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A BIBLIOMETRIC ANALYSIS OF CUSTOMER-CONSUMER ENGAGEMENT BEHAVIOR IN SOCIAL MEDIA

A. Muhamad Athar Riswanda[1], B. Erni Mertini[2], C. Tarandhika Tantra[3]

[1] Management Study Program, School of Economic & Business, Telkom University, Bandung, Indonesia
[2] Management Study Program, School of Economic & Business, Telkom University, Bandung, Indonesia
[3] Leisure Business Management Study Program, School of Economic & Business, Telkom University, Bandung, Indonesia

Abstract

Customer engagement behavior is an important outcome that serves as a primary objective of social media marketing. However, both practitioners and academics still face limitations in gaining comprehensive insights into this area. The limited number of studies that explain the development of research on customer engagement behavior remains an issue that needs to be addressed. This study aims to fill this gap by conducting a bibliometric analysis of the concept of customer engagement behavior on social media using the VOSviewer software. The data were collected based on keyword searches in the Scopus database. From the search results, 910 relevant articles published between 2009 and 2022 were identified. The findings indicate that Facebook is the most frequently occurring keyword in studies on customer engagement behavior in social media. The United States is the country with the highest number of articles in this field. Future research opportunities related to customer engagement behavior include studies on emotion, content creators, and automated content analysis. This research contributes by providing a comprehensive mapping of studies on customer engagement behavior over the past 12 years. It is expected to serve as a valuable reference and guide for other researchers in conducting and determining research themes in the future.

Keywords— Bibliometric Analysis; Customer Engagement Behavior; Social Media; VosViewer; Relationship Marketing

Abstrak

Customer engagement behavior merupakan keluaran penting yang menjadi tujuan utama pemasaran social media. Namun, praktisi dan akademisi masih memiliki keterbatasan dalam mempelajari wawasan ini. Masih sedikitnya study yang dapat menjelaskan perkembangan kajian di bidang customer engagement behavior menjadi masalah yang perlu diselesaikan. Penelitian ini bertujuan untuk manjawab masalah tersebut dengan melakukan analisis bibliometric dalam konsep customer engagement behavior di social media menggunakan perangkat lunak vosviewer. Data yang diperoleh merupakan data hasil pencarian berdasarkan kata kunci di database scopus. Dari hasil pencarian, diperoleh 910 artikel yang relevan antara tahun 2009 sampai 2022. Hasil studi menunjukkan Facebook menjadi kata kunci yang paling sering muncul untuk penelitian customer engagement behavior di social media. Negara dengan jumlah artikel terbanyak kajian ini adalah USA. Peluang untuk penelitian di masa yang akan datang terkait kajian customer engagement behavior berhubungan dengan emotion, content creator, dan automated content analysis. Hasil penelitian ini berkontribusi dengan menunjukkan pemetaan penelitian untuk customer engagement behavior selama rentang waktu 12 tahun terakhir. Penelitian ini diharapkan dapat menjadi referensi dan membantu peneliti lain dalam melakukan dan menentukan tema penelitian di masa yang akan datang.

Kata kunci— Bibliometric Analysis; Customer Engagement Behavior; Social Media; VosViewer; Relationship Marketing

I. INTRODUCTION

Since the emergence of the internet and Web 2.0, consumer and brand activities on social media have continued to grow, with 98% of brands having a social media presence and 95% of consumers aged between 18 and 34 following brand pages on social media in 2019 (Park & Ha, 2021). It is not an exaggeration to say that both consumers and brands have shifted their marketing activities to social media (Muntinga et al., 2011). With the increasing focus of companies on social media marketing, customer engagement has become a crucial component sought by marketers due to its role in strengthening the relationship between consumers and companies (Ajiboye et al., 2019). Engagement is also considered an innovative concept because it enhances company profitability, brand equity, and customer relationships (Schaefers et al., 2021; Roy et al., 2018; Qu et al., 2022).

Academics and marketing practitioners are challenged to address customer engagement within today's highly competitive business environment (Shawsky et al., 2019). The fact that engaged consumers tend to be more loyal than non-engaged consumers has also attracted significant interest in this topic (Vivek et al., 2012). Unfortunately, there remains limited understanding among academics and practitioners regarding the factors that motivate consumers to engage with brands, which is an area that requires deeper exploration (Jaakonmäki et al., 2017; Schaefers et al., 2021). Moreover, there is still a lack of empirical findings on the effectiveness of customer engagement behaviors on social media, which warrants further investigation (Beckers, 2016).

Customer engagement has been studied from various perspectives by researchers. One primary focus is on examining antecedent factors that drive engagement behavior, while another focus is on exploring the manifestations or outcomes of consumer behavior in the online context (Dwivedi et al., 2020). This study seeks to delve into the concept of customer engagement behavior as an outcome of social media marketing activities, given the limited knowledge and insights on engagement behavior within academic research (Barger et al., 2016). For marketing practitioners, this lack of understanding affects their ability to demonstrate the effectiveness of social media marketing efforts (Syrdal & Briggs, 2018; Halloran & Lutz, 2021; Schaefers et al., 2021). Engagement behaviors commonly exhibited by consumers as a result of corporate social media marketing efforts can be observed through measurable behavioral aspects such as likes, comments, and shares (Dessart et al., 2016; Dai & Wang, 2021). However, the lack of consensus regarding engagement behaviors on social media remains a challenge for scholars seeking to produce relevant findings.

Over the past decade, there has been an increase in research examining customer engagement behavior, although this area remains relatively underexplored compared to other marketing topics (Martiyanti, 2022). Given the importance of customer engagement behavior in social media, practitioners and academics interested in this topic need to understand the current status and research directions. Therefore, bibliometric analysis is essential to stay updated with the latest developments and studies on customer engagement behavior. Bibliometric analysis aims to examine the structure and development of knowledge based on the volume of relevant research. Thus, this study aims to fill this gap by employing quantitative bibliometric analysis and mapping related research documents. The research objectives of this study are as follows: (1) To analyze the trends and distribution of research on customer engagement behavior; (2) To highlight the contributions of the most productive journals, countries/territories, institutions, authors, international collaborations among authors, and the most cited studies.; (3) To identify key topics and common terms used in research on customer engagement behavior; (4) To provide insights for future research directions.

In terms of structure, this article is organized into five sections. The first section is the introduction, which presents the background and research gaps. Section 2 discusses the literature review on customer engagement behavior. Section 3 describes the research design, data sources, and details of the methods and software employed. Section 4 presents the results and discussion of each bibliometric indicator. Finally, Section 5 outlines the conclusions, implications, research limitations, and directions for future research...

II. LITERATURE REVIEW

A. Relationship Marketing and Service Dominant Logic (SD-Logic)

Relationship marketing represents a paradigm shift in the field of marketing. Its emergence is often associated with the development of the service sector, which requires long-term relationships, focuses on the interactions between companies and consumers, and emphasizes consumer participation in the services provided (Gummerus et al., 2017). Similar to relationship marketing, Service-Dominant Logic also represents a paradigm shift in modern marketing, arising from a perspective that prioritizes service in the exchange process (Vargo & Lusch, 2006). The development of the service-dominant logic approach stems from a marketing perspective that emphasizes intangible resources, co-creation of value, and relational aspects that were previously overlooked in

organizational marketing practices. These two theories form the theoretical foundation for the concept of customer engagement, as both share the assumption that consumers play an active role in marketing and interactions that contribute to the creation of long-term relationships with companies (Vinerean & Opreana, 2021).

In developing the concept of Service-Dominant Logic, Vargo and Lusch (2006) explain that the marketing perspective is derived from service science. Within this perspective, customers are regarded as operant resources and collaborators in value creation for the company. As a result, marketing models based on this theory always involve customers as an integral part of the company in the process of creating value.

