Social Media: A Bibliometric Analysis

Siska Maharani, Anisa Lutpiani, Adi Setiawan*

Universitas Swadaya Gunung Jati, Indonesia

Corresponding author Email: a.setiawan28@gmail.com

Abstract

This research discusses the development and role of social media in modern life, especially Within digital marketing and consumer behavior. Social media, defined as internet-based platforms that enable user creation and exchange of content, has experienced a rise from 2003 to 2013, with significant influence on communication, social interaction, and business strategy. The method used in this study is bibliometric analysis with VOSviewer software, which maps data from scholarly articles published in leading journals such as Elsevier, Emerald, Springer, Willey, Sagepub, and Taylor. Data was collected using Publish or Perish software with specific keywords related to social media, digital marketing, and consumer behavior. From the bibliometric analysis, 1,550 articles with 4,961 keywords were found and analyzed using co-occurrence and co-authorship methods, resulting in 111 specific keywords divided into 11 clusters. The study revealed the importance of social media in building customer-business relationships, the influence of the power of social ties on consumer behavior, and the role of social media in developing effective marketing strategies. The research also identifies author collaborations in social media-related studies and shows how research trends and patterns evolve. The findings provide deep insights into the use of social media in modern marketing strategies. They can form the basis for further research development in management, business, and digital marketing. The findings of this study offer valuable contributions to the academic and professional understanding of social media. They serve as a foundational reference for future research aiming to explore the strategic applications of social media in business, the psychology of online consumer engagement, and the technological advancements that continue to reshape digital communications. The study also provides insights into the evolution of research patterns, visualizing how scholarly focus has shifted from early platforms like MySpace and Flickr to contemporary and emerging platforms such as YouTube, TikTok, and Instagram. Using overlay visualization and keyword density maps, the research identifies recent trends and research gaps, highlighting areas that require further academic exploration. For instance, the dominance of "YouTube" in recent literature indicates a growing interest in multimedia marketing, influencer culture, and community-driven content. At the same time, some topics, such as mobile-integrated social platforms, remain underexplored.

Keywords: Social Media, Digital Marketing, Consumer Behavior, Bibliometric Analysis, Marketing Strategy.

1. Introduction

Social media has become an effective platform for business activities. Social media allows companies to interact directly with customers, promote products or services, and increase brand awareness. Additionally, social media enables companies to build communities and enhance customer loyalty. Business activities on social media can also help increase visibility and sales. By utilizing features such as advertising and promotions, companies can reach a broader target audience and raise awareness of their products or services. Furthermore, social media allows companies to collect customer feedback and improve the quality of their products or services.

Social media has become essential to business marketing strategy in today's digital era. Companies that effectively utilize social media can increase brand awareness, boost sales, and build loyal communities. Therefore, companies must understand how to use social media effectively to achieve their business goals.

The life of modern society is greatly influenced by progress in information and communication technology. The emergence of social media as a platform for interaction and mass communication is one of the most prominent phenomena. Social media has become essential to everyday life, allowing people to share information, interact with others, and form communities.

Social media is a digital platform that allows people to share content, interact, and communicate through the internet, such as blogs, discussion forums, and messaging applications. Some examples of popular social media platforms include Facebook, Instagram, Twitter, TikTok, and YouTube. Social media has continued to evolve and become an essential part of digital life since the 1990s with the emergence of platforms such as Bulletin Board System (BBS) and Prodigy. However, in the early 2000s, modern platforms such as Facebook, Friendster, and MySpace emerged.

Social media has many benefits, such as allowing people to communicate and interact, sharing information and knowledge, helping to build networks and communities, and providing opportunities to promote goods and services. In addition, social media can also be used as a tool to monitor public opinion, analyze consumer behavior, and develop marketing strategies.

Social media has significant effects, both positive and negative. Positive effects include more opportunities for social interaction, more communication, and helping to build communities. Adverse effects include the spread of misinformation, online harassment, and dependence on technology. This study aims to see how social media affects consumer behavior, find out how social media affects society, and find effective marketing strategies through social media. The results of this study are expected to help develop digital marketing strategies and increase our understanding of the role of social media in modern life.

2. Literature Review

Social media is "a group of Internet-based applications built on the ideological and technological foundations of Web 2.0 that enable the creation and exchange of user-generated content". Social media has played an essential role in several social phenomena and epidemics. With its ability to disseminate information widely and quickly over large geographical areas, social media has become a highly influential tool. The development of Emerging social media platforms has become a fast-growing And highly lucrative industry Despite its unpredictable and highly competitive nature [1]. In addition, various industries have begun to recognize the importance of social media as a new communication, marketing, and sales channel, so many companies have started to integrate and invest in social media. Theoretically, social media has a significant meaning [2][3].

The history Concerning social media, from its early platforms, Including platforms like AOL and LiveJournal, to newer platforms like Blab and Meerkat, shows that social networking technology is not a Temporary trend. The advent of social media and mobile devices has transformed interactions between individuals into digital value networks [4]. In platforms such as Facebook, Twitter, and LinkedIn, online communities such as PatientLikeMe and Apple enthusiast communities, as well as mobile applications such as Airbnb, Waze, and Line, the integration of resources through interactions between individuals is a key component in the creation of shared value. Such behavior is increasingly common in cyberspace, including social media platforms allowing customers to network, create, modify or share their knowledge.".

In the context of dominant service Service-Dominant Logic (SDL) marketing, individual customers serve as the primary providers of operational Assets in business-consumer interactions and become Key participants in the value co-creation ecosystem [5]. The primary motivation for Utilizing social media is sharing resources like information and knowledge and expressing opinions on diverse topics [6]. More than Forty percent of social media users participate in online information-sharing activities with others.

Engagement on social media through likes, shares, and comments has emerged as a gatekeeping influence for audiences, enabling researchers to assess audience behavior. Acceptance Social media facilitates interactions with varying degrees of emotional intensity and intimacy, supporting networks of strong and weak ties [7].

