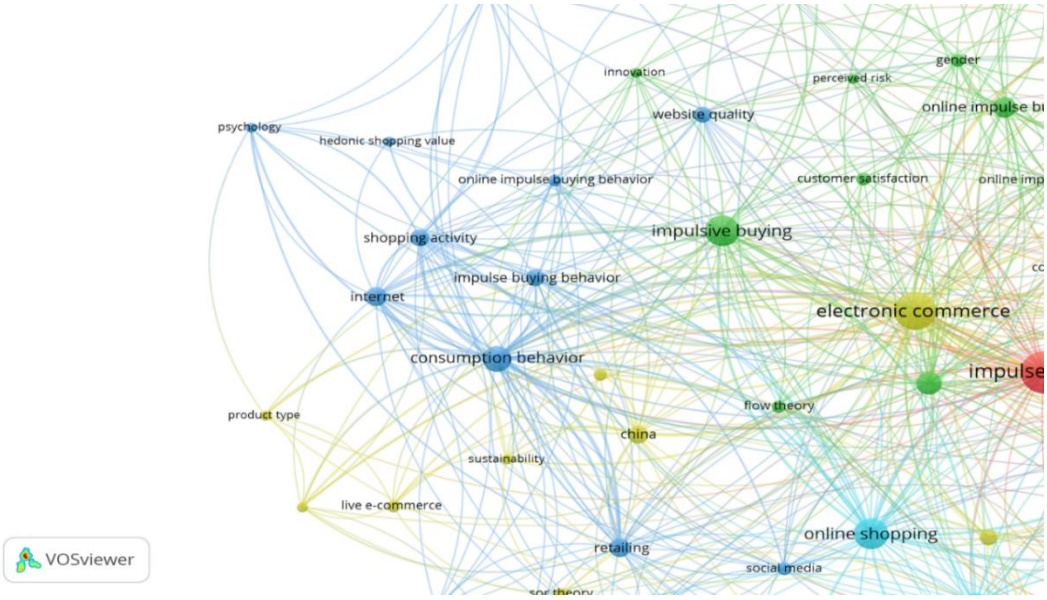


Source: VOSviewer

3.8. Cluster 3: Psychological and experiential determinants of online impulse buying in the digital retail environment

This cluster points out the psychological and experiential elements that lead to impulse buying behavior in the context of online commerce. Researchers suggest that impulse purchases are often driven by emotional gratification, entertainment and serendipity more than by utilitarian attributes (Arnold & Reynolds, 2003) such motivations are amplified within a digital context that is designed to create affective responses.

Figure 9. Cluster 3: Psychological and experiential determinants of online impulse buying in the digital retail environment



