Reciprocal Reinforcement: Social Media Engagement and FoMO

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Abstract

Social media originated in 2004 and has been exponentially researched by academicians and practitioners. From being an obscure concept to being an integral part of people's everyday lives, social media is a phenomenon that has various contributors and consequences. Fear of Missing out (FoMO) is one such crucial contributor as well as a result that needs analysis. The tool of bibliometric analysis has been applied to social media usage and fear of missing out. The area of research has yielded 458 papers since 2013 (when the first and the most cited paper was authored). The importance of FoMO in social media usage has been recognized and elaborated by the fact that a 10-item FoMO scale has been used to measure and report it, sometimes as a cause of social media usage, a result of social media usage, or a mediator of social media usage. Publication analysis clubbed with co-occurrence and author network analysis has yielded some interesting results discussed in the paper. This paper has made an effort to point out the future research venues in the field of social media usage and FoMO.

Keywords

Fear of Missing out (FoMO), Social media, Social media usage, Social Media Addiction (SMA), Instagram, Facebook, and Whatsapp.
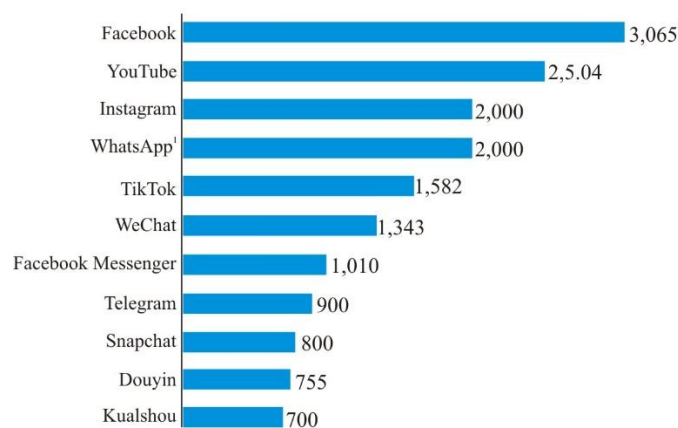
1. Introduction

Experiencing life through the lens of smartphones is the new way of life. The tourists, the audience of the live shows, and parents at the annual functions of their kids all bear testimony to it. People spend thousands on buying tickets to watch their favourite artist perform, but one look at the audience and the urge to record "it all" is more than evident. Everyone, on the surface, believes that they are watching through the camera lens because pictures and videos preserve memories. But the question arises, are the real memories being created through the lens? Are the memories being created for ourselves, or are they for the

followers/friends on social media? Maybe the answer is that it is for both, but it is not that simple, is it? Those on the show are recording it, and those who cannot attend feel left out by the posts on social media glorifying the event. People spend money and make sure that the world of their social media friends (which of course includes their real-life friends, family, and acquaintances/ followers/subscribers) knows that they had a great time.

Now, imagine a scenario where none of the audience were allowed to take their gadgets to record the videos! It would make the audience just focus on the event, their favourite celebrity, but how will they share? This sharing is responsible for the fear of missing out being heavily talked about on social media. Sharing leads to FoMO for those who could not attend, and "not sharing" leads to FoMO for those who attended but did not post. FoMO on the appreciation and views they might have had if they had shared their pictures/ videos. FoMO is the outcome either way.

Social media owes its origin to Orkut and Facebook, which started in 2004. The acquisitions, collaborations, and innovations in the field of social media have led to a humongous increase in the number of users accessing it and making it an integral part of their lives. Figure 1, from Statistica, encapsulates the usage of various social media platforms in April 2024. Facebook (3,065 monthly users) leads the roost, followed by YouTube (2,504), Instagram (2,000), WhatsApp (2,000) and the rest. These high numbers are an indication of the wide use of social media all across the globe.

Most popular social networks worldwide as of April 2024, by number of monthly active users *(in millions)*

Network	Users
Facebook	3,065
YouTube	2,5.04
Instagram	2,000
WhatsApp[1]	2,000
TikTok	1,582
WeChat	1,343
Facebook Messenger	1,010
Telegram	900
Snapchat	800
Douyin	755
Kualshou	700

Source:- https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/

Figure 1:- Most Popular Social Media Networks, 2024

The term FoMO, the fear of missing out, was added to the Oxford dictionary in 2013, but the term was used for the first time by Dr. Dan Herman in 1996 in an academic paper authored by him. Formally, the term was popularised by Patrick McGinnis, a Harvard MBA student, while writing for Harbus, a non-profit self-funded news organization of the Harvard Business School. FoMO is a paradox to the idea of "enjoying the present." It is humanly not possible to be present everywhere, but the technology lets you view what is happening everywhere, leading to the uncomfortable feeling called the Fear of Missing Out (FoMO). Przybylski (2013) discusses FoMO in comprehensive detail elaborating on the practical impossibility of ever being a part of every event and resulting in FoMO, which is "a pervasive apprehension that the others might be having a rewarding experience from which one is absent." FoMO is in no way a new construct of human nature, but its magnitude has increased manifold since social media enables us to be made aware of, and in minute detail about, what is happening in the lives of people in every nook and corner of the world, and we can share the same with them. A very interesting intersectional study on FoMO, social media intensity, and social connections (Robert, 2019), which emphasizes that FoMO increases the social media intensity, but it may also have a positive impact on the social connections through the use of social media.

2. Objectives of the Study

The present study aims to decipher the laid-down research objectives in detail. Through the following objectives, the paper focuses on finding interesting and widely used relationships between social media and FoMO.

2.1. Research Objective 1 (RO1): To extract the most productive journals and other publishing trends to map the bibliometric profile.

2.2. Research Objective 2 (RO2): To determine which authors are the most prolific and also which nations and organizations contribute the most.

2.3. Research Objective 3 (RO3): To identify the themes that have emerged in the study of social media and the Fear of Missing Out.

