

Bashar, Abu, Wasiq, Mohammad,
Nyagadza, Brighton ORCID logoORCID: <https://orcid.org/0000-0001-7226-0635> and Maziriri, Eugene Tafadzwa (2024) Emerging trends in social media marketing: a retrospective review using data mining and bibliometric analysis. Future Business Journal, 10 (23).

Downloaded from: <https://ray.yorks.ac.uk/id/eprint/10296/>

The version presented here may differ from the published version or version of record. If you intend to cite from the work you are advised to consult the publisher's version:

<https://doi.org/10.1186/s43093-024-00308-6>

Research at York St John (RaY) is an institutional repository. It supports the principles of open access by making the research outputs of the University available in digital form. Copyright of the items stored in RaY reside with the authors and/or other copyright owners. Users may access full text items free of charge, and may download a copy for private study or non-commercial research. For further reuse terms, see licence terms governing individual outputs. [Institutional Repository Policy Statement](#)

RaY

Research at the University of York St John

For more information please contact RaY at ray@yorks.ac.uk

RESEARCH

Open Access



Emerging trends in social media marketing: a retrospective review using data mining and bibliometric analysis

Abu Bashar¹, Mohammad Wasiq², Brighton Nyagadza^{3,4*}  and Eugene Tafadzwa Maziriri⁵

Abstract

The study conducts a comprehensive retrospective analysis of the social media marketing literature along with text mining and bibliometric analysis using data obtained from the Scopus database. The analysis is conducted for the literature published during 2007–2022 using VOSviewer application and Biblioshiny. The analysis revealed the publication trend and emerging themes in the research landscape of social media marketing. This study has pointed towards important theoretical and practical implications pertaining to the social media marketing. It contributes to the understanding of social media marketing research by identifying and listing the best journal, authors, country, documents, most occurred words, social and intellectual structure, and emerging research trends. The results revealed that social media marketing research is at the focal point of the researchers throughout the word. This study found that there are lack of studies from firm perspective especially small retailers; adoption of disruptive technologies such as AI, ML and block chain and its impact need more exploration.

Keywords Social media marketing, Bibliometrics, VOSviewer, Biblioshiny, Social media networks, Social media platforms, Marketing tools

Introduction

The term social media came in limelight in the early 1990s, and now, it became an inseparable entity of almost every individual having an estimated 2 billion+ active users globally [24]. Social media is a dorm of computer-based programme that allows users to connect, create and share information and exchange views and ideas via specific virtual communities and groups (Aydin 2020).

The advancement in technology especially mobile applications and cloud-based analytics had enabled firms to offer and connect to their customers in real time. The proliferation of e-commerce web and mobile applications gives rise to the tremendous growth of social media networks and has transformed the ways of communication between business and consumers who generally shares common interests and demographics [144]. Social media marketing can be regarded as a form of online marketing, and it has seen manifold growth in the recent past. The marketers are leveraging on social media platform to reach, interact, offer, and transact with their probable customers.

Many firms and brands are relying on the word-of-mouth marketing, and social media had played instrumental role in spreading word of mouth among their customers in a rapid manner that was never before. Additionally, the firms are leveraging social media network platform to expand globally [144]. Social media

*Correspondence:

Brighton Nyagadza
brightonnyagadza@gmail.com

¹ School of Management, IMS Unison University, Dehradun, India

² College of Administration and Financial Sciences, Saudi Electronic University, Riyadh, Saudi Arabia

³ Department of Marketing, Marondera University of Agricultural Sciences and Technology (MUAST), Marondera, Zimbabwe

⁴ Institute for the Future Knowledge (IFK), University of Johannesburg (UJ), Johannesburg, South Africa

⁵ Department of Management and Entrepreneurship, University of the Western Cape, Bellville, South Africa

has influenced the way consumers were searching for information, evaluating them, and making purchase decision. Moreover, social media became an inseparable integral part of businesses to sustain in this digital disruptive world. The accessibility, ease of use, real-time bound activities and global reach have made social media as a unique marketing tool. Social media enables firm to create a virtual unique platform to mark their online presence, communicate with their target customers and engage with them to increase their revenue [90]. The increasing importance of social media as a marketing tool has attracted scholars especially researchers in the domain of online buying behaviour in the last decade. Therefore, existing literature on social media marketing is being continuously reviewed by scholars to understand the current trends and suggest the future directions. In recent years, researchers have studied the importance of social media in marketing from various aspects of its application. Few of the important bibliometric studies on social media marketing are mainly focussing on the social networks and platforms. Social media platforms and its role in the evolution and performance of social enterprise conducted by revealed that proper social media strategy is not only helping in increasing revenue and profitability, but also fostering confidence among the consumers. Similarly, bibliometric analysis on the pattern of co-creation, influencers, sentiments and stock market predictions and interactive digital marketing in the context of social media is conducted over the recent few years.

None of the current studies have focussed on the overall role, i.e. integrating and analysing studies focussed on behavioural intentions, impulse purchases, customer engagement, customer loyalty and recommender management of social media in the marketing landscape. The recent advancement in the mobile-based applications had forced the organizations to adopt marketing tools which are readily available to the consumers in real time [13]. This study is an attempt to gather quality articles pertaining to the marketing applications of social media and analyse its effectiveness as a marketing tool. This article will help the academicians to have a holistic idea about the research trends in social media marketing that will prove conducive to design marketing strategies for industry practitioners. To the best of our knowledge, such comprehensive review of social media as a marketing tool has never been conducted.

The rest of the article is organized as follows. The next section is based on the review of literature. The research methodology adopted for this study is described in section “[methods](#)”. Section “[Results](#)” is based on the data analysis and its interpretation, while limitations

of this study and future research directions are presented in section “[Discussion](#)”. Conclusion is made in section “[Conclusions](#)”.

Review of literature

The current trends of the marketing research in the social media domain predicts that the traditional marketing is going to be entirely disrupted by the adoption of social media-based marketing. The marketing activities such as advertising, promotional programmes and branding seem to be entirely designed and applied using social media tools [144]. Social media adoption is on rise because of its wide presence in the masses and its easiness of access and operate. Therefore, social media became the first choice of the marketers to promote their products and services to reach to their target audience [39].

Social media is a specialized software application that connect people in an online environment, where they can interact with each other, share contents and their feedback in the relevant groups about their experiences with a brand or organization [137]. The marketers realized the importance of social media marketing and started using them as an integral part of their overall marketing strategies [89]. Social media platforms enable consumers to freely interact with their fellow users on these applications and discuss openly about the advantages or disadvantages of the products [20, 80]. So, marketers look at social media as an opportunity to build their brand image and positively position their products in the mind of their target audience [123]. The word of mouth of the consumers is also of great concern for the firms, as it may harm the brand positioning if not managed in an appropriate manner [141].

Various social media platforms such as Facebook, Twitter, Instagram, Snapchat and LinkedIn are being used by companies based on their target audience and the products they promote. As noted by [74], Snapchat is more favourite among youths, LinkedIn is more useful for reaching to mature professionals, so the marketers are selecting the platforms that suits their marketing strategy. The literatures shows that social media users are reacting more on interactive advertising rather than informational one, and it promotes interactions and cultivates the in-group messaging among the users of a particular social media platform [11].

The synthesis of the recent literatures reveals that opinion leader is playing a crucial role around the online space, so the organizations need to select carefully their leaders who can foster confidence about the firm and positive image of the brands [25]. Moreover, content is the bone of the social media marketing, and marketers need to carefully select, design and present to their

markets. The emotional appeals in the messaging and overall content have been found more influential as customers have responded more often as compared to any other appeals in the social media marketing space [92, 109]. In a similar study, it has been found that consumers are finding live videos streaming more trustworthy and authentic as compared to pre-recorded videos [23].

Therefore, it can be concluded that social media marketing is having a greater impact on the firm, and it can bring variety of positive and negative outcomes. Studies have shown that social media marketing is having positive and substantial impact on the consumer behaviour and especially on consumer retention [52]. The social media marketing efforts also play an important role in shaping the positive purchase intentions [144], brand meaning [58], brand loyalty [128], brand sustainability (X. [142, 143], hotels [76], luxury brands [10], educational institutions [83], brand equity [63], positive electronic word of mouth [87], intention to engage online [127], etc.

Previous review studies on social media marketing and its effectiveness highlighted important aspects of its applications in marketing processes. Review studies have either used a specific database like web of science/Scopus [7, 93] or studied a specific relationship such as brand–consumer interaction [101] in the context of social media marketing. Moreover, previous review studies focussed on specific applications such as evolving trends in Facebook marketing [94], a comprehensive comparative review of social media and social networks [144] and rise of social media in sports [78]. Moreover, previous studies reviewed the influence and effectiveness of social media for a specific sector/industry such as medical [90], tourism [78], hospitality and business-to-business applications as a digital mediation [68]. There is a lack of studies which has comprehensively mapped the marketing applications of social media and measured its effectiveness using bibliometric analysis. This study is an attempt to holistically examine the applications and effectiveness of social media as a marketing tool using state-of-the-art bibliometric analysis.

Methods

The development and probable future trends of a field of study can be analysed using various review techniques that can fulfil the specific objective of research. A systematic literature review (SLR) is conducted to identify, analyse, evaluate and summarize the overall findings of research in a field; it focusses on the methodological approach, theoretical framework, etc. [95]. Meta-analysis is an empirical statistical technique which combines the results of multiple studies on a given problem and then estimate the overall effect and direction of the relationship (Hassan) [14, 48, 86, 104, 106]. While bibliometric

technique is a computer-assisted methodology that helps in measuring performance by identifying the core theme, sub-themes, prolific authors, most influential country, intellectual and social structure of the research [6, 48]. For current study, bibliometric research design is adopted to fulfil the objectives of the study which helps in identifying the major trends in social media marketing using network analysis techniques [135]. It is one of the most used research methods which enables analysis of large volume of data to statistically estimate and visualize the research trends in a particular field of study [103]. This method is widely employed by other researchers in analysis and predicting the future expansion of research in a particular domain of research [12], Hassan, [49, 62, 104, 106].

