



Review

# The Role of Digital Marketing in Online Shopping: A Bibliometric Analysis for Decoding Consumer Behavior

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**Abstract:** Over the past two decades, digital evolution has radically transformed how consumers interact with brands and purchases. Highly informed consumers actively seek news, knowledge, and inspiration and often interact with multiple touchpoints over an extended period before purchasing. Thus, companies face diverse and complex challenges in engaging with and retaining consumers in virtual contexts. This systematic literature review aims to understand what influences consumer behavior, that is, the impact of digital marketing on online shopping. Based on Web of Science database articles, bibliometric analysis was used to verify the state-of-the-art of digital marketing in consumer behavior topics. This study systematizes the existing literature into six themes: (1) Digital Consumer Behavior and E-Commerce Dynamics; (2) Engagement Strategies in a Virtual Environment; (3) Factors Influencing Online Consumer Decisions and Digital Strategies; (4) E-Commerce in the Era of Social and Technological Change; (5) Innovative Approaches to Digital Consumer Engagement; and (6) Digital Transformation and Cross-Channel Shopping Behavior. The results provide insights and help to develop a more profound understanding of this theme. An agenda for further research is presented based on the existing literature.

**Keywords:** bibliometric analysis; marketing; consumer; online shopping; digital marketing; systematic literature review



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## 1. Introduction

Over the last two decades, digital evolution has radically transformed how consumers interact with brands and make purchases [1]. This digital transformation was already underway when the COVID-19 pandemic further accelerated the online shift. The social isolation imposed by the pandemic forced consumers to adopt and intensify the use of digital platforms for shopping, entertainment, and communication [2]. As e-commerce has evolved in sophistication and reach, consumers have sought increasingly personalized, interactive, and immersive shopping experiences, challenging brands to adapt their marketing and communication strategies to meet growing user expectations [3,4]. Therefore, the widespread adoption of mobile technologies and the growth of e-commerce have led to the evolution of consumer behavior in the digital environment [5,6].

E-commerce has revolutionized how consumers search for and consume product information [6]. Thus, as consumers become increasingly informed and demanding, the

purchasing journey becomes more complex and multifaceted, encompassing various channels and devices [5]. Consumers actively seek novelty, knowledge, and inspiration through multiple interactions over time to make informed purchasing decisions [5].

Understanding consumer behavior is essential for companies and brands [5]. The proliferation of mobile and social platforms has forced them to develop technological innovations to improve customer communication [4]. Mobile technologies offer interactivity and instantaneity and dynamically alter consumers' purchasing objectives by influencing their motivations in real time [6]. According to Luo [7], social behavior on digital platforms has started influencing purchasing decisions directly, requiring companies to adapt their digital marketing strategies to capitalize on these changes. In this context, electronic word-of-mouth (eWOM) has emerged as one of the most influential forms of online social interaction, affecting brand perceptions, purchase intentions, and consumer behavior in all age groups [8]. This "social proof" phenomenon suggests that online reviews and recommendations from trusted friends and contacts are more effective than the marketing strategies used by companies [5,9,10]. Another phenomenon that has emerged is "herd behavior", in which consumers tend to follow the actions of others, especially in times of uncertainty [2]. Companies must carefully manage their presence in the digital environment by leveraging positive reviews and feedback to increase consumer trust and improve their sales performance [7].

People buy and consume more online [3]. Thus, the increasing use of advanced technologies such as augmented reality (AR) and virtual reality (VR) has enabled richer shopping experiences, expanding the possibilities of sensorial and emotional involvement of consumers in the online environment [1,3]. With the integration of sensory information on e-commerce platforms, consumers become more confident in their choices, which increases their likelihood of purchasing [3]. In parallel, personalizing shopping experiences and considering consumers' emotions and unique needs is essential for building long-term relationships and increasing brand loyalty [11,12].

In a scenario where competition is intense and consumers are more informed and connected than ever, understanding the intrinsic and extrinsic motivations that influence purchasing decisions has become crucial [13,14]. Pappas et al. [11] find that emotions influence consumers' purchasing intentions to use personalized e-commerce platforms. Therefore, companies must reinforce the quality and quantity of information websites to capture consumer attention and interest [13,15], and sensory interactions should be addressed [3]. Companies must then develop and access tools and technologies to offer richer online experiences to consumers [3]. Companies use strategies such as "Behavioral targeting" [14] and the inclusion of sensory information [3] to influence consumers. This allows for more personalized interactions with consumers, providing, for example, digital advertisements based on online behavior, namely, research and purchases [14], which makes consumers more confident and secure in their choices [3].

Studies on the impact of digital marketing on online consumer choice have increased in recent years, leading to a deeper understanding of this subject. Existing Systematic Literature Reviews (SLRs) have contributed to the concept and development of this area. As expected, given the importance of the theme, this research found multiple SLRs about the subject. Some are very recent, such as the SLR developed by Léon-Alberca et al. [16], which analyzed the impact of digital marketing, more specifically, the use of Instagram, or the SLR of Nuseir et al. [17], which, although they analyzed digital marketing strategies and tools and the role played by these in various marketing activities or areas, do not resort to a bibliometric analysis, not allowing us to verify which areas of research are significant. In this sense, no SLR has investigated the impact of digital marketing on consumers' online purchasing behavior more broadly. This systematic approach contributes to the literature

by mapping more streams, areas, contributions, and locations associated with the effects of digital marketing on consumer behavior. SLR also provides a comprehensive framework for understanding the process and impact of digital marketing on online consumer behavior. This framework illustrates how identified thematic groups are interrelated. The results of SLR can inform companies, consumers, researchers, and agents interested in understanding the impact of digital marketing.

This research also responds to a gap pointed out by Wagner et al. [18], indicating the need for more studies [16] to fully understand how consumers are impacted by digital marketing and how it influences their purchasing decisions.

The SLR formulated the following research questions (RQ):

**RQ1:** *What is the impact of digital marketing on online purchases made by consumers?*

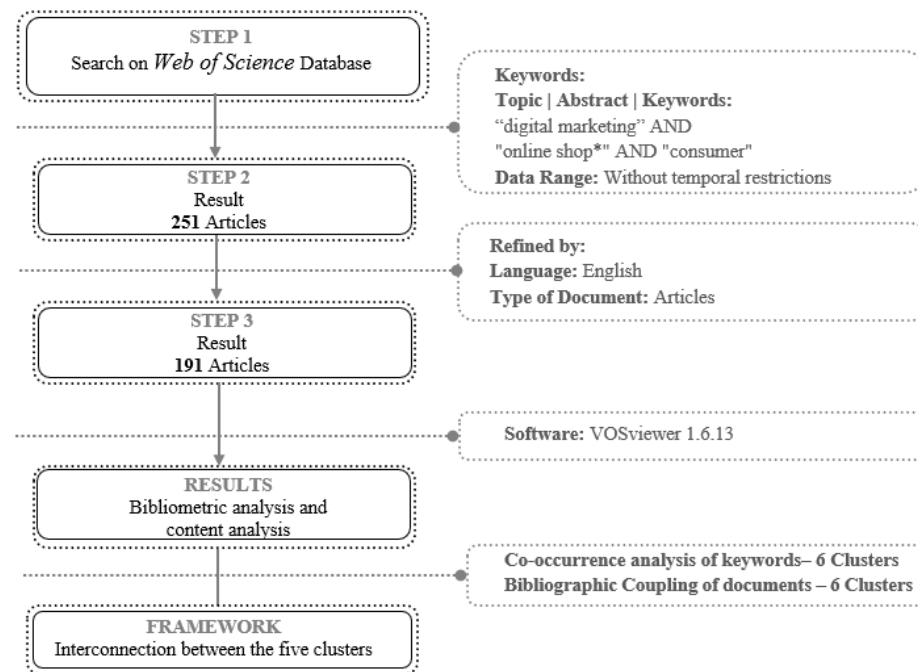
**RQ2:** *What are the main research themes on the impact of digital marketing on online shopping?*

This study is structured as follows: it begins with a comprehensive literature review on the topic under analysis; next, the frameworks of the materials and methods are introduced. The results, conceptual framework, and discussion, grounded in a bibliometric analysis, offer valuable insights into the current state of knowledge in the field. Finally, the study concludes with the key findings and proposes a future research agenda.