Source: VOSviewer

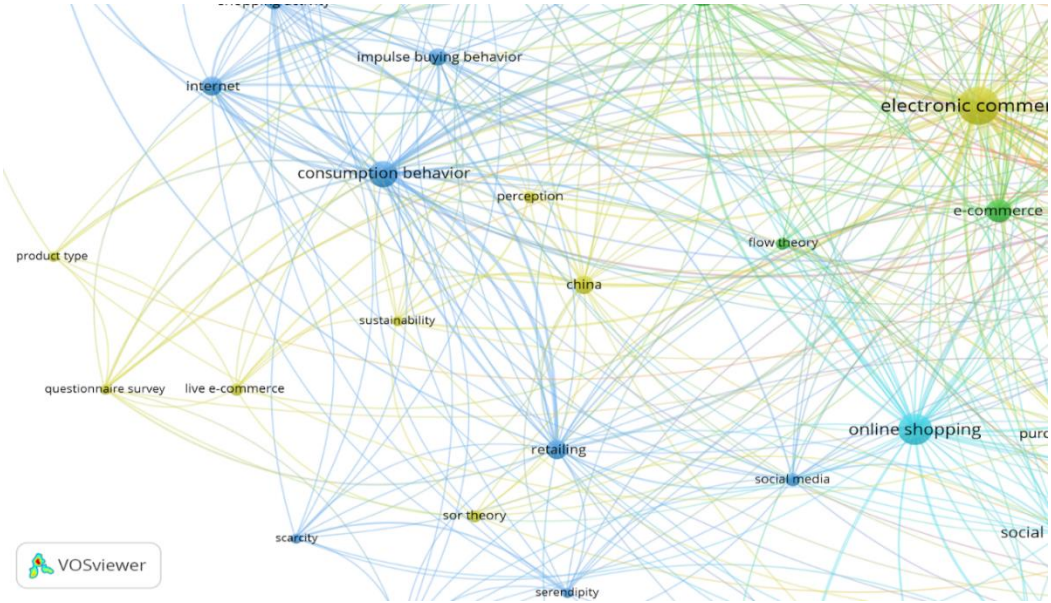
This cluster presented on figure 9 also reveals how serendipity and scarcity (i.e., limited-time offers, low stock warnings) influence decision-making, lead to online impulse buying behavior by creating a sentiment of urgency or exclusivity and a psychological tension between availability and desire. (Aggarwal et al., 2011). Moreover, visually appealing digital platforms (e.g., website quality, virtual reality) can increase online shopping activity and lead to emotional engagement (Pantano & Servidio, 2012) thus lowering self-control and increasing impulsivity in online contexts. This cluster indicates that impulse buying is not just a commercial phenomenon but a human one as well, driven by affect, cognition and digital context (Rook, 1987).

3.9. Cluster 4: Psychosocial and platform-based predictors of OIBB

This cluster reveals the role of the cognitive and perceptual factors that drive purchase intention in online commerce with a particular attention to the mental processing of perceived value, product types and consumer perception. Regarding perceived value, it includes both utilitarian (e.g., price, quality of the product) and hedonic factors (e.g., novelty, enjoyment) that significantly influence online buying decisions.

Researchers are nowadays investigating and exploring not only static online platforms, but also interactive, real-time shopping experiences. Live e-commerce is becoming a trend in China and it has altered how consumers engage with brands due to enhanced perceived trust and real-time engagement thus leading to OIBB (Wongkitrungrueng & Assarut, 2020). When it comes to the theoretical framework, the inclusion of S-O-R model (Stimulus–Organism–Response) strengthens the cognitive orientation of this cluster.

Figure 10. Cluster 4: Psychosocial and platform-based predictors of OIBB



Source: VOSviewer

It also reflects that researchers consider perceived value and perception as mediators between environmental stimuli (e.g., platform design, influencer presence, product presentation) and behavioral responses (e.g., purchasing, purchase intention) (Eroglu et al., 2001).

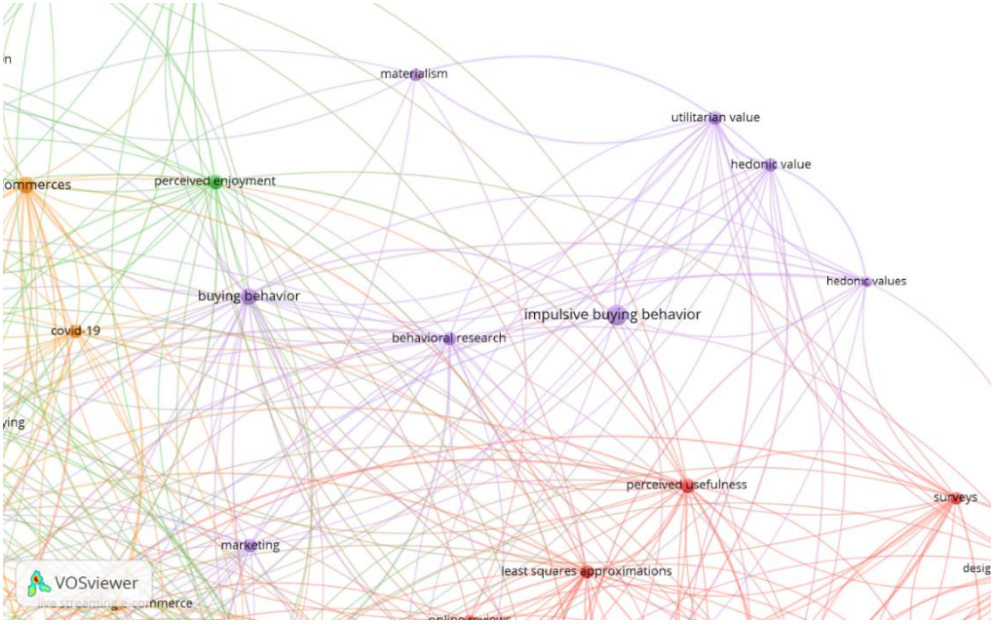
On a methodological level, questionnaire surveys are the key tool used in research related to OIBB thus highlighting that the quantitative approach captures consumer perceptions, often divided by product type (utilitarian vs. hedonic), cultural context or sustainability concerns.

