

# A BIBLIOMETRIC ANALYSIS OF PUBLICATIONS ON SOCIAL MEDIA INFLUENCERS USING VOSVIEWER

ALHAMZAH F. ABBAS<sup>1</sup>, AHMAD JUSOH<sup>1</sup>, ADAVIAH MASOD<sup>1</sup>, JAVED ALI<sup>2</sup>, AHMED H. ALSHARIF<sup>1</sup>, ALHARTHI RAMI HASHEM E<sup>1 3</sup>

<sup>1</sup>Azman Hashim International Business School, Universiti Teknologi Malaysia (UTM), 81310 Skudai, Johor, Malaysia.

<sup>2</sup>Sukkur IBA University, Pakistan.

<sup>3</sup>Ranyah University College, Taif University, Saudi Arabia

alhamza.fadil@gmail.com, ahmadj@utm.my, adaviah@utm.my, Javedali@iba-suk.edu.pk, ahmedalsharif07@gmail.com, r.aharese@tu.edu.sa

## ABSTRACT

The current study identified research trends regarding social media influencers. By searching journals related to social media influencers in the web of science collection database between 2007 and 2020 period. we collected 670 research articles about social media influencers. The study presents a knowledge-domain map that detects author collaboration networks as well as journal relationships. This was accomplished by a bibliometric study that can be examined using the VOS viewer software. The study on social media influencers reported resemblances which included the rise in the study period and the increasing recognition of “social media influencer” as a term. The results provide fundamental insights into research on social media influencers.

**Keywords:** *Social Media Influencer; Trends; Bibliometric Analysis; VOS Viewer.*

## 1 INTRODUCTION

Since the mid-16th century, the term "influencer" has been used in English. The term "influencer" has found wide use in the marketing sector since it became associated with social media in the last fifteen years. In recent years, the term has come to represent a specific type of work that is at the heart of a growing but lucrative industry [1].

Influencers on social media have become a category and social phenomenon in the past year, especially around Twitter and Instagram. Traditional influencers have less intellectual

power than today's social media influencers, and they are building commercial and for-profit strategies [1, 2] The future growth of influencers may be influenced in part by the expansion of their natural environment, such as online streaming. TV has steadily declined, albeit more slowly than some predicted, but influencers are gradually gaining ground and business from TV via streaming [3, 4]

Thus, Research on social media influencers is a growing field. With the advancement of the internet and the rise of social media, more and more people are using the internet to connect, interact, and promote themselves and their brands. Social media platforms have evolved greatly and quickly to facilitate communication. As a result, many internet celebrities, market experts, key

<sup>1</sup> Universiti Teknologi Malaysia (UTM)

<sup>2</sup> Sukkur IBA University, Pakistan.

<sup>3</sup> Ranyah University College, Taif University, Saudi Arabia

opinion leaders, and social media influencers have become increasingly popular.

Social media influencers embody a new kind of advocate, shaping audience support across multiple platforms such as tweets, social media, and blogs. Although viewed as potentially conflicting influences [5], various parties have acknowledged the likelihood of working with social media influencers to market brands or businesses. Because influencers have significant persuasive power on social media, technologies have been developed to determine and monitor the relevance of these influencers to brands or businesses [4]. Most of these efforts have been aimed at identifying social media influencers based on various aspects, including the number of followers, the number of posts shared, and the number of daily views on social blogs. Regardless of these factors, greater weight is placed on the quality of online influence, using these techniques as a starting point [3–5].

Subscribers and loyal fans are not uncommon for social media influencers. When marketers ask social media influencers to promote their products or companies, they post the message on social media platforms such as Facebook, Instagram, Twitter, and YouTube. This study provides a comprehensive understanding of recent trends in social media influencer research. Previous research has defined influencers as new, independent third parties who influence audience attitudes via social media [3].

Also, Previous literature has already given definitions for social media influencers. For example, McGaughey et al [3] describe social media influencers as "a new breed of independent third-party advocates who influence audience attitudes through blogs, tweets, and use of other social media platforms." Sarkar et al. [8] describe an influencer as "a person who maximizes personal branding to build and maintain connections with numerous followers on social media and can update, interest, and potentially influence the opinions, attitudes, and actions of followers."

De Veirman et al. [9] refer to social media influencers as "individuals who have built a large social network of people who follow them and are considered reliable tastemakers in numerous niches." The common part of these definitions is a person who influences the attitudes of followers or users and builds a relationship with users

through social media [10]. Following the earlier description and current practice of social media influencer marketing, the study suggests characterizing social media influencers as "individuals who have built a personal channel with a substantial number of avid followers on social media and have the ability to influence their views, opinions, and actions."

Bibliometrics is a statistical method for quantitative analysis of research publications on a particular topic using mathematical methods Chen et al. [9–12] It can also evaluate the quality of studies, analyze the main research areas, and predict the direction of future research [13–16] online database Web of Science (WOS) contains nearly all major research papers and has built-in analysis capabilities to create representative illustrations [19]. In addition, search results from WOS can be exported to applications such as VOSviewer for further investigation [20].

However, this study will be more comprehensive to understand social media influencers from Web of Science (WOS) database by using different indicators. Moreover, Fernandez-Prados et al. [21] conducted a study on social media influencers using the Scopus database. As a result, no other research on social media influencers could be found in the Science Network database (WOS). As a result, our research was completed on time to provide a comprehensive understanding of social media influencers as well as future research topics.