## 2. Methods

The use of Systematic Literature Reviews (SLRs) in various disciplines and research areas has increased significantly in recent years [19]. This methodology is based on rigorous and previously defined procedures, allowing an in-depth analysis of knowledge, minimizing possible biases, and ensuring the replicability of the results [19,20]. Considering the advantages of this methodology, this study develops an SLR to investigate the impact of digital marketing on consumers' online purchasing behavior. To this end, it was based on representative articles available in the Web of Science database, as it is a multidisciplinary, comprehensive, and high-quality source, guaranteeing the validity of the articles analyzed [21]. The researchers used essential concepts and Boolean operators to collect raw data. A search by topics was conducted in the WoS Core Collection (WoS) with no time restriction, using the following keywords: "digital marketing" AND "online shop\*" AND "consumer", and it was carried out on 19 August 2024. The truncation ("\*") was used to cover all fitting terms, allowing us to restrict the scope to articles that specifically address the defined words and their derivations. The filters were "type of document"—articles—and "language"—English—without temporal restrictions. The search yielded 251 articles, which was reduced to 191 after applying the abovementioned filters. The research protocol is illustrated in Figure 1.

This study employs a bibliometric analysis methodology that consists of a quantitative method that uses bibliographic data to analyze and map the development of a given area of research [22]. Bibliometric techniques enhance the advancement of scientific knowledge by thoroughly examining and analyzing the underlying factors of bibliographic phenomena associated with scientific inquiry [23]. In this specific case, the aim is to collect and analyze bibliographic data, such as publication records and citation data, to identify the main themes, concepts, and research gaps in consumers' online purchasing behavior in the digital era. In this context, 191 articles were submitted to VOSviewer, version 1.6.13 software, to obtain different bibliometric analyses [24], allowing the mapping and processing of articles with reliability and suitability [25].



**Figure 1.** Research protocol.

This study developed several complementary bibliometric analyses to obtain a comprehensive view of the evolution of the literature and the different dynamics of the topic under analysis, namely, the bibliographic coupling of documents and the analysis of the co-occurrence of keywords [26].

Bibliographic coupling involves grouping articles based on the references they share, allowing the identification of emerging search networks and the connection between studies [27].

Keyword co-occurrence analysis focuses on the relationships between the most frequently used terms in the literature, revealing the conceptual structure of the field, and highlighting the central themes and areas of intersection [25]. Together, these techniques provide an in-depth understanding of the dynamics of knowledge and trends that shape scientific development in specific areas of study [26], in this case, the evolution and analysis of consumer purchasing behavior in the digital era.

### 3. Results

#### 3.1. Descriptive Analysis

Figure 2 shows the evolution of the number of publications and citations of 191 articles obtained from the WoS database. This information considers the period between 2003 and 2024, with the same yearly information. It is possible to verify that the number of citations has evolved over the years, reaching its maximum in 2023 with 750 citations, and in 2024, it already has approximately 542 citations. Regarding the number of publications, it was also in 2023 that it reached its maximum of 45 publications, and in 2024, there will be around 17 new publications in the area. These data demonstrate the relevance and importance of this research area.

Of the 191 articles analyzed, 49 (25.65%) had no citations, and 121 (63.35%) had less than ten citations. This happens because they are very recent articles, and of these, 102 articles were published between 2020 and 2024. The first study identified was developed by Baye et al. [28] and examines the value of information to consumers in online electronic marketplaces. This study investigates how the availability of online information, such as price comparisons and product reviews, affects consumer purchasing behavior and competition among sellers.

The most cited article by Amblee and Bui [9] studied the effect of electronic word-of-mouth (eWOM) communication among a closed community of book readers.

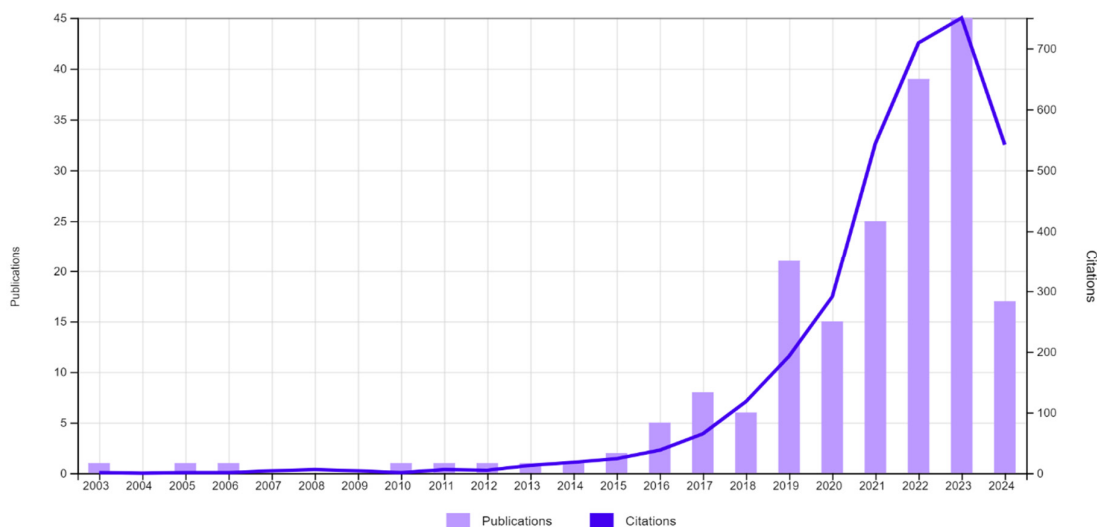


Figure 2. Evolution of the number of publications/citations.

The distribution of articles by country and region is shown in Figure 3. It can be observed that the USA is the leading publishing country, accounting for 23.35% (46 articles), followed by India with 13.71% (27 articles), the People’s Republic of China with 10.15% (20 articles), and England with 9.61% (19 articles).

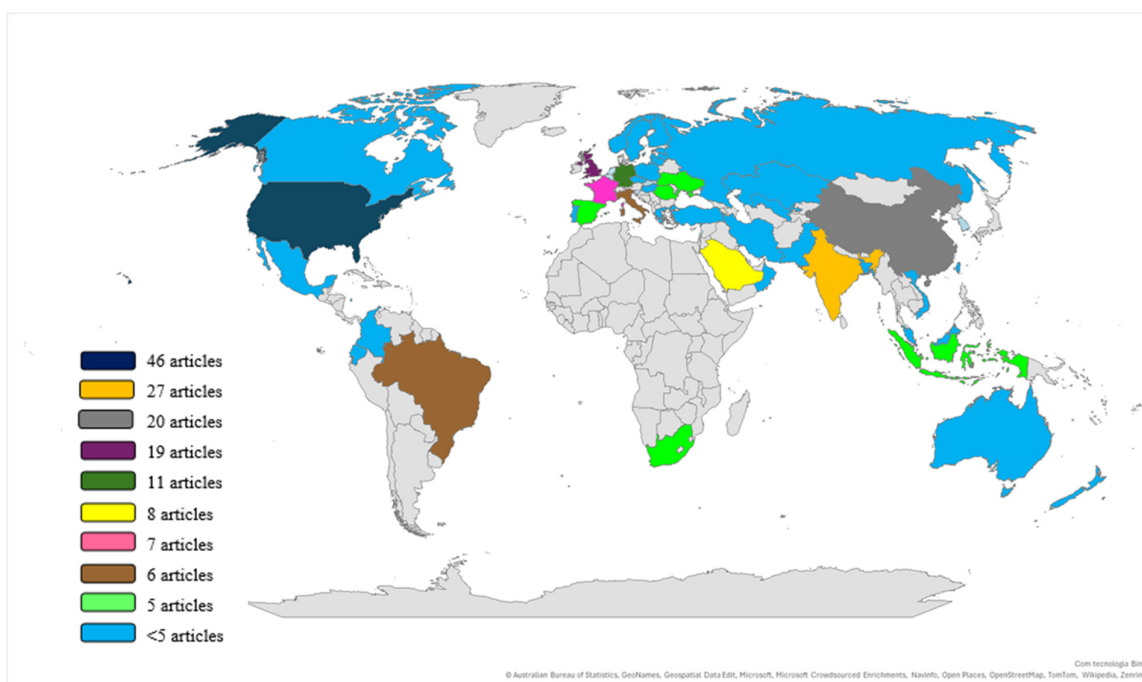


Figure 3. Number of articles by country/region.

