SCROLLS AND SHADOWS: MAPPING THE SILENT SURGE OF SOCIAL MEDIA ADDICTION AND SOCIAL ANXIETY THROUGH BIBLIOMETRIC ANALYSIS

Naveed Iqbal [1], Dr. Najam ul Kashif [2], Dr. Muhammad Atif Bashir [3], Muhammad Taimoor [4], Muhammad Kashif Bashir [5]

Affiliations:

[1] Research Scholar (Education),
Department of Education,
The Islamia University of Bahawalpur,
Pakistan.
Email: naveediqbal.nts@iub.edu.pk

[2] Assistant Professor,
Department of Education,
The Islamia University of Bahawalpur,
Pakistan.
Email: drnajam.ulkashif@iub.edu.pk

[3] Research Scholar (Management Sciences),
Institute of Business Management and
Administrative Sciences,
The Islamia University of Bahawalpur,
Pakistan.
Email: atif.bashir@iub.edu.pk

[4] Research Scholar (Management Sciences),
Institute of Business Management and
Administrative Sciences,
The Islamia University of Bahawalpur,
Pakistan.
Email: taimoor077@gmail.com

[5] Research Scholar (Pakistan Studies),
Department of Pakistan Studies,
The Islamia University of Bahawalpur,
Pakistan.
Email: kashif.scholar640@gmail.com

Corresponding Author's Email:

naveediqbal.nts@iub.edu.pk

Abstract
The psychological landscape under the sparkling surface of likes, shares, and scrolling feeds is intricate and becoming more pressing. The current examination engages in a conceptual excavation of the growing interconnection between social media addiction (SMA) and social anxiety, questioning trends and trajectories that have taken hold in the academic literature produced after 2020. Based on 8,822 works found in the Scopus database, the research yields a bibliometric mapping of a discipline marked by the digital rush of the COVID age and the quiet epidemic of behavioural addictions. Focusing specifically on articles in psychology and the social sciences written in English, the study reports an exponential increase in research volume from 2020 to 2024, followed by a gentle slowdown; however, the level of intellectual activity and international collaboration remains high. The leading publishing venues are identified as a set of specific journals, including Addictive Behaviours, Computers in Human Behaviour, and Frontiers in Psychology. Meanwhile, Chinese, UK, and US-American scholars and institutions are the top contributors to the global research agenda. Thematic groups highlight the inseparability of SMA and its association with depression, anxiety, loneliness, and the mental well-being of adolescents in the wake of digital transformation and immersive technologies.

Popular topics, such as machine persuasion, algorithms, and neural engagement, represent a paradigm shift in post-pandemic behavioural changes, underscoring the role of AI-driven content curation in exacerbating compulsive usage patterns. Emerging studies also explore cultural variations in SMA, gender disparities in coping mechanisms, and the long-term neurological effects of prolonged exposure to algorithmically optimized feeds. The research not only maps scholarly literature but also provides a guide to future research, offering tactical information to researchers, especially new ones, on how to conduct research, where to look, and whom to collaborate with in this fast-growing area of psychology. Additionally, it calls for interdisciplinary approaches, blending cognitive science, digital ethics, and policy-making to mitigate the adverse psychological impacts of hyper-connectivity.

Keywords: Social Media Addiction, Social Anxiety, Bibliometric Analysis, Digital Mental Health, Post-Pandemic Behavioural Shifts

Title: Scrolls and Shadows: Mapping the Silent Surge of Social Media Addiction and Social Anxiety through Bibliometric Analysis

73

Introduction

Nowadays, social media is a significant part of contemporary society, having a drastic impact on personal, professional, and socio-political spheres. Amid the numerous benefits of its ability to facilitate communication, networking, and the sharing of information, there has been considerable concern about its overuse and how it can be addictive (Uwalaka, Nwala, & Public, 2023). The speed of social media consumption suddenly spiked as more people isolated themselves, physical gatherings were limited, and internet accessibility increased during the COVID-19 pandemic. This increase in consumption has vigorously stirred up debates about social media addiction (SMA) as well as the addition of social media addiction as a behavioural disorder. Although many studies have revealed the negative implications of overusing social media, SMA is not formally recognized as a distinct psychological condition (Ng, Sim, & Goh, 2024). In the 11th revision of the International Classification of Diseases (ICD-11), formulated by the World Health Organization, gaming disorder is recognized as a behavioural addiction; social media addiction (Organization, 2018), however, is not mentioned in this classification. As the incidence of digital dependency accelerates, researchers have turned more of their attention to subsequent behavioural dependencies that people may develop with internet use, such as smartphone addiction, compulsive internet-based shopping, and internet-based indulgence in general.