Social media users hold a position of authority: their role as an Engaged audience is growing in significance for disseminating information across digital networks; social media is evolving into a valuable marketing tool for achieving specific strategic business objectives. In this context, we offer a theoretical foundation for social media from a strategic marketing standpoint. Despite widespread understanding among marketers of the need to engage customers on social media platforms, relatively few companies can strategize their social media presence and engagement properly [8].

Despite the challenges, the development of new social media platforms is an auspicious opportunity. In addition, businesses that do not have social media platforms can utilize the space available on various social media platforms to promote their products, services, or brands. This is partly because social media literature primarily derives from elements from different fields, such as marketing, management, consumer psychology, and computer science.

Table 1. External Stimulus Factors

Factor	Description	Reference
Digital Marketing	Digital marketing can be identified as direct marketing that connects buyers with sellers electronically through interactive technologies such as email, websites, social networks, online forums, newsgroups, television, mobile communications, etc.	[9]
Future of marketing	The future of marketing is the expansion of the service sector. The service sector has been continuously growing as a percentage of the economy in every developed country since around 1900.	[10]
Social network	Social networks, such as Facebook and LinkedIn, are platforms for sharing information and networking with people who share similar interests. Users can create personal profiles and interact online.	[11][12][13]
Web 2.0	Web 2.0 is the second-generation web that emphasizes user participation, interaction, and collaboration with technologies such as RSS and podcasting.	[14][15]
User-generated Content	Social media services such as blogs, microblogging services (Twitter), wiki-based applications	[12]

Factor	Description	Reference
	(Wikipedia), and resource-sharing services (YouTube) are just a few examples of applications that allow users to create content, annotate it, and share it with their (personal) network. In turn, friends and contacts can comment on the shared content and communicate this way. Such interactions allow communities to form and grow.	
Facebook	Facebook is a social network where users share text, pictures, videos, and feelings and build relationships.	[16][17][18]
Twitter	Twitter is a microblogging platform founded in 2006 for sharing short messages of up to 140 characters, called "tweets."	[19][20][21]
Linkedin	LinkedIn is the largest professional network on the internet, connecting colleagues for discussion, sharing interests, and providing recruitment and advertising services.	[22] [23]
Youtube	YouTube is a video-sharing platform founded in 2005 that allows users to upload, watch, comment on videos, and subscribe to channels.	([16]; [24]; [22]
Brand Community	Brand communities are groups of socially connected fans, both in person and online, to support and build loyalty to a brand.	[6] [25][26]
Brand Trust	Brand trust is the willingness of consumers to rely on the brand's ability to perform its functions as promised.	[27] [28] [29]
Brand Loyalty	Brand loyalty is a commitment to continue to buy a brand consistently, regardless of the situation or choice of other brands.	[27] [30]
Customer Centric Model	Brand communities on social media influence customer relationships and brand loyalty.	[31]
Brand Engagement	Brand engagement is the level of interaction and psychological connection of consumers with the brand, which includes thoughts, emotions, and behaviors, as well as driving interest, commitment, and relationships with the brand.	[32][28]
Brand Communication	Brand communication on social media is defined as a subset of brand-related communication "distributed through social media that allows internet users to access, share, engage with, add to, and co-create."	[33]
Brand Relationship Quality	Brand relationship quality is how strongly consumers feel the brand is a satisfying partner in a long-term relationship.	[34]
Multimedia	Multimedia that supports storytelling and can be shared across multiple platforms.	[35][36]
Communication Technologies	Communication technologies are various technologies used to process and convey information, including in the field of transportation since the 1980s.	[37]
Knowledge Management	Knowledge management involves identifying, creating, storing, organizing, and disseminating knowledge.	[38] [39]
Communities	Communities are individuals with shared experiences, needs, and ideas closely connected in social networks such as clusters or subgroups.	[12] [40]

3. Research Methods

This research utilizes a qualitative approach with a historical perspective to explore social media research's development, patterns, and mapping. The research process was carried out in two phases. The first phase systematically gathered data from articles published in prominent international journals. In the second phase, the collected articles were analyzed using bibliometric techniques, focusing on extracting and interpreting data from article titles and abstracts. This analysis aids in understanding recent advancements in social media research and offers valuable insights for identifying relevant themes.

3.1. Collecting Data Method

The data collection process involved gathering research articles from a selection of top academic journal publishers, including 1) Elsevier, 2) Emerald, 3) Springer, 4) Wiley, 5) Sage Publications, and 6) Taylor & Francis. These articles were sourced from the accessible databases of these six publisher groups. The search for relevant articles was conducted using the Publish or Perish (PoP) software, which aids in identifying publications related to specific research topics. The data collection followed these steps:

1. The search was restricted to articles published between 1984 and 2025.
2. The primary keyword used for the search was ['Social Media'].
3. The search criteria included five different keyword combinations. The first combination was ["digital marketing; future of marketing"]. The second combination. ["social network; Web 2.0; user-generated content; facebook; twitter; linkdln; youtube"]. The third combination ["brand community; brand trust; brand loyalty; customer centric mode"]. The fourth combination ["social media; brand engagement; brand communication; brand relationship quality"]. Fifth combination ["Multimedia; communication technologies knowledge management; communities"].
4. Furthermore, The research articles gathered through this software were filtered based on language, with only those written in English being considered. The chosen articles were obtained solely from esteemed journals.
5. The search was restricted to journal articles in management, business, economics, social sciences, information science, and entrepreneurship. This study did not include data from conference proceedings, meeting summaries, and books.
6. The selected articles for analysis were assessed for thoroughness, ensuring they contained essential elements such as a "title," "abstract," and "keywords."
7. Additional criteria for selecting articles included the presence of a DOI, the Journal of publication, the publisher, the article URL, the number of citations, GS Ranking, Cites Per Year, Cites Per Author, and Author Count.

One thousand five hundred fifty articles were collected using the Publish or Perish software between 1984 and 2025, based on a combination of search titles and keywords, as detailed in Table 2.