Figure 4 shows the leading journals that contributed to this theme.

The Journal of Retailing and Consumer Services is the journal that contributes the most to the analysis of the topic, with approximately eight published papers and 348 citations (WoS Core Collection). Subsequently, the International Journal of Retail & Distribution Management and Sustainability appeared with six papers each and 244 and 27 citations, respectively. Cogent Business & Management has five papers with nine citations, and

Pacific Business Review International has four with 17 citations. This study also has 5 journals with three papers, 23 with two papers, and the remaining articles are distributed over 101 journals, one per journal.

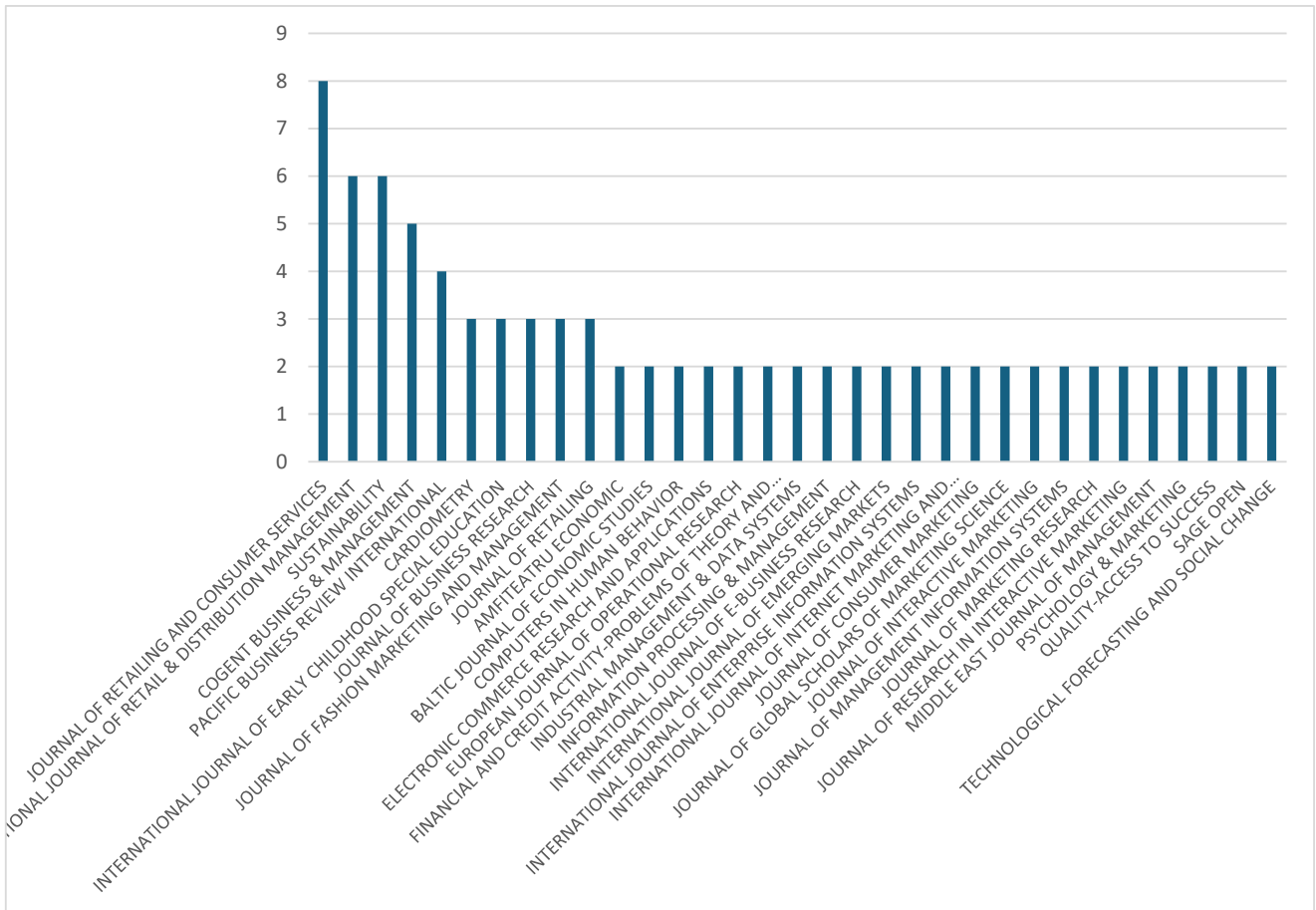


Figure 4. Prominent journals in the field.

The distribution of articles by research area is shown in Figure 5. There was a concentration of articles in the areas of Business (45.69%), Management (21.32%), Economics (8.12%), and Computer Science Information Systems (7.11%).

Table 1 presents the ten most cited articles, showing that these works were published in several journals and covered qualitative and quantitative analyses. Considering that consumer behavior has evolved, qualitative analyses reinforce the validity and depth of the results. Quantitative studies are becoming increasingly common in responding to the need to understand and clarify specific phenomena [29].

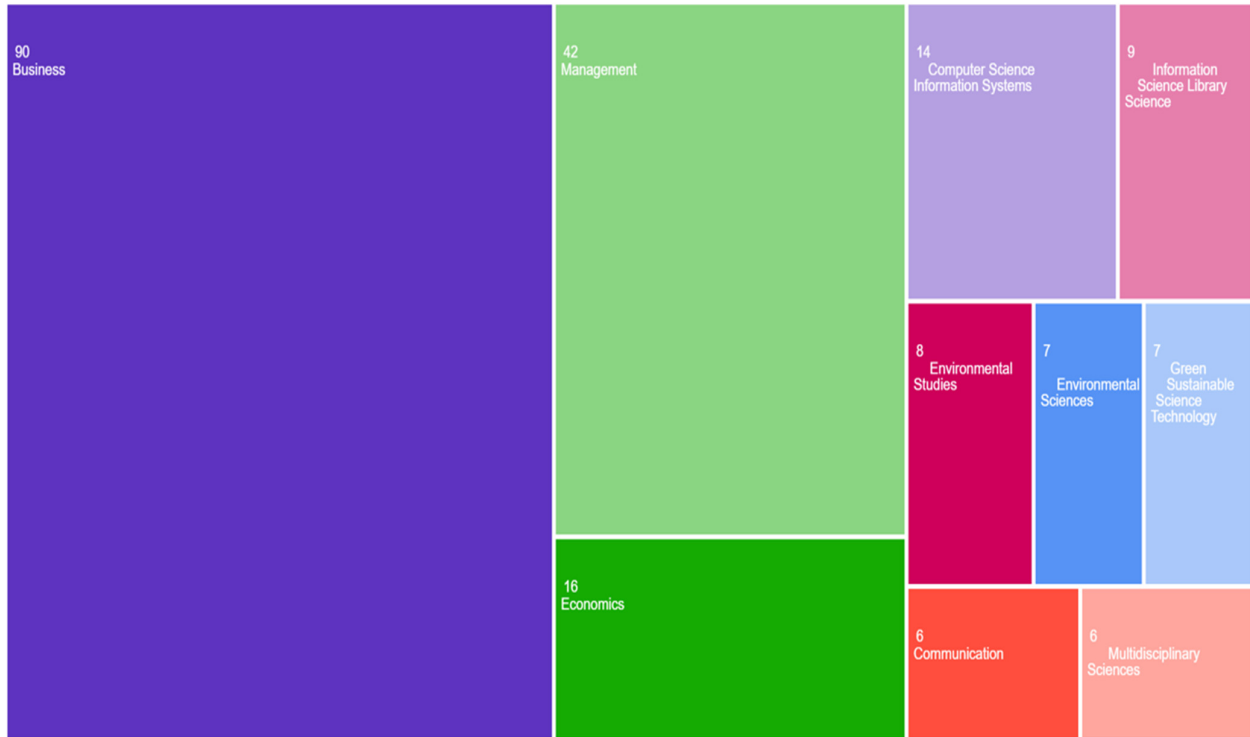


Figure 5. Main research areas.