2.4. Research Objective 4 (RO4): To summarize the methodology and findings of the most cited papers in the field of FoMO and social media.
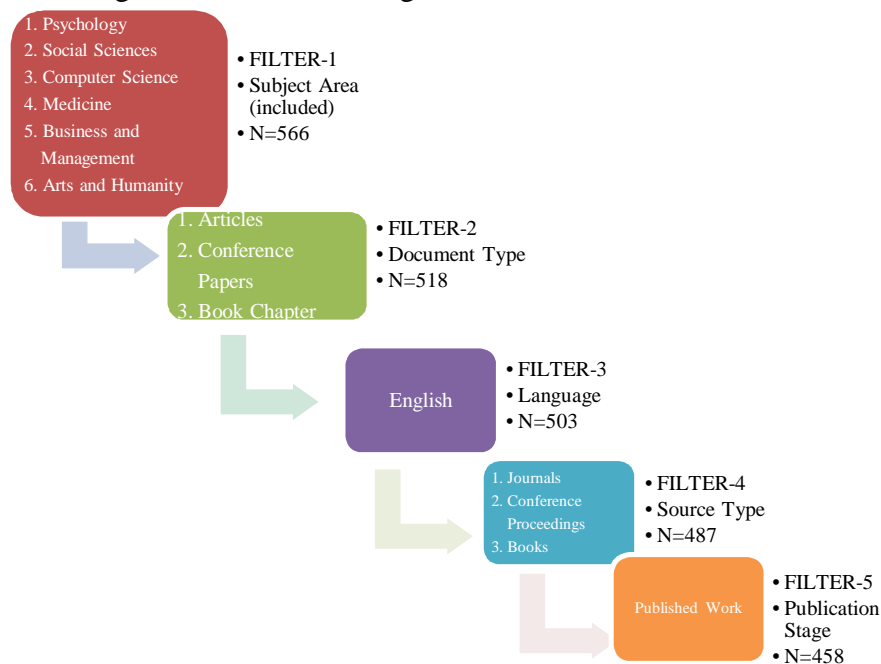
3. Research Methods

The study performs a bibliometric analysis to understand the research trends in FOMO and social media, as this will help in identifying the critical topics within the academic literature. For bibliometric analysis the study undertakes publication analysis, author network analysis and network of words co-

occurrence analysis. Bibliographic analysis facilitates researchers to comprehending the impact and quantifying the influence of individuals, publications, or journals on the growth of the research topics. Bibliometrics is a quantitative and literature-based analysis that uses statistical methods to analyze the interrelationship of publications and articles (Fahreza & Harjanah, 2024). The bibliometric analysis method is also very good at handling a lot of publication to develop research subjects, find areas of interest, and explain internal relations and researcher contact. (Van Eck and Waltman 2010). Bibliometric analysis also considerably lessens the researcher's bias, time, and effort as compared to a systematic literature review. (Radhakrishnan et al., 2017)

3.1 Data Search Strategy

A total of 589 documents were successfully retrieved from the Scopus Database using the search string "Social Media" AND "FoMO" OR "Fear of missing out" on December 17, 2024. The publication time frame was set until 2024. The process of data retrieval was undertaken by applying the following inclusion criteria. Figure 2 shows the flowchart for data retrieval.
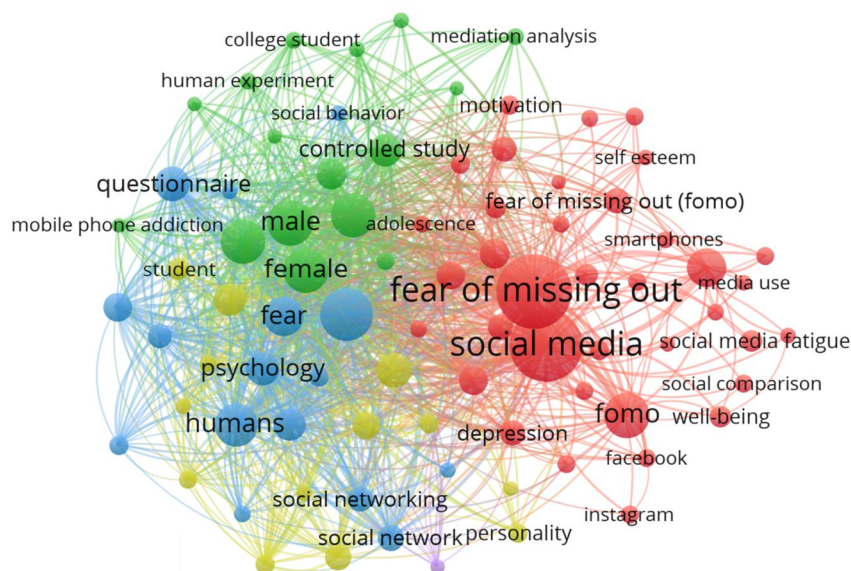

Source:- Created by Authors thorough Biblioshiny

Figure 2:- Search Strategy

4. Analysis and Tools

This study undertakes a network of word co-occurrence analysis, author network analysis and publication analysis to track research in this field.

Words co-occurrence analysis: Word co-occurrence analysis in bibliometric studies look at the relationships and frequency of words or concepts that appear together in the same document. Using word co-occurrence analysis, researchers can find theme patterns, research trends, and links across topics. This analysis offers insights into social media and the fear of missing out (FoMO) topics (Figure 3) that have gained attention from scholars.

Source:- Created by Authors thorough Biblioshiny

Figure 3:- Word Co-occurrence Analysis

The author's co-occurrence (co-authorship analysis) gives an overview of research collaborations and the social structure of research work in social media and FoMO. Co-authorship analysis facilitates the identification of collaboration networks, discovering influential authors or groups within a research domain, analysing interdisciplinary collaboration patterns, and detecting clusters of researchers working on similar topics. Co-authorship analysis can also examine the issues of collaboration on the level of institutions and countries (Župič & Cater, 2015).

Publication analysis presents the analysis of the literature in the area of FoMO and social media. It includes publication frequency by year (information on research trends in the field of research), year-by-year overview of scientific research in FoMO and social media, and the citation analysis of the research published.
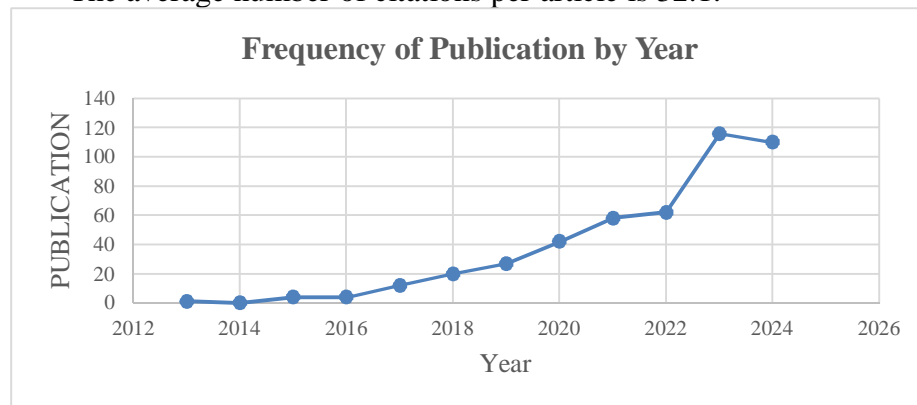
VOSviewer version 1.16.19 (Centre for Science and Technology Study, Leiden University) has been used to study word co-occurrence and author co-occurrence. For word co-occurrence, all keywords (data) are extracted by the software, and based on the data, clusters are created for further analysis. Co-author analysis of scientific publications is presumed to be a measure of collaboration (Župič & Cater, 2015).