Despite an increase in publications with a social and humanistic perspective as opposed to publications with a technical and economic focus, there is a lack of global and social media influencers studies and research. Thus, The aim of the study is to use the VOS viewer software of Leiden University to analyze the bibliographic data in social media influencers. The study chose this software because it allows us to create, visualize and explore maps representing bibliometric networks. Items in these networks may be linked by co-authorship, co-occurrence, citation, bibliographic linkage, or co-citation [22]. Maps of co-authorship, citation, and bibliographic coupling were created. Bibliographic data are used to create these maps to identify the future themes and trends in this topic.

## 2 MATERIALS AND METHODS

The literature on social media influencers around the world was searched topically and the period was defined as "all years" excluding 2021 and scanned in the database WOS collection. The most linked publication was found using the following search terms: 'influencer\*' and 'social media'. Since social media influencers were originally discovered in the United States, a significant number of study papers were written there. The query did not restrict the language.

Publication year, language, journal, title, author, affiliation, keywords, document type, abstract, and the number of citations were exported to CSV format for all papers that met the criteria [21, 22]. The query was performed on June 1, 2021. Co-occurrence, Citation, Bibliographic coupling, Co-citation, and themes were examined using VOSviewer (version 1.6.10). The "Links attribute" and the "Total link strength attribute" are two typical weight attributes that were used [23, 24].

## 3 RESULTS

### 3.1 Publications Bibliometric Analysis

A total of 670 publications on the topic of social media influencers were identified in the database

WOS in all years except 2021, including 492 (73.4%) original research articles, 142 (21.2%) proceedings, 27 (4%) early access, 15 (2.2%) review, and 37 (5%) other forms of publications, including book chapters, editorial material, etc. Of these, 274 (40.8%) papers were published in December 2020, and the remaining 173 in December 2019. Almost all papers (632, 94.3%) were in English, with 28 of the 230 Spanish publications (34%) being Open Access. In the core database WOS, 670 of the published articles could still be indexed.

### 3.2 Keywords Bibliometric Analysis

The final analysis included the keywords given by the authors of the paper, which were found more than five times in the database WOS core. Of the 2,568 keywords, 188 met the threshold. The most frequently used keywords were "social media" (total link strength 1417) and "impact" (total link strength 571), which are closely related to "influencer" and "word of mouth". As for the comparison of "social media", Instagram and Twitter were two other keywords whose total link strength was more than 400 each (Figure 1). A word cloud was also created to show the frequency of keywords that appeared more than ten times. "Social media" was mentioned most often, followed by "influencer," "marketing," and "brand" (Figure 2).

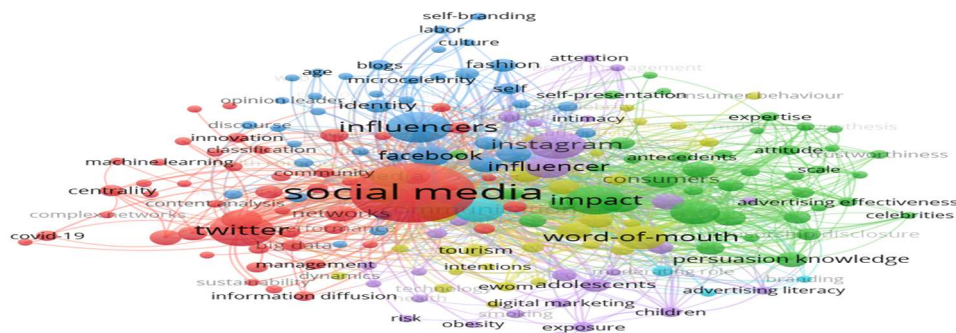


Figure 1: Keyword co-occurrence in social media influencers' publications. The size of the nodes represents the frequency in which they occur. The curves connecting the nodes show how often they co-occurrence in the same publication. The greater the frequency of co-occurrences of two keywords, the shorter the distance between two nodes.



Figure 2: Word cloud using NVIVO. 88 keywords that occurred more than 10 times were enrolled. The size of the font represents the frequency of occurrence. Keywords such as “social media”, “influencers” and “influencers marketing” occurred most commonly. “platform” and “network” are rare.

### 3.3 Analysis Citations of Publications Bibliometric Analysis

The ten most cited articles in the field of social media influencers are listed in Table 1. Most of them were research articles mainly dealing with social media influencers and social media. The ten most

cited publications had an average citation count of 7 (range 100-200). All papers were published between 2011 and 2020, most of them by American and Australian researchers.

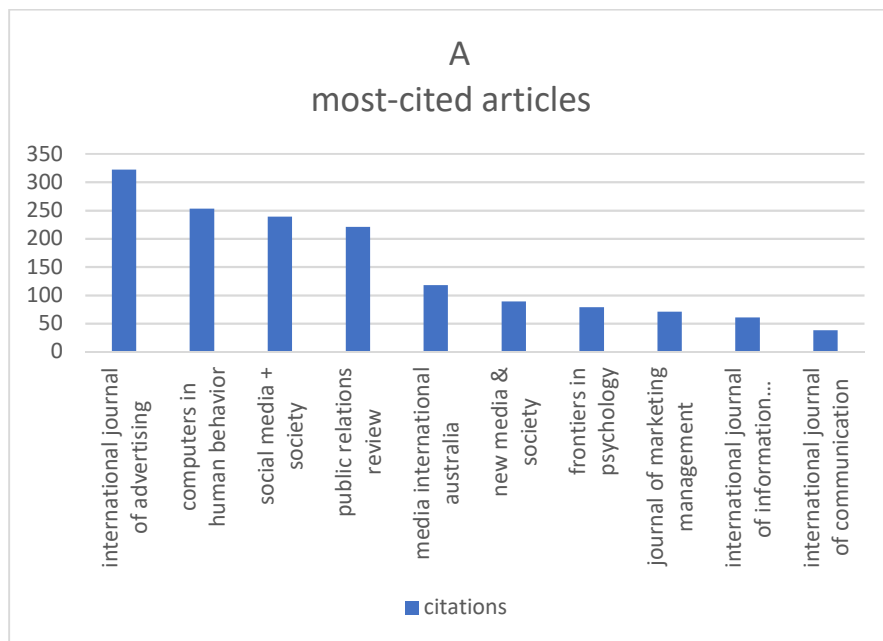
Table 1: The top 10 most cited articles in the field of social media influencers