Table 1. Top 10 most cited articles.

Article	Authors	Journal	Total Citations (in WoS Core Collection)	Methodology
Harnessing the Influence of Social Proof in Online Shopping: The Effect of Electronic Word of Mouth on Sales of Digital Microproducts	Amblee & Bui [9]	International Journal of Electronic Commerce	299	Quantitative analysis
Digital Sensory Marketing: Integrating New Technologies Into Multisensory Online Experience	Petit et al. [3]	Journal of Interactive Marketing	240	Qualitative analysis
Mobile Shopper Marketing: Key Issues, Current Insights, and Future Research Avenues	Shankar et al. [6]	Journal of Interactive Marketing	187	Qualitative analysis
Effects of perceived interactivity of augmented reality on consumer responses: A mental imagery perspective	Park & Yoo [1]	Journal of Retailing and Consumer Services	160	Quantitative analysis
Consumer attitudes and communication in a circular fashion	Vehmas et al. [30]	Journal of Fashion Marketing and Management	125	Qualitative analysis
Online shopping adoption during COVID-19 and social isolation: Extending the UTAUT model with herd behavior	Erjavec & Manfreda [2]	Journal of Retailing and Consumer Services	107	Quantitative analysis
The path-to-purchase is paved with digital opportunities: An inventory of shopper-oriented retail technologies	Willems et al. [31]	Technological Forecasting and Social Change	97	Qualitative analysis
Online retailing across e-channels and e-channel touchpoints: Empirical studies of consumer behavior in the multichannel e-commerce environment	Wagner et al. [18]	Journal of Business Research	95	Quantitative analysis
Understanding how Millennial shoppers decide what to buy Digitally connected unseen journeys	Hall et al. [5]	International Journal of Retail & Distribution Management	94	Quantitative analysis
An Audience of One: Behaviorally Targeted Ads as Implied Social Labels	Summers et al. [14]	Journal of Consumer Research	89	Quantitative analysis

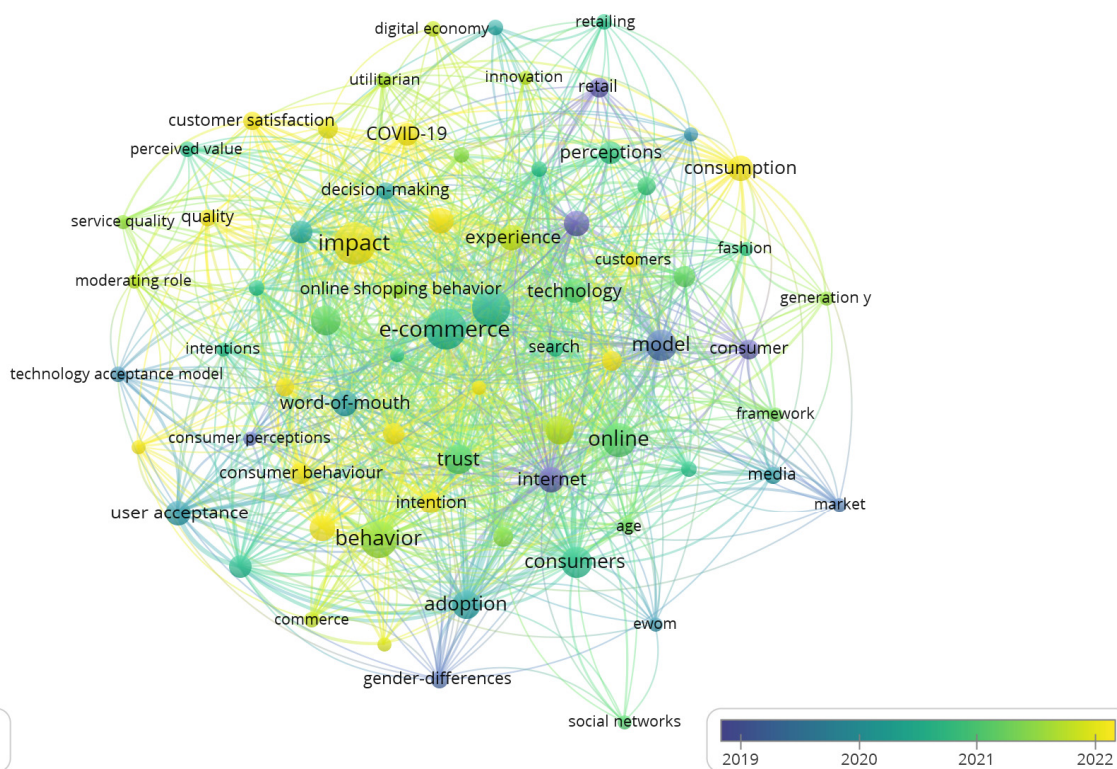




**Table 2.** Clusters of keywords.

Cluster Number	Color	Cluster Name	Main Keywords
1	Red	E-commerce	Attitude, consumer behavior, customer engagement, customers, digital economy, digital marketing, e-commerce, engagement, framework, innovation, management, marketing, online shopping behavior, perceptions, technology
2	Green	Behavior	Antecedents, behavior, consumer perceptions, COVID-19, information technology, intentions, online shopping, perceived ease, purchase intention, quality, technology acceptance model, unified theory, user acceptance, word-of-mouth
3	Blue	Online	Brand, determinants, digital transformation, experience, information, internet, markets, model, online, product, retail, retailing, search
4	Black	Consumers	Acceptance, adoption, commerce, consumer behavior, consumers, ewom, gender differences, intention, social commerce, social networks, trust
5	Purple	Social media	Age, consumer, consumption, fashion, gender, generation y, loyalty, market, media, satisfaction, social media
6	Yellow	Customer satisfaction	Customer satisfaction, decision-making, impact, moderating role, perceived value, service quality, utilitarian

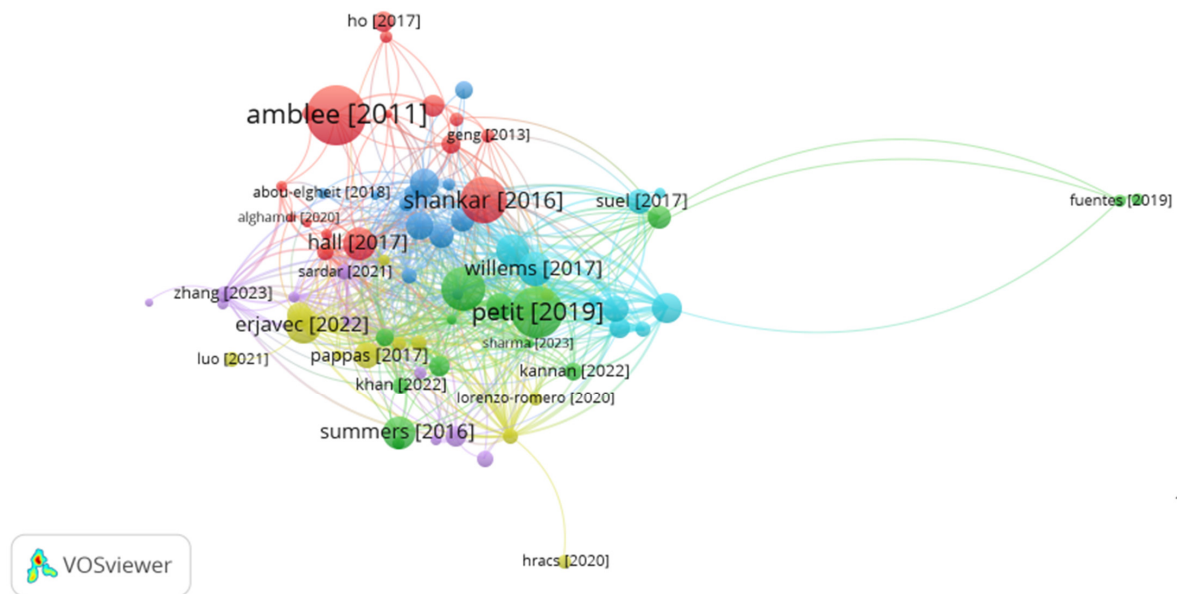
Figure 7 shows that the most influential keywords emerged between 2019 and 2022, demonstrating the topic’s originality and relevance. The keywords that stood out in 2019 were “model” and “internet”. In 2020, the most cited words were “digital marketing” and “e-commerce”; in 2021, it was “online” and “trust”. The most recent words, in 2022, show an interest in understanding the impact of digital marketing on online shopping, with the most cited words being “impact” and “satisfaction”.