This review is conducted in two steps; first, the descriptive analysis such as the trend of research publication, best authors and top journals of the social media research is presented and then co-citation and co-occurrence analysis are presented. For descriptive analysis, Biblioshiny applications of R is used; it allows researchers to explore their data and run descriptive analysis and present them in an intuitive tabular and graphic form [5]. While for co-citation and co-occurrence analysis, VOSviewer software application is employed, it is a tool which produce output in network form—the networks are the combinations of various clusters that enables researchers to find the trending themes and sub-themes in a given area of research [126].

Scopus database is used for searching and downloading articles based on the applications of social media in marketing. The TITLE-ABS-KEY was searched using most appropriate keywords pertaining to the application of social media in marketing. The keywords such as “Social media marketing”, “Social networking sites”, “Social media platforms”, “Facebook marketing”, “Social network advertising”, “Social media purchasing”, and “digital marketing using social media” were searched using variety of combinations of Boolean operators (AND/OR) syntax. The inclusion of articles is based on certain criteria such as span of publication during (2007–2022), written in English language, must be either research article or reviews, and most importantly, the main theme of the literature must be on the application of social media as a marketing tool.

First search results in 2753 research articles, which are then carefully investigated for the defined inclusion criteria, book chapters, conference papers, short notes, editorial notes, etc., were removed. Literatures published in languages other than English were removed. Then, the researchers looked at title and abstract of each article to make sure that the central idea of research is based on the aspects of social media as a marketing tool. The final

sample consists of 1232 articles, which then exported in .CSV format for further processing and analysis.

The following table is a snapshot of the data used in this bibliometric analysis.

This dataset consists of 1232 articles out of which 1183 are research articles and 83 reviews articles as presented in Table 1. There are 58,528 references cited in these studies and the average citations per documents stands at 23.23. These papers were published by 562 sources and written by 2953 authors. It is worth noting that 2994 authors have published on social media marketing, while only 173 documents are single-authored, and all other documents are multi-authored. Documents per author is 0.411, while 2.43 authors are there per document; it shows strong collaborations among authors and collaboration index stands at 2.71.

Results

The following section presents the descriptive analysis of data that is conducted using the Biblioshiny application. The .CVS file of the final data was uploaded on web service provided by Biblioshiny called bibliometrix application for further analysis.

Annual publications

The trends of publication over the years are depicted in Fig. 1; it is obvious that this area of research started in the mid of 2000s that signifies the importance of adoption of social media tools for marketing activities. Since then, there have been an exponential increase in the number of publications. From 2015 onwards, there were substantial research for understanding the effectiveness of social media as a marketing tool. As we see that there are

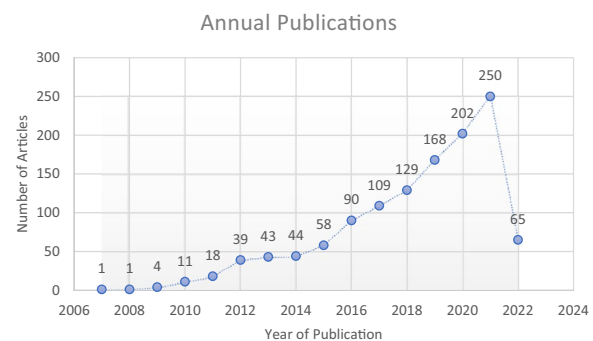


Fig. 1 Annual publication trends in applications of social media in marketing

already 65 articles published by November 2022—at the time of data extraction for this study. The trend shows that there will be continued research efforts to unveil the various aspects of social media marketing that can help marketers to understand consumer behaviour and make winning marketing strategies.

From thematic perspective, the trend can be further classified into themes which have been identified from the analysis. The early age (2000–2009) of social media marketing can be attributed to its application in advertising on social media platforms and network. This era also fuelled the development of customer groups and community where customers can interact and express their views about brands. Adoption of disruptive technologies defines trends from 2010 to 2017; during this period, smart recommendation systems, automatic feedback analysis and grievance redressal mechanisms introduced on social media. The human machine interaction signifies the trends from 2018 till date. The introduction of social robots, integration of augmented and virtual reality, real-time behavioural intelligence and super personalization can be treated as emerging themes.

Table 1 Data characteristics

Timespan	2007:2022
Sources (Journals, Books, etc.)	562
Documents	1232
Average citations per documents	23.23
References	58,528
Article	1183
Review	49
Author's keywords (DE)	2953
Authors	2994
Authors of single-authored documents	173
Authors of multi-authored documents	2821
Documents per author	0.411
Authors per document	2.43
Co-authors per documents	2.88
Collaboration Index	2.71

Influential sources

Table 2 illustrates the most important journals publishing on the applications of social media in marketing. Top 20 journals based on total number of publications along with their total citations, and indices of h, g and m are presented.

The “Journal of Research in Interactive Marketing” is the most productive journal which has published 56 articles and been cited by 1841 times. This journal is the top-notch source in the production and dissemination of research based on interactive marketing. Few of the important themes of this journal over the years are social media influencers [131], personalization [97], adoption of disruptive technologies such as artificial intelligence and machine learning for web personalization [50] and

Table 2 Top 20 Journals

Journals	h_index	g_index	m_index	TC	NP	PY_start
Journal of Research in Interactive Marketing	21	42	2.10	1841	56	2013
Journal of Business Research	16	25	1.45	2207	25	2012
Sustainability (Switzerland)	8	13	1.6	197	20	2018
Journal of Retailing and Consumer Services	10	15	2.00	686	15	2018
Psychology And Marketing	8	11	1.00	738	11	2015
Journal of Global Fashion Marketing	9	11	0.69	516	11	2010
Industrial Marketing Management	9	10	0.75	870	10	2011
Asia Pacific Journal of Marketing and Logistics	8	10	1.33333	321	10	2017
Marketing Intelligence and Planning	7	10	1	280	10	2016
Journal of Interactive Marketing	7	9	0.64	2216	9	2012
International Journal of Internet Marketing and Advertising	5	9	0.45455	127	9	2012
Cogent Business and Management	4	9	0.66667	85	9	2017
Journal of Marketing for Higher Education	7	8	0.875	222	8	2015
Journal of Promotion Management	6	8	0.54545	217	8	2012
Journal of Hospitality and Tourism Technology	7	8	0.7	165	8	2013
Journal of Business and Industrial Marketing	6	8	0.75	163	8	2015
Young Consumers	5	7	0.625	167	7	2015
Journal of Brand Management	6	7	0.85714	154	7	2016
Journal of Consumer Behaviour	6	7	0.75	110	7	2015

“h-index is defined as the maximum value of h such that the given author/journal has published h papers that have each been cited at least h times; **g-index** is calculated based on the distribution of citations received by a given researcher's publications, such that given a set of articles ranked in decreasing order of the number of citations that they received; **m-index** is defined as h/n , where n is the number of years since the first published paper of the scientist; also called m-quotient. TC stands for total citations, NP: Number of papers; PY_Start: Production year started” (Hassan, [104, 106])

customer experience [4], brand–consumer interaction using social media [131].

The second influential journal publishing on social media marketing is “Journal of Business Research”. This journal published 25 quality articles and been cited 2207 times. This is interesting to note that it has published articles less than half of the “Journal of Research in Interactive Marketing” but cited more often than that. This journal has contributed in the comprehension of the phenomenon of social media marketing by publishing on important aspects such as fake news and social media marketing [30], social media and brand equity [145], customer engagement via social media [40] and use of social media for B2B marketing [122].

Sustainability (Switzerland) is the third most important source that publishes on social media marketing. It has published 20 articles and attracted only 197 citations since its starting publications. This journal is publishing important aspects of social media-based marketing such as implementation of green marketing using social media [85], impact of social media on environmental sustainability [27], digital co-creation [22] and role of social media in organizational sustainability [138].

The other journals in the list have also contributed immensely to the growth of social media marketing research and its implications for the businesses.

Most prolific authors

The most prolific authors researching and publishing on social media marketing are presented in Table 3; this selection is based on the number of papers published by an author over the period, and their total citations and h-index are also presented for a better comprehension. The first author in the list is Kumar V; he has published six quality articles on the applications of social media tools in marketing. Some of the most influential articles published are “Engaging luxury brand consumers on social media”, “Synergistic effects of social media and traditional marketing on brand sales: capturing the time-varying effects”, “Creating a measurable social media marketing strategy: Increasing the value and ROI of intangibles and tangibles for Hokey Pokey”, “Increasing the ROI of social media marketing” and “An evolutionary road map to winning with social media marketing”. All the above-mentioned articles are focussing on specific marketing applications of social media. The second author in the list is Dwivedi YK with four papers and 718 citations and with an h-index of 4. The important articles published are “Examining the impact of social commerce dimensions on customers’ value cocreation: The mediating effect of social trust”, “Measuring social media influencer index- insights from Facebook, Twitter, and Instagram”, and “Social media marketing: Comparative

Table 3 Top 20 authors

Author	h-index	TC	NP	Start year
Kumar V	5	464	6	2012
Dwivedi YK	4	718	4	2017
Rana NP	4	664	4	2017
Kumar A	3	381	4	2013
Rauschnabel PA	3	360	4	2017
Alalwan AA	3	497	3	2017
Cambria E	3	364	3	2014
Kim AJ	2	1161	2	2010
Ko E	2	1161	2	2010
Buhalis D	2	663	2	2013
Hoffman DI	2	612	2	2010
Skiera B	2	540	2	2013
Algharabat R	2	486	2	2017
Michahelles F	2	436	2	2013
Pletikosa Cvijikj I	2	436	2	2013
Godey B	2	385	2	2016
Pederzoli D	2	385	2	2016
Singh R	2	376	2	2016
Poria S	2	342	2	2014

effect of advertisement sources”. With four publications and 664 citations, Rana NP is the third most influential authors in the research domain of social media marketing. The most influential literature published by Rana NP is “Do Social Media Marketing Activities Improve Brand Loyalty? An Empirical Study on Luxury Fashion Brands”,

“Social media marketing: Comparative effect of advertisement sources”, “social media in marketing: A review and analysis of the existing literature”. Rana NP has authored various articles in collaboration with Dwivedi YK as well.