4.1 Publication Analysis

RO1: To extract the most productive journals and other publishing trends in order to map the bibliometric profile.

2013, saw the first research paper on social media and FoMO (SM & FoMO) was published with zero research in this area in 2014; however, in the subsequent year, (post-2016) research in FoMO and social media gained interest, and 2023 witnessed 116 research articles. In total, 458 publications were identified which included research articles (413 documents), book chapters (17 documents), and conference papers (28 documents). The growth is exponential in the years 2020 and 2021 (due to increase in social media usage and the fear of missing out in life during the pandemic), and also in 2022-2023 as FoMO changed form, people were more interested in not missing out on anything and posting about it.

The average number of citations per article is 32.1.

Source:- Created by Authors thorough Biblioshiny

Figure 4:- Publication Analysis

These articles appeared in 241 journals, of which 23 (maximum) articles relating to FoMO and social media were published in Computers in Human Behavior followed by 21 publications in Current Psychology, and 12 each in Cyberpsychology, Behavior, and Social Networking and Inter-national Journal of Environmental Research and Public Health (Table-1).

Table 1:- Top 10 Academic Journals with the Most Publications (Biblioshiny)

S. No.	Publication Name	Number of Articles
1.	Computers in Human Behavior	23
2.	Current Psychology	21
3.	Cyberpsychology, Behavior, and Social Networking	12
4.	International Journal of Environmental Research and Public Health	12
5.	Addictive Behaviors	11
6.	Frontiers in Psychiatry	10
7.	BMC Psychology	8
8.	Psychology Research and Behavior Management	8
9.	Journal of Technology in Behavioral Science	7
10.	International Journal of Human-computer Interaction	6

Source:- Created by Authors through Biblioshiny

Table 2 presents the top 10 most cited journals with maximum citations and a minimum of three documents. Computers in Human Behavior has 3543 citations to its credit with the highest number (23 articles) of publications in this area of research. Journal of Adolescence has only three documents published in this field, but the citations of these documents are 911, Addictive Behavior with 811 citations (11 articles published), Personality and Individual Differences has published 3 documents, and the citations of these papers are 529, International Journal of Environmental Research and Public Health has 504 (12 research articles published), and New Media and Society has 453 citations (3 publications), followed by the Journal of Retailing and Consumer Services with 437 citations (3 documents). These figures point to the outstanding performance of Computers in Human Behavior, Journal of Adolescence, Addictive Behaviors, Personality and Individual differences in terms of citation v/s publications. Also, new researchers should target these journals for a higher readership of their work.

Table 2:- Top 10 Highly Cited Publications. (Vosviewer.CSV file)

S. No.	Publication Name	Documents	Number of Citations
1.	Computers in Human Behavior	23	3543
2.	Journal of Adolescence	3	916
3.	Addictive Behaviors	11	811
4.	Personality and Individual differences	3	529
5.	International Journal of Environmental Research and Public Health	12	504
6.	New Media and Society	3	453
7.	Journal of Retailing and Consumer Services	3	437
8.	Technological Forecasting and Social Change	5	435
9.	Current Psychology	21	276
10.	Internet Research	3	276

Source:- Created by Authors through Biblioshiny

4.2 Author Network Analysis

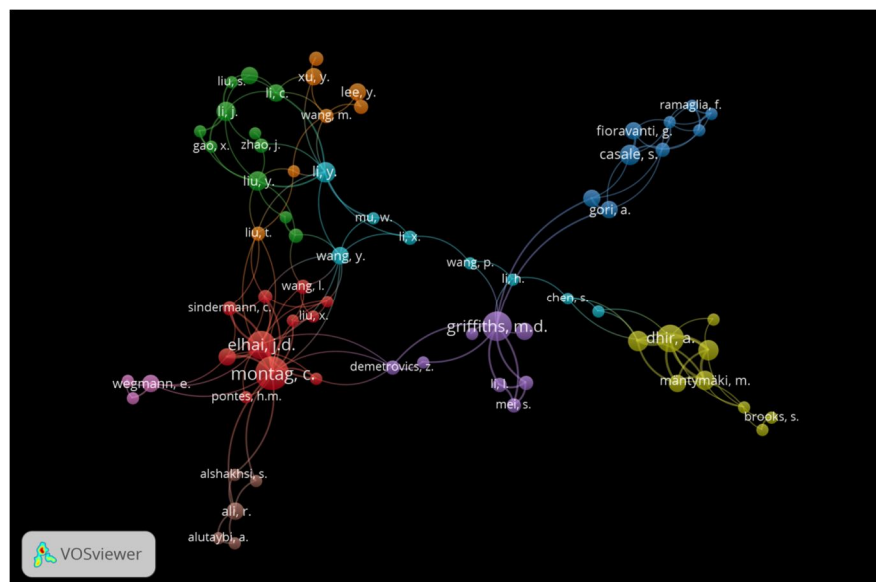RO2: To determine which authors are the most prolific as well as which nations and organizations contribute the most.

The paper uses VOS viewer software for author network analysis. VOS viewer is a tool for constructing and visualizing bibliometric networks.

Table 3:- Top 10 Author's Publication Analysis (VOSviewer-.RIS file)

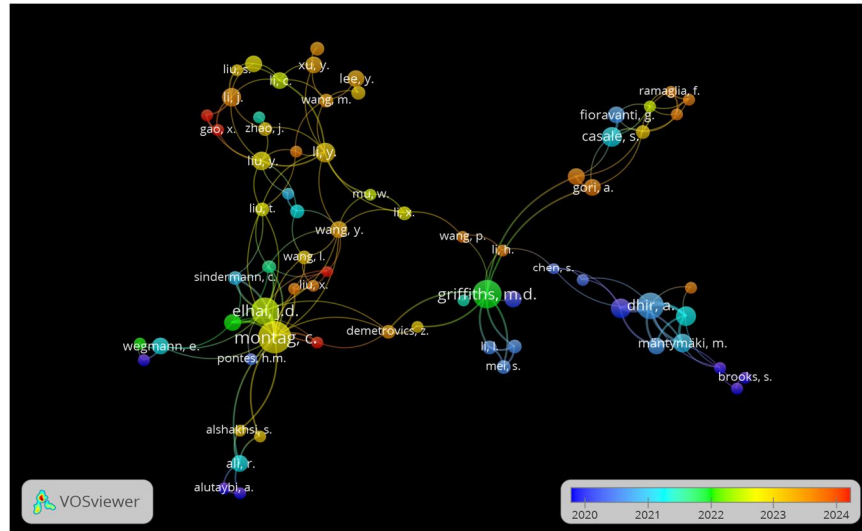| S. No.	Author	Documents	Total Link Strength
1.	C. Montag	15	34
2.	M.D. Griffiths	12	22
3.	J.D. Elhai	11	26
4.	A. Dhir	10	25
5.	A. Tandon	6	19
6.	P. Kaur	6	17
7.	Y. Li	6	13
8.	S. Casale	6	9
9.	C.T. Barry	6	4
10.	M. Mantymaki	5	17