**Figure 7.** Evolution of keyword networks based on co-occurrence.

### 3.2.2. Bibliographic Coupling of Documents

The bibliographic coupling technique was used to identify trends in the literature regarding the impact of digital marketing on consumer behavior in online shopping. Research on this topic was divided into clusters based on the bibliographic coupling of 191 articles. The analysis unit is considered “documents”, with a minimum of seven documents in each cluster, resulting in 75 papers divided into six clusters (see Figure 8, VOSviewer output).



**Figure 8.** Network of documents based on bibliographic coupling analysis.

The six clusters formed, revealing distinct characteristics in size (number of articles), influence (total article citations), and research focus, confirmed the wide range of themes in this area of investigation. The clusters are as follows: (1) Digital Consumer Behavior and E-Commerce Dynamics, (2) Engagement Strategies in a Virtual Environment, (3) Factors Influencing Consumer Decisions and Digital Strategies, (4) E-Commerce in the Era of Social and Technological Change, (5) Innovative Approaches to Digital Consumer Engagement, and (6) Digital Transformation and Cross-Channel Shopping Behavior.

#### Cluster 1—Digital Consumer Behavior and E-Commerce Dynamics

Cluster 1, highlighted in red in Figure 8, comprises 15 articles. Cluster 1 contains the first article on the analyzed topic and three of the ten most cited articles. This cluster offers a deeper understanding of the dynamics of e-commerce and consumer interactions with digital platforms.

Consumers often rely on online information to make informed and conscious purchasing decisions [28]. However, as highlighted by Hall et al. [5], each customer has unique experiences and expectations, making the purchasing process highly variable in duration and influencing different touchpoints utilizing various media and platforms. Mobile devices are platforms that transform purchasing behavior, allowing consumers to shop anytime and anywhere [6]. This presents significant challenges and opportunities for companies because digital marketing strategies become crucial in influencing the consumer at every stage of the buying journey, from the initial trigger to post-purchase recommendations [6].

Specifically, millennials face a complex and nonlinear purchasing journey, where digital influences such as social media, product reviews, and personalized recommendations play fundamental roles [5]. This demographic seeks to validate consumers' purchasing decisions in both online social networks and offline interactions, demonstrating the significant impact of other consumers' opinions. Therefore, reviews and recommendations from other users can decisively influence purchasing decisions, positively or negatively affecting sales [9]. This phenomenon is related to the concept of eWOM (electronic word of mouth), which, according to Amblee & Bui [9], is a powerful digital marketing tool that companies should consider to optimize their sales strategies, improve product and brand reputation, and even promote complementary goods.

Another critical point is how the online information is presented. Transparency benefits consumers, especially regarding pricing and ease of access to information and platforms [28]. According to Ho et al. [32], strategies such as online cashback programs have the potential to influence consumer behavior significantly. Such programs are perceived as financial incentives that reduce the perceived cost of products, increase the likelihood of repeat purchases, and foster customer loyalty [32].

Table 3 presents the five most co-cited authors in cluster one.

**Table 3.** The top five authors of Cluster 1.

Article	Authors	Journal	Total Citations (in WoS Core Collection)	Methodology
Harnessing the Influence of Social Proof in Online Shopping: The Effect of Electronic Word of Mouth on Sales of Digital Microproducts	Amblee & Bui [9]	International Journal of Electronic Commerce	299	Quantitative analysis
Mobile Shopper Marketing: Key Issues, Current Insights, and Future Research Avenues	Shankar et al. [6]	Journal of Interactive Marketing	187	Qualitative analysis
Understanding how Millennial shoppers decide what to buy Digitally connected unseen journeys	Hall et al. [5]	International Journal of Retail & Distribution Management	94	Quantitative analysis
The value of information in an online consumer electronics market	Baye et al. [28]	Journal of Public Policy and Marketing	43	Quantitative analysis
Online Cash-back Shopping: Implications for Consumers and e-Businesses	Ho et al. [32]	Information Systems Research	38	Qualitative analysis

### Cluster 2—Engagement Strategies in a Virtual Environment

Cluster 2, composed of 14 articles, includes three of the ten most cited articles and predominantly features quantitative studies. This cluster (green) explores various aspects of consumer behavior and digital marketing strategies in e-commerce environments, addressing the quality of digital services, emerging technologies such as augmented reality (AR), the influence of behavioral advertising, and the importance of digital sensory marketing.

Online strategies such as behaviorally targeted ads are used as implicit social labels to maintain closer consumer relationships [14]. When consumers perceive these ads to be highly personalized and individually targeted, they can trigger behavioral responses that reinforce social conformity or generate resistance to these social labels. Hence, such strategies influence consumers’ self-perceptions and, consequently, their purchase intentions [14]. Consumers who want to interact with an e-commerce platform must perceive it as offering quality service (e-service quality), which requires considering the accuracy and relevance of the information provided [33]. Specific service quality attributes, such as ease of use, reliability, security, and personalization, significantly impact consumer satisfaction and loyalty on e-commerce platforms [33].

Another approach to increasing consumer interaction is to use digital sensory marketing techniques, which employ new technologies to create multisensory online experiences [3]. Developing digital environments incorporating high-quality images, sounds, videos, and even tactile and olfactory simulations can enhance consumer engagement and satisfaction, providing a more immersive and differentiated shopping experience [3]. This aligns with the findings of Gatter et al. [34] and Park & Yoo [1] on the crucial role of interactivity and realism provided by technologies such as AR in enhancing the online shopping experience.

Gatter et al. [34] highlight that AR can create a sense of physical presence that simulates the touch experience in a virtual environment, increasing satisfaction and purchase intention. Similarly, Park and Yoo [1] examined the effects of perceived interactivity in AR experiences and how these affect consumer responses, such as engagement and purchase in-

tion. The study concluded that immersive interactive experiences, such as those offered by AR, can strengthen consumers' emotional and cognitive connections with products [1].

Therefore, implementing advanced technologies, such as AR and digital sensory marketing, can significantly improve perceived service quality, providing positive experiences that increase consumer interaction, satisfaction, and retention [33].

Table 4 presents the five most co-cited authors in cluster two.

**Table 4.** The top five authors of Cluster 2.

Article	Authors	Journal	Total Citations (in WoS Core Collection)	Methodology
Digital Sensory Marketing: Integrating New Technologies Into Multisensory Online Experience	Petit et al. [3]	Journal of Interactive Marketing	240	Qualitative analysis
Effects of perceived interactivity of augmented reality on consumer responses: A mental imagery perspective	Park & Yoo [1]	Journal of Retailing and Consumer Services	160	Quantitative analysis
An Audience of One: Behaviorally Targeted Ads as Implied Social Labels	Summers et al. [14]	Journal of Consumer Research	89	Quantitative analysis
Can augmented reality satisfy consumers' need for touch?	Gatter et al. [34]	Psychology and Marketing	56	Quantitative analysis
E-service quality and e-retailers: Attribute-based multidimensional scaling	Kalia & Paul [33]	Computers in Human Behavior	89	Quantitative analysis

### Cluster 3—Factors Influencing Online Consumer Decisions and Digital Strategies

Cluster 3 (blue) contains 13 articles, of which only one among the top five most cited is based on a qualitative analysis. This cluster focuses on understanding consumer behavior and decision-making processes in digital and online environments. To this end, factors such as attitudes, emotional involvement, purchase intentions, and consumer satisfaction were analyzed in these contexts. In addition, the cluster discusses e-commerce strategies to understand consumers better and build closer relationships with them.