Most important documents

Table 4 presents the top research papers published on the application of social media in marketing. These papers are listed based on their number of citations it has attracted over the years. The top document is written by Kozinets RV and focussed on the importance of the virtual online crowd, where consumers come together to discuss, share their opinion that results in collective innovation. Moreover, this paper emphasizes on the proliferation of networking technology that made online collaboration easy to access and interact; technologies help innovation to take new heights that ultimately impact the consumption patterns of the consumers. This paper has been cited 1077 times with an annual average of 83.

The second influential document found in this dataset is about social media marketing that was published in 2012 and cited 996 times by then. This paper has analysed the importance of social media in marketing from important aspects such as self-expression, socializing, brand interactions and the social communities that have substantial influence on the consumer purchasing intentions and purchasing behaviour. In addition, this paper also touches the importance of the impulsive buying activities on social media platforms; consumers are getting intimated with intuitive advertisements on social

Table 4 Top 10 documents

Author	Year	Paper	Journal	Total citations	TC per year
Kozinets RV	2012	The wisdom of consumer crowds: Collective innovation in the age of networked marketing	Journal Of Macromarketing	1077	83
De Vries L	2012	Social media marketing	Life Science Journal	996	91
Kim AJ	2012	Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand	Journal Of Business Research	904	82
Hoffman DI	2010	Can you measure the ROI of your social media marketing	MIT Sloan Management Review	601	46
Ashley C	2015	Creative strategies in social media marketing: An exploratory study of branded social content and consumer engagement	Psychology & Marketing	523	65
Michaelidou N	2011	Digital and social media marketing usage in B2B industrial section	Marketing Management Journal	504	42
Smith An	2012	How does brand-related user-generated content differ across YouTube, Facebook, and Twitter?	Journal of Interactive Marketing	492	45
Liu Z	2015	What makes a useful online review? Implication for travel product websites	Tourism Management	452	57
De Veirman M	2017	Marketing through Instagram influencers: the impact of number of followers and product divergence on brand attitude	International Journal of Advertising	437	73
Hays S	2013	Social media as a destination marketing tool: its use by national tourism organizations	Current Issues in Tourism	428	43

media platforms and landing to the e-commerce websites that instigate impulse shopping urges [13].

The paper published by Journal of Business Research and written by Kim AJ stands third in the list of most influential articles. This paper has investigated the role of social media in enhancing the customer equity with a special focus on luxury fashion brands. This paper was published in 2012 and attracted 904 citations by then. This paper explored the influence of social media marketing activities on customer perceived value, brand equity and customer equity. The findings favour the proposition that customer equity is highly enhanced by social media marketing activities.

The other documents in the list have also been contributed to the understanding and expansion of the area of social media marketing research. Few of the important themes discussed in these papers are measuring ROI of social media, creative social media marketing activities, online reviews, user-generated contents, influencer marketing, etc.

Most productive countries

The countries contributed most to the research stream of social media marketing are illustrated in Table 5. The countries are selected based on the number of citations of their articles. The greatest number of research articles are contributed by USA; it has produced 222 research papers, and these papers have been cited 7065 times with an average article citation of 31.82. It indicates the adoption of social media as a marketing tool in the USA; the researchers are studying the underlying factors which are crucial to understand consumer behaviour in the space of social media marketing activities.

Moreover, it also indicates that countries having better networking facilities and high bandwidth internet can exploit the advantages of social media marketing more efficiently than the countries not at par in terms of internet and networking facilities. The other two important countries are UK and China with 3195 and 1674 citations, respectively. It can be noticed that there is huge disparity among top 3 countries in terms of publications and number of times it had been cited. Nevertheless, the trend is showing that the proliferation of internet technology and availability of high-quality internet will boost the adoption of social media among users and social media marketing among the business firms.

Citation analysis of the documents

Citation analysis is the method of assessing the quality and impact of an organization, author, source, etc., derived from the quantitative analysis of the citations to references [103]. VOSviewer application is employed

Table 5 Top 20 countries

Country	Papers	Total citations	Average article citations
USA	222	7065	31.82
UNITED KINGDOM	47	3195	67.98
CHINA	77	1674	21.74
FRANCE	6	1571	261.83
KOREA	25	1427	57.08
NETHERLANDS	3	999	333.00
INDIA	84	982	11.69
CANADA	14	889	63.50
BELGIUM	5	476	95.20
NORWAY	9	465	51.67
AUSTRALIA	29	450	15.52
SWITZERLAND	3	436	145.33
HONG KONG	11	421	38.27
SPAIN	18	377	20.94
ITALY	24	332	13.83
TURKEY	13	310	23.85
MALAYSIA	33	294	8.91
SINGAPORE	2	258	129.00
SOUTH AFRICA	13	247	19.00
FINLAND	8	220	27.50

for this purpose, and minimum number of citations of a document was kept 10. The network thus obtained contains four clusters based on the grouping of a specific theme in social media marketing (Fig. 2).

The largest cluster (red) of the network is made up of 134 documents and consists of large nodes which specifies the greater number of citations these documents received over the time. The important aspects of social media marketing in this cluster are mainly focussed on the information processing that can be further used to make strategies pertaining to the social media consumers [88]; analysis of the online conversation among users is of enormous importance because it is crucial in affecting the consumer behaviour either positively or negatively about the firm and its products [2, 31, 66]. B2B semantics is useful for understanding the deep inside thoughts of the firms and their leaders that ultimately shapes their behaviour [34, 128]. In addition, the application of big data analytics tools is for processing and analysing the large amount of data to learn pattern of consumer interaction and activities on the social media network platforms [55, 74, 110]. Another important consideration in this cluster is about the use of sentiment analysis and opinion mining for managing the expectations of the consumers and offering them most customized products as per their unique needs.

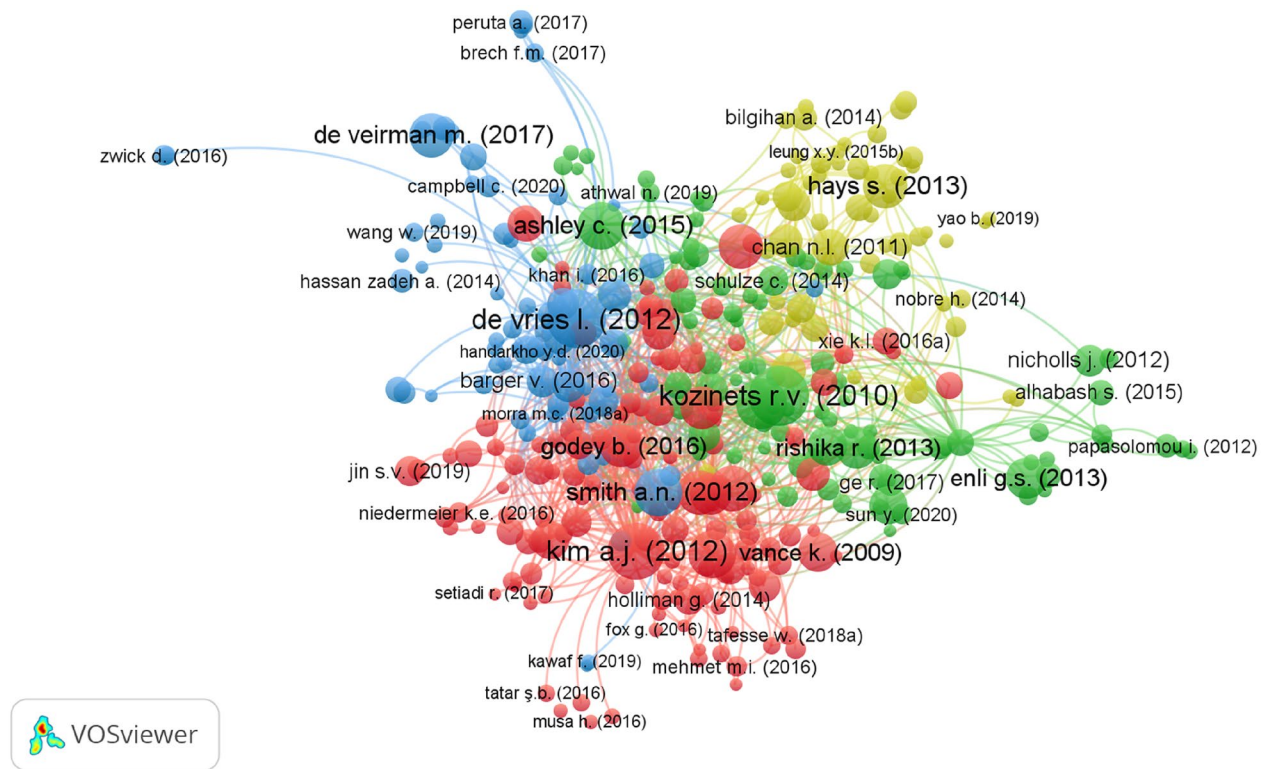


Fig. 2 Citation analysis of documents

The green cluster, second major in the network, is made of 93 documents. This cluster of this citation network is found to accumulate documents that addressed the research concerns of consumer behaviour from the perspective of social media marketing. The role of social media-based marketing in shaping the consumer intention to purchase [37, 84, 123], the impact of personalized content and its impact on consumer behaviour [19, 140], consumer social media participation and its impact on overall profitability of the firm [26, 29], persuasive advertisement and its impact on customer engagement [42, 67, 113].

Third cluster (blue) consists of 69 documents on various important aspects of the social media marketing from the perspective of customer engagement. The documents which have formed the basis of this cluster are essentially addressing the concepts of mutual sustainable relationship between customers and e-retailers are perceived value that a customer assessed about the product of services that meets their unique expectations [44, 82]. The service quality on the shopping websites and applications is crucial to persuade customers to revisit and explore which ultimately increase the chances of customer engagement, while poor service quality demoralizes customers and decreases the level of engagement

significantly [34, 133, 134]. In addition, customer experience that includes important factors such as personalization, tailoring of offers to match unique expectation of customers, are substantial in the course of customer engagement [116, 123]. Customer engagement cannot be achieved if customer satisfaction is not central to a firm, and it must be the prime focus, and marketers needs to make all possible efforts to not only satisfy, but also delight their target customers [33, 41, 43].