B. Customer Engagement Behavior

Customer engagement behavior is a concept introduced by Van Doorn et al. to describe consumer behavioral manifestations toward a brand or company, driven and motivated by specific activities, with effects that extend beyond purchase behavior (Van Doorn et al., 2010). Although the term customer engagement has existed in the literature since 2006, it was not until 2010 that academics and marketing practitioners began to show significant interest in examining the impact of motivations and stimuli in social media on consumer behavior toward corporate social media marketing activities (Lim et al., 2022). The manifestations of engagement behavior resulting from consumer-brand interactions on social media are considered to have a stronger impact compared to traditional forms of interaction (Azar et al., 2016).

Previous studies indicate that engagement behaviors on social media can take both positive and negative forms (Ajiboye et al., 2019), active or passive forms (Dolan et al., 2019; Syahbaznezhad et al., 2021), and are often represented through actions such as likes, comments, and shares (Dai & Wang, 2021). Engagement metrics commonly used to evaluate consumer responses are often linked to behavioral reactions (Dai & Wang, 2021; Dessart et al., 2016). These behavioral responses encompass the cognitive, affective, and conative aspects of consumers, as reflected in their actions on social media (Dai & Wang, 2021). For this reason, the present study focuses on examining customer engagement from the behavioral perspective, as many prior studies have employed behavioral parameters to investigate the same concept.

III. RESEARCH METHODOLOGY

This article employs a bibliometric analysis approach to evaluate publications related to customer engagement behavior on social media. Bibliometric analysis is a widely used method to understand global research trends by utilizing large and unstructured datasets from academic literature databases (Ghani et al., 2022; Donthu et al., 2021). For this study, we selected and used the Scopus research database as the primary data source because it contains abstracts and citation data from literature that has been curated by reviewers and includes a large number of journals indexed in WoS (Han et al., 2022).

PRISMA is a standard method that can be used to provide a systematic review of existing studies. This research adopts the PRISMA method to systematically review and evaluate studies on customer engagement behavior. Data mining from the Scopus database was conducted on June 16, 2023, for the purpose of this study. The data source used consists of journal articles collected based on English keywords published between 2009 and 2022. We applied specific criteria to select data from the database using a search string focused on literature related to customer engagement behavior and social media to explore the research content. The search string used in this study is TITLE-ABS-KEY ("customer engagement behavior" OR "user engagement" OR "social media engagement" OR "online engagement" AND "social media" OR "social network" OR "social network sites") AND PUBYEAR > 2008 AND PUBYEAR < 2023 AND (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")).

The bibliometric analysis in this study provides detailed information regarding research trends on customer engagement behavior in social media, based on seven indicators: (1) research productivity trends; (2) source; (3) country/territory; (4) institution; (5) author keywords; (6) authorship, and; (7) citation metrics. Most of the descriptive analyses of these indicators are presented using the Scopus Analyzer function. To visualize performance analysis, we used Microsoft Office Excel for data processing and VosViewer software to support network visualization and analysis. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach was applied to present the procedure for reviewing the collected literature. To ensure that the analysis in this study is based on accurate data, we refined the query string and manually excluded 214 documents deemed irrelevant based on titles, abstracts, and keywords (Figure 1). We then continued the analysis using the refined dataset, considering factors such as publication year, source, author, author keywords, institution, and country.

Bibliometric indicators, including the total number of publications (TP), total number of citations, citation scores, and H-index, were employed to create rankings for the analysis. The dataset obtained through this bibliometric approach represents only the number of articles published and does not assess the scholarly contribution or content quality of the articles.
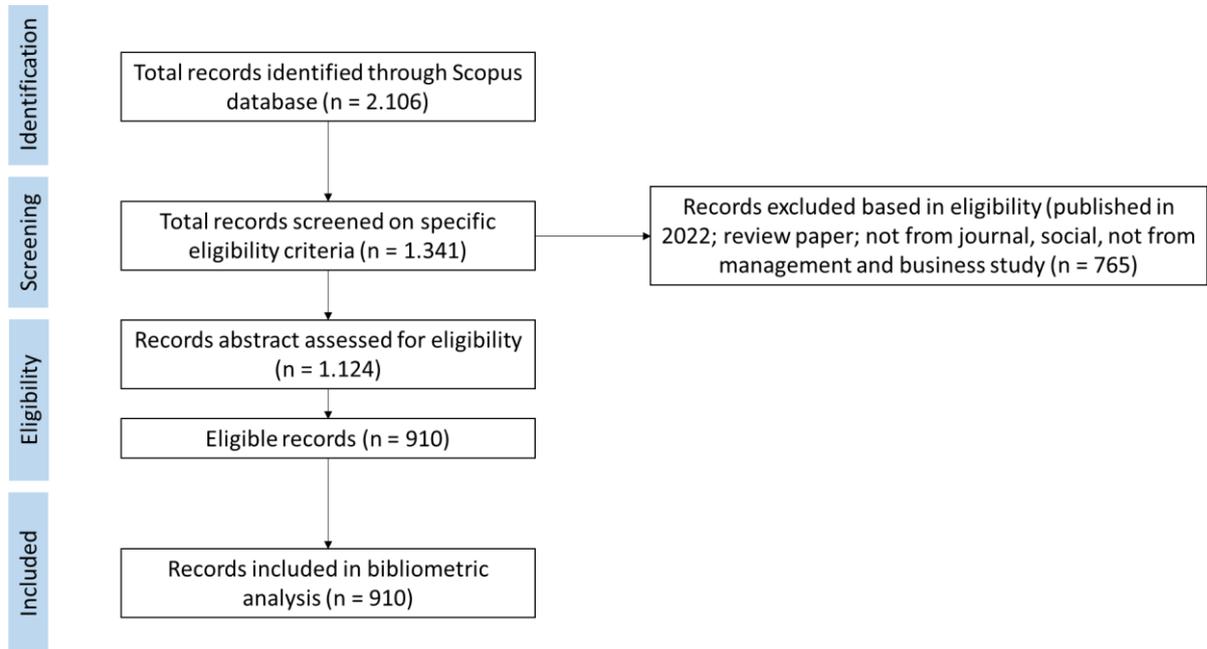
Fig. 1 PRISMA flow diagram process

IV. RESULT/FINDING

A. Publication Distribution

Over the span of 13 years, we identified 910 research papers related to customer engagement behavior (CEB) published within the Scopus database (Figure 1). The annual publication trend demonstrates a steady increase in research output from 2009 to 2022. During the first decade, the average annual publication count was 27.9 papers, with the highest number recorded in 2020, reaching 136 documents, while the lowest output was observed in 2009 and 2010, with only one document each. A slight decline in publication numbers occurred in 2014 compared to the previous year, but subsequent years show a consistent upward trend in research activity.