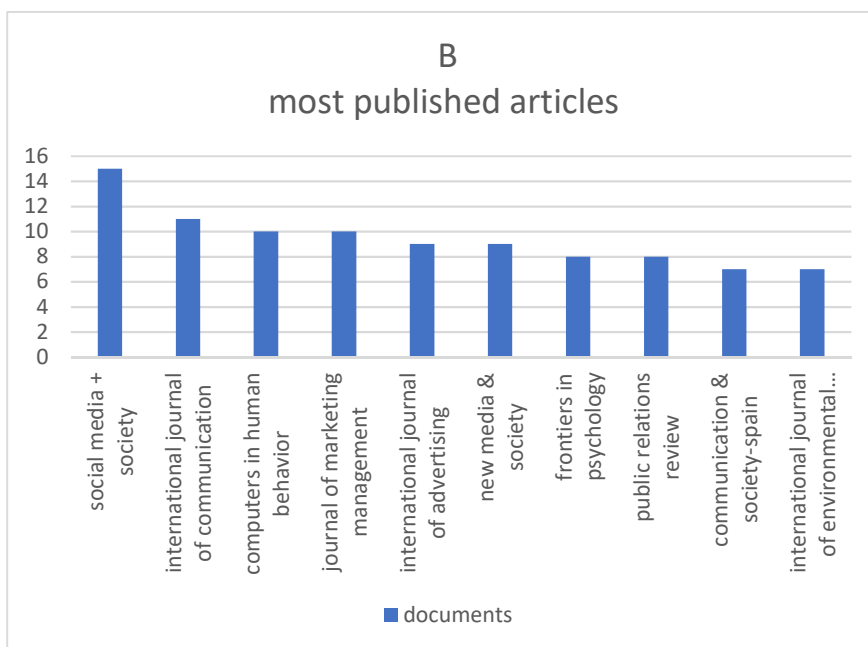
Rank	Title	Journal	Article type	Country of the corresponding author	Publication year	Citations
1	Marketing through Instagram influencers: the impact of number of followers and product divergence on brand attitude	INTERNATIONAL JOURNAL OF ADVERTISING	Article	Belgium	2017	191
2	Self-branding, 'micro-celebrity' and the rise of Social Media Influencers	CELEBRITY STUDIES	Article	Australia	2017	177
3	Who are the social media influencers? A study of public perceptions of personality	PUBLIC RELATIONS REVIEW	Article	USA	MAR 2011	155
4	Aren't These Just Young, Rich Women Doing Vain Things Online?: Influencer Selfies as Subversive Frivolity	SOCIAL MEDIA + SOCIETY	Article	Australia	APR-JUN 2016	108
5	Visibility labour: Engaging with Influencers' fashion brands and #OOTD advertorial campaigns on Instagram	MEDIA INTERNATIONAL AUSTRALIA	Article	Australia	NOV 2016	100
6	The Multiple Facets of Influence: Identifying Political	AMERICAN BEHAVIORAL SCIENTIST	Article	England	SEP 2014	100

	Influentials and Opinion Leaders on Twitter					
7	Increasing the ROI of Social Media Marketing	MIT SLOAN MANAGEMENT REVIEW	Article	USA	FAL 2012	100
8	Collective Influence Algorithm to find influencers via optimal percolation in massively large social media	SCIENTIFIC REPORTS	Article	USA	JUL 26 2016	73
9	Celebrity vs. Influencer endorsements in advertising: the role of identification, credibility, and Product-Endorser fit	INTERNATIONAL JOURNAL OF ADVERTISING	Article	Netherlands	FEB 17 2020	64
10	Measuring social media influencer index- insights from facebook, Twitter and Instagram	JOURNAL OF RETAILING AND CONSUMER SERVICES	Article	India	JUL 2019	62

473 journals published articles on social media influencers, and 18 of them published more than 5 articles. A total of 95 articles were published in the top ten active journals, representing 14.18% of the publications in the core database WOS. Social

Media Society was the highest-ranked journal with 15 publications and an impact factor (IF) of 2.807. The most cited journal was the International Journal of advertising with 322 citations and an IF of 3.606 (Figure 2).





**Figure 3:** The top 10 most popular journals. (A) The top 10 journals with the greatest number of citations in the field of social media influencers; (B) the top ten journals with the most published articles in the field of social media influencers.

The top ten countries, organizations, and authors of social media influencer publications are listed in table (2,3,4). Ten articles from Hudders, Liselot from University Ghent in Belgium were cited 285 times,

and 9 articles from Ghent University were cited 285 times, making them the most cited author and organization in the world. 190 papers from the USA were cited 1706 times, and the total link strength is 416 (Figure 3).