Keyword co-occurrence analysis

The keyword co-occurrence analysis can be referred to as a method of analysing the similarities and proximity between knowledge structure that is based on the semantics of the words which are closely related but not exactly the same [13]. For this analysis, VOSviewer software is employed, and it is among the best tools for scientific data visualization and mapping of co-occurrence of similar keywords to discover the emerging trends in a specific area of research [12].

The criteria for a keyword to be included in the network was that a keyword must have a frequency of at least 15. The frequency of occurrence is set as 15, to make sure the inclusion of significant keywords that can help in visualizing the scientific landscape. The network thus

obtained is based on 235 keywords out of 4061 and presented in Fig. 3. This network is based on three specific clusters having combined keywords pertaining to a specific aspect of the social media marketing.

The largest cluster of the network is represented by red colour and consists of 110 keywords. This cluster is made up of keywords that signifies the importance of technology in social media marketing and social networks. This cluster also explains the importance and adoption of disruptive technologies in the application of social media in marketing activities. The role of artificial intelligence [57, 73, 130], machine learning [72, 74, 109], learning algorithms [9, 31, 121], sentiment analysis [109], learning systems [9, 130], CRM tools [29, 125], customer interactions [42, 117], customer reviews [116, 124] and recommender applications [98, 112] has been studied over the period to implement them efficiently for better business outcome. Moreover, this cluster is having important implications for the designers, developers, and implementers of the social media marketing campaigns; it is crucial for the organizations to first collect the large amount of data resulting from the customer exploration of their web

portals and process them to learn the trends and expectations of the consumers. This comprehension can further be used to design marketing efforts across the channels to reach to target markets, motivate them to interact over social media and engage into activities that can lead to profitable business transactions.

The second largest cluster (green) consists of 64 keywords; careful analysis of this cluster reveals that this cluster has combined the keyword which is centred around consumer behaviour on social media platforms. The important perspectives of consumer behaviour that can be visualized in this cluster are perceived value [79, 129], purchase intentions [52, 99, 100], brand value [17, 115], brand loyalty [10, 133], brand image [107, 114], ethics [28, 91], green behaviour [10, 130], sustainability aspects [99, 130], millennials [10, 34, 35], generation [39, 118], and customer engagement [99, 107, 140]. Therefore, it is quite evident that social media tools are being used in almost all facets of consumer behaviour; the above studies also concluded that the use of social media marketing tools has a positive and substantial impact on consumer behaviour.

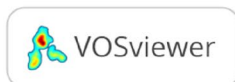
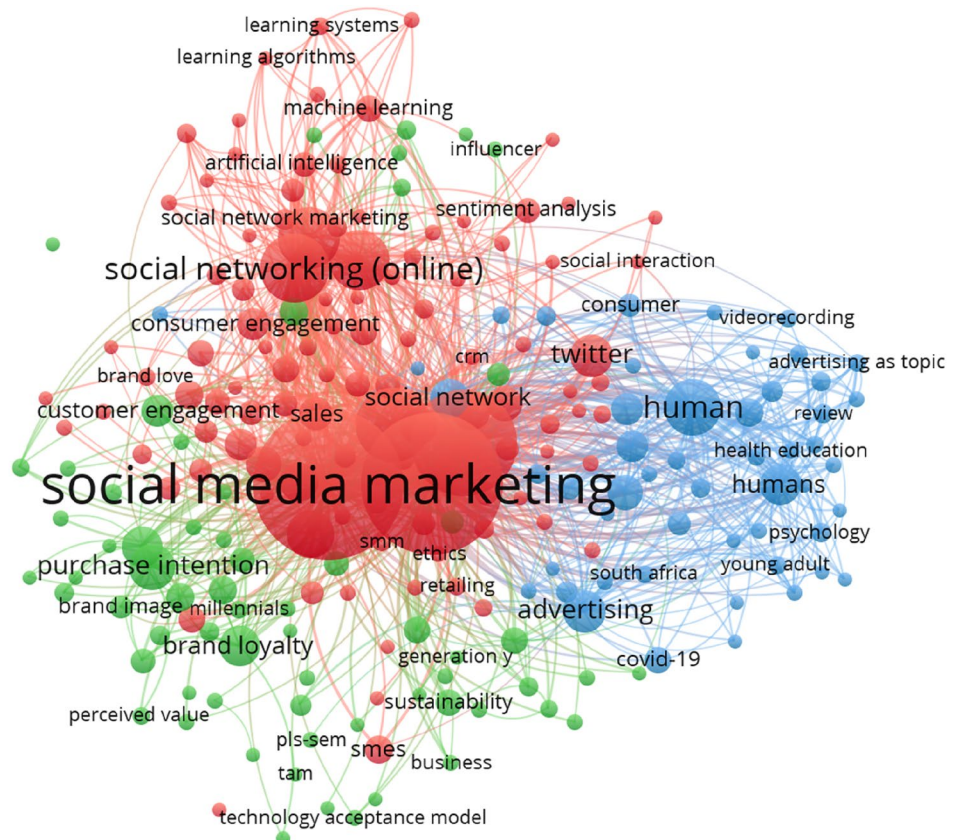


Fig. 3 Keywords co-occurrence analysis

The third and last cluster (blue) of this network is made of 51 items. This cluster has accumulated keywords which are focussed on the human aspects of social media marketing. As it is obvious from the network that the largest node in this cluster is “human” and “humans”, which specifies the interaction of machine, i.e. computers with human [36, 58, 139]. The human computer interface is a trending research stream in social media marketing, where efforts are made to understand the best practices to interact with computers in a more efficient manner [129, 136]. The another important concept in this cluster is about psychology which is quite important for the marketers to understand the cognitive process of consumer when presented with marketing stimuli using social media marketing tools [59, 117]. Few other keywords which dominated this cluster are health education and monitoring health using social media applications [28], young adults [81, 130], selection of advertising topics [1, 51], etc.

Trends in social media marketing

The network analysis helps in the identifications of emerging trends in the research of social media marketing. The social media networks allow users to interact and share their thoughts and experience with a brand which in turn helps in viral marketing [120]. The possibility of sharing podcast and video contents has fuelled the interactivity among users [15]. The reviews and feedback are of enormous importance for the marketers to listen the voice of the customers and adapt accordingly [54].

One of the major trends is about real-time personalization on the social networks; the recommender system is recommending most sought-after products to the customer in real-time web exploration. The personalization in real time is achieved using technologies such as artificial intelligence, machine learning and predictive analytics that helps in gaining deeper insights into behavioural intentions [3, 96].

The introduction of augmented reality and virtual reality is another latest trend that have revolutionized the way marketing was being carried out using social media networks. The augmented reality has enabled the customers to virtually look at desired aspects such as suitability, colour combinations, fittings and virtual trials [39]. It gives consumers the confidence to immediately decide to purchase and quick gratifications [119]. The impulse purchasing mechanism is also trending on social media platforms; the firms are appropriately designing and putting across their offerings that creates urge to buy impulsively [61].

Influencer marketing and brand endorsement are not a new trend, but it is one of the major trends that is going to stay for a while. The brands are associating with

influencers who have huge followers and witnessed better results as good as running paid advertisement campaigns [39].

Live streaming has been adopted by various firms to reach to specific segments of their target markets using webinar or a platform showcase [18]. It gives them opportunity to socialize and interact with prospective customers and engage with them through Q & A sessions or collaborative contents [18].

Themes and sub-themes in social media marketing

The detailed analysis of the networks of citations and keyword co-occurrence analysis helps in identifying themes and sub-themes which are emerged from the clusters of the network. Table 6 is representing the main themes and sub-themes along with related studies.

Discussion

Each research study is having certain limitations and so as this one. One of the major limitations is about citation bases analysis; the selection of articles is based on the number of citations it has received. There might be important studies on social media that may have not been included in the analysis because it did not receive many citations. Moreover, we selected research literature written in English language and either article or review paper; there might be quality articles that left behind.

As far as future direction of research is concerned, it is obvious that social media marketing is evolving at ever high pace and there is a need for deeper investigation into this phenomenon. Careful investigation of the networks unveils important areas of future research expansion. First, the adoption of social media among consumers, what are the factors that hinders the usage of social media and technological barriers that restricts the customers to use social media are needed to be explored further. Studies have shown that one of biggest barrier in the adoption of social networks and platforms is the availability of high speed affordable internet networks [132]. Therefore, TAM model needed to be revisited from social media perspective, and additional components can be added to understand the adoption of technology and social media applications. A versatile model could be developed that can be used in variety of technology adoption scenarios and can be generalized in various environments. There is a need of study to understand the firm capabilities required and preparedness to adopt social media marketing practices.

The second important area of research is from the firm perspective; still it is not very much clear that how disruptive digital transformation and technologies such as artificial intelligence, Internet of Things, machine learning, deep learning, etc., can be implemented to

Table 6 Themes and sub-themes in social media marketing

Theme	Sub-theme	References
Information Processing	Online Conversation	[9, 31, 129]
	Feedback Analytics	[25, 59, 112]
	Sentiment Analytics	[46, 108, 109, 102, 103]
	Opinion Mining	[19, 25, 79]
Consumer Behaviour	Personalized Content	[56, 69]
	Customer Engagement	[16, 21, 32, 102, 104, 106]
	Persuasive advertisement	[81, 113, 142, 143]
	Purchase intention	[73, 118, 133]
Adoption of Technology	Perceived Belief and Trust	[69–71]
	Artificial Intelligence	[9, 66, 73]
	Machine Learning	[8, 60, 109]
	Learning Algorithms	[24, 34, 130]
Human Aspects	Design and Implementation	[10, 67, 113]
	Human Machine Interaction	[9, 58, 75, 117]
	Perceived Belief	[33, 63]
	Social Robots	[38, 77, 111, 65, 102]

get maximum ROI and that can persuade consumers to transact with them. Studies have focussed on artificial intelligence applications such as recommendation system which is positively influencing the consumer behaviour especially purchase intention [10, 53]. The future studies can help in building a comprehensive model that could be used by the firm to evaluate their investment, ROI, perceived value to customer and overall consumer behaviour.