The effects of SMA not only encompass overuse but also lead to psychological, physiological, and social impacts. The research produced robust links between SMA and sleep disturbance, elevated anxiety and depression, diminished fulfilment and satisfaction in life, and flattened productivity (Baldini et al., 2024). Since social media is rapidly evolving, particularly in terms of its user base and the rate of change between 2020 and 2025, new addiction patterns and emerging issues necessitate a more in-depth, systematic critical examination. The number of possible ways for compulsive usage continues to increase as platforms implement new engagement strategies, including algorithm-based content customization and immersive digital experiences. The advent of artificial intelligence, virtual reality, and augmented reality in the field of social media enhances the problem of addiction to digital devices and long-term consequences (Torous et al., 2021). To address these pressing challenges, a systematic review of the available literature is necessary to understand the development of SMA and identify future areas of study (Pelissari, Oliveira, Amor, Kandakoglu, & Helleno, 2020).

Although several previous bibliometric studies have been conducted on the general use of social media, the actual sphere of social media addiction has been less discussed. Adie et al. (2018) conducted a bibliometric analysis and reviewed social media usage patterns of 12 years (2008-2018) based on 1,232 articles (Adie, Willis, & Van der Kleij, 2018). Nevertheless, the dynamic development of SMA, particularly regarding technological progress and changes in behavioural patterns following the pandemic, warrants a specific bibliometric evaluation. This research will fill the research gap by conducting a comprehensive bibliometric analysis of the SMA research literature from 2020 to 2025. In particular, it aims to map the bibliometric landscape of SMA literature by discussing publication trends, the most fruitful journals, and the most cited research articles. Additionally, it will highlight the most prolific writers, prominent research centres, and influential nations in the field of SMA. Moreover, the study will identify the following themes and lines of research, thereby gaining new and valuable insights into the intellectual development of research on SMA. This research activity will add value to the existing body of knowledge related to SMU, social anxiety, and the use of social media since it will chart the scholarly discourse on the matter. Results in terms of identifying influential contributors, high-impact publications, and trending research topics will support academic discussions, inform policymakers, and prompt additional studies in this rapidly evolving field (Goncalves & Ahumada, 2025). With current digital interactions shaping modern lifestyles, a systematic review of SMA research works will play a crucial role in addressing the increasing challenges of the problem and developing effective interventions.

Research objectives

The present study is to provide a detailed Review of social media addiction and social anxiety using bibliometric analysis. To the best of our knowledge, no bibliometric study has been carried out on the use of social Media and social anxiety. The research on bibliometric analysis of social media Usage is a pioneering

study in the field of social media trends and over-usage (Azizan, 2024). This work carries out the research concerning the topics of SMA in publications, Identifies the most prolific researchers in this direction, their contributions to the Field of SMA, the hotspots of research (both countries and institutions) where the Maximum amount of work is devoted to this direction by the means of research, and the novelties of SMA and Social Anxiety. The study addresses the research question of establishing the history of the body of research in the area of social media usage over the years, specifically examining the number of research publications, themes investigated, and scientific contributions made in this field. Having determined the specific research objectives (RO) as follows:

RO1:

To map the bibliometric profile of the theme by analysing publication trends, identifying the most productive journals, and highlighting the most highly cited papers.

RO2:

To identify the most prolific authors, as well as the leading contributing countries and organizations.

RO3:

To determine the emergent themes in the research on social media addiction and social anxiety.

The findings of this research are targeted at the entire advancement in the field, including trend and theme analysis, which aims to create research interest in the field. The study will provide researchers with valuable insights into conducting studies in the areas of SMA and Social Anxiety. In addition to the thematic development, popular topics in SMA will also drive research attention.

Methods

Bibliometric mapping analysis forms the core of the study's analysis, which is gaining acceptance in various disciplines (Su, Lin, Chen, & Lai, 2020). This bibliometric search was conducted in the Scopus database using keywords such as "social media addiction," "problematic social media use," "excessive social media use," and "compulsive social media use." The search was limited to English-language journal articles and book chapters published between 2019 and February 2025 in the fields of psychology, social sciences, and related disciplines. After applying rigorous inclusion and exclusion criteria, 239 articles specifically addressing SMA and social anxiety were selected for detailed analysis. The dataset reflects a strong focus on psychological relevance and research quality.

Literature search and data collection

Table 1 provides the reader with an overview of the current research plan, including the inclusion and exclusion criteria. These criteria have helped shape the design of the current study. The number of document search results on Scopus that were obtained through the use of keywords social media addiction OR problematic social media use OR excessive social media use OR compulsive social media use was 8822 (at the moment of retraction: February 17, 2025). The inclusion and exclusion criteria adopted helped eliminate irrelevant items (Amundsen et al., 2018). Table 1 clarifies the requirements being addressed.

Table-1

Inclusion and Exclusion Criteria

Criteria	Code	Criteria	Comments
INCLUSION CRITERIA	IC1	Search key-TITLE-ABS-KEY ("social media addiction" OR "problematic social media use" OR "excessive social media use" OR "compulsive social media use") (The articles will be found in the Title, abstract or even in the keywords)	The search terms used with the relevant dataset were the six-word combination of the article, including "social media addiction," "problematic social media use," "excessive social media use," or "compulsive social media use," all conjunctions with the "AND" Operator. The overall no. 8,822 (N=8,822) of relevant documents.