Table 2: The top 10 most active countries of social media influencers publications

country	documents	citations
USA	190	1706
Spain	63	254
England	58	460
Australia	53	715
peoples r China	38	211
Germany	31	136
Canada	29	109
India	28	291
Italy	26	97
Netherlands	19	218

Table 3: The top ten most active organizations social media influencers publications

Institution	documents	citations
University Ghent	9	285
University Florida	8	39
University Seville	8	26
Curtin University	7	50

Monash University	7	26
Natinal University of Singapore	7	172
University southern California	7	59
University Tennessee	7	217
Hong kong polytech University	6	61
Northwestern University	6	70

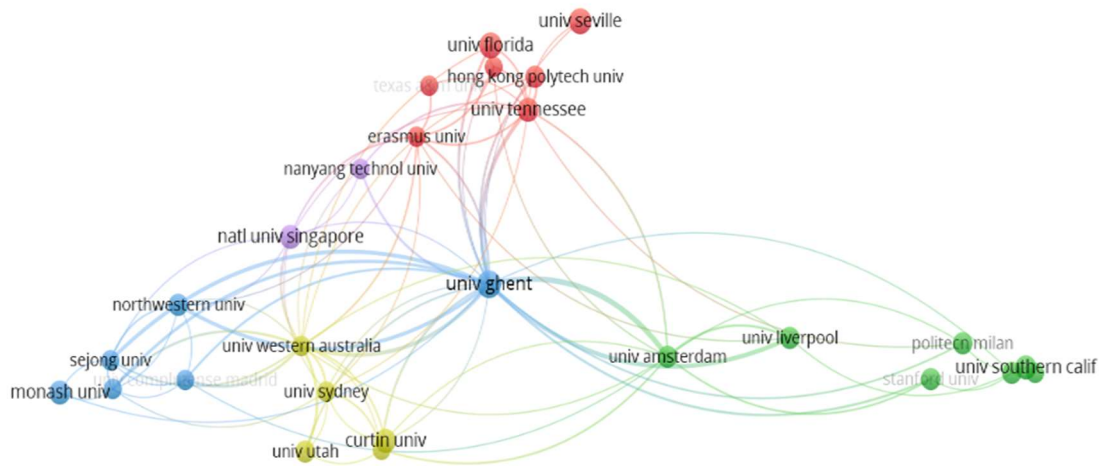
Table 4: The top ten most active authors of social media influencers publications

Authors	documents	citations
Hudders, Liselot	7	285
De veirman, Marijke	6	253
Francalanci, Chiara	5	32
Archer, Catherine	5	31
Abidin, Crystal	5	253
Kar, Arpan Kumar	4	74
Jin, S. Venus	4	76
Hussain, Ajaz	4	22
De jans, Steffi	4	46
Yu, Justin	3	3

A



B



C

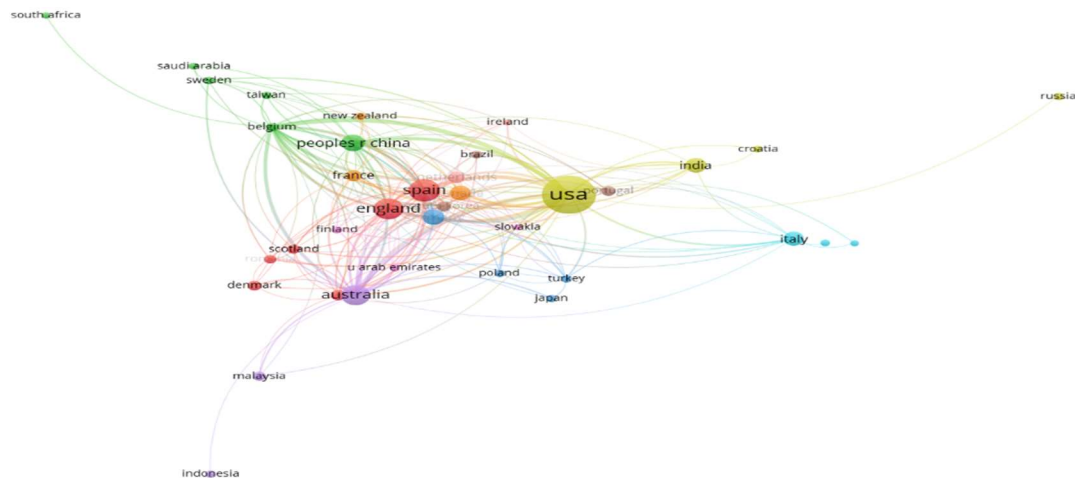


Figure 4: An examination of the citations using bibliometric analysis. (A) The summary of authors' citations. Two different color clusters were displayed on the screen. The author Hudders, Liselot in the red cluster is the most cited (285 times); (B) the citations of organizations are represented by the blue cluster. The University of Ghent, which is in the red cluster, is the most cited organization (285 times); (C) the citations of countries are shown in the yellow cluster

### 3.4 An Examination of the Co-authorship Based on Bibliometric Analysis

About 1822 authors contributed to the publication of the studies on social media influencers in their respective fields. Among them, Hudders, Liselot of University Ghent has authored 7 papers mainly focusing on social media influencer marketing. His main collaborators are De Veirman, Marijke from the same university, other authors where the co-authorship was not significant. The total strength

of the links is 6. After searching the local and international literature, it was found that 865 organizations have published papers on this topic, with 27 of them having published more than five papers.