This overall growth pattern indicates a sustained and growing scholarly interest in CEB on social media, reflecting its relevance in contemporary marketing and consumer behavior studies. Given this upward trajectory, it is reasonable to predict an even higher volume of publications in 2023 and beyond, as the topic continues to gain attention from both academics and practitioners.
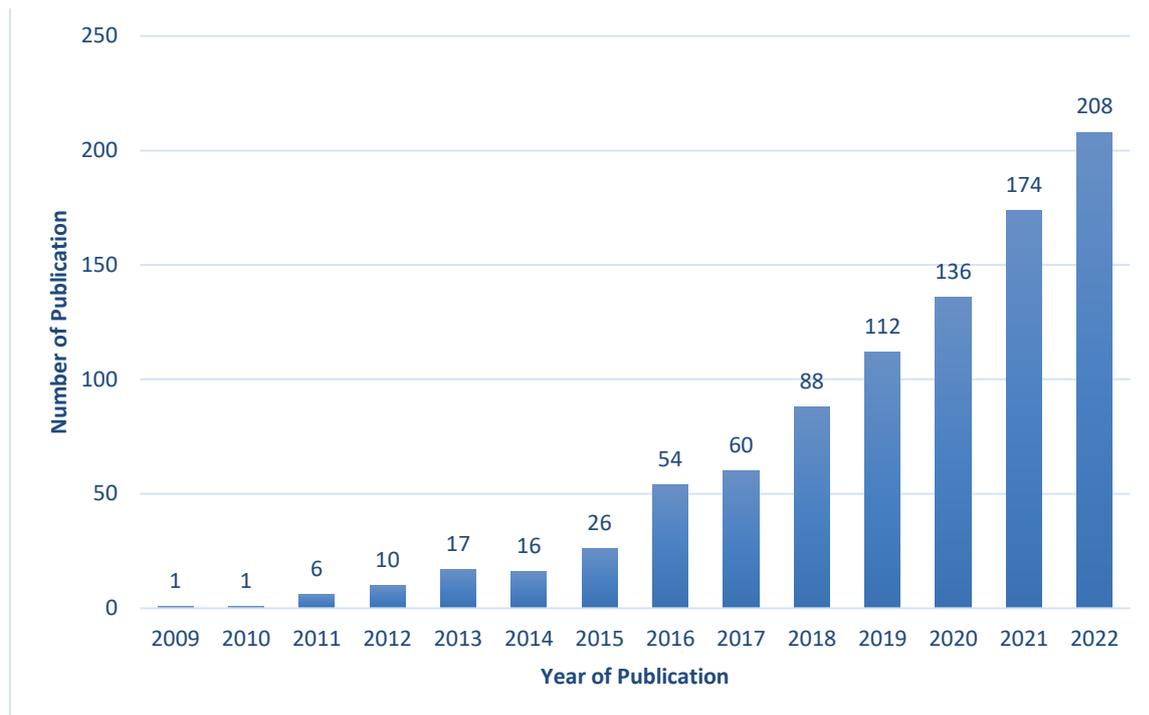
Figure 2 Cumulative number of publications in customer engagement behavior in social media indexed in Scopus from 2009 – 2022 (Microsoft Excel Office)

B. Productive Journals

The descriptive analysis of journals publishing research on customer engagement behavior (CEB) in social media identified 17 journals with the highest number of publications, affiliated with seven publishers (Table 2). To present this descriptive analysis, we applied two criteria: the number of publications as the primary measure of journal performance, and the 2022 CiteScore as the secondary ranking criterion, focusing on journals with six or more publications. Based on the publication count, Elsevier and Sage are the leading publishers, each with 42 articles. Elsevier, in particular, stands out as the publisher with the highest number of journals (four) that have consistently published CEB-related research during the observed period. Other prominent publishers include Emerald, Taylor & Francis, Annenberg Press, and Springer Nature. Among the journals, Online Information Review is the most productive, with 19 publications (2.08%), followed by Public Relations Review with 16 publications (1.75%), and both Information, Communication & Society and Social Media + Society, each contributing 14 documents (1.5%). In terms of citation impact, the Journal of Interactive Marketing ranks highest, with a total of 497 citations and the highest CiteScore (17.4) based on the 2022 CiteScore metrics.

Table 1 The top 17 productive journal on customer engagement behavior in social media with their most cited article

No.	Journal Name	Tot. Doc. (%)	Tot. Citation	Tot. Public ation (%)	CIteSc ore 2022	The most Cited Article	Times Cited	Publisher
1	Online Information Review	19 (2.08)	1,585	293	5.4	Influence of Facebook brand-page posts on online engagement (Luarn et al., 2015)	216	Emerald
2	Public Relations Review	16 (1.75)	2,676	364	7.4	Ebola on Instagram and Twitter: How health organizations address the health crisis in their social media engagement (Guidry et al., 2017)	191	Elsevier

No.	Journal Name	Tot. Doc. (%)	Tot. Citation	Tot. Public ation (%)	CIteSc ore 2022	The most Cited Article	Times Cited	Publisher
3	Information Communication and Society	14 (1.5)	5,432	506	10.7	What drives interaction in political actors' Facebook posts? Profile and content predictors of user engagement and political actors' reactions (Heiss et al., 2019)	95	Taylor & Francis
4	Social Media and Society	14 (1.5)	4,321	560	7.7	Cognitive Effects of Social Media Use: A Case of Older Adults (Quinn, 2018)	50	SAGE
5	New Media and Society	13 (1.4)	6,371	547	11.6	Accidental exposure to politics on social media as online participation equalizer in Germany, Italy, and the United Kingdom (Valeriani & Vaccari, 2016)	178	SAGE
6	Sustainability (Switzerland)	11 (1.2)	281,274	48,515	5.8	Designing a data visualization dashboard for managing the sustainability communication of healthcare organizations on Facebook (Conte et al., 2018)	8	MDPI
7	Journal of Business Research	11 (1.2)	51,538	3,216	16.0	Understanding consumers' social media engagement behaviour: An examination of the moderation effect of social media context (Cao et al., 2021)	75	Elsevier
8	International Journal of Communication	10 (1.09)	NA	NA	NA	Constructing public space| Rousing the facebook crowd: Digital enthusiasm and emotional contagion in the 2011 protests in Egypt and Spain (Gerbaudo, 2016)	51	University of Southern California
9	Social Network Analysis and Mining	9 (0.98)	2,062	445	4.6	Online engagement factors on Facebook brand pages (Cvijikj & Michahelles, 2013)	488	Springer Nature
10	Journal of Interactive Marketing	9 (0.98)	2,285	131	17.4	Managing customer relationships in the social media era: Introducing the social CRM house (Malthouse et al., 2013)	497	SAGE
11	Journal of Academic Librarianship	8 (0.87)	1,836	443	4.1	Analyzing the use of Facebook among university libraries in Hong Kong (lam et al., 2019)	38	Elsevier
12	Internet Research	8 (0.87)	3,468	331	10.5	The outcome of online social interactions on Facebook pages: A study of user engagement behavior (Khobzi et al., 2019)	47	Emerald
13	Industrial Marketing Management	7 (0.76)	11,674	843	13.8	Role of big data and social media analytics for Business-to-Business sustainability: A participatory web context (Sivarajah et al., 2020)	107	Elsevier
14	Information Technology and People	6 (0.65)	2,560	339	7.6	Building brand loyalty through user engagement in online brand communities in social networking sites (Zheng et al., 2015)	204	Emerald
15	Journal of Interactive Advertising	6 (0.65)	907	79	11.5	Social Media Engagement as a Metric for Ranking US Olympic Athletes as Brand Endorsers (Brison & Geurin, 2021)	6	Taylor & Francis
16	Journalism and Mass Communication Quarterly	6 (0.65)	1,120	177	6.3	An Examination of Antecedents to Perceived Community Resilience in Disaster Postcrisis Communication (Zhang & Shay, 2019)	17	SAGE

No.	Journal Name	Tot. Doc. (%)	Tot. Citation	Tot. Public ation (%)	CIteSc ore 2022	The most Cited Article	Times Cited	Publisher
17	International Journal of Strategic Communication	6 (0.65)	544	111	4.9	Toward an integrated model of public engagement on corporate social networking sites: Antecedents, the process, and relational outcomes (Men & Tsai, 2013)	63	Taylor & Francis

C. Countries and Leading Institutions

Based on the country of origin of the researchers, this study found that customer engagement behavior (CEB) on social media has been examined by scholars from 70 countries/territories. For clarity, we selected the 14 most productive countries/territories in this field, as shown in Table 3. Approximately 63.2% of all documents were contributed by the top five countries: the United States, the United Kingdom, Australia, Germany, and China. The United States leads with 359 publications, representing nearly one-third of the total global output. The United Kingdom follows with 105 documents, while Australia contributed 72, and Germany and China accounted for 46 and 42 documents, respectively.