Source:- Created by Authors through Biblioshiny

Between 2013-2024, 1279 authors contributed towards 458 SM & FoMO publications. The top 5 authors with 5 or more publications were Montag (15) - ULM University, Germany, Griffiths (12) - Nottingham Trent University, UK, Elhai (11), University of Toledo, USA, Dhir (10), University of Agder, Norway, Tandon (6) University of Turku, Finland, and Kaur (6), NorthWestern University, SA/University of Bergen, Norway. Table 3 presents the top 10 authors with 5 or more publications. The work of these authors in SM & FoMO can be investigated for further research in this area. Of the 458 publications with 1271 contributing authors, only 36 were single-authored, and 1235 were multi-authored. The Total link strength (TLS) indicates the total strength of an author's collaboration with others. A high TLS (e.g. A. Dhir, A. Tandon) suggests that the author is highly connected and has strong collaborative ties, indicating centrality in research collaborations. Items with higher TLS are often central to the network and can represent influential authors with groundbreaking papers. By interpreting TLS, researchers can have a better understanding of collaboration patterns, influential topics, or authors.

To study the composition of co-authors' relationships among contributing authors, this paper examines the 1271 authors by analysing their co-occurrence and connection.
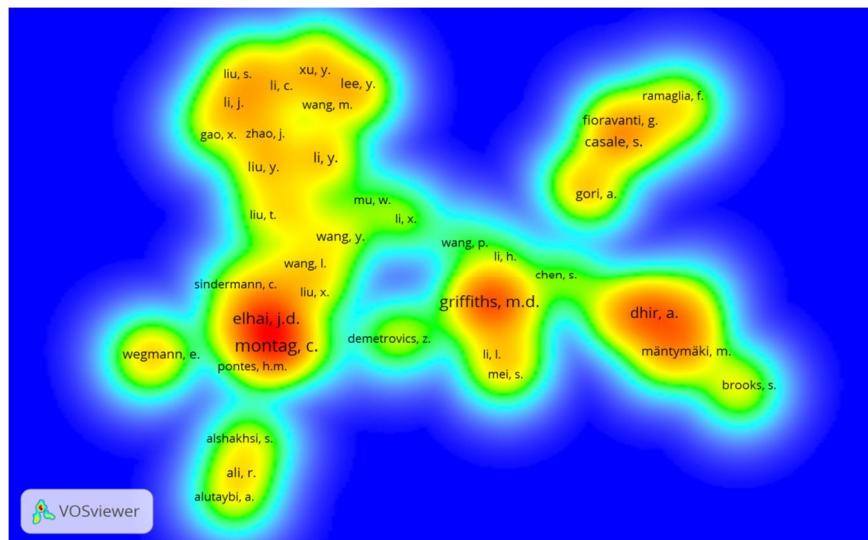

Source:- Created by Authors through Biblioshiny

Figure 5:- Network Visualization of Co-authorship Analysis

Source:- Created by Authors through Biblioshiny

Figure 6:- Overlay Visualisation of Co-authorship analysis

Source:- Created by Authors through Biblioshiny

Figure 7:- Density Visualisation of Co-authorship analysis

Co-authorship analysis was conducted using VOSviewer software. Figure-5 shows that there were 11 clusters with 4 significant clusters (with a minimum of 9 authors in each cluster), and the remaining 7 clusters have

authors ranging from three to eight in number. The authors who represented the 4 significant clusters: Montag (red cluster), Griffiths (purple cluster), Dhir (yellow cluster), and Li J (ocean blue cluster).

The overlay visualization map records the period of article publication by prominent authors (Figure-6). The clusters in blue colour indicate the authors who contributed before 2019. (Przybylski et. al., 2013), initiated research in this field. The clusters in yellow and orange refer to the authors with recent work in SM and FoMO. Montag and Griffiths, with their recent work in 2024 belong to this group however, these authors have been contributing to research in this area since 2019.

Figure-7 presents a density visualization of the co-authorship network. It allows us to visualize the profiles of the authors. Color gradients are used to represent density. Warm colours (e.g., red, orange, and yellow) indicate higher density (more influence). Cool colours (e.g., green and blue) represent lower density. Red zones highlight dominant authors; hence, Montag, Dhir, and Griffiths dominate the research in the field of SM and FOMO. New researchers can connect with these authors to explore more in this research area.

Table 4:- Top 10 Authors with Highest Citations (VOSviewer using .CSV file)

S. No.	Authors	Documents	Citations
1.	D. Alt	3	454
2.	A.Tandon, A. Dhir, S. Talwar, P. Kaur	2	162
3.	T.C.T. Dinh, Y. Lee	2	94
4.	A. Gori, E. Topino, M.D. Griffiths	2	40
5.	F. Westin, S. Chiasson	2	34
6.	A. Koessmeier, O.B. Buttner	2	31
7.	A. J. Sultan	2	22
8.	T. Eitan, T. Gazit	2	20
9.	I. Alvi, N. Saraswat	2	8
10.	L. Zhao	2	6

Source:- Created by Authors through Biblioshiny

Network analysis shows 10 significant authors in terms of citations. Dorit Alt, with 3 publications, has the highest number of citations (454) followed by Tandon, Dhir, Talwar, Kaur, Dinh and Lee (Table 4). Alt has published 3 research papers each in 2015, 2017, and 2018. His work focuses on the usage of social media on the mental health of university students. Anushree Tandon, Puneet Kaur and Amandeep Dhir have 2 publications and 162 citations. Their work (from 2020 to 2022) investigates the dark side the problematic use of social media. Their most recent work in 2022 highlights social media-induced FoMO.

4.3. Word Co-occurrence Analysis

RO3: To identify the themes that have emerged in the study of social media and Fear of Missing out.

This section of the paper studies the most frequent words or terms (keywords) in academic journals. For this study, five minimum co-occurrences of a keyword have been considered in VOSviewer and selected 162 words that met the threshold. Thus, only 162 out of 2142 words were retained for word co-occurrence analysis.