Table 2. Article Search Combinations and Corresponding Results

Title	Keywords	Amount
Social Media	Digital marketing, the future of marketing	286 Article
Social Media	Social networking, Web 2.0, User-generated content, Facebook, Twitter, LinkedIn, YouTube	150 Article
Social media	Brand community, Brand trust, Brand loyalty, Customer-centered fashion	460 Article
Social Media	Social media, Brand Engagement, Brand involvement, Brand communication, Brand relationship quality	124 Article
Social Media	Multimedia, communication technology, knowledge management, community	374 Article

3.2. Analysis Data Method

Bibliometric analysis using the VOSviewer application. The results of the study show a bibliographic map related to social media. Bibliometric analysis produces bibliographic data maps and text extracted from the titles and abstracts of selected articles. The results of this analysis are used to map and develop reference studies. This scientific mapping is done to analyze trends and patterns in the research development conducted with the results of research studies on Social media. VOSviewer is the material used to research scientific articles that have been published, and it can visualize networks equipped with cluster labeling. However, this means that VOSviewer can provide insight into research and research updates and the extent to which research in this field has taken place.

The output of VOSviewer includes a network map based on the most critical coincidence data and a very detailed keyword relevance. The network visualization and keyword map are shown in different colors for each data cluster, making understanding the relationship between concepts easier. However, this application shows an overlay network that illustrates the development of articles. This overlay network visualizes the range of years each keyword is related, which is shown in a dynamic network. The visualization of the overlay network can assess the level of advancement in research within the field of social media marketing. VOSviewer also provides density visualizations that show the high or low frequency of the concept or construct under study. With this, the tool presents valuable information for researchers to understand trends and dynamics in scientific research.

4. Results and Discussions

4.1. Number of Publication Years

The early 1984s marked a significant turning point in the development of social media, as the swift rise of platforms like Facebook, Twitter, Instagram, and YouTube established a new digital interaction ecosystem. This trend grew as smartphone technology made connecting directly with social media platforms easier for the public. This significant technology change significantly affects various aspects of social and business life. It has dramatically influenced how people interact, communicate, and conduct transactions. As a result, this phenomenon has motivated numerous researchers to study social media as the central theme in articles or as research keywords. Based on the search, 1,550 articles were published between 1984 and 2025, as shown in Table 3.

Table 3. Number of Publication Years 1984-2025.

Year	Publication Year	Year	Publication Year
1984	1	2013	100
1987	1	2014	87
1991	2	2015	123
1995	1	2016	130
1999	1	2017	110
2001	3	2018	163

2003	1	2019	105
2004	1	2020	127
2005	2	2021	126
2007	2	2022	111
2008	2	2023	100
2009	6	2024	90
2010	18	2025	1
2011	58	TOTAL	1.550
2012	78		

From 2003 to 2013, there will be an increase in the number of social media users. Social media is regarded as the ideal platform for everyday interactions. All individuals, communities, and organizations must be able to use social media to communicate and network. More and more challenges are emerging due to technological developments and ever-changing user behavior. In the world of social media, the only choice is Social media. As a result, Scholars and professionals across various fields continue to research social media to comprehend, anticipate, and enhance its utilization in the modern era.

4.2. Author Analysis

The author's analysis uses the Google Scholar (GS) ranking. GS has the same function as Thomson ISI Web of Knowledge, which produces Journal Impact Factors (JIF). The JIF assesses the impact factor of the article.[41]. GS found other available articles, and we performed additional searches by checking the included publication citations from the initial broad database search.

Table 4. Active Publications by the Year 1984-2025

Author Name	Title	GS rank
G Barbier, H Liu (2011)	Data mining on social media	980
VJ Garcia-Morales, R Martín-Rojas (2018)	The influence of social media technology on organizational performance through knowledge and innovation	979
X Chen, S Wang, Y Tang, T Hao (2018)	Bibliometric analysis of event detection on social media	977
EWT Ngai, KK Moon, SS Lam, ESK Chin (2015)	Social media models, technologies, and applications: an academic review and case study	976
LY Hua, T Ramayah, TA Ping (2017)	Social media as a travel destination selection tool: The case of Malaysia	976
A Cavalcante (2020)	Plunged into a strange utopia and vortex: The experiences of LGBTQ social media users on Tumblr	975
ECX Aw, LI Labrecque2020	Celebrity support in the context of social media: understanding the role of parasocial interactions and the need to belong to a community.	974
JH Lipschultz (2016)	Adrienne L. Massanari, Social Networks: Redefining Communication in the Digital Age, by Anastacia Kurylo and Tatyana Dumova (Eds.), Social Media and the Social	974
R Rauniar, G Rawski, J Yang (2014)	The technology acceptance model (TAM) and social media usage: an empirical study on Facebook	973
MA Moreno, YT Uhls (2019)	Applying the affordances approach and developmental perspective to address adolescent social media use	972
NK Baym (2015)	Social Media and Community Struggle	971
S Song, HY Kim (2022)	Is social media marketing beneficial for luxury brands? The dual impact of brand page satisfaction and brand love on word-of-mouth loyalty intentions and attitudes	970
(D Jeske, KS Shultz 2016)	Using social media content for screening in recruitment and selection: pros and cons	969
RN Bolton, A Parasuraman, A Hoefnagels (2013)	Understanding Generation Y and their use of social media: a review and research agenda	968
C Oh, Y Roumani, JK Nwankpa, HF Hu (2017)	Beyond likes and tweets: Consumer engagement behavior and movie box	967

Author Name	Title	GS rank
	office on social media	
R Baird (2022)	Youth and social media: the benefits and challenges of online graffiti practice	967
M Oliveira, T Fernandes (2022)	Luxury brands and social media: drivers and outcomes of consumer engagement on Instagram	966
M Clark, HG Black, K Judson (2017)	Brand community integration and satisfaction with social media sites: a comparative study	965
M Gómez, C Lopez, A Molina (2019)	Integrated model of social media brand engagement	964
R Agnihotri, R Dingus, MY Hu, MT Krush (2016)	Social media: Influencing customer satisfaction in B2B sales	963
AJ Kim, E Ko (2010)	The Impact of Luxury Fashion Brand's social media marketing on customer relationships and purchase intentions	962
P Gerbaudo, E Treré (2015)	Searching for 'us' in social media activism: introduction to the special issue on social media and protest identities	961
TM Chen (2021)	Automatic content classification on social media platforms	961
H Reinikainen, TM Tan, V Luoma-Aho, J Salo (2021)	Building and breaking relationships on social media: the impact of brand betrayal and influencers	960
M Yarchi, C Baden, N Kligler-Vilenchik (2021)	Political polarization in the digital realm: A cross-platform and over-time analysis of interactional, positional, and affective polarization in social media	958

GS ranking can be seen from the author's contribution to producing articles yearly. Based on the data collected, 36 authors actively write. Table 5 discusses the authors contributing articles each year by looking at the GS rank. Table 5 shows the authors' contribution to producing articles each year.[41].