Thirdly, there is a lack of study on the influence of social media marketing on small retail firms. More studies are warranted to seek clarity about the effectiveness of social media as a marketing tool for smaller firm, which social media tool and tactics will be more advantageous for these firms. Researchers are also encouraged to empirically explore the small retailer's perspective of adopting social media tools for their marketing activities. There shall be a mechanism to gauge the outcome of social media marketing on their brand awareness, customer growth, sales, and overall profitability of smaller retailers.

Fourth important area of research could be the deliberations of the social content. Content is the core of social media platforms; studies have shown that consumers tend to get attracted and spend more time on the social network where they can create their own content in an easy manner. Content is also crucial in terms of its suitability across platforms and ethical implications.

Therefore, researchers can study and analyse the most appropriate content across the social media platforms, devices and for a specific business. Researchers can explore the critical aspects of social content such as most

suitable content for C2C interaction, firm reaction on a specific customer content, content to combat competitions, etc.

Fifth area of future research could be the monitoring of social media, how a firm shall record and acknowledge complaints of the customers. The sub-themes in monitoring can be to find out the best listening mechanisms of consumer activities that can be further analysed using predictive analysis mechanism to develop strategies to engage customers in the way they might be looking for. Another investigation can be done to seek clarity about the mechanism of watching and listening customers, i.e. whether there should be a fully automated process or hybrid one. This is important for the firms to understand the probable capital investment in the implementation of monitoring and responding process. This subject can be further investigated from the CRM perspective. Research can be extended to understand the role of various social media platforms on customer engagement, and what should be the capability of the CRM to exploit maximum from customer created content.

Conclusions

Bibliometric analysis is performed to have a comprehensive understanding of the applications of social media for marketing activities. The aim of the research was to investigate the research trends and emerging themes using the Scopus database. The findings of the research reveal the most important journals, authors, documents, and their intellectual structure. Moreover, it is found that research in the application of social media as a marketing tool is growing at

an ever-increasing rate. Scholars around the world are collaborating with each other to comprehend the phenomenon and suggest strategies that can help firms to exploit the power of social media platforms in their marketing tactics. The outcomes of the research shown that there are certain areas of social media marketing landscape which need more scholarly attention; current literature has not considered these essential factors in detail. The findings suggest that current extant literature can be expanded by appending research in the areas such as modelling social media marketing ROI, social content strategies, monitoring and responding social media activities, social media strategies for smaller retailers, etc. This study has enumerated important implications along with the analysis for the businesses. The outcomes would also be helpful for social media enthusiasts and prospective social media marketing researchers.

Abbreviations

C2C	Customer-to-customer
CRM	Customer relationship management
ROI	Return on investment
TAM	Technology acceptance model

Acknowledgements

The researchers express unwavering gratitude to the authors of many sampled articles included in this current data mining and bibliometric analysis. Their invaluable efforts cannot be ignored.

Declaration of generative AI in scientific writing

The chapter was scientifically prepared without the writing assistance of any enhanced generative artificial intelligence (AI) software(s).

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

Author contributions

Authors contributed equally in the development of the article.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

Availability of data and materials

Not applicable.

Declarations

Conflict of interests

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Ethics approval and consent to participate

Not applicable.

Consent for publication

The authors consent publication of the article with *Future Business Journal*.

Received: 26 August 2023 Accepted: 22 January 2024

Published online: 15 February 2024

References

1. Abuljadail M, Ha L (2019) Engagement and brand loyalty through social capital in social media. *Int J Internet Mark Advert* 13(3):197–217. <https://doi.org/10.1504/IJIMA.2019.102557>
2. Aghdam SM, Jafari Navimipour N (2016) Opinion leaders selection in the social networks based on trust relationships propagation. *Karbala Int J Mod Sci* 2(2):88–97. <https://doi.org/10.1016/j.kijoms.2016.02.002>
3. Aknine S, Slodzian A, G. Q. I. T. for W, et al (2003) Web personalisation for users protection: a multi-agent method. Springer
4. Aljukhadar M, Bériault Poirier A, Senecal S (2020) Imagery makes social media captivating! Aesthetic value in a consumer-as-value-maximizer framework. *J Res Interact Mark* 14(3):285–303. <https://doi.org/10.1108/JRIM-10-2018-0136>
5. Alshater MM, Hassan MK, Khan A, Saba I (2020) Influential and intellectual structure of Islamic finance: a bibliometric review. *Int J Islam Middle East Financ Manag*. <https://doi.org/10.1504/IMEFM-08-2020-0419>
6. Alshater MM, Saba I, Supriani I, Rabbani MR (2022) Fintech in islamic finance literature: a review. Heliyon, Cambridge
7. Alves H, Fernandes C, Raposo M (2016) Social media marketing: a literature review and implications. *Psychol Mark* 33(12):1029–1038. <https://doi.org/10.1002/mar.20936>
8. Ameer K, Benblidia N, Khouas SO (2016) Dimensions reordering for visual mining of association rules using parallel set. *Int J Data Anal Tech Strat* 8(4):296–315. <https://doi.org/10.1504/IJDATS.2016.081362>
9. Aswani R, Kar AK, Vigneswara Ilavarasan P (2018) Detection of Spammers in Twitter marketing: a hybrid approach using social media analytics and bio inspired computing. *Inf Syst Front* 20(3):515–530. <https://doi.org/10.1007/s10796-017-9805-8>
10. Bali S, Bélanger CH (2019) Exploring the use of Facebook as a marketing and branding tool by hospital foundations. *Int J Nonprofit Volunt Sect Mark*. <https://doi.org/10.1002/nvsm.1641>
11. Bashar A, Ahmad I, Wasiq M (2012) Effectiveness of social media as a marketing tool: an empirical study. *Int J Mark Financ Serv Manag Res* 2(11):88–99
12. Bashar A, Rabbani MR, Khan S, Ali MAMd (2021) Data driven finance: a bibliometric review and scientific mapping. 2021 International Conference on Data Analytics for Business and Industry, ICDABI 2021, pp 161–166. <https://doi.org/10.1109/ICDABI53623.2021.9655898>
13. Bashar A, Singh S (2022) Impulsive buying on social media platforms: a bibliometric review. *J Contemp Issues Bus Govern* 28(3):386–420
14. Bashar A, Jreisat A, Kaur J, Al-Mohamad S, Rabbani MR (2022) Looking into corporate boardrooms through the lens of gender diversity: a bibliometric review and META analysis. *Planning* 17(5):1593–1603
15. Bello-Ortiz G, Mesas RM, Zarco C, Rodríguez V, Córdón O, Camacho D (2020) Marketing analysis of wineries using social collective behavior from users' temporal activity on Twitter. *Inform Process Manag*. <https://doi.org/10.1016/j.ipm.2020.102220>
16. Bello MJG (2019) Cloud-based conversational agents for user acquisition and engagement. In M VM, F D, H M, P C (eds) 9th International Conference on Cloud Computing and Services Science, CLOSER 2019. SciTePress, pp 528–534. <https://doi.org/10.5220/0007766105280534>
17. Beneke J, Blampied S, Miszczak S, Parker P (2014) Social networking the brand—an exploration of the drivers of brand image in the South African beer market. *J Food Prod Mark* 20(4):362–389. <https://doi.org/10.1080/10454446.2013.807402>
18. Bharadwaj N, Ballings M, Naik PA, Moore M, Arat MM (2022) A new live-stream retail analytics framework to assess the sales impact of emotional displays. *J Mark* 86(1):27–47. <https://doi.org/10.1177/00222429211013042>
19. Bhardwaj P, Adhikari RS, Ahuja V (2018) An analytical study of the facebook content management strategies of dominos India. In: Digital marketing and consumer engagement: concepts, methodologies, tools, and applications, pp 1091–1105. IGI Global. <https://doi.org/10.4018/978-1-5225-5187-4.ch055>
20. Bilkova R, Zelenka Z (2015) Social network marketing: An examination of marketing behavior of small businesses. In S KS (ed) 26th