University Tennessee has published seven related papers that have received a total of 217 citations. The main partners are three universities (Clemson University, university southern California and hong kong polytech university). Most of the research papers focus on Generational



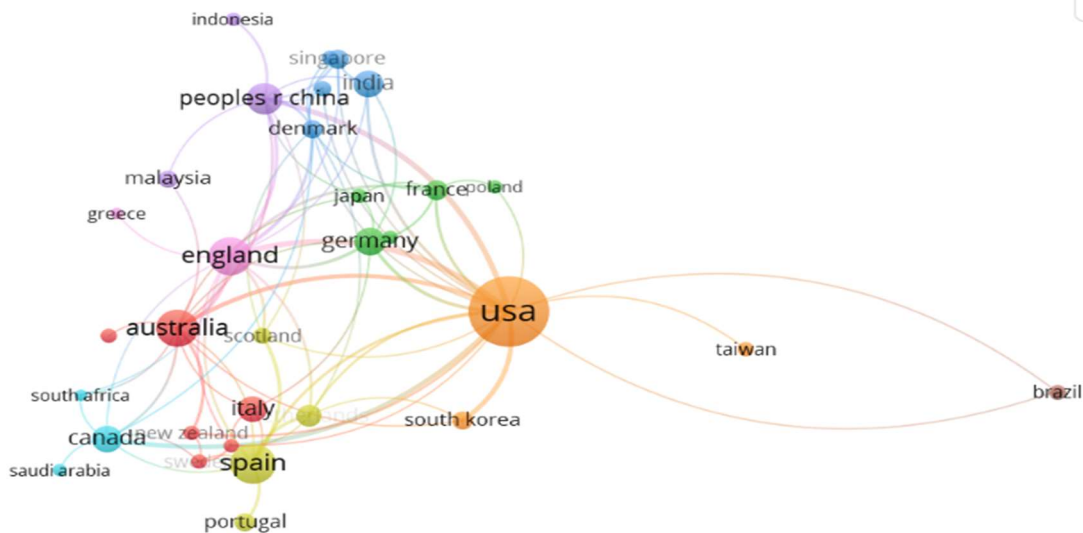
Differences and understanding Social Media Influencers and influencer marketing. Another important collaborative partner is Hong Kong University, which is conducting a long-term study on the use of influencers in social media as an advertising medium.

In the United States, there are 20 contributors with a total connection strength of 71 publications and a total volume of 190 publications. The main partners of England and the United States are England and Australia (Figure 4).

A



B



C



Figure 5: The co-authorship was subjected to bibliometric analysis. (A) The co-authorship map of authors indicates the authors who collaborate in the field of social media influencers; (B) the co-authorship map of organizations reveals the authors who collaborate in the field of social media influencers. In this area, the University of Tennessee has published seven publications and collaborates with three other universities; (C) a map of countries with co-authorship. It is estimated that there are 20 collaborators in the United States, with a link strength of 71. Different colors represent different clusters, and the size of circles represents the number of articles in each cluster. The strength of the links between the countries is shown by the thickness of the lines between them.

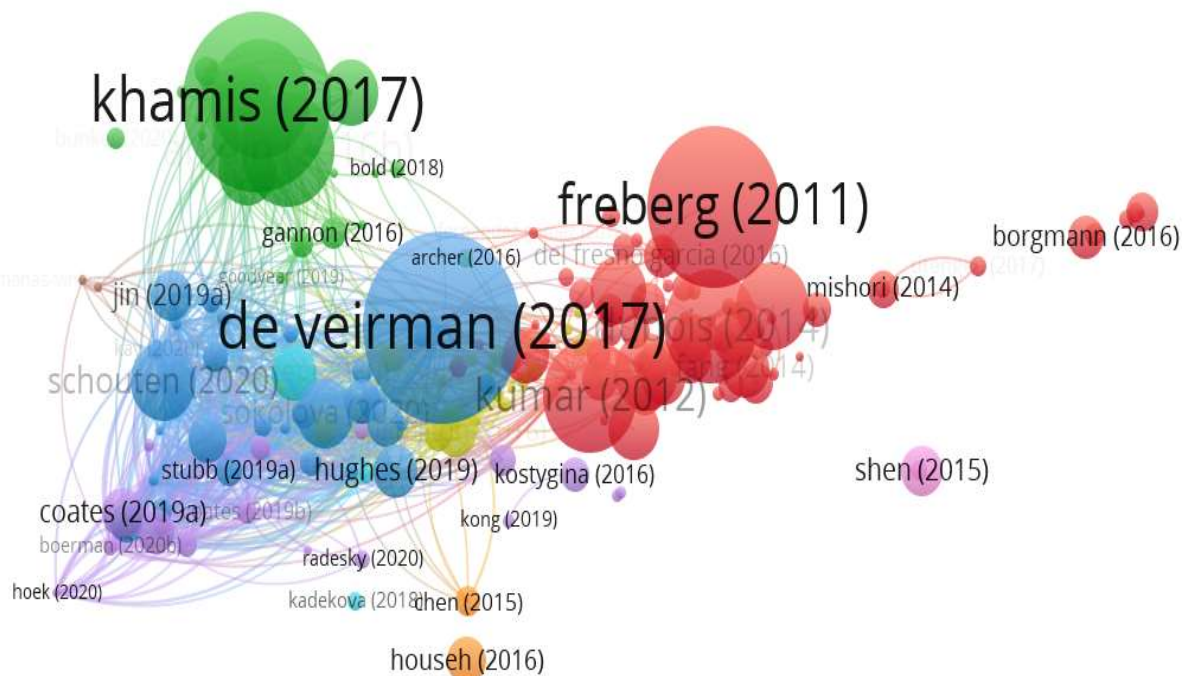
### 3.5 The Relationship Between Bibliographic Coupling and Co-citation Bibliometric Analysis.