4.3. Citation Analysis

Citation analysis reveals the number of articles referenced or cited by other researchers, providing insight into their academic influence. From 2003 to 2013, there will be an increase. The rapid development of social media brings new challenges to contemporary business management. To remain relevant and competitive, business managers must be able to adapt to the dynamics of change. The high commitment of scientists and practitioners to continue to develop knowledge about digital marketing strategies, customer interactions, and online reputation management to solve problems that arise in the social media ecosystem is part of an effort to improve this adaptability. As shown in Table 5, *Cakrawala Bisnis* is the Journal with the most publications on social media.

Table 5. Leading authors and most-cited articles in social media research.

Author's Name	Title	Frequency of Cities
AM Kaplan, M Haenlein (2010)	Business horizon	35.732
JH Kietzmann, K Hermkens, IP McCarthy, BS Silvestre (2011)	Business horizon	9.359
AJ Kim, E Ko (2012)	Journal of Business Research	4.502
YK Dwivedi, E Ismagilova, DL Hughes (2021)	International Journal	2.797
PR Berthon, LF Pitt, K Plangger, D Shapiro (2012)	Business horizon	2.429
KK Kapoor, K Tamilmani, NP Rana, P Patil (2018)	Information Systems	1.887
C Lamberton, AT Stephen (2016)	Marketing journal	1.747
B Schivinski, D Dabrowski (2016)	Journal of Marketing Communication	1.734
MTPMB Tiago, JMC Veríssimo (2014)	Business horizon	1.613
R Rauniar, G Rawski, J Yang (2014)	Information management	1.586
A Kumar, R Bezawada, R Rishika (2016)	Marketing journal	1.564

Author's Name	Title	Frequency of Cities
AA Alalwan (2018)	International Journal of Information Management	1.397
LI Labrecque (2014)	Interactive marketing journal	1.319
C Greenhow, C Lewin (2019)	Social media and education	1.146
RW Naylor, CP Lamberton, PM West (2012)	Marketing journal	998
RS Ebrahim (2020)	Journal of Relationship Marketing	899
E Constantinides, MC Zinck Stagno (2011)	Marketing journal	625
J Wolny, C Mueller (2013)	Marketing management journal	606
L Dessart (2017)	Marketing management journal	547
J Paniagua, J Sapena (2014)	Business horizon	515
R Odoom, T Anning-Dorson (2017)	Information management	444
MR Habibi, M Laroche, MO Richard (2014)	Journal of Information Management	428
XW Wang, YM Cao, C Park (2019)	Jurnal Informasi Internasional	325
R Effing, TAM Spil (2016)	International Journal of Information Management	288
M Mayrhofer, J Matthes, S Einwiller (2020)	International Journal	283

4.4. Bibliometric Analysis

Bibliometric analysis helps researchers map and find out the extent of the development of researchers related to social media. This will allow researchers to identify relevant and current research themes or variables, thus clarifying the potential impact of research if it is developed.

The co-authorship analysis reveals connections between authors and their collaborators. The results indicate that researchers work together on social media-related studies, as illustrated in Figure 1. YK Dwivedi collaborates with other authors. Two research teams worked on two articles published by YK Dwivedi. Likewise, NP Rana and KK Kapoor have authored two articles, each published by separate research teams.
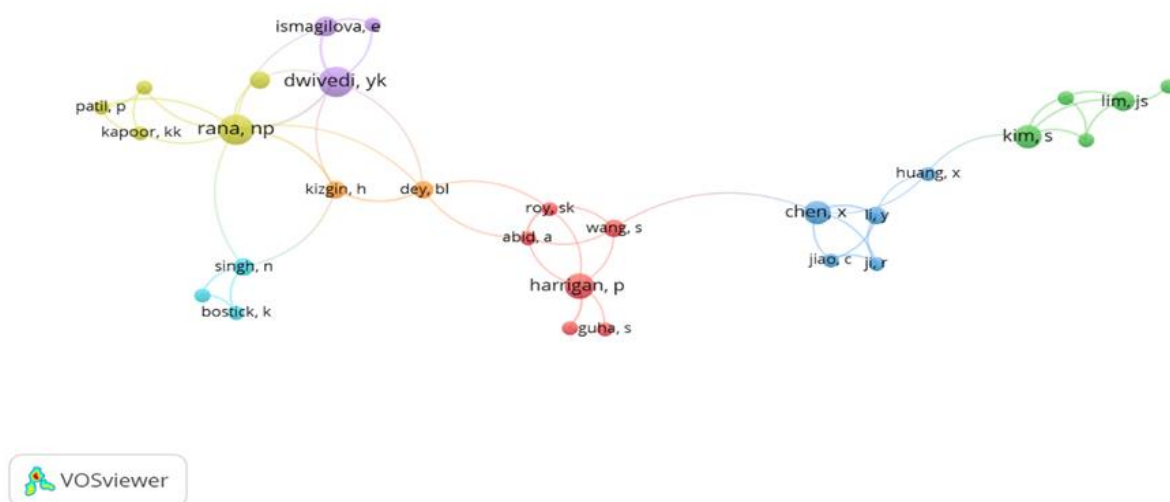

Fig 1. Author Network

The collaboration among the authors demonstrates a strong commitment to ongoing research on social media. Table 6 presents the research titles of the authors involved in these studies.