Out of the 162 keywords retained, Table 5 displays 14 keywords that occurred 50 or more times. 2 keywords (Fear of Missing Out & Social Media) appeared more than 200 times, followed by human (128 times), 3 keywords occurred more than 90 times, 5 words appeared more than 70 times. Table-6 presents a keyword co-occurrence analysis. Fear of missing out has the highest occurrence (252), closely followed by social media (241) for SM and FOMO topics in the academic journals. However, in terms of total link strength (TLS), social media is the most vital link keyword (2279 TLS), followed by fear of missing out (2241 TLS).
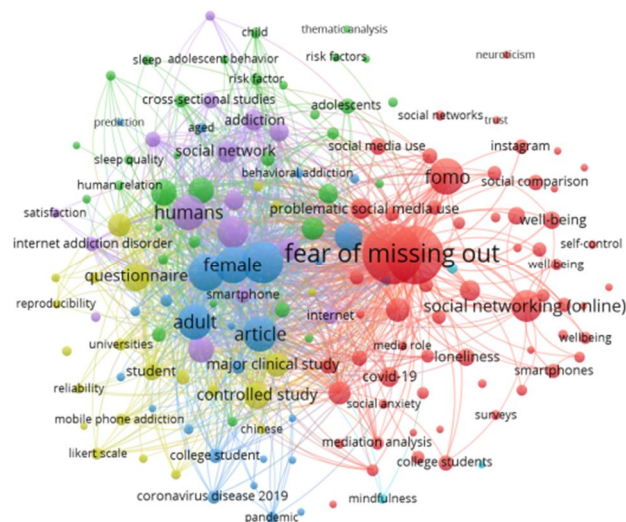
Table 5:- Most Influential Publications of Co-word Analysis

S. No.	Keywords	Cluster	Occurrence	Total Link Strength
1.	Fear of Missing Out	1	252	2227
2.	Social Media	1	241	2279
3.	Human	3	128	2103
4.	Male	3	93	1705
5.	Female	3	93	1701
6.	FoMO	1	92	602
7.	Adult	3	87	1610

S. No.	Keywords	Cluster	Occurrence	Total Link Strength
8.	Article	3	87	1569
9.	Humans	5	86	1500
10.	Fear	5	72	1179
11.	Social Networking (Online)	1	70	464
12.	Social Media Addiction	3	57	761
13.	Questionnaire	4	55	972
14.	Psychology	2	50	942

Source:- Created by Authors through Biblioshiny

Figure 8 illustrates a network map of all keyword co-occurrence and interactions in academic journals. The distance between nodes represents the strength of the relationship between the terms or keywords they represent. Closer nodes indicate terms that co-occur frequently in the dataset. Farther nodes suggest weaker relationships, meaning the terms are less likely to appear together. The distance between the nodes indicates the measure of conceptual similarity or thematic closeness. Nodes within the same cluster (same colour) are typically closer together because they represent terms that co-occur more frequently with each other than with terms in other clusters. (Van Eck & Waltman, 2010)

Source:- Created by Authors through Biblioshiny

Figure 8:- Co-occurrence Analysis

Four significant clusters emerge from the keyword co-occurrence analysis. The red cluster with the highest number of nodes (61 items) mentions problematic social media, phubbing, well-being, social networking (online), (FoMO), fear of missing out, and social media prominently. These items may be used to develop foundational knowledge and theoretical understanding of this research area. The green cluster with 33 items points at adolescents, anxiety, and psychology, although these items are as prominently used however, these are underdeveloped items that can be used for research growth in the subject area of social media and FoMO as these are more specialized and relevant for emergent studies. The blue cluster has 27 items. These items majorly point to the influence of gender on social media and FoMO. The items that prominently emerge from this cluster are male, female, and social media addiction. The yellow cluster (22 items) majorly focuses on controlled study, major clinical study, and questionnaire suggesting the various research tools used to study this subject, other items gaining attention in this cluster are the Likert scale, survey and questionnaire suggesting that these tools can also be applied by researchers for a better research output.

4.4. Research Findings for FoMO and Social Media

RO4: To summarise the findings and gaps of the most cited papers in the field of FoMO and Social Media.

Table 6:- Most Cited Papers

Paper	DOI	Total Citations	TC per Year	Normalized TC
PRZYBYLSKI AK, 2013, COMPUT HUM BEHAV	10.1016/j.chb.2013.02.014	1697	141.42	1.00
DHIR A, 2018, INT J INF MANAGE	10.1016/j.ijinfomgt.2018.01.012	593	84.71	4.52
FOX J, 2015, COMPUT HUM BEHAV	10.1016/j.chb.2014.11.083	529	52.90	2.30
BLACKWELL D, 2017, PERS INDIVID DIFFER	10.1016/j.paid.2017.04.039	513	64.13	3.40

Paper	DOI	Total Citations	TC per Year	Normalized TC
HUNT MG, 2018, J SOC CLIN PSYCHOL	10.1521/jscp.2018.37.10.751	507	72.43	3.87
OBERST U, 2017, J ADOLESC	10.1016/j.adolescence.2016.12.008	497	62.13	3.30
TALWAR S, 2019, J RETAIL CONSUM SERV	10.1016/j.jretconser.2019.05.026	351	58.50	5.90
ALT D, 2015, COMPUT HUM BEHAV	10.1016/j.chb.2015.02.057	310	31.00	1.35
KLEIS NIELSEN R, 2018, NEW MEDIA AND SOCIETY	10.1177/1461444817701318	272	38.86	2.07
BARRY CT, 2017, J ADOLESC	10.1016/j.adolescence.2017.08.005	266	33.25	1.76

Source:- Created by Authors through Biblioshiny

Table 7:- Details of the Most Cited papers

S. No.	Title of the Paper and Year	Authors
1.	Motivational, emotional, and behavioral correlates of fear of missing out, 2013	Andrew K. Przybylski, Kou Murayama, Cody R. DeHaan, Valerie Gladwell
2.	Online social media fatigue and psychological well being—A study of compulsive use, fear of missing out, fatigue, anxiety, and depression, 2018	Amandeep Dhir,Yossiri Yossatorn Puneet Kaur, Sufen Chen
3.	The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances, 2015	Jesse Fox, Jennifer J. Moreland

S. No.	Title of the Paper and Year	Authors
4.	Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction, 2017	David Blackwell, Carrie Leaman, Rose Tramposch, Ciera Osborne, Miriam Liss
5.	No More FoMO: Limiting Social Media Decreases Loneliness and Depression., 2018	Melissa G. Hunt, Rachel Marx, Courtney Lipson, and Jordyn Young
6.	Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out, 2017	Ursula Oberst, Elisa Wegmann, Benjamin Stodt, Matthias Brand, Andrés Chamarro
7.	Why do people share fake news? Associations between the dark side of social media use and fake news sharing behavior, 2019	Shalini Talwar, Amandeep Dhir, Puneet Kaur, Nida Zafar, Melfi Alrasheedy
8.	College students' academic motivation, media engagement, and fear of missing out, 2015	Dorit Alt
9.	Dealing with digital intermediaries: A case study of the relations between publishers and platforms, 2018	Rasmus Kleis Nielsen and Sarah Anne Ganter
10.	Adolescent social media use and mental health from adolescent and parent perspectives, 2017	Christopher T. Barry, Chloe L. Sidoti, Shanelle M. Briggs, Shari R. Reiter, Rebecca A. Lindsey

Source:- Created by Authors through Biblioshiny

The paper "Motivational, emotional, and behavioural correlates of fear of missing out" has been cited 1697 times. It is rich in content and a fascinating read. It handles a complex topic with simplicity. The objective of the paper is to make a measure of FoMO for the individuals, followed by another sample to study the demographic, individual differences, and social engagement levels of the users related to the fear of missing out, and the third one was to measure the impact of FoMO on emotional well-being of the users and the real-life experiences (Przybylski et al., 2013).