Figure 5A and B show the bibliographic linkage map of the documents and sources, respectively. As a result of the analysis, nine clusters were identified. In cluster 1, which deals with marketing through Instagram influencers, there are 78 items (shown in blue). a publication in the International Journal of Advertising as a representative paper in 2017 by De Veirman, M. Cluster 7,8,9 has only 2 items (shown in orange and purple). By analyzing the bibliographic linkage map, 3 source clusters were discovered. Cluster 1 includes 8 sources and one international advertising journal, which has the highest total

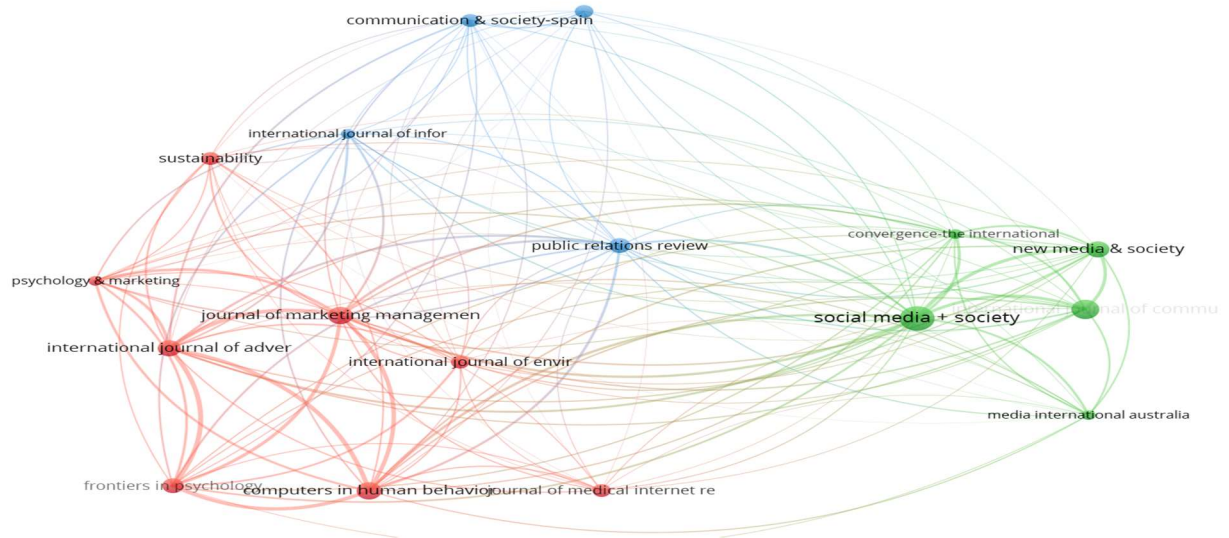
length strength of 1227 of the bibliographic linkage (shown in red).

Bibliometric analysis was used to identify three clusters of cited references, with the minimum number of citations of a cited reference being 20. The three clusters reflect the research areas of social media influencers, Instagram influencers, and self-branding, represented in the graph by the colors red, green, and blue, respectively. Sixteen and ten articles, respectively, are the two largest clusters of cited sources. The journal Computer-Human Behaviour is one of the most representative journals (Figure 5C, D).'

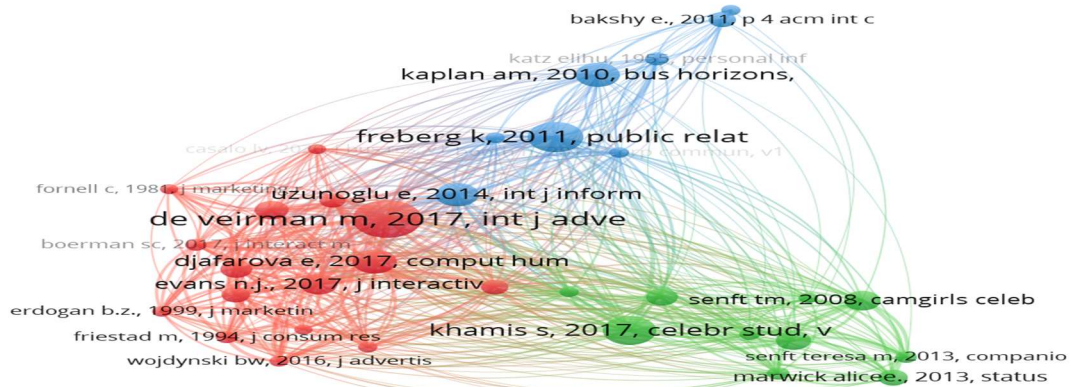
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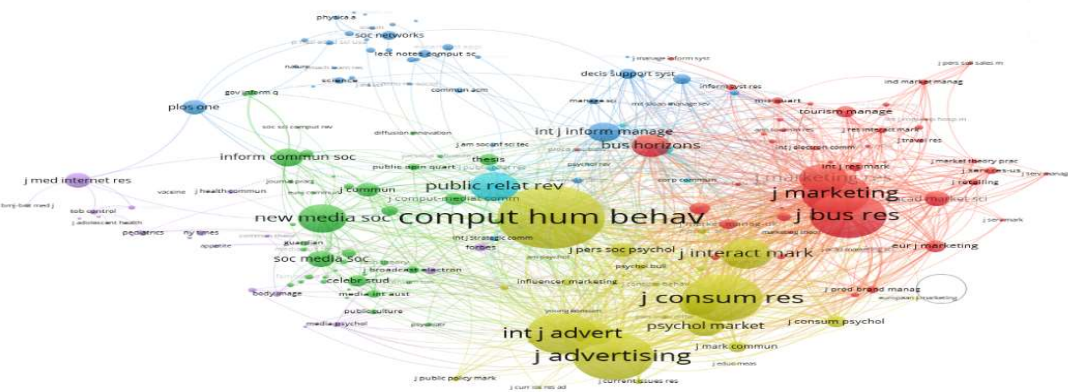