3.10. Cluster 5: Hedonic and utilitarian values in consumer behavior

The 11th figure captures the psychological and motivational factors behind impulse buying behavior. The present keywords emphasize the difference between hedonic value (i.e., pleasure-seeking, experiential) and utilitarian value (i.e., goal-oriented, practical), a central contrast in explaining impulse buying behavior. Impulsive buying behavior is heavily influenced by hedonic values, in order words, emotions such as excitement, joy and desire trigger OIBB as opposed to rational considerations.

Moreover, materialism acts as a personal trait and antecedent of impulsive tendencies since materialistic individuals gain more self-worth from purchases and are thus more prone to impulsive spending (Dittmar et al., 2007). This proves that personal values play an important role in online commerce environments. This cluster illustrates the intersection between theoretical constructs and empirical studies in to gain deeper insights about the emotional and cognitive antecedents of impulsive buying.

Figure 11. Cluster 5: Hedonic and utilitarian values in consumer behavior



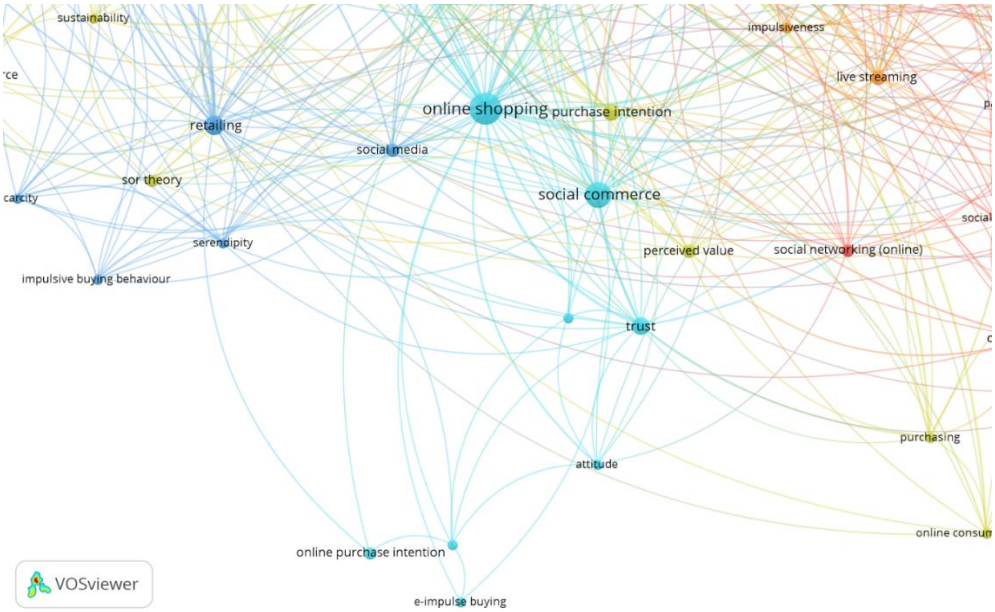
Source: VOSviewer

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

3.11. Cluster 6: The role of trust, attitude and purchase intention in OIBB

The sixth cluster highlights the role of trust and attitude in online environments thus revealing the mediating role of emotions induced by social features in online impulse buying behaviors especially in socially interactive settings.