Table 6. Author Collaboration

Author	Tittle
JS Lim, P Pham, JH Heinrichs (2020)	The impact of social media activity results on brand equity
JH Heinrichs, JS Lim, KS Lim (2011)	The influence of social networking sites and user access methods on social media evaluation
JS Lim, YC Hwang, S Kim, FA Biocca (2015)	How social media engagement leads to sports channel loyalty: The mediating role of social presence and channel commitment
H Hwang, KO Kim (2015)	Social media as a social movement tool: The influence of social media use and social capital on the intention to participate in social movements
X Chen, X Shen, X Huang, Y Li (2021)	Research on social media content marketing: An empirical analysis based on 10 Chinese metropolitan cities for Korean brands
ZJ Huang, MS Lin, J Chen (2024)	Co-created tourism experiences on social media
X Chen, C Jiao, R Ji, Y Li (2021)	Examining customer motivation and its impact on customer engagement behavior in social media: the mediating effect of brand experience.
X Chen, S Wang, Y Tang, T Hao (2018)	Bibliometric analysis of event detection on social media.
A Abid, P Harrigan, S Wang, SK Roy (2023)	Social media in politics: How to drive engagement and strengthen relationships.
P Harrigan, G Soutar (2015)	Modeling CRM in the age of social media
S Guha, P Harrigan, G Soutar (2018)	Linking social media with customer relationship management (CRM): a qualitative study on SMEs
H Kizgin, A Jamal, BL Dey, NP Rana (2018)	The impact of social media on acculturation and consumer purchase intentions
H Kizgin, BL Dey, YK Dwivedi, L Hughes (2020)	The impact of social media on consumer Acculturation: Challenges, opportunities, and current research and practice agenda
N Singh, K Lehnert, K Bostick (2012)	Use of global social media: Insights for reaching consumers around the world
YK Dwivedi, E Ismagilova, DL Hughes (2021)	Defining the future of social media and digital marketing research: Perspectives and research proposals
AA Alalwan (2018)	Investigating the impact of social media advertising features on customer purchase intentions.
R Algharabat, NP Rana, AA Alalwan (2020)	Investigating the Antecedents of customer brand engagement and consumer-based brand equity in social media
KK Kapoor, K Tamilmani, NP Rana, P Patil (2018)	Advances in social media research: Past, present and future

Using VOSviewer for co-occurrence analysis, the study identified 111 keywords associated with social media. A minimum occurrence threshold of three was set to refine the keyword analysis from titles and abstracts. Following this criterion, 4,961 keywords were identified and grouped into 11 clusters, as presented in Table 7.

Table 7. Keyword Clustering

Cluster	Keywords
Cluster 1	Brand awareness, brand community, brand engagement, brand equity, brand interactivity, brand involvement, brand loyalty, brand relationship quality, brand trust, consumer brand engagement, consumer involvement, consumers, emotions, online brand community, smi, smm, social media brand engagement, social media environment, social media interaction, social media engagement, social media marketing, brand page, branded content, customer participation, digital advertising, digital marketer, health promotion, social capital, social marketing, social media advertising, social media advertising, social media brand communication, social media context, social media impact, social media usage, user participation, virtual brand community, digital natives, social media of the future, influencer, influencer marketing, marketing communication, marketing tool, online advertising, online marketing, online marketing strategy, social media influencer, social media influencer, social media integration, social media page, social media practice, TikTok, computer, delicious, digital, digital marketing, digital marketing community, Flickr, information communication
Cluster 2	A brand page, branded content, customer participation, digital advertising, digital marketing, health promotion, social capital, social marketing, social media advertising, social media advertising, social media brand communication, social media context, social media impact, social media usage, user participation, virtual brand community

Cluster	Keywords
Cluster 3	Digital natives, social media of the future, influencer, influencer marketing, marketing communications, marketing tools, online advertising, online marketing, online marketing strategy, social media influencer, social media influencers, social media integration, social media page, social media practice, TikTok
Cluster 4	Computer, tasty, digital, digital marketing, digital marketing community, flickr, information, communication, internet marketing, line, mobile marketing, mobile social media, new social media, social interaction, social media apps
Cluster 5	Co-creation, communication technology, community members, content sites, followers, friends, higher education market, information exchange, myspace, SNS, social media engagement, social media era, social support, YouTube videos
Cluster 6	Community building, digital media, digital technology, Linked, networking, new communication technology, online social media, social media adoption, social media research, social media strategy, YouTube channel
Cluster 7	Linked, microblog, popular sites, Tumblr, Twitter, wiki, Wikipedia, YouTube
Cluster 8	Online social networks on Pinterest, social influencers
Cluster 9	Brand communication, social media metrics framework, UGC, WhatsApp
Cluster 10	Snapchat
Cluster 11	Tweet

The Network Visualization Analysis results display multiple small nodes representing keywords identified through the analysis, as shown in Figure 2. This visualization highlights the presence of significant research gaps. Further studies on social media are essential to bridge these gaps. For instance, the digital node "YouTube" has yet to be linked to the digital model node "mobile social medium." Further studies are required to clarify the causality of each node. The explanation of the causal relationship generated by this research will generate scientific knowledge that can help us understand, explain, and optimize the impact of social media in various fields.
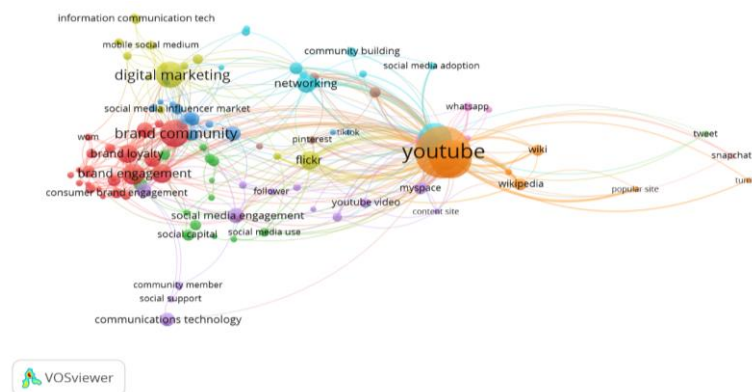