Studies by Chang [13] and Akhlaq & Ahmed [35] explored the cognitive and emotional factors influencing consumer attitudes toward online shopping. Analyzing consumers' intrinsic and extrinsic motivations is crucial as it helps to understand their needs and demands. Cognitive trust is the foundation for attracting and retaining customers, with utility value (intrinsic motivation) being the main influencing factor. However, other aspects also affect consumers' purchase intentions in digital environments, such as ease of use, security [13], trust, convenience, perceived security, social influence, and facilitating conditions [35]. Therefore, companies should develop strategies to enhance the security, quality, and quantity of information on their websites (extrinsic motivations) and provide a dynamic presentation of products with relevant information to increase consumers' hedonic value [13]. An essential aspect to consider is aesthetics, as it can increase purchase intention and contribute to brand recall, especially in information-saturated digital environments [15]. According to Dennis et al. [36], another effective e-commerce strategy is "digital nudging", which involves subtle persuasion techniques, such as specific numbers and words. Thus, consumer choices are influenced by awareness. However, this strategy must be applied ethically, transparently, and in a manner that respects consumer autonomy [36]. These engagement experiences allow customers to strengthen the link between satisfaction and loyalty [12,15]. Therefore, companies must develop robust engagement strategies to foster customer loyalty and trust in digital environments to ensure a safe and convenient online shopping experience [12,35].

Table 5 presents the five most co-cited authors in cluster three.

**Table 5.** The top five authors of Cluster 3.

Article	Authors	Journal	Total Citations (in WoS Core Collection)	Methodology
The mediation of cognitive attitude for online shopping	Chang et al. [13]	Information Technology and People	78	Quantitative analysis
The moderating role of customer engagement experiences in customer satisfaction-loyalty relationship	Thakur [12]	European Journal of Marketing	67	Quantitative analysis
Digital commerce in emerging economies Factors associated with online shopping intentions in Pakistan	Akhlaq & Ahmed [35]	International Journal of Emerging Markets	53	Quantitative analysis
Imagery makes social media captivating! Aesthetic value in a consumer-as-value-maximizer framework	Aljukhadar et al. [15]	Journal of Research in Interactive Marketing	45	Qualitative analysis
Digital Nudging: Numeric and Semantic Priming in E-Commerce	Dennis et al. [36]	Journal of Management Information Systems	30	Quantitative analysis

#### Cluster 4—E-Commerce in the Era of Social and Technological Change

Cluster 4, highlighted in orange in the figure, comprises 13 articles that primarily use quantitative methodologies to explore the impact of factors such as emotions, social networks, and social isolation (e.g., caused by COVID-19) on consumer behavior in e-commerce environments. This cluster also examined how technology influences online shopping and consumer purchase intentions.

The COVID-19 pandemic has significantly reshaped consumer buying behavior globally [2]. In particular, social isolation has driven changes in online shopping behavior [2,7]. Consumer resources and involvement in social media have a strong correlation with increased e-commerce activities due to information sharing, social trust, and consumer and business interactions [7]. However, technology adoption and use in online shopping are still influenced by digital skills, attitudes toward technology, and social support, especially among older adults [37]. According to Erjavec & Manfreda [2], herd behavior, in which individuals tend to follow the actions of others, has been a notable trend during the pandemic. This suggests that companies must be aware of and respond to this tendency, as digital platforms directly affect online purchasing decisions [7].

Furthermore, emotions are critical in influencing purchase intentions in personalized e-commerce settings. As Pappas et al. [11] point out, personalization, message quality, and targeted recommendations are key factors in persuading consumers to purchase online. In this sense, businesses need to understand the diverse needs of consumers and develop specific strategies tailored to different segments, including personalized offers and communication, to succeed in this environment. Technologies must be adapted to meet these needs by providing tailored shopping experiences [38]. Such marketing strategies help create an emotional balance by generating positive emotions that enhance purchase intentions while avoiding negative emotions that could deter them [11].

By leveraging insights from this cluster, companies can better understand the evolving dynamics of consumer behavior in digital environments, especially during times of social upheaval, and craft more effective e-commerce strategies.

Table 6 presents the five most co-cited authors in cluster four.

#### Cluster 5—Innovative Approaches to Digital Consumer Engagement

Cluster 5 (purple), composed of ten articles, analyzes how consumers interact with different shopping channels, both online and offline, and how these interactions influence their purchasing decisions. This cluster also addresses issues related to digital transformation, technological advancements, and psychological factors that shape and redefine purchasing behaviors and intentions in digital contexts.

**Table 6.** The top five authors of Cluster 4.

Article	Authors	Journal	Total Citations (in WoS Core Collection)	Methodology
Online shopping adoption during COVID-19 and social isolation: Extending the UTAUT model with herd behavior	Erjavec & Manfreda [2]	Journal of Retailing and Consumer Services	107	Quantitative analysis
Sense and sensibility in personalized e-commerce: How emotions rebalance the purchase intentions of persuaded customers	Pappas et al. [11]	Psychology & Marketing	60	Quantitative analysis
The use of mobile technology for online shopping and entertainment among older adults in Finland	Kuoppamäki et al. [37]	Telematics and Informatics	55	Quantitative analysis
Analyzing the impact of social networks and social behavior on electronic business during COVID-19 pandemic	Luo [7]	Information Processing & Management	21	Quantitative analysis
What help do you need for your fashion shopping? A typology of curated fashion shoppers based on shopping motivations	Sebald & Jacob [38]	European Management Journal	20	Quantitative analysis

According to Agrawal [39], it is crucial to analyze generational differences and preferences to understand consumer behavior in digital environments. Credibility, the amount and quality of information, and electronic word of mouth (eWOM) significantly impact the purchase intentions of younger consumers [40]. While Generation Z (post-millennials) tends to be more motivated by convenience and technological innovation, Generation Y (millennials) places more value on the shopping experience and trust in e-commerce platforms [39]. Implementing technologies such as blockchain can provide greater transparency and security, reduce fraud, increase trust in digital transactions, and reinforce the need for effective online reputation management [40,41].

Moreover, the type of product purchased influences the decision to buy online or offline. For instance, in the case of fresh food, many consumers prefer to buy from physical stores because of their perceived quality. However, factors such as convenience, variety, and personalized online experiences can increase the acceptance of digital platforms for these purchases [42]. Another interesting aspect highlighted by Zhang et al. [42] is “in-store live streaming”, a strategy combining online and offline shopping experiences that creates a more engaging and informative shopping environment. This innovative approach enhances consumer trust and increases purchase desire even in physical settings by providing an interactive and enriching experience.

Table 7 presents the five most co-cited authors in cluster five.

**Table 7.** The top five authors of Cluster 5.

Article	Authors	Journal	Total Citations (in WoS Core Collection)	Methodology
Determining behavioral differences of Y and Z generational cohorts in online shopping	Agrawal [39]	International Journal of Retail and Distribution Management	35	Quantitative analysis
Is fresh food shopping sticky to retail channels and online platforms? Evidence and implications in the digital era	Wang et al. [42]	Agribusiness	26	Quantitative analysis
Effects of in-store live stream on consumers’ offline purchase intention	Zhang et al. [43]	Journal of Retailing and Consumer Services	25	Quantitative analysis
An Empirical Examination of the Impact of eWom Information on Young Consumers’ Online Purchase Intention: Mediating Role of eWom Information Adoption	Sardar et al. [40]	Sage Open	21	Quantitative analysis
Impulse purchases during emergency situations: exploring permission marketing and the role of blockchain	Nigam et al. [41]	Industrial Management & Data Systems	14	Qualitative analysis

### Cluster 6—Digital Transformation and Cross-Channel Shopping Behavior

Cluster 6 (purple) is the smallest, comprising nine articles. This cluster focuses on multichannel and omnichannel shopping experiences and explores how consumers navigate between online and offline channels. Additionally, the adoption of technologies to enhance the shopping experience was examined.