To analyze cross-country collaboration, we utilized data on Single Country Publications (SCP). The average collaboration percentage between countries was calculated by dividing the number of publications by the number of documents affiliated with a single country. The total number of documents published by top institutions in the 12 leading countries is reported under the Total Publication Institution (TPI) column.

Our findings reveal that India (81.6%), the USA (74.4%), Spain, and Italy (69.2%) have the highest SCP values, indicating strong domestic collaboration. Conversely, Hong Kong (22.7%), China (26.2%), and Sweden (37.5%) demonstrate low domestic collaboration. For instance, 17 out of 22 documents affiliated with Hong Kong involved collaborations with six different countries/territories, while 31 of the 42 Chinese documents were produced through international partnerships spanning seven countries. These statistics highlight China as the country with the highest level of international collaboration in CEB research.

Table 2 The top 12 productive countries in work of customer engagement behavior in social media publications. TPC: Total publication of a given country; SCP: single-country publications; TPI: total publication for customer engagement behavior in social media in each institution

Rank	Country	TPC	SCP (%)	Most Productive Institution	TPI
1	USA	359	74.4	University of Central Florida	12
2	UK	105	46.7	University of Glasgow	6
3	Australia	72	51.4	The University of Sydney	11
4	Germany	46	47.8	Ludwig-Maximilians-Universität München	6
5	China	42	26.2	University of Nottingham Ningbo China	5
6	Spain	39	69.2	Universidad de Almería	7
7	Canada	38	52.6	The University of British Columbia	4
8	India	38	81.6	Amity University	3
9	Netherlands	29	41.4	Universiteit van Amsterdam	12
10	South Korea	27	44.4	Korea University	3
11	Italy	26	69.2	Politecnico di Milano	5
12	Hong Kong	22	22.7	The University of Hong Kong	6

We also mapped the 12 most productive institutions in customer engagement behavior (CEB) research, as illustrated in Figure 4. Each of these institutions has published more than six documents on the topic. The results indicate that 2.62% of the total articles (24 out of 910) were contributed by the University of Central Florida and

Universiteit van Amsterdam, with each institution producing 12 publications. Following closely, The University of Sydney stands out with 11 publications, positioning it as another leading contributor to research on CEB.
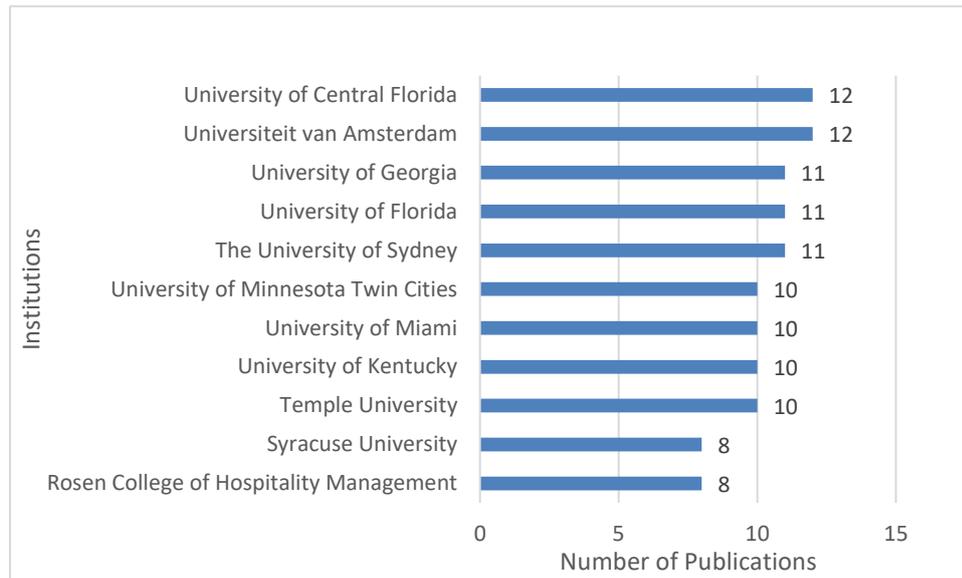
Fig. 3 The top 11 most productive institutions in customer engagement behavior in social media research

D. Leading Authors

Table 3 presents the top 10 leading authors in customer engagement behavior (CEB) research, representing seven countries: Australia (3 authors), Spain (3 authors), and Israel (2 authors). In addition, one highly productive author each comes from Italy, Hungary, the USA, and Canada. The ranking of authors was determined based on three criteria: (1) number of research documents published, which served as the primary indicator of productivity; (2) citation count and H-index (2022), which were used as the secondary measure to assess the authors' scholarly impact; (3) Total number of citations, serving as the third standard to distinguish the most influential authors in the field.

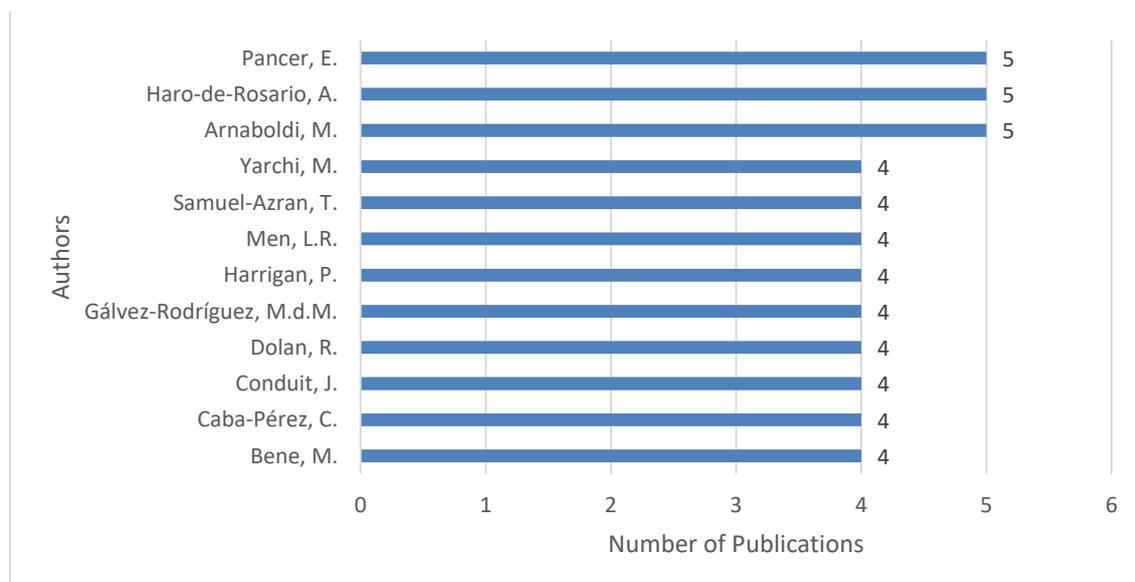*Fig. 4 The top 12 most productive authors in customer engagement behavior in social media research*

E. Leading Authors and Their Research Impact

Based on Figure 4, Michela Arnaboldi, Arturo Haro-de-Rosario, and Ethan Pancer are the most productive authors in the field of customer engagement behavior (CEB) on social media, each contributing five articles. Detailed information about these authors is presented in Table 5. Among them, Michela Arnaboldi is recognized as the most prolific author, with a total of 73 documents indexed in Scopus. She is currently affiliated with Politecnico di Milano, Italy, and has achieved an H-index of 25, with her works cited 2,068 times across 1,766 documents. Her research primarily focuses on digital transformation, public sector management, and the integration of social media in organizational contexts, which intersects with the study of engagement behaviors.