Figure 12. Cluster 6: The role of trust, attitude and purchase intention in OIBB



Source: VOSviewer

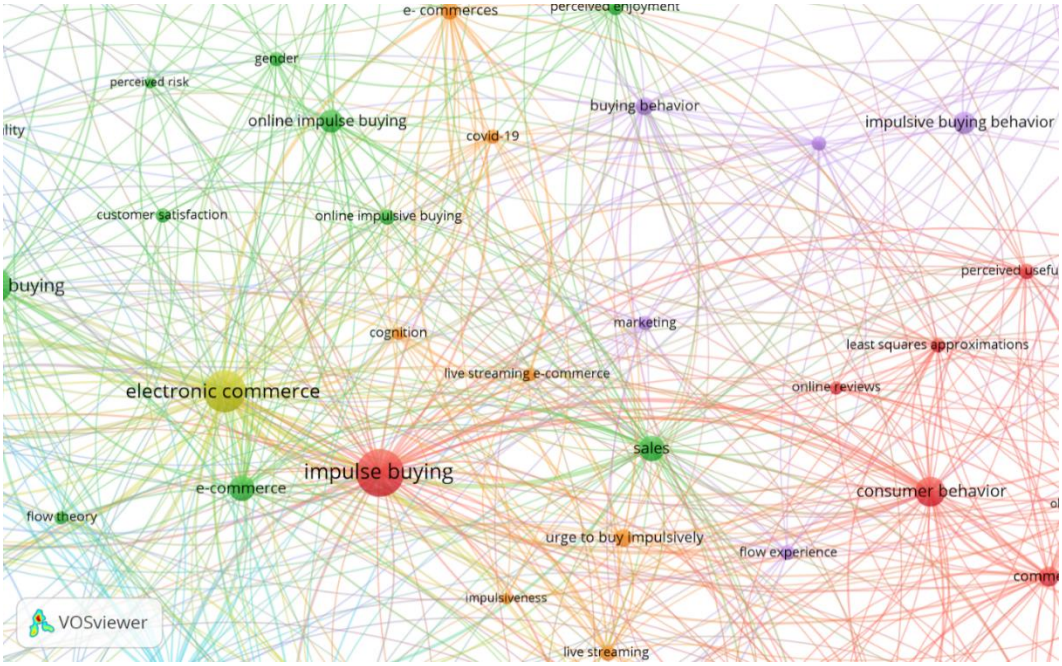
On one hand, trust is a crucial enabler of impulse buying in online commerce since the absence of the physical inspection of the products increases perceived risk thus the trust in platforms, influencers or peer recommendations significantly enhances purchase intention especially when transactions take place in social commerce environments where interpersonal interactions and instant feedback are omnipresent (Hajli, 2015).

On the other hand, comes attitude which is shaped by previous experience, interface quality and perceived usefulness which lowers cognitive barriers and has a strong role in online impulse buying (Lim et al., 2016). OIBB derives from positive attitudes formed through personalization, convenience or entertainment value.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

3.12. Cluster 7: Cognitive and situational triggers of impulsive buying in live streaming e-commerce during the COVID-19 era

Figure 13. Cluster 7: Cognitive and situational triggers of impulsive buying in live streaming e-commerce during the COVID-19 era



Source: VOSviewer

This last figure unravels how external events and context (e.g., COVID-19) contribute to new consumption patterns and increase digital dependency when shopping. In addition, the emergence of real-time digital stimuli (e.g., live streaming) created the urge to buy impulsively. On one hand, the COVID-19 pandemic intensified digital commerce and emotional vulnerability thus enhancing the frequency of impulse buying behaviors in online environments (Sheth, 2020). On the other hand, live streaming platforms became a powerful e-commerce channel especially in East Asia since it combines entertainment, social influence and real-time urgency hence leading to impulsive behavior (Sun et al., 2019). To conclude, this cluster summarizes how context and technology both enhance OIBB which consumers use as a response to external pressures and advancements.