- International Business Information Management Association Conference - Innovation Management and Sustainable Economic Competitive Advantage: From Regional Development to Global Growth, IBIMA 2015. International Business Information Management Association, IBIMA, pp 2171–2180
21. Buckley S, Ettl M, Jain P, Luss R, Petrik M, Ravi RK, Venkatramani C (2014) Social media and customer behavior analytics for personalized customer engagements. *IBM J Res Develop*. <https://doi.org/10.1147/JRD.2014.2344515>
22. Calcagni F, Maia AA, James C-S et al (2019) Digital co-construction of relational values: understanding the role of social media for sustainability. *Springer* 14(5):1309–1321. <https://doi.org/10.1007/s11625-019-00672-1>
23. Chang H-L, Chou Y-C, Wu D-Y, Wu S-C (2018) Will firm's marketing efforts on owned social media payoff? A quasi-experimental analysis of tourism products. *Decis Support Syst* 107:13–25. <https://doi.org/10.1016/j.dss.2017.12.011>
24. Chawla Y, Chodak G (2021) Social media marketing for businesses: organic promotions of web-links on Facebook. *J Bus Res* 135:49–65. <https://doi.org/10.1016/j.jbusres.2021.06.020>
25. Chellam A, Chaturvedi A, Ramanathan L (2020) Data visualization: visualization of social media marketing analysis data to generate effective business revenue model. In: *Data visualization: trends and challenges toward multidisciplinary perception*. Springer, Singapore, pp 75–92. https://doi.org/10.1007/978-981-15-2282-6_5
26. Cheung TY, Ye Z, Chiu DKW (2020) Value chain analysis of information services for visually impaired people: a case study of contemporary technological solutions. *Library Hi Tech* 39(2):625–642. <https://doi.org/10.1108/LHT-08-2020-0185>
27. Chuang HM, Liao YD (2021) Sustainability of the benefits of social media on socializing and learning: An empirical case of facebook. *Sustainability* (Switzerland). <https://doi.org/10.3390/su13126731>
28. Cox T, Park JH (2014) Facebook marketing in contemporary orthodontic practice: a consumer report. *J World Federation Orthod* 3(2):e43–e47. <https://doi.org/10.1016/j.ejwf.2014.02.003>
29. Doligalski T (2013) Social network marketing: customer value, CRM, and competitive actions. In: *Marketing in the Cyber Era: strategies and emerging trends*. IGI Global, pp 96–113. <https://doi.org/10.4018/978-1-4666-4864-7.ch007>
30. Domenico GD, Sit J, Ishizaka A, Nunan D (2021) Fake news, social media and marketing: a systematic review. *J Bus Res* 124:329–341. <https://doi.org/10.1016/j.jbusres.2020.11.037>
31. Domeniconi G, Semertzidis K, Moro G, Lopez V, Kotoulas S, Daly EM (2017) Identifying conversational message threads by integrating classification and data clustering. In: H M, F C (eds) 5th International Conference on Data Management Technologies and Applications, DATA 2016. Springer Verlag, vol 737, pp 25–46. https://doi.org/10.1007/978-3-319-62911-7_2
32. DSouza S, Rabbani MR, Hawaldar IT, Kumar AJ (2022) Impact of bank efficiency on the profitability of the Banks in India: an empirical analysis using panel data approach. *Int J Financ Stud* (Forthcoming)
33. Duffett RG (2015) Effect of Gen Y's affective attitudes towards facebook marketing communications in South Africa. *Electron J Inform Syst Develop Ctries* 68:1–27. <https://doi.org/10.1002/j.1681-4835.2015.tb00488.x>
34. Ebrahimi P, Khajeheian D, Fekete-Farkas M (2021) A sem-nca approach towards social networks marketing: evaluating consumers' sustainable purchase behavior with the moderating role of eco-friendly attitude. *Int J Environ Res Public Health*. <https://doi.org/10.3390/ijerph182413276>
35. Ebrahimi P, Salamzadeh A, Gholampour A, Fekete-Farkas M (2021) Social networks marketing and Hungarian online consumer purchase behavior: the microeconomics strategic view based on IPMA matrix. *Acad Strateg Manag J* 20(4):1–7
36. Fagerström A, Ghinea G (2011) Co-creation of value through social network marketing: a field experiment using a facebook campaign to increase conversion rate. In *Human Interface and the Management of Information: Interacting with Information - Symposium on Human Interface 2011, Held as Part of HCI International 2011: Vol. 6772 LNCS (Issue PART 2, pp 229–235)*. https://doi.org/10.1007/978-3-642-21669-5_27
37. Faiers A, Cook M, Neame C (2007) Towards a contemporary approach for understanding consumer behaviour in the context of domestic energy use. *Energy Policy* 35(8):4381–4390. <https://doi.org/10.1016/j.enpol.2007.01.003>
38. Fusté-Forné F, Filimon N (2021) Using social media to preserve consumers' awareness on food identity in times of crisis: the case of bakeries. *Int J Environ Res Public Health*. <https://doi.org/10.3390/ijerph18126251>
39. Ghouse SM, Duffett RG, Chaudhary M (2022) How Twitter advertising influences the purchase intentions and purchase attitudes of Indian millennial consumers? *Int J Internet Mark Advert* 16(1–2):142–164. <https://doi.org/10.1504/IJIMA.2022.120973>
40. Gligor D, Bozkurt S, Russo I (2019) Achieving customer engagement with social media: a qualitative comparative analysis approach. *J Bus Res* 101:59–69. <https://doi.org/10.1016/j.jbusres.2019.04.006>
41. Groothuis D, Spil TAM, Effing R (2020) Facebook marketing intelligence. In: B TX (ed) 53rd Annual Hawaii International Conference on System Sciences, HICSS 2020 (vols. 2020-Janua). IEEE Computer Society, pp 2559–2568
42. Gulay Ozturk R (2014) Friendvertising: a new advertising strategy in social network marketing. In: *Digital arts and entertainment: concepts, methodologies, tools, and applications*. IGI Global, vol 3, pp 1575–1600. <https://doi.org/10.4018/978-1-4666-6114-1.ch078>
43. Gulay Ozturk R (2015) FRIENDVERTISING: A new advertising strategy in social network marketing. In: *Social Media and Networking: Concepts, Methodologies, Tools, and Applications (Vols. 4–4, pp 2051–2075)*. IGI Global. <https://doi.org/10.4018/978-1-4666-8614-4.ch094>
44. Han K-S (2016) Study of structural relationship between the value proposition of facebook brand fan pages and commitment and engagement. *Indian J Sci Technol*. <https://doi.org/10.17485/ijst/2016/v9i41/103927>
45. Hassan MK, Bashar A, Rabbani MR, Choudhury T (2022) An insight into the Fintech and Islamic Finance Literature: a bibliometric and visual analysis. In: *FinTech in Islamic Financial Institutions: Scope, Challenges, and Implications in Islamic Finance*. Springer International Publishing, Cham, pp 131–156
46. Hassan MK, Rabbani MR, Ali MA (2020) Challenges for the Islamic Finance and banking in post COVID era and the role of Fintech. *J Econ Coop Develop* 43(3):93–116
47. Hassan MK, Rabbani MR, Brodmann J, Bashar A, Grewal H (2022) Bibliometric and Scientometric analysis on CSR practices in the banking sector. *Rev Financ Econ*
48. Hassan MK, Raza Rabbani M (2022) Sharia governance standards and the role of AAOFI: a comprehensive literature review and future research agenda. *J Islamic Account Bus Res*. <https://doi.org/10.1108/JIABR-04-2022-0111>
49. Hindley C, Smith MK (2017) Cross-cultural issues of consumer behaviour in hospitality and tourism. In: *The Routledge Handbook of Consumer Behaviour in Hospitality and Tourism*. Taylor and Francis, pp 86–96. <https://doi.org/10.4324/9781315659657>
50. Huang R, Ha S, Kim SH (2018) Narrative persuasion in social media: an empirical study of luxury brand advertising. *J Res Interact Mark* 12(3):274–292. <https://doi.org/10.1108/JRIM-07-2017-0059/FULL/HTML>
51. Iannelli L, Giglietto F, Rossi L, Zurovac E (2020) Facebook digital traces for survey research: assessing the efficiency and effectiveness of a facebook ad-based procedure for recruiting online survey respondents in niche and difficult-to-reach populations. *Soc Sci Comput Rev* 38(4):462–476. <https://doi.org/10.1177/0894439318816638>
52. Imtiaz R, Ul Ain Kazmi SQ, Amjad M, Aziz A (2019) The impact of social network marketing on consumer purchase intention in Pakistan: a study on female apparel. *Manag Sci Lett*. <https://doi.org/10.5267/j.msl.2019.3.015>
53. Ioanid A, Deselnicu DC, Militaru G (2017) Branding in the age of social media: How entrepreneurs use social networks to boost their service-based businesses. *Balkan Region conference on engineering and business education* 3(1):79–85. <https://doi.org/10.1515/cplbu-2017-0011>
54. Jaakonmäki R, Müller O, vom Brocke J (2017) The impact of content, context, and creator on user engagement in social media marketing. In: B TX, S R (eds) 50th Annual Hawaii International Conference on System Sciences, HICSS 2017. IEEE Computer Society, vols 2017-Janua, pp 1152–1160