On the other hand, Linjuan Rita Men stands out as the most influential author based on citation count and academic impact. She holds an H-index of 29 (as of 2022) and is a Professor of Public Relations at the College of Journalism and Communications, University of Florida. Her research themes include internal communication, leadership communication, emerging technologies, and entrepreneurial communication. Since 2011, her 69 Scopus-indexed publications have been cited 2,641 times, making her one of the leading voices in exploring the intersection between communication strategies and engagement behaviors.

No.	Author	Scopus Author ID	Year of 1st Publication	TP	h-index	TC	Current affiliation	Country
1	Arnaboldi, Michela.	8902067800	2003a	73	25	2068	Politecnico di Milano	Italy
2	Haro-de-Rosario, Arturo.	55802223700	2012a	25	9	378	Universidad de Almeria	Spain
3	Pancer, Ethan.	36775013200	2010c	14	7	311	Saint Mary's University	Canada
4	Bene, Marton.	57189716157	2015b	23	7	256	Eötvös Loránd Tudományegyetem	Hungary
5	Caba-Pérez, Carmen.	55318662300	2004b	61	16	945	Universidad de Almeria	Spain
6	Conduit, Jodie.	6507634770	1996b	58	21	2144	The Adelaide Business School	Australia
7	Dolan, Rebecca M.	57016255700	2015a	26	15	1124	The Adelaide Business School	Australia
8	Gálvez-Rodríguez, Maria del Mar.	55318456500	2012a	24	9	302	Universidad de Almeria	Spain
9	Harrigan, Paul O.	24068435900	2008a	65	25	2223	The UWA Business School	Australia
10	Men, Linjuan Rita.	48861910500	2011a	69	29	2641	University of Florida	USA
11	Samuel-Azran, Tal.	55444395400	2012a	59	13	513	Reichman University	Israel
12	Yarchi, Moran.	55968510400	2013a	50	15	772	Reichman University	Israel

F. Collaboration Network of Countries

Figure 5 illustrates the collaboration network among countries/territories, visualized using VOSviewer software. The strength of collaboration between countries is represented by the thickness of the connecting lines. The USA leads in collaborative research, with connections to 117 co-authors, followed by the UK with 79 co-authors. Australia ranks third, having established research collaborations with 50 co-authors, with other countries following behind. Our analysis reveals that CEB research is distributed across major continents, with Asia contributing the highest number of countries (29), followed by Europe (26), and Africa (10). In Southeast Asia, Thailand stands out as the only country with a significant record of publications, notably collaborating with researchers from the USA.

These findings emphasize that contemporary research on CEB is increasingly driven by international collaborations, which have proven to generate broader and more impactful insights compared to studies conducted within a single country (Dusdal & Powell, 2021). The full visualization of this collaboration network can be accessed at: https://tinyurl.com/254lj6mt.
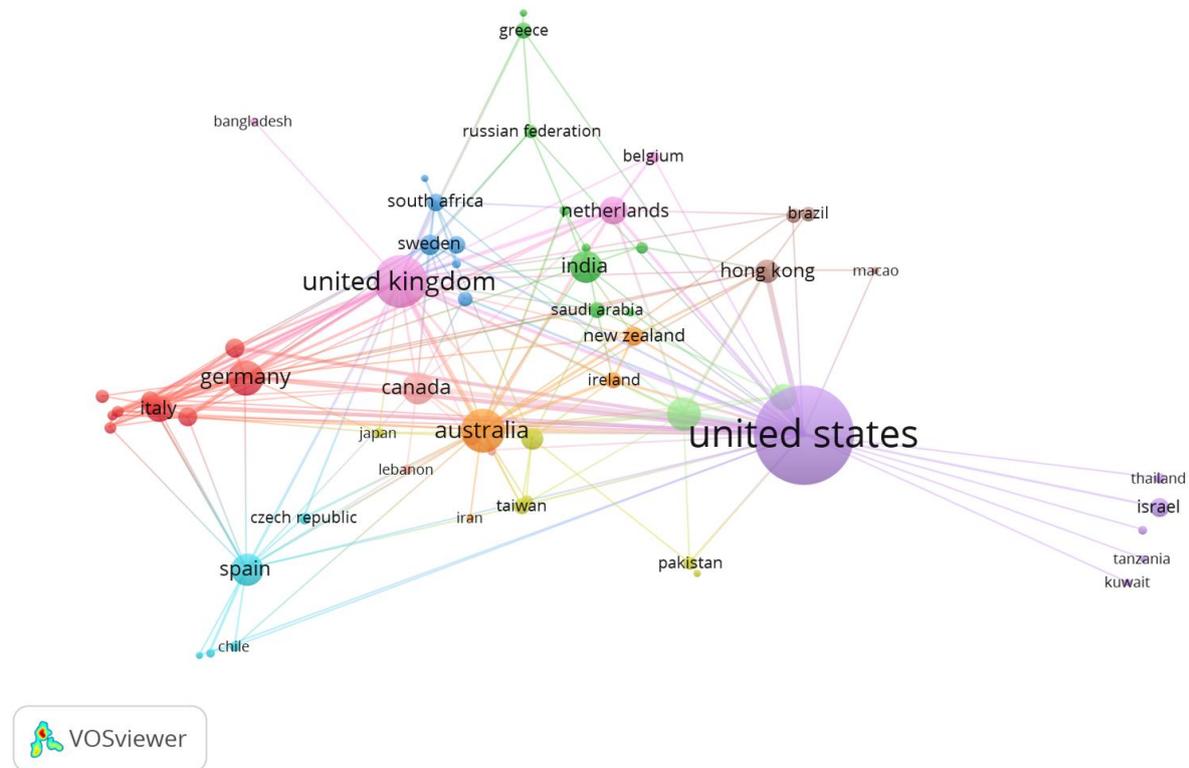
Figure 5 A screenshot of bibliometric map on customer engagement behavior in social media research with network visualization mode

G. Document Citations

As of June 16, 2023, the citation summary of 910 articles in the Scopus database indicates a total of 21,002 citations, with an average of 23 citations per document. To simplify the analysis, we selected the 10 most-cited research papers on CEB from the Scopus database (Table 4).

Based on Table 4, the most-cited article was authored by Gummerus et al. (2012), published in the Journal of Management Research Review, with a total of 597 citations. To complement the citation analysis, we also examined the research methodologies used in these highly cited articles. We found that 4 out of the 10 most-cited documents employed quantitative methods, particularly through questionnaires. In contrast, methods such as content analysis, data mining, and mixed methods remain underutilized by previous researchers.