4. Discussion of Results

This bibliometric study revolves around the intellectual structure and thematic evolution of the research related to online impulse buying behavior over the past two decades. This study included the analysis of 197 articles indexed in Scopus, a co-citation network of 35 highly referenced sources and 50 keyword co-occurrences leading to the identification of seven

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

thematic clusters, each addressing specific behavioral, psychological or technological factors influencing impulse purchases in online commerce environments.

The co-citation analysis of 35 these highly referenced sources unravel a strong theoretical foundation that combines classical consumer behavior frameworks and sophisticated technological advancements. For instance, Verhagen and Van Dolen (2011) is the most cited article in the field and it does highlight the role of online trust and perception in influencing consumer behavior since it replaces the physical product interaction in terms of credibility. Then Liu et al. (2013) article reveals how hedonic and utilitarian website attributes lead to OIBB using foundational theories such as S-O-R model. This analysis also highlighted how Rook's article (1987) is also foundational due to its conceptualization of impulse buying which paved the way for more research in the field.

In addition, the co-occurrence analysis led to the detection of seven clusters, thus showing the multidimensional nature of OIBB research. The first cluster focused on the behavioral and social drivers of impulse buying such as peer influence, parasocial interaction and platform design (Lim et al., 2022) which highlights the socio-technical influences that create new forms of consumer engagement in the online realm. The second cluster determines the hedonic motivations and technological tools such as augmented reality and immersive design (Poushneh & Vasquez-Parraga, 2017) that drive enjoyment and engagement during online shopping and the third cluster unravels the psychological and experiential elements causing OIBB like serendipity, scarcity and visual aesthetics since they turn online shopping into an emotionally-driven experience.

The fourth and fifth clusters reflect on how perceived value and purchase intention are conditioned by the interaction between hedonic and utilitarian motivations, how they lead to impulse buying and how they remain relevant using modern tools such as live e-commerce (Wongkitrungrueng & Assarut, 2020) and personalized targeting. The sixth cluster supports the role of trust and attitude formation in online commerce contexts (Hajli, 2015; Verhagen & Van Dolen, 2011) and how it can be accomplished through credibility, social proof and building lasting relationships with consumers. The final cluster reflects on how the COVID-19 pandemic, live streaming and vulnerability have restructured impulse buying by creating new vulnerabilities, decreasing cognitive control and enhancing emotional reactivity (Sheth, 2020) thus rising several ethical considerations for researchers and practitioners.

Notably, the expansion in publications since 2016 proves the digital acceleration caused by the mainstream adoption of social commerce and real-time marketing technologies while the growth of scientific production starting from 2020 is closely linked to the changes in consumers behavior during the pandemic. The results of this study show a rapidly growing field where

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

technology, emotions and user experience influence impulsive consumer behaviors in online contexts. Future research is likely to strengthen the intersection between behavioral theory and digital innovation.

To answer RQ1, the most cited articles about online impulse buying behavior are by: Verhagen and Van Dolen (2011), Liu et al. (2013) and Beatty and Ferrell (1998). Those articles clarify the influence of trust, website attributes and hedonic motivation in consumer behavior. For RQ2, the timely distribution of publications demonstrates a clear evolution of publications starting in 2016, with an exponential increase after 2020 and a peak in 2024 which corresponds with the rise of social commerce, mobile retail and post-pandemic digital adoption. Regarding RQ3, the countries that publish the most are China, India, Indonesia and the United States showing the relevance and global interest in OIBB, especially in regions with strong e-commerce growth, collectivistic values such as the Asian market.

Regarding RQ4, the Journal of Retailing and Consumer Services emerged as the most productive journal in terms of publications, followed by the Asia Pacific Journal of Marketing and Logistics and the International Journal of Information Management, consolidating the field's interdisciplinary nature and how it became a concern across several sectors and countries. Concerning RQ5, the co-occurrence analysis revealed an intellectual landscape including seven clusters with themes such as behavioral triggers, hedonic experiences, trust mechanisms, live streaming commerce and real-time digital engagement.