55. Jami Pour M, Hosseinzadeh M, Amoozad Mahdiraji H (2021) Exploring and evaluating success factors of social media marketing strategy: a multi-dimensional-multi-criteria framework. *Foresight* 23(6):655–678. <https://doi.org/10.1108/FS-01-2021-0005>
56. Jiang L, Erdem M (2017) Twitter-marketing in multi-unit restaurants: Is it a viable marketing tool? *J Foodserv Bus Res* 20(5):568–578. <https://doi.org/10.1080/15378020.2016.1222746>
57. Jung YJ, Kim J (2016) Facebook marketing for fashion apparel brands: Effect of other consumers' postings and type of brand comment on brand trust and purchase intention. *J Glob Fash Market* 7(3):196–210. <https://doi.org/10.1080/20932685.2016.1162665>
58. Jussila J, Madhala P (2019) Cognitive computing approaches for human activity recognition from tweets—A case study of twitter marketing campaign. In V A, L MD (eds) *Research and Innovation Forum, Rii Forum 2019*. Springer, pp 153–170. https://doi.org/10.1007/978-3-030-30809-4_15
59. Kachniewska M (2015) Gamification and social media as tools for tourism promotion. In: *Handbook of research on effective advertising strategies in the Social Media Age*. IGI Global, pp 17–51. <https://doi.org/10.4018/978-1-4666-8125-5.ch002>
60. Kao L-J, Huang Y-P (2014) Mining implicit outlier purchasing behaviors from fan group marketing data. In: *2014 Joint 7th International Conference on Soft Computing and Intelligent Systems, SCIS 2014 and 15th International Symposium on Advanced Intelligent Systems, ISIS 2014*, pp 1048–1053. <https://doi.org/10.1109/SCIS-ISIS.2014.7044662>
61. Karim W, Abdul M, Chowdhury M, Al Masud A, Arifuzzaman M (2021) Analysis of Factors influencing Impulse Buying behavior towards e-tailing sites: An application of SOR model. *Cmr-JournalOrg*. <https://doi.org/10.7903/cmr.20457>
62. Kaur G, Singh M, Singh S (2021) Mapping the literature on financial well-being: A systematic literature review and bibliometric analysis. *Int Soc Sci J* 71(241–242):217–241. <https://doi.org/10.1111/issj.12278>
63. Kawaf F, Istanbuloglu D (2019) Online fashion shopping paradox: the role of customer reviews and facebook marketing. *J Retail Consum Serv* 48:144–153. <https://doi.org/10.1016/j.jretconser.2019.02.017>
64. Khan S, Rabbani MR (2020) Chatbot as Islamic Finance Expert (CalFE): when finance meets artificial intelligence. In: *2020 International Conference on Computational Linguistics and Natural Language Processing (CLNLP 2020)*, Seoul, South Korea, pp 1–5
65. Khan S, Rabbani MR (2021) Artificial intelligence and NLP based chatbot as islamic banking and finance expert. *Int J Inform Retr Res (IJIRR)* 11(3):65–77
66. Kim YS, Tran VL (2013) Assessing the ripple effects of online opinion leaders with trust and distrust metrics. *Expert Syst Appl* 40(9):3500–3511. <https://doi.org/10.1016/j.eswa.2012.12.058>
67. Kovco A, Vranesic P, Aleksic-Maslac K (2018) Advantages of WCA facebook advertising with analysis and comparison of efficiency to classic facebook advertising. *WSEAS Trans Bus Econ* 15:73–79
68. Kumar B, Sharma A, Vatawala S, Kumar P (2020) Digital mediation in business-to-business marketing: a bibliometric analysis. *Ind Mark Manag* 85:126–140. <https://doi.org/10.1016/j.jindmarman.2019.10.002>
69. Leung XY, Bai B, Stahura KA (2015) The marketing effectiveness of social media in the hotel industry: a comparison of facebook and twitter. *J Hosp Tourism Res* 39(2):147–169. <https://doi.org/10.1177/1096348012471381>
70. Leung XY, Baloglu S (2015) Hotel facebook marketing: an integrated model. *Worldwide Hosp Tour Themes* 7(3):266–282. <https://doi.org/10.1108/WHATT-03-2015-0011>
71. Leung XY, Jiang L (2018) How do destination Facebook pages work? An extended TPB model of fans' visit intention. *J Hosp Tour Technol* 9(3):397–416. <https://doi.org/10.1108/JHTT-09-2017-0088>
72. Li X, Guo Y, Sheng Y, Chen Y (2020) Characterizing social marketing behavior of e-commerce celebrities and predicting their value. In: *2020 IEEE INFOCOM conference on computer communications workshops, INFOCOM WKSHP5 2020*, pp 1166–1171. <https://doi.org/10.1109/INFOCOMWKSHP550562.2020.9162757>
73. Liao S-H, Hsian P-Y, Wu G-L (2014) Mining user knowledge for investigating the facebook business model: the case of Taiwan users. *Appl Artif Intell* 28(7):712–736. <https://doi.org/10.1080/08839514.2014.927695>
74. Liao S-H, Yang C-A (2021) Big data analytics of social network marketing and personalized recommendations. *Soc Network Anal Min*. <https://doi.org/10.1007/s13278-021-00729-z>
75. Liu Y, Wan H, Yang X (2010). Social network based marketing in mobile phone users' community. In: *2010 international conference on machine vision and human-machine interface, MVHI 2010*, pp 669–672. <https://doi.org/10.1109/MVHI.2010.11>
76. Lo YC, Fang C-Y (2018) Facebook marketing campaign benchmarking for a franchised hotel. *Int J Contemp Hosp Manag* 30(3):1705–1723. <https://doi.org/10.1108/IJCHM-04-2017-0206>
77. Lokshina I, Lanting CJM (n.d.) A qualitative evaluation of IoT-driven eHealth: knowledge management, business models and opportunities, deployment and evolution
78. López-Carril S, Escamilla-Fajardo P, González-Serrano MH, Ratten V, González-García RJ (2020) The rise of social media in sport: a bibliometric analysis. *Int J Innov Technol Manag*. <https://doi.org/10.1142/S0219877020500418>
79. Lupa-Wójcik I (2020) Emotions aroused by the most popular content on Facebook and their virality on the example of selected industries. In: K C, V C (eds) *7th European Conference on Social Media, ECSM 2020*. Academic Conferences International, pp 154–162. <https://doi.org/10.34190/ESM.20.022>
80. Maziriri ET, Nyagadza B, Mapuranga M, Maramura TC (2022) Habitual Facebook use as a prognosticator for life satisfaction and psychological well-being: Social safeness as a moderator. *Arab Gulf J Sci Res (AGJSR)* 40(2):153–179. <https://doi.org/10.1108/AGJSR-04-2022-0011>
81. Mejova Y, Weber I, Fernandez-Luque L (2018) Online health monitoring using facebook advertisement audience estimates in the United States: evaluation study. *JMIR Public Health Surveill*. <https://doi.org/10.2196/publichealth.7217>
82. Moyer C, Griffin RJ, Pokrywczynski J (2018) Take me out to the facebook page. *J Digit Soc Media Mark* 6(4):357–370
83. Muangmee C (2021) Effects of Facebook advertising on sustainable brand loyalty and growth: case of Thai start-up businesses. *Transnatl Corp Rev*. <https://doi.org/10.1080/19186444.2021.1986340>
84. Mulero O, Adeyeye M, Ajibesin AA (2012) Determinants of user acceptance of online social networks marketing. *International conference on communication, internet, and information technology, CIIT 2012*:338–345. <https://doi.org/10.2316/P.2012.773-013>
85. Nabivi E (2020) Implementation of green marketing concept through social media activities: a systematic literature review. *J Mark Consum Behav Emerg Mark* 2/2020(11):55–67. <https://doi.org/10.7172/2449-6634/jmcbe.2020.24>
86. Naeem MA, Karim S, Rabbani MR, Bashar A, Kumar S (2022) Current state and future directions of green and sustainable finance: a bibliometric analysis. *Qualit Res Financ Mark* (ahead-of-p)
87. Nassar MA (2012) Harnessing the power of social networks for branding hotel services: evidence from the egyptian hotel sector. *Innov Mark* 8(2):58–66
88. Nastisin L, Fedorko R, Vavrecka V, Bacik R, Rigelský M (2019) Quantitative study of selected Facebook marketing communication engagement factors in the optics of different post types. *Innov Mark* 15(3):16–25. [https://doi.org/10.21511/im.15\(3\).2019.02](https://doi.org/10.21511/im.15(3).2019.02)
89. Nobre H, Silva D (2014) Social network marketing strategy and SME strategy benefits. *J Transnatl Manag* 19(2):138–151. <https://doi.org/10.1080/15475778.2014.904658>
90. Nusair K, Butt I, Nikhashemi SR (2019) A bibliometric analysis of social media in hospitality and tourism research. *Int J Contemp Hosp Manag* 31(7):2691–2719. <https://doi.org/10.1108/IJCHM-06-2018-0489>
91. Nuseir MT, Alshawabkeh A, Leibfried EL (2021) Factors affecting the use of social networks as a customer relationship management tool. *Int J Bus Inform Syst* 38(2):179–199. <https://doi.org/10.1504/IJBS.2021.119182>
92. Nyagadza B, Mazuruse G, Simango K, Chikazhe L, Tsokota T, Macheka L (2023) Examining the influence of social media eWOM on consumers' purchase intentions of commercialised indigenous fruits (IFs) products in FMCGs retailers, Sustainable Technology & Entrepreneurship (STE). Elsevier España. <https://doi.org/10.1016/j.stae.2023.100040>
93. Nyagadza, B. (2022). Search engine marketing and social media marketing predictive trends, *Journal of Digital & Media Policy (JDMP)*, Vol.13