Fig 2. Publication of Network Visualization in Social Media

Figure 2 presents a network visualization generated using VOSviewer software, illustrating the connections between terms associated with digital marketing, social media, and online platforms. Each node within the network signifies a specific term or concept, while the edges show the relationship or connection between two terms based on the data analyzed. The size of the nodes reflects the frequency or importance of the term, with larger nodes such as "YouTube" being the primary focus in this network. Different colors on the nodes indicate clustering, i.e., groups of terms with a strong relationship. In this visualization, "YouTube" stands out as the central hub that is closely connected to terms such as "brand engagement," "social media engagement," "networking," and other platforms such as "TikTok," "Wikipedia," and "Snapchat." This shows YouTube's central role in social media and digital marketing as a platform to build communities, increase user engagement, and support digital marketing activities. Other clusters, such as "brand community" and "social media influencer market," strongly focus on user interaction and engagement in the digital world. This visualization illustrates the importance of the interconnection of digital platforms in shaping modern marketing strategies.
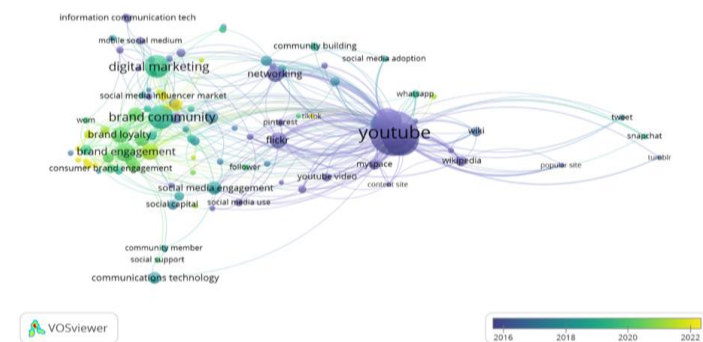

Fig 3. Visualization of Overlays in Social Media Publications

Figure 3 visualizes the network map generated using VOSviewer software. This map illustrates the interconnections and relationships among different keywords or concepts in research related to social media, digital marketing, and brand communities. In this visualization, the size of each node (sphere) indicates the frequency or importance of a keyword in the research data. In contrast, the color of the nodes represents groups or clusters based on topic relatedness. For example, the keyword "YouTube" dominates as the leading center in the map, with many connections to other terms such as "brand community," "social media engagement," and "networking," indicating the critical role of the platform in social media studies.

Additionally, the color gradient from blue to yellow along the timeline shows the evolution of topics from 2016 to 2022. Blue represents terms that were more commonly discussed in the earlier years, whereas yellow signifies terms that have gained prominence or relevance in recent years. For example, "TikTok" and "social media influencer market" appear in yellow, reflecting the increasing popularity and attention to new platforms and modern marketing strategies. In contrast, terms like "Myspace" or "Flickr" are closer to blue, indicating a decline in relevance in recent years. This map provides valuable insights into the trends and dynamics in social media research and digital communications.
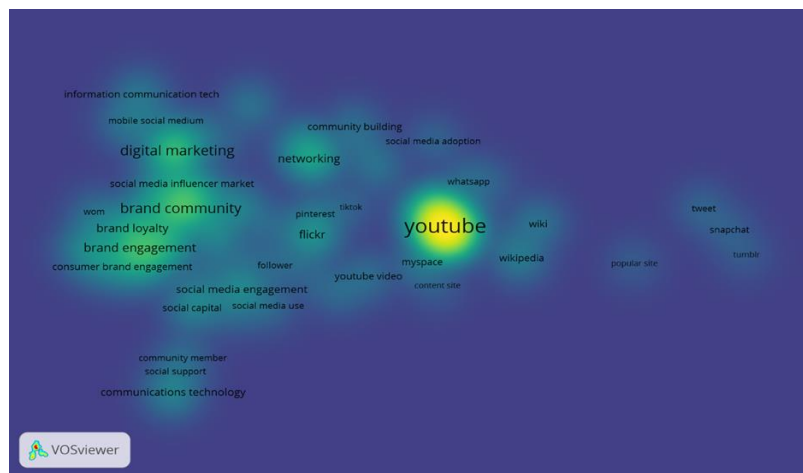

Fig 4. Visualization of Density in Social Media Publication

Figure 4 shows research related to social media, primarily associated with YouTube. This condition can be seen from the focus on yellow in the input density visualization. The colors that emerge from each theme or variable tend to be darker. In other words, relatively few publications explore this subtheme; this finding aligns with both the network visualization analysis and the overlay visualization results, highlighting the significance of studying social media, particularly focusing on YouTube. This research will help in the scientific preparation and development of scientific knowledge related to social media.

A heatmap visualization generated with VOSviewer software illustrates the intensity of relationships between keywords in research related to social media, digital marketing, and brand community engagement. Bright spots in yellow indicate a higher concentration or importance of keywords in the data, while blue represents a lower intensity. In this case, the keyword "YouTube" is at the center with a bright yellow highlight, indicating the dominance of this topic in the research network over other terms such as "brand community," "social media engagement," or "digital marketing." The image above is a heatmap visualization generated with VOSviewer software, illustrating the intensity of relationships between keywords in research related to social media, digital marketing, and brand community engagement. Bright yellow dots indicate a higher concentration or importance of keywords in the data, while blue represents a lower intensity. In this case, the keyword "YouTube" is at the center with a bright yellow highlight, indicating the dominance of this topic in the research network over other terms such as "brand community," "social media engagement," or "digital marketing." The image above is a heatmap visualization generated with VOSviewer software, illustrating the intensity of relationships between keywords in research related to social media, digital marketing, and brand community engagement. Bright yellow dots indicate a higher concentration or importance of keywords in the data, while blue represents a lower intensity. In this case, the keyword "YouTube" is centered with a bright yellow highlight, indicating the dominance of this topic in the research network over other terms such as "brand community," "social media engagement," or "digital marketing." The map also provides an overview of keyword clusters based on interrelated themes. Lighter areas indicate the primary focus of research, such as the role of "YouTube" in supporting community building and brand engagement. On the other hand, keywords such as "MySpace," "Flickr," and "Tumblr" are in darker areas, indicating less relevance in current studies. This visualization helps researchers understand priorities and trends in social media-related studies over time.