The study included participation by 1013 (672 men, 341 women), within the age group of 18 to 62 years (M = 28.5, SD = 8.55). The participants were English-speaking; from different parts of the world, including the United States, India, Australia, Canada, The United Kingdom, and some other nations.

The study employed a Likert scale to develop the instrument, which focused on accurately identifying tapped-in between-persons variability in FoMO. The second part of the study used the 10-item scale for FoMO developed in the study, social media engagement was studied by asking the respondents about the daily use of social media through an 8-point Likert scale. The Need Satisfaction Scale (9-item scale) was employed to study psychological need satisfaction. A 5-point Likert scale was used to study overall life satisfaction and was measured with an assessment that tapped into life satisfaction. The Emmons Mood Indicator (modified 9-item scale) was used to measure the general mood of the participants.

The results indicated that there was an association between FoMO and lower need, life and mood satisfaction; it led to higher social media engagement and a link between FoMO and distracted driving as well as attention deficiency during the lectures was established. FoMO also mediated links between social media engagement and individual differences. The study also established a self-report measure of FoMO. With such rich outcomes, it is no wonder the study is the most cited study.

The paper "Online social media fatigue and psychological well-being—A study of compulsive use, fear of missing out, fatigue, anxiety, and depression" has been cited 593 times. It studies various psychosocial well-being factors related to social media fatigue. The paper discusses the concept of social media fatigue amongst the reasons why social media users take a break. (A. Dhir, 2018)

Various antecedents and precedents of social media fatigue have been studied, with this particular study bridging the gap. The stressor-strain-outcome framework (SSO) is used to examine if the precedents are the psychosocial well-being measures, including compulsive media use and fear of missing out. The study also studies if anxiety and depression are the antecedents of social media fatigue.

The study's sample is from adolescent social media users in India. A repeated cross-sectional methodology with two waves of data (N = 1554, 1144) separated by 5 months was used to study them.

Confirmatory Factor Analysis (CFA) using the measurement model has been used to evaluate the model fit. The study concludes that obsessive media use considerably increased social media fatigue, which in turn led to higher levels of anxiety and depression. Through the mediation of obsessive social media use, social media fatigue was indirectly predicted by FoMO.

"The Dark Side of Social Networking Sites: An Exploration of the relational and psychological stressors associated with Facebook use and affordances" by Jesse Fox and Jennifer J. Moreland has been cited 529 times. The paper is very rich in research and explores multiple aspects, though for this paper the study of FoMO has been identified as a small part of the research. (Fox & Moreland, 2015)

The sample was a focus group of 44 participants (17 men and 27 women) from the Midwestern university, aged within the age group of 19 to 52. Focus groups were employed to decipher the themes around the emotional responses and stressors of Facebook usage. It is an interesting takeaway from the study, where focus groups instead of surveys and questionnaires have been preferred. In this particular study of social media, where the basic fibre is social interactions, and hence focus groups would be a more emphatic study.

Twelve focus groups (same-sex) were analyzed, and an open coding process was applied to the script. Vivo coding has been employed to identify the key terms the focus group participants have used to describe the experiences (e.g., friend sluts, FoMO, TMI, creeping, friend sluts). A constant-comparative method, where the iterations of the data have been layered to identify, explain, and clarify categories, determining their salience and recurrence within and amongst the groups. Common themes were identified through individual coding by the experts.

Facebook users frequently feel depressed and under pressure to use the site regularly, mainly due to FoMO (the fear of missing out) and to meet relationship maintenance requirements. Some participants had privacy concerns and felt that Facebook's prominence, connectivity, and persistence. These characteristics also made it possible to constantly compare oneself to other people in the network, which led to feelings of worry, jealousy, and many other undesirable emotions.

"Extraversion, neuroticism, attachment style, and fear of missing out as predictors of social media use and addiction" (Blackwell et al., 2017), has been cited 513 times. The paper is focused on determining whether Fear of

missing out (FoMO), extraversion, neuroticism, and attachment style were predictors of overuse of social media (simple use and addiction).

The sample to study the precedents of social media usage and addiction was from the Southeastern U.S., with around 80 percent still enrolled in college. 207 survey participants, including 155 women, 50 men, and the two who identified as "other." The range in age is from 17 to 49 years (M = 22.15, SD = 7.38).

Various instruments were used to analyse the precedents, including the FoMO 10-point scale (Cronbach's alpha=0.91).; the experience in close relationships scale to study the attachment anxiety and avoidance (Cronbach's alphas = 0.81 for anxiety; 0.79 for avoidance); 8-point Big five inventory to measure extraversion and neuroticism (Cronbach's alpha=0.84); 6-item, Bergen social media addiction scale (Cronbach's alpha =0.88) and 5-item Social Media Engagement scale (Cronbach's alpha=0.85). To analyze the scales bivariate correlation (between all variables). MANOVA was applied with recruitment style (general psychology or online) was considered as an independent variable and all the other variables were treated as dependent variables.

The study is of immense importance for the researchers focusing on FoMO as the two predictors of the use of social media have been identified as FoMO and neuroticism. For social media addiction, only FoMO predicted it.

"No More FoMO: Limiting Social Media Decreases Loneliness And Depression" By Melissa G. Hunt, Rachel Marx, Courtney Lipson, And Jordyn Young has been cited 507 times. The study's focus is crisp with an experimental approach to establishing that social media usage is linked to worse well-being and how limiting it could have a positive impact. (Hunt et al., 2018)

143 undergraduates at the University of Pennsylvania were recruited to either use social media as they usually do for three weeks or limit their usage of social media (FB, Instagram, and Snapchat) to 10 minutes per platform, per day.

The study analyses the subjects on 7 scales since social media usage has not been extensively studied. 10-point FoMO scale (Cronbach's alpha =0.87); 20-point The Interpersonal Support and Evaluation List scale to measure social support (Cronbach's alpha=0.77); the UCLA Loneliness Scale measuring perceived isolation (20 points) (Cronbach's alpha=0.94); 20-point, The Spielberger State-trait Anxiety Inventory to measure anxiety;

21 items on the Beck Depression Inventory to measure depressive symptoms; 10-item The Rosenberg Self-esteem Scale to analyze how one feels about himself; 42-item The Ryff Psychological Well-being Scale to analyze psychological well-being in six directions.