Table 3 List of the top 10 most cited publications

No.	Authors	Title	Method	Year	Journal	TC
1	Gummerus J.; Liljander V.; Weman E.; Pihlström M.	Customer engagement in a Facebook brand community (Gummerus et al., 2012)	Quantitative, Survey	2012	Management Research Review	597
2	Rauniar R.; Rawski G.; Yang J.; Johnson B.	Technology acceptance model (TAM) and social media usage: An empirical study on	Quantitative, Survey	2014	Journal of Enterprise Information Management	521

No.	Authors	Title	Method	Year	Journal	TC
3	Aral S.; Walker D.	Facebook (Rauniar et al., 2014) Creating social contagion through viral product design: A randomized trial of peer influence in networks (Aral & Walker, 2011)	Experimental	2011	Management Science	512
4	Malthouse E.C.; Haenlein M.; Skiera B.; Wege E.; Zhang M.	Managing customer relationships in the social media era: Introducing the social CRM house (Malthouse et al., 2013)	Literature Review	2013	Journal of Interactive Marketing	497
5	Pletikosa Cvijikj I.; Michahelles F.	Online engagement factors on Facebook brand pages (Cvijikj & Michahelles, 2013)	Data Mining	2013	Social Network Analysis and Mining	488
6	Lee D.; Hosanagar K.; Nair H.S.	Advertising content and consumer engagement on social media: Evidence from Facebook (Lee et al., 2018)	Content Analysis	2018	Management Science	397
7	Dolan R.; Conduit J.; Fahy J.; Goodman S.	Social media engagement behaviour: a uses and gratifications perspective (Dolan et al., 2016)	Literature Review	2016	Journal of Strategic Marketing	362
8	Voorveld H.A.M.; van Noort G.; Muntinga D.G.; Bronner F.	Engagement with Social Media and Social Media Advertising: The Differentiating Role of Platform Type Voorveld et al., 2018)	Quantitative, Survey	2018	Journal of Advertising	320
9	Dijkmans C.; Kerkhof P.; Beukeboom C.J.	A stage to engage: Social media use and corporate reputation (Dijkmans et al., 2015)	Quantitative, Survey	2015	Tourism Management	311
10	Schivinski B.; Christodoulides G.; Dabrowski D.	Measuring consumers' engagement with brand-related social-media content: Development and validation of a scale that identifies levels of social-media engagement with brands (Schivinski et al., 2016)	Mix Method	2016	Journal of Advertising Research	249

H. Co-Occurrence based on Author keywords

A total of 2,643 author keywords were extracted from 910 documents, with 496 keywords (78.1%) occurring only twice, 224 keywords (11.4%) occurring three times, and 139 keywords (4.1%) occurring four times. We

employed a co-occurrence technique based on author keywords to identify the frequency of specific terms across documents and to reveal the thematic proximity of the research topics studied (Donthu et al., 2021). The keyword "social media" was excluded from the analysis because it had already been used as a primary filter during the dataset search. After refining the keywords to be analyzed, we included only those author keywords that appeared at least twice, resulting in 486 keywords analyzed through VOSviewer. The co-occurrence analysis revealed that "social media engagement" (85 occurrences; 110 links), "user engagement" (73 occurrences; 118 links), "Twitter" (72 occurrences; 108 links), "engagement" (66 occurrences; 115 links), "online engagement" (40 occurrences; 58 links), and "social media marketing" (30 occurrences; 50 links) are closely associated with customer engagement behavior on social media. These findings represent an important theoretical framework for researchers to use when exploring the domain of social media marketing. The results can also be accessed at https://tinyurl.com/2zdze7co.

Figure 6 A screenshot of bibliometric map on customer engagement behavior in social media research based on author keywords co-occurences with network visualization mode (minimum occurences of a keyword are set to two)

To deepen the bibliometric analysis conducted in this study, we grouped and ranked five keyword categories based on media, fields of study, theories, methods, and variables that frequently appeared in the author keywords. In the media category, the most frequently occurring keywords were Facebook (118 occurrences; 181 links), Twitter (72 occurrences; 108 links), Instagram (29 occurrences; 52 links), and YouTube (6 occurrences; 18 links). Facebook appears to be the most widely used platform for studying the concept of CEB on social media. This is consistent with Facebook being the largest social media platform globally, with 2.98 billion monthly active users in the first quarter of 2023 (Dixon, 2023).

The contexts most frequently studied in relation to CEB, as identified through co-occurrence mapping, include marketing (13 occurrences; 30 links), higher education (8 occurrences; 18 links), advertising (8 occurrences; 26 links), politics (7 occurrences; 16 links), tourism (6 occurrences; 18 links), and sports marketing (6 occurrences; 14 links). Marketing emerges as the most frequently referenced field among researchers, indicating that CEB

research is most commonly linked to marketing compared to other contexts. This finding aligns with the argument of Islam & Rahman (2016), who noted that customer engagement is a core topic in marketing research.

We also identified several variables closely associated with CEB as research constructs, including purchase intention (7 occurrences; 16 links), trust (7 occurrences; 21 links), emotions (6 occurrences; 12 links), as well as brand equity (4 occurrences; 11 links), brand loyalty (4 occurrences; 11 links), and customer experience (4 occurrences; 10 links). These findings form a theoretical framework for understanding common antecedents and outcomes in CEB research. However, further studies are required to deepen and validate these initial findings.

Regarding theories frequently associated with CEB, we found that social capital (6 occurrences; 10 links), uses and gratification (5 occurrences; 11 links), social exchange theory (4 occurrences; 10 links), and self-determination theory (3 occurrences; 5 links) are the most referenced theoretical foundations in CEB-related documents. This suggests that these theories are widely adopted as conceptual frameworks in CEB research.

Finally, the analysis of methods used in CEB research shows that content analysis (20 occurrences; 51 links), sentiment analysis (14 occurrences; 25 links), big data (12 occurrences; 32 links), text mining (5 occurrences; 10 links), and netnography (4 occurrences; 12 links) are the dominant approaches applied by researchers, as revealed by the frequency of these terms in author keywords.

Figure 7 A screenshot of bibliometric map on customer engagement behavior in social media research based on author keywords co-occurences with network visualization mode (minimum occurences of a keyword are set to two)

To identify emerging themes in recent research, we employed an overlay visualization generated through VOSviewer to highlight the newest concepts frequently associated with CEB since 2021. Figure 7 displays the visualization of author keywords from 2017 to 2022. In this visualization, the brighter the color of a node, the more recent the concept has been used in CEB studies.

The results shown in Figure 7 reveal that Covid-19 (28 occurrences; 56 links), emotion (6 occurrences; 12 links), text mining (5 occurrences; 10 links), populism (5 occurrences; 13 links), and social networking online (4 occurrences; 12 links) are among the latest concepts connected to CEB research on social media. For the year 2022, represented by bright yellow nodes, content creator (2 occurrences; 9 links) and automated content analysis (2 occurrences; 8 links) have emerged as new concepts that can be linked to CEB on social media.

These findings underscore a shift toward research that integrates digital content creation and advanced analytical methods, indicating future opportunities for exploring CEB through the lens of creator-driven platforms and automation. The complete visualization results can be accessed at https://tinyurl.com/2zdze7co.

V. DISCUSSION

This study is among the first to examine the concept of Customer Engagement Behavior (CEB) on social media using a bibliometric approach combined with mapping visualization software. Consequently, our findings provide significant implications for both researchers and practitioners interested in exploring CEB in social media contexts. A bibliometric analysis was conducted to gain insights into customer engagement behavior on social media, with data sourced from the Scopus database. After filtering the data using the PRISMA protocol, a total of 910 articles published between 2009 and 2022 were analyzed using Microsoft Excel and VOSviewer software to evaluate and visualize research trends. The analysis identified the most influential journals and publishers on CEB, as well as key countries/regions, institutions, the most productive authors, and the most cited works. Our initial results reveal a notable upward trend in CEB research over the period 2009–2022, indicating the likelihood of continued growth in the coming years. This finding aligns with Ajiboye et al. (2019), who observed that research interest in CEB significantly increased after 2012, coinciding with the development of measurable customer engagement behavior scales.

We identified 17 journals from seven major publishers (Table 2), with Online Information Review emerging as the most productive journal in this field, publishing 19 articles indexed in Scopus. Journal of Interactive Marketing recorded the highest citation score within this group. Of these 17 journals, eight have a primary research scope in communication studies, while four focus on business and management, suggesting that CEB research on social media is strongly associated with communication and business management disciplines. This finding highlights a potential pathway for future research to examine CEB through these two disciplines. However, engagement as a concept has been explored across a wide range of academic fields, each with its own terminology (Slam & Rahman, 2016), indicating substantial opportunities for further interdisciplinary exploration.