Figure 6: The relationship between bibliographic coupling and co-citation is investigated using bibliometric methods. (A) Bibliographic coupling of documents; (B) Bibliographic coupling of sources; (C) Co-citation of documents; and

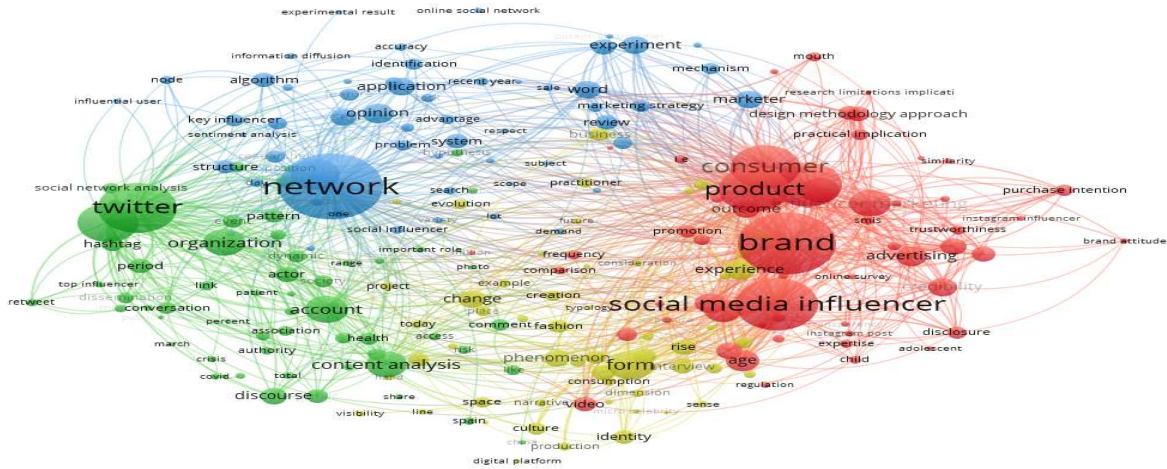
(D) Co-citation of sources are all examples of bibliographic coupling. Distinct colors indicate different areas of research interest. The size of the circles corresponds to the number of co-citations that have occurred. The distance between the two reflects the degree of correlation

### 3.6 Bibliometric Analysis of Themes and Trend Topics

Three trends were discovered in social media influencer research, as shown in Figure 6A. Networks and advertising belonged to the blue cluster. The green cluster involved hashtags on Twitter and Instagram. The red cluster included social media influencers, brands, and products.

The yellow cluster was about fashion, culture, and influencer identity. Figure 6B shows a network map of trending topics by keywords used from 2007 to 2020. The indicator is colored from purple to yellow in the current publication. Recently, a number of new studies have been published looking at retweets, purchase intentions, and brand opinions.

A



C

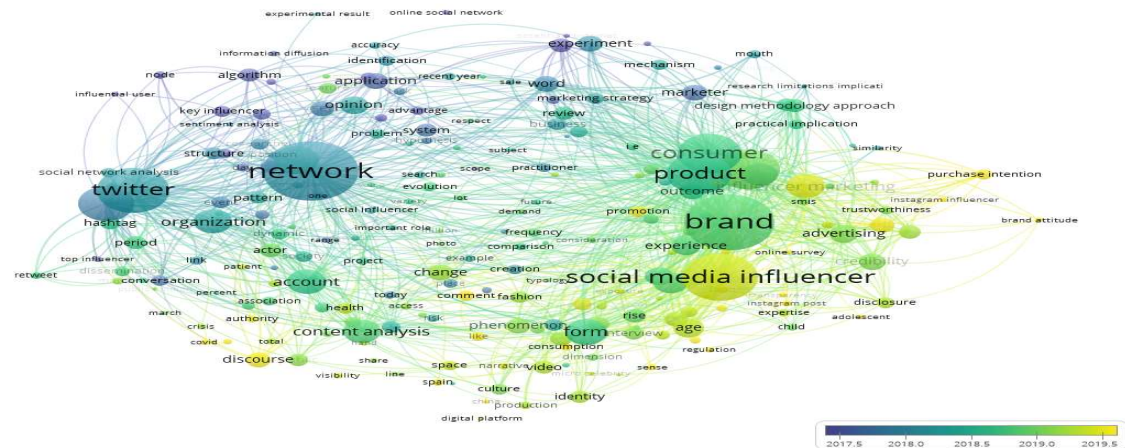


Figure 7: Theme analysis using bibliometric methods. (A) Themes distribution among the participants. On the map, three clusters have been identified. Social media influencers, businesses, and products are grouped in the red cluster. Networks and advertising were included in the blue cluster. The green cluster represents the hashtags that are associated with C on Twitter and Instagram. (B) A network map of the trend topics based on the keywords that were used between December 2019 and December 2020. The indicator changes color from purple to yellow to signify which publications are currently available. More research has been done on social media influencers, purchase intention, and influencer marketing, among other topics. The size of the circles shows the frequency of keywords' appearance. The relationship between the two circles is represented by the distance between them.