Increased self-monitoring decreases fear of missing out, anxiety, loneliness, and depression. The study advocates that social media use be restricted to 30 minutes a day would greatly impact overall well-being.

The paper, "Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out" by Ursula Oberst, Elisa Wegmann, Benjamin Stodt, Matthias Brand, and Andrés Chamarro has been cited 497 times. The paper is framed with an understanding that adolescents find social networking sites attractive and use them excessively. And this excessive usage leads to negative psychological consequences (Oberst et al., 2017).

1468 Spanish-speaking Latin American social media users, through mobile phones. The age group targeted was 16-18 years old.

Four scales were used to measure various dimensions. HADS (Hospital Anxiety and Depression Scale), SNI (the Social Networking Intensity Scale), the FoMO scale (Fear of Missing Out), and a questionnaire on the negative impact of using SNS via mobile devices (CERM). The results were analyzed using structural equation modelling.

FoMO and social networking intensity is the mediator between psychopathology and the questionnaire on the negative impact of using SNS. For females, being depressed is the trigger of social media involvement and for males, anxiety is the trigger.

"Why do people share fake news? Associations between the dark side of social media use and fake news sharing behaviour" by Shalini Talwar, Amandeep Dhir, Puneet Kaur, Nida Zafar, and MelfiAlrasheedy have been cited 351 times. The paper delves into a very crucial aspect of excessive social media usage i.e. propagating fake news. The paper focuses on establishing an association between the negative side of soil media usage and fake news-sharing behaviour (Talwar et al., 2019).

1022 WhatsApp users from India were used for this research using surveys (open-ended and closed-ended). The study participants were aged between 18 and 30 years The study was advertised in three different public and private universities in Lahore, Pakistan.

Theme analysis was done on the responses using NVivo on a set of open-ended surveys, and the collected data were analysed using SPSS 23 (IBM

Corp. 2017) and AMOS 23. Next, a two-step process has been applied to test the research model. Confirmatory factor analysis (CFA) was done to examine the model fit indices and different forms of validity and reliability. Later, the structural path and different hypotheses were assessed using structural equation modelling (SEM).

FoMO (along with online trust, self-disclosure and fatigue) has a positive association with propagating fake news. More the online social comparison lessening the sharing of fake news. The users authenticated news before sharing if they suffered from social media fatigue. Also, online trust was negatively associated with authenticating news before sharing.

"College students' academic motivation, media engagement, and fear of missing out" by Dorit Alt was cited 310 times. It touches on the FoMO's mediation effect on academic motivation and social media engagement (Alt, 2015).

296 undergraduate students from a major college in Northern Galilee. The authors developed a Social Media Engagement (SME) scale was designed to measure the extent of social media usage in the classroom. The FoMO scale and the Academic Motivation scale were also used, and Path analysis was performed.

The positive link between SME (social media engagement) and extrinsic motivation for learning is likely to be mediated by the fear of missing out (FoMO).

"Dealing with digital intermediaries: A case study of the relations between publishers and platforms" by Rasmus Kleis Nielsen and Sarah Anne Ganter is very different from the other research papers highlighted by the extraction of most cited papers in the field of Social Media and FoMO, but it touches upon a news media affected by FoMO. The paper was cited 272 times is a case study highlighting the collaboration between social media and search engines with the news media (Kleis Nielsen & Ganter, 2018).

Large news media houses and established digital intermediaries have been roped in for this case study. Semi-structured interviews with major players in the news media (editorial staff, product development managers, and strategic managers); off-the-record conversations and secondary sources have been interpreted to discuss the impact of search engines, social media, and news media. 13 such interviews held in 2016 were a part of the case study.

In 2016, collaborations started between news media and digital intermediaries, including search engines and social networking sites, as a

"let us try and see" approach. The major driver of the collaboration is FoMO.

"Adolescent social media use and mental health from adolescent and parent perspectives" authored by Christopher T. Barry, Chloe L. Sidoti, Shanelle M. Briggs, Shari R. Reiter, and Rebecca A. Lindsey have been cited 266 times. The paper studies the relationship between the social media usage of adolescents and its impact on their mental health and psychosocial functioning (Barry et al., 2017).

The study had 226 participants, 113 parents from all across the United States of America, and 113 students (51 females, 55 males, and 7 unreported) in the age group of 14-17 years.

A social media survey developed by the authors has been administered to both the parent participants and the students. Parents also completed an 82-item checklist of symptoms in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). A 10-item FoMO scale and a 20-item UCLA loneliness scale was filled out by the students.

Regression and correlation through SPSS Version 24 have been applied to the various hypotheses developed to understand the impact of social media usage on the mental health of adolescents.

Parent-reported DSM-5 symptoms of inattention, hyperactivity/impulsivity, ODD, anxiety, and depressive symptoms, as well as adolescent-reported loneliness and fear of missing out (FoMO) were modestly connected with the number of social media accounts reported by adolescents and their parents. Finally, teenagers with relatively high FoMO and a high number of parent-reported social media accounts had the greatest levels of anxiety and depression symptoms.

5. Discussion

The research paper analyzes the scientific work done in the field of social media and the fear of missing out (FoMO) over the last decade. (Since the work in the field has been identified to have started in 2013). The data has been retrieved from the Scopus database.

The main objective of the paper is to decipher the graph of research being done in the field of social media usage and fear of missing out (FoMO) (the keywords were restricted to these two areas only). Social media started in 2004 with the advent of Facebook and Orkut and the research concerning the impact or relationship between FoMO and social media began in 2013, with the upward

trend starting in 2016 and reaching its peak in 2023 and 2024, where more than 100 Scopus-indexed papers have been published in the field.

The paper by Przybylski (2013) is the most cited (1697) and finds a mention in most of the papers intending to study FoMO and social media usage since a 10-item FoMO scale has been developed by the authors. The scale represents people's fears, anxieties, and concerns about being in or out of touch with the events, conversations, and experiences occurring in their wide online social media networks.

Computers in Human Behavior (23) and Current Psychology (21) are the two journals that have shown the inclination to publish work in the field of social media usage and fear of missing out (FoMO).

Four hotspots for collaboration are visualized by the co-author heatmaps, with Montag's cluster stood out as the largest and most active. In addition to receiving the most citations, this cluster highlights increased production and a deep interest in the topic. A higher number of citations indicates productivity and significant interest in the topic.

This study identifies four clusters emerging from the co-occurrence network analysis, representing distinct research streams in social media and FOMO. Problematic social media, phubbing, well-being, and social networking (online), are the themes that summarise work in this area.