5. Conclusion

Social media has become an essential part of modern life, with a significant role in communication, social interaction, and digital marketing. In addition to benefits such as expanding social networks and supporting business strategies, social media also has negative impacts, such as the spread of misinformation and technology dependency.

VOSviewer analysis shows that social media significantly influences consumer behavior and marketing strategies. Ongoing research is essential to enhance the utilization of social media across different areas of life.

References

[1]   A. M. Kaplan and M. Haenlein, "Users of the world, unite! The challenges and opportunities of Social Media," *Bus. Horiz.*, vol. 53, no. 1, pp. 59–68, 2010, doi: 10.1016/j.bushor.2009.09.003.
[2]   A. K. Fox and M. B. Royne, "PRIVATE INFORMATION IN A SOCIAL WORLD: ASSESSING CONSUMERS' FEAR AND

UNDERSTANDING OF SOCIAL MEDIA PRIVACY," *J. Mark. Theory Pract.*, vol. 26, no. 1–2, pp. 72–89, Apr. 2018, doi: 10.1080/10696679.2017.1389242.

[3] A. H. Zadeh, M. Zolfagharian, and C. F. Hofacker, "Customer–customer value co-creation in social media: conceptualization and antecedents," *J. Strateg. Mark.*, vol. 27, no. 4, pp. 283–302, May 2019, doi: 10.1080/0965254X.2017.1344289.

[4] R. J. Brodie, L. D. Hollebeek, B. Jurić, and A. Ilić, "Customer engagement: Conceptual domain, fundamental propositions, and implications for research," *J. Serv. Res.*, vol. 14, no. 3, pp. 252–271, 2011, doi: 10.1177/1094670511411703.

[5] S. L. Vargo and R. F. Lusch, "Service-dominant logic: Continuing the evolution," *J. Acad. Mark. Sci.*, vol. 36, no. 1, pp. 1–10, 2008, doi: 10.1007/s11747-007-0069-6.

[6] J. Riley, "Riley, 2020," *J. Glob. Sch. Mark. Sci. Bridg. Asia World*, vol. 30, no. 4, pp. 344–357, 2020, doi: 10.1080/21639159.2020.1766990.

[7] V. García-Perdomo, R. Salaverría, D. K. Kilgo, and S. Harlow, "To Share or Not to Share: The influence of news values and topics on popular social media content in the United States, Brazil, and Argentina," *Journal. Stud.*, vol. 19, no. 8, pp. 1180–1201, Jun. 2018, doi: 10.1080/1461670X.2016.1265896.

[8] F. Li, J. Larimo, and L. C. Leonidou, "Social media marketing strategy: definition, conceptualization, taxonomy, validation, and future agenda," *J. Acad. Mark. Sci.*, vol. 49, no. 1, pp. 51–70, Jan. 2021, doi: 10.1007/s11747-020-00733-3.

[9] S. Purwar, "Digital Marketing: An Effective Tool of Fashion Marketing." [Online]. Available: https://ssrn.com/abstract=3318992

[10] R. T. Rust, "The future of marketing," *Int. J. Res. Mark.*, vol. 37, no. 1, pp. 15–26, Mar. 2020, doi: 10.1016/j.ijresmar.2019.08.002.

[11] E. Alwagait, B. Shahzad, and S. Alim, "Impact of social media usage on students academic performance in Saudi Arabia," *Comput. Human Behav.*, vol. 51, pp. 1092–1097, Oct. 2015, doi: 10.1016/j.chb.2014.09.028.

[12] M. Atzmueller, "Mining social media: Key players, sentiments, and communities," *Wiley Interdiscip. Rev. Data Min. Knowl. Discov.*, vol. 2, no. 5, pp. 411–419, Sep. 2012, doi: 10.1002/widm.1069.

[13] M. Cheng, I. K. A. Wong, S. Wearing, and M. McDonald, "Ecotourism social media initiatives in China," *J. Sustain. Tour.*, vol. 25, no. 3, pp. 416–432, Mar. 2017, doi: 10.1080/09669582.2016.1214141.

[14] E. Bonsón, L. Torres, S. Royo, and F. Flores, "Local e-government 2.0: Social media and corporate transparency in municipalities," *Gov. Inf. Q.*, vol. 29, no. 2, pp. 123–132, Apr. 2012, doi: 10.1016/j.giq.2011.10.001.

[15] E. Bonsón and F. Flores, "Social media and corporate dialogue: The response of global financial institutions," *Online Inf. Rev.*, vol. 35, no. 1, pp. 34–49, 2011, doi: 10.1108/14684521111113579.

[16] K. M. Carley, M. Malik, P. M. Landwehr, J. Pfeffer, and M. Kowalchuck, "Crowd sourcing disaster management: The complex nature of Twitter usage in Padang Indonesia," *Saf. Sci.*, vol. 90, pp. 48–61, Dec. 2016, doi: 10.1016/j.ssci.2016.04.002.

[17] S. Rai, "Engaging Young Employees (Gen Y) in a Social Media Dominated World – Review and Retrospection," *Procedia - Soc. Behav. Sci.*, vol. 37, pp. 257–266, 2012, doi: 10.1016/j.sbspro.2012.03.292.

[18] R. Rauniar, G. Rawski, J. Yang, and B. Johnson, "Technology acceptance model (TAM) and social media usage: An empirical study on Facebook," *J. Enterp. Inf. Manag.*, vol. 27, no. 1, pp. 6–30, 2014, doi: 10.1108/JEIM-04-2012-0011.

[19] M. Bishop, "Healthcare Social Media for Consumer Informatics," in *Consumer Informatics and Digital Health: Solutions for Health and Health Care*, Springer International Publishing, 2019, pp. 61–86. doi: 10.1007/978-3-319-96906-0_4.