Consumer buying behavior is changing in response to innovations and the growth of online channels [44]. Virtual alternatives are currently attractive substitutes, especially for those who prefer large shopping baskets, as online channels are still not fully available for smaller baskets [44]. It is crucial to understand how customers shop, particularly why they switch between online and offline stores and the increasing use of digital devices like smartphones and tablets [45]. According to Willems et al. [31], companies should strategically use technologies such as beacons, interactive displays, and mobile apps to enhance consumer engagement and sales effectiveness. Therefore, the omnichannel approach is a strategy that should not be overlooked by companies [45], as consumers are increasingly adopting it throughout their shopping journey [46], helping to create an integrated and personalized shopping experience [31]. Brand familiarity, personalization, perceived value, and technological readiness influence the omnichannel experience [45]. Consequently, consumers’ online shopping experiences are affected and shaped by using various devices and digital formats [18]. Because consumers interact with multiple touchpoints, companies should treat all channels in an integrated manner to provide a seamless and cohesive shopping experience [18,45,46]. As customers become more willing to use in-store innovations for unique shopping experiences, companies increasingly utilize advanced in-store systems, such as inventory management technologies, RFID, and customer data integration [46]. E-channels such as E-commerce, Mobile-commerce, Internet-enabled TV Commerce (IETV), and complementary commerce are also being used to meet the diverse needs of consumers [18]. This, in turn, can improve service quality perception, enhance brand image, and boost customer loyalty [45,46].

Table 8 presents the five most co-cited authors in cluster six.

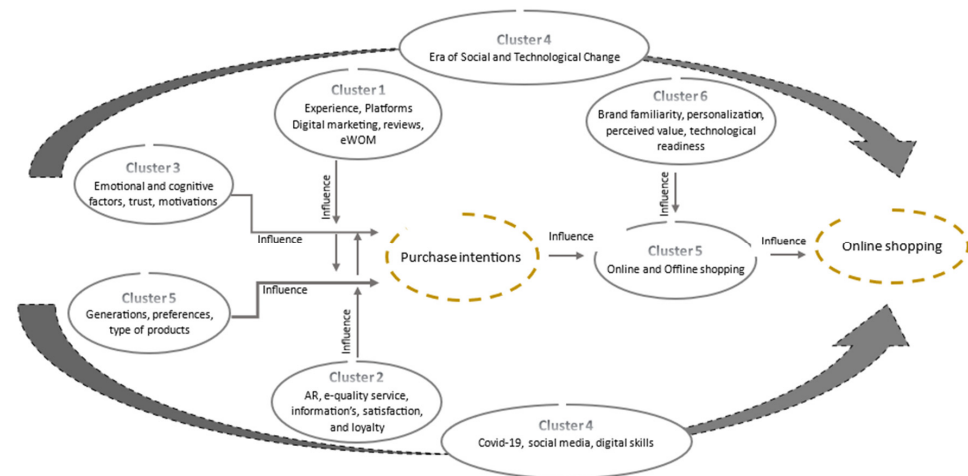
**Table 8.** The top five authors of Cluster 6.

Article	Authors	Journal	Total Citations (in WoS Core Collection)	Methodology
The path-to-purchase is paved with digital opportunities: An inventory of shopper-oriented retail technologies	Willems et al. [31]	Technological Forecasting and Social Change	97	Qualitative analysis
Online retailing across e-channels and e-channel touchpoints: Empirical studies of consumer behavior in the multichannel e-commerce environment	Wagner et al. [18]	Journal of Business Research	95	Quantitative analysis
Technology adoption for the integration of online-offline purchasing Omnichannel strategies in the retail environment	Savastano et al. [46]	International Journal of Retail & Distribution Management	75	Qualitative analysis
An omnichannel approach to retailing: demystifying and identifying the factors influencing an omnichannel experience	Hickman et al. [45]	International Review of Retail, Distribution and Consumer Research	60	Quantitative analysis
Development of joint models for channel, store, and travel mode choice: Grocery shopping in London	Suel & Polak [44]	Transportation Research Part A: Policy and Practice	50	Quantitative analysis

## 4. Conceptual Framework and Future Research Agenda

The different bibliometric analyses allow an understanding of the trends in the literature on the impact of digital marketing on consumer behavior in online shopping. The results obtained with the various techniques complement and corroborate the systematiza-

tion of the literature, allowing the development of an integrative framework (Figure 9) and articulating the main themes found in the literature.



**Figure 9.** An integrative framework of the impact of digital marketing on consumer behavior in online shopping.

The integrative framework illustrates how clusters can be systematized and inter-related. Cluster 1 focuses on consumer behavior in online shopping environments and its implications for digital business and marketing strategies. This cluster examines how consumers use information, the impact of recommendations (eWOM), the use of different platforms, and the overall digital shopping journey. Future studies should explore the distinction between eWOM from close connections, like friends and family, in social networks versus eWOM from strangers, whether they are experts or casual, unknown shoppers [9]. Companies that understand and effectively leverage these dynamics can develop more targeted digital marketing strategies to maximize consumer engagement and loyalty in the digital realm. As every consumer is unique, future research should investigate how to create appealing shopping experiences based on customers' emotional states [6].

Cluster 2 investigates digital and technological strategies to enhance the online shopping experience and consumer behavior. It covers topics ranging from augmented reality (AR) and service quality to sensory marketing and personalized ads. The synergy between these approaches offers valuable insights for companies seeking to develop innovative and effective digital marketing strategies to drive greater consumer engagement and loyalty. Future research could explore additional sources of implied social labels beyond behaviorally targeted advertisements in this context. For instance, word-of-mouth recommendations from friends or compliments from salespeople can also serve as implied social labels [14]. Additionally, to provide consumers with a unique and memorable online shopping experience, further research is required to analyze and create more pleasant and informative multisensory experiences [3].

Cluster 3 provides a deeper understanding of how various digital marketing strategies, psychological factors, and technological tools influence consumer behavior in e-commerce and online environments. Understanding consumer motivations, needs, and expectations is essential for developing strategies to engage, satisfy, and foster loyalty. As every consumer is unique, future studies would benefit from exploring purchasing intentions across different countries, enabling a better understanding of the cultural factors to consider [13]. Further, digital technologies significantly impact online consumer behavior, and more research is needed to understand how different digital stimuli affect purchasing behavior in e-commerce settings [36].



The studies in Cluster 4 address consumer behavior in e-commerce environments, focusing on the social, emotional, and technological factors that influence purchase decisions. Given the constantly evolving nature of consumers, it would be valuable to investigate more detailed aspects of emotions, particularly their relationship with different online shopping platforms and strategies, and how emotions impact customer retention and acquisition [11]. Moreover, this cluster explored digital adaptation across demographics, the impact of personalization, herd behavior, and the role of social media in driving e-commerce. However, to gain more intercultural insights, further studies should conduct comparative analyses to examine the impact of different platforms and digital technologies on consumers' motivation during online shopping [38].

Cluster 5 emphasizes the importance of understanding interactions across shopping channels and the variables influencing consumer choices in an increasingly digital world. Future research should investigate live-streaming influencer marketing for various products, considering their specific characteristics and different national contexts [43]. In addition, marketing and sales strategies must be continuously adapted to align with the evolving expectations of modern consumers. Future research should also examine the impact of digital strategies, such as eWOM, across different social media platforms on consumer purchasing intentions [40].