5. Implications & Limitations

5.1. Theoretical and Practical Implications

This bibliometric study offers valuable insights on a theoretical and practical level which is useful for academics and practitioners involved and interested by the research on online impulse buying behavior. On a theoretical level, this study helped identify key intellectual clusters such as hedonic motivation, trust and real-time commerce which shows the multidimensional theoretical framework and interdisciplinary nature of the domain combining consumer psychology, digital marketing and information systems. It also consolidates the actual relevance of frameworks such as the S-O-R model, while proving their flexibility and adjustment to modern digital contexts and technologies (e.g., augmented reality, artificial intelligence, live-streaming). Finally, this study highlighted several theoretical research gaps such as the psychology behind algorithm-mediated OIBB and long-term repercussions of personalized shopping experiences which give scholars the unprecedented opportunity to bridge these gaps. Regarding practitioners, the findings reveal the importance of improving user experience through website attributes, emotional responses and trust-building processes since psychological and hedonic factors play a crucial role in driving OIBB. In addition, the

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

introduction of clusters related to real-time e-commerce, augmented reality and live streaming shows that businesses increase OIBB through the offering of immersive environments and give marketing practitioners the detailed strategy to implement to better engage and influence consumers (e.g., live shopping, interactive features).

Moreover, the mapping of geographical publications provides valuable benchmarking for institutions and industries seeking to identify regional research gateways and collaborative opportunities. Concerning policymakers, the study's insights demonstrate that the technologies used to influence consumer behavior should culminate in the development of policies related to digital marketing practices, data privacy and consumer rights in online commerce environments.

5.2. Limitations

Despite the insights provided by this study, multiple limitations must be acknowledged. First of all, the dataset was limited to Scopus-indexed publications which excludes potentially relevant articles from other databases such as Web of Science. This limitation caused the omission of influential publications not included in Scopus, particularly those published in niche or emerging journals. Secondly, the search strategy included several adequate keywords related to OIBB, yet excluded studies that explore similar concepts under different terminologies (e.g., compulsive buying, spontaneous consumption), thus reducing the scope of analysis and reducing the literature mapping. Third, while keyword co-occurrence analyses provide elements related to the conceptual and intellectual structure in the literature, it fails consider citation quality or contextual nuances.

Bibliometric studies cannot capture the depth of the articles nor provide full understanding due to the quantitative nature of their analysis. Future studies should add dynamic bibliometric approaches or mixed methods incorporating content analysis to capture the richness of the articles. Finally, this bibliometric study included research published from 2000 to 2024 which introduces a recency bias since it excludes the most recent publications and given the rapid evolution of the field, future studies must include more recent findings to reveal the shifts and updates in scientific research.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

Conclusion

This bibliometric study provides a comprehensive overview of the intellectual, conceptual and thematic evolution of research related to OIBB over the past two decades. This study analyzed over 190 peer-reviewed articles indexed in Scopus database and led to conducting co-citation and keyword co-occurrence analyses which helped identify key research trends and trajectories, influential authors and publications and emerging areas of research. The findings unravel a rapidly growing field where theories such as the Stimulus-Organism-Response model help explain modern digital contexts such as social commerce, augmented reality, AI-driven personalization and live streaming platforms.

The seven clusters defined through the keyword co-occurrence analysis show the multidimensional nature of online impulse buying behavior and the factors that influence it (e.g., psychological, social, experiential, technological). These insights prove the need for an ongoing collaboration across marketing, information systems and psychology to reinforce and develop a comprehensive understanding of how digital contexts lead to OIBB. Ultimately, this study plays a big role in the consolidation of OIBB as a distinct research field at the intersection of marketing, digital technology and consumer psychology.

It provides a foundation for future research dedicated to help academics explore aspects such as ethical personalization, real-time engagement strategies and the influence of emerging technologies like generative AI in online shopping.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

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ISSN : 2658-9311
Vol : 03, Num 35 Avril 2026

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