[20] A. Hermida, F. Fletcher, D. Korell, and D. Logan, "SHARE, LIKE, RECOMMEND: Decoding the social media news consumer," *Journal. Stud.*, vol. 13, no. 5–6, pp. 815–824, 2012, doi: 10.1080/1461670X.2012.664430.

[21] D. E. O'leary, "THE USE OF SOCIAL MEDIA IN THE SUPPLY CHAIN: SURVEY AND EXTENSIONS," *Intell. Syst. Accounting, Financ. Manag.*, vol. 18, no. 2–3, pp. 121–144, Apr. 2011, doi: 10.1002/isaf.327.

[22] C. T. Lee and S. H. Hsieh, "Can social media-based brand communities build brand relationships? Examining the effect of community engagement on brand love," *Behav. Inf. Technol.*, vol. 41, no. 6, pp. 1270–1285, 2022, doi: 10.1080/0144929X.2021.1872704.

[23] A. M. Munar and J. K. S. Jacobsen, "Trust and Involvement in Tourism Social Media and Web-Based Travel Information Sources," *Scand. J. Hosp. Tour.*, vol. 13, no. 1, pp. 1–19, Apr. 2013, doi: 10.1080/15022250.2013.764511.

[24] C. T. Carr and R. A. Hayes, "Social Media: Defining, Developing, and Divining," *Atl. J. Commun.*, vol. 23, no. 1, pp. 46–65, Jan. 2015, doi: 10.1080/15456870.2015.972282.

[25] P. Seargeant and C. Tagg, "Introduction: The language of social media."

[26] C. Stohl, M. Etter, S. Banghart, and D. J. Woo, "Social Media Policies: Implications for Contemporary Notions of Corporate Social Responsibility," *J. Bus. Ethics*, vol. 142, no. 3, pp. 413–436, May 2017, doi: 10.1007/s10551-015-2743-9.

[27] J. Chae, D. Thom, Y. Jang, S. Kim, T. Ertl, and D. S. Ebert, "Public behavior response analysis in disaster events utilizing visual analytics of microblog data," *Comput. Graph.*, vol. 38, no. 1, pp. 51–60, 2014, doi: 10.1016/j.cag.2013.10.008.

[28] M. Oliveira and T. Fernandes, "Luxury brands and social media: drivers and outcomes of consumer engagement on Instagram," *J. Strateg. Mark.*, vol. 30, no. 4, pp. 389–407, 2022, doi: 10.1080/0965254X.2020.1777459.

[29] Ş. B. Tatar and İ. Eren-Erdoğmuş, "The effect of social media marketing on brand trust and brand loyalty for hotels," *Inf. Technol. Tour.*, vol. 16, no. 3, pp. 249–263, Sep. 2016, doi: 10.1007/s40558-015-0048-6.

[30] R. Russell-Bennett and J. Parkinson, "loyalty (brand loyalty)," 2014.

[31] E. Meriglier, O. Debouverie, A. Walter-Lepage, A. Brigaud, C. Beuvon, and L. Luca, "Un syndrome cérébelleux révélant un syndrome de Gougerot-Sjögren primitif," Sep. 01, 2015, *Elsevier Masson SAS*. doi: 10.1016/j.neurol.2015.03.009.

[32] R. Huerta-Álvarez, J. J. Cambra-Fierro, and M. Fuentes-Blasco, "The interplay between social media communication, brand equity and brand engagement in tourist destinations: An analysis in an emerging economy," *J. Destin. Mark. Manag.*, vol. 16, Jun. 2020, doi: 10.1016/j.jdmm.2020.100413.

[33] H. A. M. Voorveld, "Brand Communication in Social Media: A Research Agenda," *J. Advert.*, vol. 48, no. 1, pp. 14–26, Jan. 2019, doi: 10.1080/00913367.2019.1588808.

[34] Z. Chen, C. C. Su, and A. Chen, "Top-down or Bottom-up? A Network Agenda-setting Study of Chinese Nationalism on Social Media," *J. Broadcast. Electron. Media*, vol. 63, no. 3, pp. 512–533, Jul. 2019, doi: 10.1080/08838151.2019.1653104.

[35] J. Bronstein, N. Aharony, and J. Bar-Ilan, "Politicians' use of Facebook during elections: Use of emotionally-based discourse, personalization, social media engagement and vividness," *Aslib J. Inf. Manag.*, vol. 70, no. 5, pp. 551–572, Oct. 2018, doi: 10.1108/AJIM-03-2018-0067.

[36] F. Tiago, J. Couto, S. Faria, and T. Borges-Tiago, "Cruise tourism: social media content and network structures," *Tour. Rev.*, vol.

73, no. 4, pp. 433–447, Oct. 2018, doi: 10.1108/TR-10-2017-0155.

[37] G. A. Giannopoulos, "The application of information and communication technologies in transport," *Eur. J. Oper. Res.*, vol. 152, no. 2, pp. 302–320, Jan. 2004, doi: 10.1016/S0377-2217(03)00026-2.

[38] J. Hemsley and R. M. Mason, "Knowledge and Knowledge Management in the Social Media Age," Jan. 2013. doi: 10.1080/10919392.2013.748614.

[39] M. Zulean and G. Prelipcean, "Emergency preparedness in romania: Dynamics, shortcomings and policy proposals," *Technol. Forecast. Soc. Change*, vol. 80, no. 9, pp. 1714–1724, Nov. 2013, doi: 10.1016/j.techfore.2012.11.004.

[40] E. Djonov and T. Van Leeuwen, "Social media as semiotic technology and social practice: the case of ResearchGate's design and its potential to transform social practice," *Soc. Semiot.*, vol. 28, no. 5, pp. 641–664, Oct. 2018, doi: 10.1080/10350330.2018.1504715.

[41] A. Setiawan, M. Y. Mahadianto, M. Alwi, and B. A. Prasetya, "Mapping The Knowledge Domains of Digital Transformation Publications: A Bibliometric Analysis," 2024, pp. 440–457. doi: 10.2991/978-94-6463-443-3_58.