Cluster 6 analyzes the influence of online and offline shopping channels on consumer behavior and the impact of omnichannel strategies and technologies on enhancing the shopping experience. Comparative quantitative studies (e.g., surveys or field experiments) could explore consumer perspectives on omnichannel shopping, differentiating between hedonic and utilitarian orientations, to better evaluate and quantify customer value perceptions in this emerging management strategy [46]. The integration of technologies to create a seamless shopping experience is a growing focus of companies in the digital age. Given the globalized nature of commerce, each culture has its own unique characteristics. Future research should investigate whether Internet-enabled devices, e-channels, and electronic touchpoints differ across countries, cultures, and industries [18].

To analyze the framework and understand the impact of digital marketing on consumers' online purchasing behavior, it is essential first to identify key consumer characteristics, preferences (Cluster 5), and the emotional, cognitive, and motivational factors (Cluster 3) driving purchase intentions. These purchasing intentions, formed by consumer attitudes and cognitive and emotional processes, are fundamental to defining the probability of purchasing a product or service. Factors such as motivation, preference, and attitude towards a product significantly influence the consumer's purchasing propensity, regardless of the channel, thus establishing a deep relation with clusters 3 and 5. Online shopping represents current purchasing behavior, referring to purchasing a product or service through digital platforms. Behavior and purchase intention determine the choice of channel. Once a purchase is made online, the consumer's subsequent experiences in that environment—such as satisfaction, feedback, or dissatisfaction—impact future purchase intentions and shape consumer preferences, creating a continuous cycle of influence. Additionally, companies must develop targeted strategies tailored to the digital environment (Cluster 2) and incorporate advanced digital marketing techniques (Cluster 1). In today's rapidly evolving social and technological landscape (Cluster 4), consumers often face challenges deciding between online and offline purchasing options. To address this, companies must create engaging and unique online shopping experiences by leveraging multiple digital platforms and prioritizing brand familiarity, personalization, and perceived value (Cluster 6). This comprehensive approach fosters consumer engagement, satisfaction, and long-term loyalty.

Table 9 summarizes the future research agenda for each cluster.

**Table 9.** Future research agenda.

Cluster/Theme	Future Research Suggestions
Cluster (1): Digital Consumer Behavior and E-Commerce Dynamics	<ul style="list-style-type: none"> <li>- Future studies should explore the distinction between eWOM from close connections, like friends and family, in social networks versus eWOM from strangers, whether they are experts or casual, unknown shoppers [9].</li> <li>- Future research should investigate how to create appealing shopping experiences based on customers’ emotional states [6].</li> </ul>
Cluster (2): Engagement Strategies in a Virtual Environment	<ul style="list-style-type: none"> <li>- Future research could explore other sources for implied social labels in addition to behaviorally targeted ads. For example, word-of-mouth recommendations from friends and compliments from salespeople can both likely act as implied social labels [14].</li> <li>- Further research is still needed to create more enjoyable and informative multisensory experiences for the consumer [3].</li> </ul>
Cluster (3): Factors Influencing Online Consumer Decisions and Digital Strategies	<ul style="list-style-type: none"> <li>- Future research investigates the consumer purchase intention of different countries to learn about the purchase intention of different cultures [13].</li> <li>- More research has been developed to understand how different digital stimuli (priming and other digital nudges) affect purchasing behavior in e-commerce settings [36].</li> </ul>
Cluster (4): E-Commerce in the Era of Social and Technological Change	<ul style="list-style-type: none"> <li>- Future studies should investigate more detailed aspects of emotions, particularly their relationship with different online shopping platforms and strategies, and how emotions impact customer retention and acquisition [11].</li> <li>- Further studies should conduct comparative analyses to examine the impact of different platforms and digital technologies on consumers’ motivational reasons during online shopping [38].</li> </ul>
Cluster (5): Innovative Approaches to Digital Consumer Engagement	<ul style="list-style-type: none"> <li>- Future research should investigate live-streaming influencer marketing for various products, considering their specific characteristics and different national contexts [43].</li> <li>- Future research should examine the impact of digital strategies such as eWOM across different social media platforms on consumer purchasing intentions [40].</li> </ul>
Cluster (6): Digital Transformation and Cross-Channel Shopping Behavior	<ul style="list-style-type: none"> <li>- Comparative quantitative studies (e.g., surveys or field experiments) could explore consumer perspectives on omnichannel shopping, differentiating between hedonic and utilitarian orientations to better evaluate and quantify customer value perceptions in this emerging management strategy [46].</li> <li>- Future research should investigate whether internet-enabled devices, e-channels, and electronic touchpoints differ across countries, cultures, or industries [18].</li> </ul>

However, in addition to the research questions associated with each cluster, some additional questions can be raised to investigate online shopping behavior based on general research trends. Consequently, further research should be conducted to examine the extent to which sustainable technologies influence purchasing, i.e., the adoption of sustainable practices regarding e-commerce on consumer perceptions, particularly sustainable marketing. At the same time, an analysis of the influence of sensory stimuli would also be beneficial. It is crucial to consider visual design, sound, and interactivity concerning digital platforms in consumer experience and purchase intention. Since markets are global, cultural differences about consumer behavior in e-commerce must be explored and studied, and the focus must be adapted to how marketing strategies must be changed to achieve global markets. Finally, as the market is increasingly dynamic, future longitudinal studies should be developed to monitor and analyze changes in online purchasing preferences over time, especially in contexts of rapid technological advances.

### 5. Limitations and Conclusions

This study is an SLR about the impact of digital marketing in online shopping, in which, through a bibliometric analysis, six thematic groups (clusters) were identified: (1) Digital Consumer Behavior and E-Commerce Dynamics, (2) Engagement Strategies in a Virtual Environment, (3) Factors Influencing Online Consumer Decisions and Digital Strategies,

(4) E-Commerce in the Era of Social and Technological Change, (5) Innovative Approaches to Digital Consumer Engagement, and (6) Digital Transformation and Cross-Channel Shopping Behavior.

This study makes significant contributions to the literature on the impact of digital marketing on consumers' online purchasing behavior through the systematization of central themes, the illustration of the interconnectedness of research areas via an integrative framework, and the identification of potential future research avenues.

This study highlights the complexity of consumer behavior in the digital era, particularly when shopping online, where digital platforms and techniques play a pivotal role in meeting consumer needs and fostering loyalty. Using time-saving tools like digital platforms and personalized and simplified user interfaces significantly impacts and simplifies the complexity of online purchasing decisions. This is crucial because understanding consumer behavior is vital for companies and brands, with satisfaction being a key factor in fostering repeat behavior and loyalty. This approach helps build trust and emotional connections between consumers and brands [47].

Analyzing consumer reactions, attention, and interest are fundamental in the selection process. These reactions are influenced by website aesthetics, personalized recommendations, and intuitive interfaces, which create a positive shopping experience and increase trust in the platform [48]. Additionally, the influence of some strategies like social networks and electronic word of mouth (eWOM) cannot be overlooked, as they significantly shape consumers' purchase intentions. These emotional and relational aspects are essential to understanding consumer behavior in the digital age, where trust and perceived value are essential for loyalty. The relationship between satisfaction, trust, and emotional connection presents new opportunities for digital marketing research, emphasizing the potential of emerging digital technologies—like artificial intelligence, blockchain, and augmented reality—in influencing consumer behavior [1,3]. These technologies improve real-time feedback collection, precise targeting, and personalized delivery, significantly affecting consumer decision-making processes. Gaining deeper insights into how consumers react to digital stimuli and how their behaviors change allows marketers to develop strategies centered around the consumer and driven by innovation. Additionally, integrating and connecting various research fields, such as psychology, marketing, and information systems, can provide valuable opportunities for expanding knowledge. The collaboration between these areas can facilitate further development.

Although bibliometric analysis can be a valuable tool for mapping research trends, it has limitations. More recent and innovative studies may be overlooked due to the fewer citations. This aspect comes from the time needed to accumulate impact, while older studies may dominate the analysis, regardless of their current relevance. On the other hand, this type of analysis is effective for identifying patterns and connections, but it is unsuitable for determining causal relationships or explaining why specific patterns emerge.

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