#### 4 DISCUSSION

In this study, we examined 670 publications on social media influencers indexed in the core database WOS. The published literature covers the following three aspects: Influencer Marketing, Influencer, and Barding. The term "social media influencer" is the most common keyword and is closely related to the terms "influencer" and "influence". The United States provided the most significant contribution in this important field. The retweet, purchase intention and attitude towards the brand could be among the hotspots in the future.

"Social media influencer" is a jargon term used to describe a person who wields significant influence on social media. There are comparable terms related to social media influencers such as opinion leaders, internet personalities, and celebrity endorsers. Internet celebrities act as influencers who bring marketers and consumers together and produce educational and credible content on social media or other online communities to interact dynamically with users [27]. High-ranked journals such as Social Media Society, International Journal of Advertising, and computer of human behavior Journal have been opened with special sections for social media influencers, publishing a high number of papers.

influencers as a social phenomenon would need to be given more attention in sociological research and global surveys to assess the changes in values and behavior they trigger. In particular, the focus on marketing or technical aspects of human behavior obscures other social facets and domains of human behavior, such as social and digital participation, interpersonal and sexual relationships, deviant behavior, and other risks, all of which are critical to understanding the impact of social networks in an increasingly globalized world [1].

The study found little doubt that adolescents and young people are protagonists of this social phenomenon, both as actors and as targets influencers, and that an educational study is needed. Nowadays, social networks are part of marketing strategies precisely because the prestige and trust that influencers instill in their followers lead to a recognition effect among the audience, causing them to trust their criteria, opinions, and information, usually related to interests and topics in which they are

knowledgeable. They have a variety of hobbies and topics with which they already have experience.

Consequently, both families and teachers have an important role to play as information brokers in encouraging use that supports the potential offered by social networks, and as advisors to young people in identifying the risks and problematic uses that can result from inappropriate use [30]. Thus, more studies need to work to understand the influencers' demographic characteristics.

The initial focus is often on influencers and branding. For example, "social media", "influencer", "impact" and Instagram as the most commonly used keywords have a strong relationship with "word-of-mouth" and "influencer marketing" .and most papers that focused on impact characteristics also had the highest citations. The article published in 2017 was an important piece of information that revealed marketing through Instagram influencers: the impact of the number of followers and product divergence on brand attitudes.

Regarding the lack of studies to understand and define the phenomenon of influencers in social media This study provides valuable information about the current state of research and tried to fill the gap by determining the future trends in social media influencers, but it has some shortcomings. The limitations of the study stem from the emphasis on a quantitative approach and a single database that needs to be expanded. The authors intend to evaluate the content of scientific studies and use the Scopus database in future studies. We only considered articles published in the databases of WOS that are relevant to social media influencers, so the results can be generalized. Nevertheless, there are always limitations. Every day, researchers submit articles to WOS. However, only a portion of them is included in the main database [30, 31] As a result, articles written in other languages were either overlooked or rejected.

Second, this study recommends adopting and adapting previous studies on social media influencers, as this topic has already received attention in academia, and also identifying patterns related to this topic. However, the notion of clusters as a theoretical basis for the work of social media influencers might be biased due to the weaknesses of the bibliometric study. Future

research should, however, develop an innovative classification tool to further investigate the working trends and progress. However, only a VOSviewer program was used in this research, so specific bibliometric analysis tools could be used for future studies.

## 5 CONCLUSIONS

The rise of influencers in social media has spurred scholarly research in a variety of fields and disciplines, from computer science to the social sciences, from economics to medicine, especially in the last two years. These are perhaps the two most notable findings of the bibliometric analysis, which lead us to expect that this field of research will continue to grow and be complemented by a variety of disciplines.

In this paper, we conduct a bibliometric analysis of academic papers from WoS on the topic of social media influencers from 2007 to 2020. We start by identifying general publication distributions, such as publication and citation trends, topic distribution, and prolific journals, authors, affiliations, nations, etc. The distributions of annual degrees of collaboration are examined from the perspective of country, affiliation, and author.

The growth of the most influential countries' publications has been driven by the development and use of social media for influencer research, with the United States, Spain, England, and Australia accounting for more than 45 percent of all social media influencer publications. The top four ranked countries are the most influential in the field of social media influencers. The study also found an exponential increase in the number of publications on the topic of social media influencers since 2007. The growth profile of publications can be used to predict changes in the coming years in different countries. The conclusions of the analysis provide a comprehensive picture of the research trend and development of social media influencers. They can help the concerned researchers to gain a comprehensive understanding of the research status, find research assistants, and determine the best research topics.

With the development of technology and the Internet, social media are increasing the role of influencers to influence other users and consider them effective members in marketing and

advertising, and there are a growing number of scientific publications. It is very important to evaluate the quality of such a large number of research articles and collect useful information. The study has identified very influential articles in social media influencer research and the contribution to understanding the role of influencers in advertising and purchase intention research which is still needed for future directions.

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