- [Issue 3] pp. 407–425, Intellect Publishers, Bristol, United Kingdom (UK), (DHET/SCOPUS). DOI: https://doi.org/10.1386/jdmp_00036_1
94. Othman N, Mohd Suki N, Mohd Suki N (2021) Evolution trends of facebook marketing in digital economics growth: a bibliometric analysis. *Int J Interact Mobile Technol* 15(20):68–82. <https://doi.org/10.3991/ijim.v15i20.23741>
 95. Paul J, Lim WM, O'Cass A, Hao AW, Bresciani S (2021) Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). *Int J Consum Stud*. <https://doi.org/10.1111/IJCS.12695>
 96. Pearson A (2019) Personalisation the artificial intelligence way. *J Digit Soc Media Mark* 7(3):245–269
 97. Pelletier MJ, Krallman A, Adams FG, Hancock T (2020) One size doesn't fit all: a uses and gratifications analysis of social media platforms. *J Res Interact Mark* 14(2):269–284. <https://doi.org/10.1108/JRIM-10-2019-0159/FULL/HTML>
 98. Phelan KV, Chen H-T, Haney M (2013) "Like" and "Check-in": How hotels utilize Facebook as an effective marketing tool. *J Hosp Tour Technol* 4(2):134–154. <https://doi.org/10.1108/JHTT-Jul-2012-0020>
 99. Poolperm P, Thongmak M (2021) The influence of facebook marketing using gamification on consumers purchase intention. In: 27th Annual Americas Conference on Information Systems, AMCIS 2021
 100. Prabowo H, Bramulya R, Yuniarty (2020) Student purchase intention in higher education sector: the role of social network marketing and student engagement. *Manag Sci Lett* 10(1):103–110. <https://doi.org/10.5267/j.msl.2019.8.012>
 101. Qin YS (2020) Fostering brand–consumer interactions in social media: the role of social media uses and gratifications. *J Res Interact Mark* 14(3):337–354. <https://doi.org/10.1108/JRIM-08-2019-0138/FULL/HTML>
 102. Rabbani MR (2020) The competitive structure and strategic positioning of commercial banks in Saudi Arabia. *Int J Emerg Technol* 11(3):43–46
 103. Rabbani MR, Ali MAM, Rahiman H, Atif M, Zulfikar Z, Naseem Y (2021) The response of Islamic financial service to Covid-19 pandemic: the social open innovation of financial system. *J Open Innov: Technol Market Complex*
 104. Rabbani MR, Bashar A, Hawaldar IT, Shaik M, Selim M (2022). What do we know about crowdfunding and P2P lending research? A bibliometric review and meta-analysis. *J Risk Financ Manag*. <https://doi.org/10.3390/jrfm15100451>
 105. Rabbani MR et al (2021) Text mining and visual analytics in research: Exploring the innovative tools. International conference on decision aid sciences and application (DASA) 2021:1087–1091
 106. Rabbani MR, Kayani U, Bawazir HS, Hawaldar IT (2022) A commentary on emerging markets banking sector spillovers: Covid-19 vs GFC pattern analysis. *Heliyon* 8(3):e09074
 107. Radpour R, Honarvar AR (2018) Impact of social networks on brand value based on customer behavior using structural equations. *Int J Cust Relations Mark Manag* 9(3):50–67. <https://doi.org/10.4018/IJCRMM.2018070104>
 108. Raveendrarasa V, Amalraj CRJ (2020) Sentiment analysis of Tamil-English code-switched text on social media using sub-word level LSTM. In: 5th international conference on information technology research, ICITR 2020. <https://doi.org/10.1109/ICITR51448.2020.9310817>
 109. Romero Moreno FY, Sanchez Martelo CA, Alfonso Corredor BY, Sanchez Cifuentes JF, Ospina López JP (2020) Sentiment analysis to the opinions generated in the social network twitter: political marketing. *RISTI - Revista Iberica de Sistemas e Tecnologias de Informacao* 2020(E35):187–203
 110. Rozas L, Castronuovo L, Busse P, Mus S, Barnoya J, Garrón A, Tiscornia MV, Guanieri L (2021) Data on the Facebook marketing strategies used by fast-food chains in four Latin American countries during the COVID-19 lockdowns. *BMC Res Notes*. <https://doi.org/10.1186/s13104-021-05870-8>
 111. Samala N, Katkam BS, Bellamkonda RS, Rodriguez RV (2020) Impact of AI and robotics in the tourism sector: a critical insight. *J Tour Futures*. <https://doi.org/10.1108/JTF-07-2019-0065>
 112. Sevlı O, Küçüksille EU (2017) Advertising recommendation system based on dynamic data analysis on Turkish speaking Twitter users. *Tehnicki Vjesnik* 24(2):571–578. <https://doi.org/10.17559/TV-20151020205558>
 113. Shareef MA, Mukerji B, Alryalat MAA, Wright A, Dwivedi YK (2018) Advertisements on Facebook: Identifying the persuasive elements in the development of positive attitudes in consumers. *J Retail Consum Serv* 43:258–268. <https://doi.org/10.1016/j.jretconser.2018.04.006>
 114. Sharma R, Alavi S, Ahuja V (2017) Generating trust using Facebook-A study of 5 online apparel brands. In: S Y, A V, D D, S Y, B D, T Y, T JM, A N (eds) 5th international conference on information technology and quantitative management, ITQM 2017. Elsevier B.V, vol 122, pp 42–49. <https://doi.org/10.1016/j.procs.2017.11.339>
 115. Sharma R, Alavi S, Ahuja V (2019) Generation of trust using social networking sites: a comparative analysis of online apparel brands across social media platforms. *Int J Manag Pract* 12(4):405–425. <https://doi.org/10.1504/IJMP.2019.102532>
 116. Sijabat DCS, Saputra FD, Ikhsan RB, Yuniarty (2020) The impact of social network marketing and customer engagement on purchase intentions in wedding service business. In: 5th International Conference on Information Management and Technology, ICIMTech 2020, pp 97–102. <https://doi.org/10.1109/ICIMTech50083.2020.9211285>
 117. Smith D, Hernández-García A, Agudo Peregrina AF, Hair Jr JF (2016) Social network marketing: A segmentation approach to understanding purchase intention. In: G. J., J. J., R. E., M. P., & M. D. (Eds.), 7th International Conference on Social Media and Society, SMSociety 2016. Association for Computing Machinery. DOI: <https://doi.org/10.1145/2930971.2930992>
 118. Spackman JS, Larsen R (2017) Evaluating the impact of social media marketing on online course registration. *J Contin Higher Educ* 65(3):151–165. <https://doi.org/10.1080/07377363.2017.1368774>
 119. Sugawara E, Nikaido H (2014) Properties of AdeABC and AdeLJK efflux systems of *Acinetobacter baumannii* compared with those of the AcrAB-TolC system of *Escherichia coli*. *Antimicrob Agents Chemother* 58(12):7250–7257. <https://doi.org/10.1128/AAC.03728-14>
 120. Tang S (2018) When social advertising meets viral marketing: sequencing social advertisements for influence maximization. 32nd AAAI Conference on Artificial Intelligence, AAAI 2018, pp 176–183
 121. Thingom C, Yeon G (2017) An integration of big data and cloud computing. In B V, S SC, J A (eds), 1st International Conference on Data Engineering and Communication Technology, ICDECT 2016. Springer Verlag, vol 469, pp 729–737. https://doi.org/10.1007/978-981-10-1678-3_70
 122. Tiwary NK, Kumar RK, Sarraf S, Kumar P, Rana NP (2021) Impact assessment of social media usage in B2B marketing: a review of the literature and a way forward. *J Bus Res* 131:121–139. <https://doi.org/10.1016/j.jbusres.2021.03.028>
 123. Toor A, Husnain M, Hussain T (2017) The impact of social network marketing on consumer purchase intention in Pakistan: Consumer engagement as a mediator. *Asian J Bus Account* 10(1):167–199
 124. Tu Y, Zhao M, Jones C (2014). Insights into social media and online digital music. In: Digital Arts and Entertainment: Concepts, Methodologies, Tools, and Applications. IGI Global, vol 2, pp 684–710. <https://doi.org/10.4018/978-1-4666-6114-1.ch032>
 125. Tussyadiah IP (2012) A concept of location-based social network marketing. *J Travel Tour Mark* 29(3):205–220. <https://doi.org/10.1080/10548408.2012.666168>
 126. Van Eck NJ, Waltman L (2019) VOSviewer Manual version 1.6.10. In: CWTS Meaningful metrics
 127. Varma M, Dhakane N, Pawar A (2020) Evaluation of impact of instagram on customer preferences: the significance of online marketing. *Int J Sci Technol Res* 9(2):548–554
 128. Vasudevan S, Kumar FJP (2018) Social media and B2B brands: an Indian perspective. *Int J Mech Eng Technol* 9(9):767–775
 129. Vasudevan S, Peter Kumar FJ (2018) Brand social engagement: learnings from Indian real estate websites. *Int J Civil Eng Technol* 9(7):1861–1870
 130. Wajid A, Awan MJ, Ferooz F, Shoukat S, Anwar M, Mazhar M (2021) Facebook marketing analytics. In: 4th International conference on innovative computing, ICIC 2021. <https://doi.org/10.1109/ICIC53490.2021.9693023>
 131. Wang CL (2021) New frontiers and future directions in interactive marketing: Inaugural Editorial. *J Res Interact Mark* 15(1):1–9. <https://doi.org/10.1108/JRIM-03-2021-270/FULL/HTML>
 132. Wang G, Tan GW-H, Yuan Y, Ooi K-B, Dwivedi YK (2021) Revisiting TAM2 in behavioral targeting advertising: a deep learning-based dual-stage SEM-ANN analysis. *Technol Forecast Soc Chang*. <https://doi.org/10.1016/j.techfore.2021.121345>

133. Wang SS, Lin Y-C, Liang T-P (2018) Posts that attract millions of fans: the effect of brand-post congruence. *Electron Commer Res Appl* 28:73–85. <https://doi.org/10.1016/j.jelerap.2017.12.010>
134. Wang Z, Zhao H, Zhang G, Zhang J (2017) An ACP-based approach for complex social network marketing system. *Xitong Gongcheng Lilun yu Shijian/Syst Eng Theory Pract* 37(11):2897–2907. [https://doi.org/10.12011/1000-6788\(2017\)11-2897-11](https://doi.org/10.12011/1000-6788(2017)11-2897-11)
135. Wasiaq M, Bashar A, Akmal S, Rabbani MR, Saifi MA, Nawaz N, Nasef YT (2023) Adoption and applications of blockchain technology in marketing: a retrospective overview and bibliometric analysis. *Sustainability* 15(4):3279
136. Wright LT, Gaber H, Robin R, Cai H (2018) Content strategies for facebook marketing: a case study of a leading fast-food brand page. In: *Developments in Marketing Science: Proceedings of the Academy of Marketing Science*. Springer Nature, pp 779–791. https://doi.org/10.1007/978-3-319-66023-3_246
137. Wu Y, Stewart M, Liu R (2015) Social networking sites and marketing strategies. In *Handbook of Research on Integrating Social Media into Strategic Marketing*. IGI Global, pp 207–239. <https://doi.org/10.4018/978-1-4666-8353-2.ch013>
138. Yang S, Zeng X (2018) Sustainability of government social media: A multi-analytic approach to predict citizens' mobile government micro-blog continuance. *Sustainability (Switzerland)*. <https://doi.org/10.3390/su10124849>
139. Yarahmadi F, Yarahmadi F, Nader BS (2022) Investigating the impact of social network marketing on the bank customers' profitability. In: *Contributions to Management Science*. Springer Science and Business Media Deutschland GmbH, pp 119–134. https://doi.org/10.1007/978-3-030-86028-8_7
140. Yoo K-H, Lee W (2017) Facebook marketing by hotel groups: Impacts of post content and media type on fan engagement. In: *Advances in social media for travel, tourism and hospitality: new perspectives, practice and cases*. Taylor and Francis, pp 131–146. <https://doi.org/10.4324/9781315565736>
141. Yoon Y, Deng R, Joo J (2022) The effect of marketing activities on Web Search Volume: an empirical analysis of Chinese Film Industry Data. *Appl Sci (Switzerland)*. <https://doi.org/10.3390/app12042143>
142. Zhang B, Mildemberger M, Howe PD, Marlon J, Rosenthal SA, Leiserowitz A (2020) Quota sampling using Facebook advertisements. *Polit Sci Res Methods* 8(3):558–564. <https://doi.org/10.1017/psrm.2018.49>
143. Zhang X, Gong Y, Peng L (2020) The impact of interdependence on behavioral engagement in online communities. *Mark Intell Plan* 38(4):417–431. <https://doi.org/10.1108/MIP-05-2019-0285>
144. Zhao H, Huang Y, Wang Z (2020) Comparison between social media and social networks in marketing research: a bibliometric view. *Nankai Bus Rev Int* 12(1):122–151. <https://doi.org/10.1108/NBRI-12-2019-0072>
145. Zollo L, Filieri R, Rialti R, Yoon S (2020) Unpacking the relationship between social media marketing and brand equity: The mediating role of consumers' benefits and experience. *J Bus Res* 117:256–267. <https://doi.org/10.1016/j.jbusres.2020.05.001>