The major contribution of the paper is the deep dive into the most cited papers in the field of social media usage and fear of missing out (FoMO). Some very interesting takeaways are

- Przybylski, (2013) developed the 10-item scale for Fear of Missing Out, which has been used by most of the studies factoring in FoMO as a precedent, antecedent, or mediator in analysing Social media usage (Przybylski et al., 2013).

- Foxsuggests that focus groups instead of surveys and questionnaires should be preferred to study social media interactions and their impact (Fox & Moreland, 2015).

- Social media fatigue and social media addiction are predicted by FoMO (A Dhir, 2018; Blackwell et al., 2017; Fox & Moreland, 2015).

- Increased monitoring of Social media usage can decrease FoMO (as well as anxiety, depression, and loneliness) (Hunt et al., 2018).

- The more the FoMO, the more the number of social media accounts held by adolescents (Barry et al., 2017).

- Fake news is also a result of FoMO (Talwar, 2017). Collaborations between reputed media houses and Social media websites are driven by FoMO (Neilsen Report 2018, 2018).

The present study reveals that FoMO is considered an important contributor to social media usage and has been studied as a precedent, antecedent or mediator of social media usage. The exploration of research in the field through this paper leads to a comprehensive understanding of the concept of FoMO and social media usage.

6. Conclusion

The field of FoMO and social media usage research has seen an upward trend in publications. Though the publications started in 2013, the acceleration started in 2016 and reached the 100+ mark in 2023 and 2024. This implies that the field is being thickly pursued by the researchers.

Countries like the United Kingdom, France, and China have come up the guidelines restricting the use of social media by children since the harmful effects of social media usage have been identified and acknowledged. The interest in the field of social media usage and the contributors of or consequences of it (FoMO, along with a host of others) do not show any signs of fading away.

More than 1200 authors have contributed to the field with 458 publications since 2013. Most of the publications were co-authored (only 30+ publications are attributed to single authors). The heat map of the co-authorship clusters has been highlighted with significant clusters by Montag (red); Griffiths (purple); Dhir (yellow); and Li. Y (ocean blue).

We identified the 4 themes, namely, problematic social media, phubbing, well-being, and social networking (online). In literature, these themes are sometimes referred to as research fronts. Since the themes also highlight the gaps in this field of study, identifying them will assist new researchers in guiding their work.

These themes are also known as research fronts in literature. Recognizing the themes will help new researchers in giving direction to their research as these themes also point to the gaps that exist in this research field.

The investigation of research into social media and FoMO is expected to encourage researchers to pursue this important area. In addition, the analysis of the existing review of literature can help interested researchers identify possible research avenues, possible collaborations, and viable publication options and also define the parameters of their studies.

7. Limitations

Though the paper intends to make a significant contribution to the field of Social media usage and fear of missing out by accumulating and analysing the huge data in the field through bibliometric techniques; it is necessary to acknowledge the limitations to pave the way for the future researchers to investigate the field.

The study has extracted data only from the Scopus database, which, though quite rich additional or a combined study of other databases like Web of Science, Google Scholar etc., can add significantly to the knowledge in the area of research. It may yield some unique results by exploring the research published in non-academic media. The expansion of the database would widen the perspective and may provide a different insight into the field.

The results of the bibliometric analysis are heavily dependent on the keywords and the strings used to extract the data. It may sometimes unintentionally omit some significant work done by the authors/researchers in the field of the study. A thorough analysis of various combinations of keywords, including the synonyms and related terms would help to make the study comprehensive, multi-dimensional and complete.

7. References

1. A Dhir, Y. Y. P. K. (2018). Online Social Media Fatigue and Psychological Well-being—A Study of Compulsive Use, Fear of Missing Out, Fatigue, Anxiety, and Depression. *Int J Information Manag*, *40*, 141–152. https://doi.org/ 10.1016/j.ijinfomgt.2018.01.012

2. Barry, C. T., Sidoti, C. L., Briggs, S. M., Reiter, S. R., & Lindsey, R. A. (2017). Adolescent Social Media Use and Mental Health from Adolescent and Parent Perspectives. *Journal of Adolescence*, *61*, 1–11. https://doi.org/ 10.1016/J.ADOLESCENCE.2017.08.005

3. Blackwell, D., Leaman, C., Tramposch, R., Osborne, C., & Liss, M. (2017). Extraversion, Neuroticism, Attachment Style and Fear of Missing Out as Predictors of Social Media Use and Addiction. *Personality and Individual Differences*, *116*, 69–72. https://doi.org/10.1016/j.paid.2017.04.039

4. Fahreza, M. Y., &Harjanah, T. W. (2024). Work is Fun, Isn't it? Bibliometrics of Fun Work. *Gadjah Mada International Journal of Business*, *26*(3), 369–399. https://doi.org/10.22146/gamaijb.76200

5. Fox, J., & Moreland, J. J. (2015). The Dark Side of Social Networking Sites: An Exploration of the Relational and Psychological Stressors

Associated with Facebook use and Affordances. *Computers in Human Behavior*, *45*, 168–176. https://doi.org/10.1016/J.CHB.2014.11.083

6. Hunt, M. G., Marx, R., Lipson, C., & Young, J. (2018). No More FoMO: Limiting Social Media Decreases Loneliness and Depression. *https://Doi. Org/10.1521/Jscp.2018.37.10.751*. https://doi.org/10.1521/JSCP.2018.37.10.751

7. Neilsen Report 2018. (2018). *Time Flies: U.S. Adults Now Spend Nearly Half a Day Interacting with Media – Nielsen*. Q1 2018 Nielsen Total Audience Report. https://www.nielsen.com/us/en/insights/article/2018/ time-flies-us-adults-now-spend-nearly-half-a-day-interacting-with-media/

8. Przybylski, A. K., Murayama, K., Dehaan, C. R., & Gladwell, V. (2013). Motivational, Emotional, and Behavioral Correlates of Fear of Missing Out. *Computers in Human Behavior*, *29*(4), 1841–1848. https://doi.org/ 10.1016/ j.chb.2013.02.014

9. Radhakrishnan, S., Erbis, S., Isaacs, J. A., & Kamarthi, S. (2017). Correction: Novel Keyword Co-occurrence Network-based Methods to Foster Systematic Reviews of Scientific Literature (PLoS ONE (2017) 12:3 (e0172778) DOI: 10.1371/journal.pone.0172778). *PLoS ONE*, *12*(9), 1–16. https://doi.org/10.1371/journal.pone.0185771

10. Van Eck, N. J., & Waltman, L. (2010). Software Survey: VOSviewer, A Computer Program for Bibliometric Mapping. *Scientometrics*, *84*(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3