The geographic distribution analysis indicates that the United States and the United Kingdom are the two most productive countries in CEB research on social media. This confirms and extends the findings of Elango & Oh (2022), who identified the United States, China, and the United Kingdom as the top three contributors to academic publications across various fields. Our study builds on Ajiboye et al. (2019), who also examined CEB on social media, but did not provide detailed geographic mapping. We confirm that the USA and UK remain leading countries in CEB research, enriching previous systematic literature reviews (Ajiboye et al., 2019). International collaboration, particularly between developing countries and these leading nations, should be encouraged to further expand research in this domain. Southeast Asian countries, for example, could leverage this momentum to enhance collaborative efforts, as Thailand appears to be the only country in the region with significant international research collaborations in this area.

Among the most productive authors in CEB research on social media are Michela Arnaboldi, Artuto Haro-de-Rosario, and Ethan Pancer, each with five publications. Linjuan Rita Men is the most influential author based on citation counts. The 12 most productive authors are affiliated with eight different institutions, indicating a global distribution of CEB research, but also revealing the untapped potential for international collaboration. The article titled "Customer engagement in a Facebook brand community" by Gummerus et al. (2012) is the most cited publication in this field. Conducted within the context of a Facebook Game Club, this study is frequently referenced for its insight that members tend to connect more strongly with the brand than with the social media content itself, a finding that has spurred subsequent research.

Our keyword analysis shows that terms such as social media engagement, user engagement, Twitter, engagement, online engagement, and social media marketing are the most frequently occurring keywords in prior studies. We also identified common antecedent and outcome variables for CEB research on social media. However, these results warrant further exploration, as keyword co-occurrence primarily reflects frequency rather than the structural relationships between variables. Notably, the COVID-19 pandemic (early 2020) has had a strong influence on CEB research trends, with many studies explicitly linking their analyses to pandemic conditions. We also observed the emergence of new keywords such as TikTok, content creator, and automated content analysis, which offer promising avenues for future research. In terms of methodology, our review of the most cited articles revealed that quantitative survey methods dominate CEB research, suggesting that alternative approaches such as qualitative methods or text mining remain underutilized and could be further explored.

VI. CONCLUSION AND RECOMMENDATION

A. *Theoretical Implications*

This study aims to explore research trends in CEB on social media using bibliometric analysis. The dataset consists of peer-reviewed publications from Scopus-indexed journals. Our study successfully maps the evolution of research, keyword frequencies, and thematic clusters using VOSviewer. The findings present a 13-year overview of CEB research trends, emerging themes, leading countries and journals, theoretical foundations, research methodologies, and contemporary topics of interest. The results contribute to a deeper understanding of research dynamics in this domain and help identify literature gaps and opportunities for future studies.

B. *Practical Implications*

For marketing practitioners and academics focused on social media marketing, this study offers valuable insights into the landscape of CEB on social media. First, researchers and practitioners can identify the most relevant journals and influential authors in this field, enabling them to review foundational studies and develop more robust and well-structured research manuscripts. Second, the identification of international and institutional collaborations provides guidance for forming meaningful partnerships with researchers and institutions from other countries.

For those in hospitality and tourism research, these insights are especially relevant. By recognizing the leading journals, highly cited articles, and influential scholars, they can better navigate the literature and prepare targeted research strategies. Furthermore, the mapping of global collaborations offers a strategic pathway to engage in international research networks.

C. *Limitations and Recommendations for Future Research*

While this study offers valuable insights into the concept of CEB on social media through bibliometric analysis, it is not without limitations, which could be addressed in future studies. First, although Scopus is a comprehensive database, future research should consider integrating other databases (e.g., Web of Science, Google Scholar, ProQuest, or EBSCO) to ensure broader article coverage. Second, although our study identified key antecedent and outcome keywords for CEB research, these relationships were only analyzed through co-occurrence mapping and have not been fully validated. We encourage future research to apply frameworks such as Input-Output Analysis or the Antecedents-Mediators/Moderators-Outcomes (AMO) framework to gain deeper insights into the relationships among variables. Third, our dataset was not segmented by specific industries, despite the relevance of social media marketing across various sectors. Future studies could explore industry-specific CEB research, such as in manufacturing, banking, tourism, or healthcare, to better capture the unique characteristics of engagement across different industries.

REFERENCES

Ajiboye, T., Harvey, J., & Resnick, S. (2019). Customer engagement behaviour on social media platforms: A systematic literature review. Journal of Customer Behaviour, 18(3), 239-256.

Aral, S., & Walker, D. (2011). Creating social contagion through viral product design: A randomized trial of peer influence in networks. Management science, 57(9), 1623-1639.

Azar, S. L., Machado, J. C., Vacas-de-Carvalho, L., & Mendes, A. (2016). Motivations to interact with brands on Facebook–Towards a typology of consumer–brand interactions. Journal of Brand Management, 23(2), 153-178.

Barger, V., Peltier, J. W., & Schultz, D. E. (2016). Social media and consumer engagement: a review and research agenda. Journal of Research in Interactive Marketing, 10(4), 268-287.

Beckers, S. F. M. (2016). Going beyond transactions: Theoretical perspectives and empirical studies on customer engagement behavior effectiveness. [Thesis fully internal (DIV), University of Groningen]. University of Groningen, SOM research school.

Brison, N. T., & Geurin, A. N. (2021). Social media engagement as a metric for ranking US Olympic athletes as brand endorsers. Journal of Interactive Advertising, 21(2), 121-138.

Cao, D., Meadows, M., Wong, D., & Xia, S. (2021). Understanding consumers' social media engagement behaviour: An examination of the moderation effect of social media context. Journal of Business Research, 122, 835-846.

Conte, F., Vitale, P., Vollero, A., & Siano, A. (2018). Designing a data visualization dashboard for managing the sustainability communication of healthcare organizations on Facebook. Sustainability, 10(12), 4447.

Dai, Y., & Wang, T. (2021). Prediction of customer engagement behaviour response to marketing posts based on machine learning. Connection Science, 33(4), 891-910.

Dessart, L., Veloutsou, C., & Morgan-Thomas, A. (2016). Capturing consumer engagement: duality, dimensionality and measurement. Journal of Marketing Management, 32(5-6), 399-426.

Dijkmans, C., Kerkhof, P., & Beukeboom, C. J. (2015). A stage to engage: Social media use and corporate reputation. Tourism management, 47, 58-67.

Dolan, R., Conduit, J., Fahy, J., & Goodman, S. (2016). Social media engagement behaviour: a uses and gratifications perspective. Journal of strategic marketing, 24(3-4), 261-277.

Dolan, R., Conduit, J., Frethey-Bentham, C., Fahy, J., & Goodman, S. (2019). Social media engagement behavior: A framework for engaging customers through social media content. European Journal of Marketing, 53(10), 2213-2243.

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of business research, 133, 285-296.

Dusdal, J., & Powell, J. J. (2021). Benefits, motivations, and challenges of international collaborative research: A sociology of science case study. Science and Public Policy, 48(2), 235-245.

Dwivedi, A., Miles, M., Oczkowski, E., Weerawardena, J., Johnson, L. W., & Wilkie, D. (2020). Buyer–seller relational engagement and seller brand equity. Journal of Business & Industrial Marketing, 35(8), 1311-1322.

Elango, B., & Oh, D. G. (2022). Scientific productivity of leading countries. International Journal of Information Science and Management (IJISM), 20(2), 127-143.

Gerbaudo, P. (2016). Constructing public space| rousing the Facebook crowd: Digital enthusiasm and emotional contagion in the 2011 protests in Egypt and Spain. International Journal of Communication, 10, 20.

Ghani, N. A., Teo, P. C., Ho, T. C., Choo, L. S., Kelana, B. W. Y., Adam, S., & Ramliy, M. K. (2022). Bibliometric analysis of global research trends on higher education internationalization using Scopus database: Towards sustainability of higher education institutions. Sustainability, 14(14), 8810.

Guidry, J. P., Jin, Y., Orr, C. A., Messner, M., & Meganck, S. (2017). Ebola on Instagram and Twitter: How health organizations address the health crisis in their social media engagement. Public relations review, 43(3), 477-486.

Gummerus, J., Liljander, V., Weman, E., & Pihlström, M. (2012). Customer engagement in a Facebook brand community. Management Research Review, 35(9), 857-877.

Gummerus, J., von Koskull, C., & Kowalkowski, C. (2017). Guest editorial: relationship marketing–past, present and future. Journal of services marketing, 31(1), 1-5.

Halloran, T. J., & Lutz, R. J. (2021). Let's Give Them Something to Talk About: Which Social Media Engagements Predict Purchase Frequency?Journal of Interactive Marketing, 56(1), 83-95.

Han, Y., Yang, Y., & Mohamed, R. (2022). A bibliometric analysis of work engagement in the hospitality and tourism industry. Journal of Hospitality and Tourism Insights.

Heiss, R., Schmuck, D., & Matthes, J. (2019). What drives interaction in political actors' Facebook posts? Profile and content predictors of user engagement and political actors' reactions. Information, communication & society, 22(10), 1497-1513.

Jaakonmäki, R., Müller, O., & Vom Brocke, J. (2017). The impact of content, context, and creator on user engagement in social media marketing. In Proceedings of the Annual Hawaii International Conference on System Sciences (Vol. 50, pp. 1152-1160). IEEE Computer Society Press.

Khobzi, H., Lau, R. Y., & Cheung, T. C. (2019). The outcome of online social interactions on Facebook pages: A study of user engagement behavior. Internet Research, 29(1), 2-23.

Lam, E. T. H., Au, C. H., & Chiu, D. K. (2019). Analyzing the use of Facebook among university libraries in Hong Kong. The journal of academic librarianship, 45(3), 175-183.

Lee, D., Hosanagar, K., & Nair, H. S. (2018). Advertising content and consumer engagement on social media: Evidence from Facebook. Management Science, 64(11), 5105-5131.

Luarn, P., Lin, Y. F., & Chiu, Y. P. (2015). Influence of Facebook brand-page posts on online engagement. Online Information Review, 39(4), 505-519.

Lusch, R. F., & Vargo, S. L. (2006). Service-dominant logic: reactions, reflections and refinements. Marketing theory, 6(3), 281-288.

Malthouse, E. C., Haenlein, M., Skiera, B., Wege, E., & Zhang, M. (2013). Managing customer relationships in the social media era: Introducing the social CRM house. Journal of interactive marketing, 27(4), 270-280.

Malthouse, E. C., Haenlein, M., Skiera, B., Wege, E., & Zhang, M. (2013). Managing customer relationships in the social media era: Introducing the social CRM house. Journal of interactive marketing, 27(4), 270-280.

Martiyanti, D. (2022). Does Brand Love Make Every Consumer Behave On Social Media? The Role of Personality Traits and Brand Love On Customer Engagement Behavior. AMAR (Andalas Management Review), 6(1), 14-38.

Men, L. R., & Tsai, W. H. S. (2013). Toward an integrated model of public engagement on corporate social networking sites: Antecedents, the process, and relational outcomes. International Journal of Strategic Communication, 7(4), 257-273.

Muntinga, D. G., Moorman, M., & Smit, E. G. (2011). Introducing COBRAs: Exploring motivations for brand-related social media use. International Journal of advertising, 30(1), 13-46.

Park, J. S., & Ha, S. (2021). From information experiences to consumer engagement on brand's social media accounts. Fashion and Textiles, 8, 1-22.

Pletikosa Cvijikj, I., & Michahelles, F. (2013). Online engagement factors on Facebook brand pages. Social network analysis and mining, 3, 843-861.

Qu, Y., Saffer, A. J., & Riffe, D. (2022). The social network antecedents to consumer engagement: revealing how consumers' conversations influence online engagement behaviors. Corporate Communications: An International Journal, 27(2), 226-244.

Quinn, K. (2018). Cognitive effects of social media use: A case of older adults. Social Media+ Society, 4(3), 2056305118787203.

Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: an empirical study on Facebook. Journal of enterprise information management, 27(1), 6-30.

Roy, S. K., Shekhar, V., Lassar, W. M., & Chen, T. (2018). Customer engagement behaviors: The role of service convenience, fairness and quality. Journal of Retailing and Consumer Services, 44, 293-304.

Schaefers, T., Falk, T., Kumar, A., & Schamari, J. (2021). More of the same? Effects of volume and variety of social media brand engagement behavior. Journal of business research, 135, 282-294.

Schivinski, B., Christodoulides, G., & Dabrowski, D. (2016). Measuring consumers' engagement with brand-related social-media content: Development and validation of a scale that identifies levels of social-media engagement with brands. Journal of advertising research, 56(1), 64-80.

Shahbaznezhad, H., Dolan, R., & Rashidirad, M. (2021). The role of social media content format and platform in users' engagement behavior. Journal of Interactive Marketing, 53(1), 47-65.

Shawky, S., Kubacki, K., Dietrich, T., & Weaven, S. (2019). Using social media to create engagement: A social marketing review. Journal of Social Marketing, 9(2), 204-224.

Sivarajah, U., Irani, Z., Gupta, S., & Mahroof, K. (2020). Role of big data and social media analytics for Business-to-Business sustainability: A participatory web context. Industrial Marketing Management, 86, 163-179.

Syrdal, H. A., & Briggs, E. (2018). Engagement with social media content: A qualitative exploration. Journal of Marketing Theory and Practice, 26(1-2), 4-22.

Valeriani, A., & Vaccari, C. (2016). Accidental exposure to politics on social media as online participation equalizer in Germany, Italy, and the United Kingdom. New media & society, 18(9), 1857-1874.

Van Doorn, J., Lemon, K. N., Mittal, V., Nass, S., Pick, D., Pirner, P., & Verhoef, P. C. (2010). Customer engagement behavior: Theoretical foundations and research directions. Journal of service research, 13(3), 253-266.

Vinerean, S., & Opreana, A. (2021). Measuring customer engagement in social media marketing: A higher-order model. Journal of Theoretical and Applied Electronic Commerce Research, 16(7), 2633-2654.

Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. Journal of marketing theory and practice, 20(2), 122-146.

Voorveld, H. A., Van Noort, G., Muntinga, D. G., & Bronner, F. (2018). Engagement with social media and social media advertising: The differentiating role of platform type. Journal of advertising, 47(1), 38-54.

Zhang, X. A., & Shay, R. (2019). An examination of antecedents to perceived community resilience in disaster postcrisis communication. Journalism & Mass Communication Quarterly, 96(1), 264-287.

Zheng, X., Cheung, C. M., Lee, M. K., & Liang, L. (2015). Building brand loyalty through user engagement in online brand communities in social networking sites. Information Technology & People, 28(1), 90-106.

Dixon, S. (2023). Facebook: quarterly number of MAU (monthly active users) worldwide 2008-2023. Available at https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/#statisticContainer. Accessed at 12 June 2023.

Islam, J. U., & Rahman, Z. (2016). Linking customer engagement to trust and word-of-mouth on Facebook brand communities: An empirical study. Journal of Internet Commerce, 15(1), 40-58.

Lim, W. M., Rasul, T., Kumar, S., & Ala, M. (2022). Past, present, and future of customer engagement. Journal of Business Research, 140, 439-458.