Criteria	Code	Criteria	Comments
-do-	IC2	PUBYEAR, 2019-2025	The Period of analysis for the study is 2019-2025 (till 17 February 2025). N=5,061
-do-	IC3	SUBJECTAREA	The Period of analysis for the research is 2019-2025 (until 17 February 2025). N=5,061 The discipline of the study comprises articles in the psychology and Arts and Humanities segments of the Social Sciences. N= 5061 The research area will focus on the end articles and book chapters that have been successfully published. N= 4,677
-do-	IC4	LANGUAGE, "English"	The study examines documents published in the English language. N=4,458
EXCLUSION CRITERIA	EC1	PUBSTAGE "aip"	This study has taken into account recently published articles, but articles in press have not been considered. N=2086 "Following the literature review, 239 psychologically significant articles about social media addiction and social anxiety were chosen to be analysed on the grounds of the compatibility with the research objectives."

The inclusion and exclusion criteria used in the research, as tabulated in Table 1, demonstrate a methodical and stringent approach to identifying relevant literature on social media addiction (SMA). The initial search strategy involved using the following keywords: social media addiction, problematic social media use, excessive social media use, and compulsive social media use, in the title or keyword fields of the Scopus database, resulting in 8,822 documents. The period of publications was then restricted to works released between 2019 and February 17, 2025, narrowing the data to 5,061 papers. To ensure that the relevance of the search remained practical within the discipline, it was further constrained to incorporate only documents that could be classified under the subject areas of psychology, social sciences, and arts and humanities. This reduced the number of papers maintained to 5,061, of which only final and entirely issued publications, such as journal articles and book chapters, were considered, resulting in 4,677. This was followed by the inclusion of only English publications, resulting in a total of 4,458 documents. An additional 2,086 articles were also eliminated due to the exclusion criteria, which involved the removal of documents in press (publication stage AIP) within the selected time period. With all these filters, 239 psychologically relevant articles were narrowed down on social media addiction and social anxiety specifically, and it could be said that the final data was as close to the research objectives of the study. All the other databases have not been included in this research since Scopus is believed to have comprehensive coverage of the reputable articles (Widyanty et al., 2025).

Title: **Scrolls and Shadows: Mapping the Silent Surge of Social Media Addiction and Social Anxiety through Bibliometric Analysis**

76

Table 2

Data synthesis indicates the main information about the data

Sr. No.	Description	Results
1.	Timespan	2020-2025
2.	Source (Journal, Book, etc.)	598
3.	Documents	2086
4.	Annual Growth Rate%	-13.36
5.	Documents Average Age	2.28
6.	Average Citation Documents doc	14.04
7.	References	125595
Document Contents		
8.	Keywords Plus (Roberts & David)	4095
9.	Author's keywords (DE)	4207
10.	AUTHORS	6196
11.	Authors of single-authored Docs	118
Authors Collaborations		
12.	Single Author Docs	122
13.	Co-author per Doc	4.17
14.	International co-authorships %	30.11
Documents Type		
15.	Article	1916
16.	Book, Chapter	170
17.	Conference paper	

Data Analysis

In Table No. 2, Synthesis, the overview of the bibliometric data on research into Social Media Addiction (SMA) from 2020 to 2025 is provided. It has been identified that 2,086 documents have been published in 598 sources, with an annual growth rate of -13.36%, indicating a recent decrease in the level of publication. The papers have an average age of 2.28 years, and the average citation rate is 14.04 per document, with 125,595 references cited. The result of content analysis is 4,095 Keywords Plus and 4,207 author-provided keywords, which represent a wide array of research themes. The dataset comprises 6,196 authors, with 118 single-authored documents and 122 papers in total, suggesting significant collaboration. This is supported by an average of 4.17 co-authors per document and 30.11 percent international co-authors. By document types, there are articles preponderant (1,916), book chapters (170), and an unspecified number of conference papers.

Table 3

Annual Scientific Production

Year	Articles
2020	168
2021	260
2022	398
2023	495
2024	683
2025 (till February 17)	82

Table 3 illustrates the projected annual growth of scientific publications on the subjects of Social Media Addiction (SMA) and Social Anxiety between 2020 and the beginning of 2025. As seen, the number of articles has continued to expand over time, increasing from 168 in 2020 to 683 in 2024, as more scholars

Title: **Scrolls and Shadows: Mapping the Silent Surge of Social Media Addiction and Social Anxiety through Bibliometric Analysis**

77

have become interested in the subject. The most significant increase occurred between 2021 and 2024, and it is worth noting that following the pandemic, there has been a rise in the need to research digital behaviour and addiction. There are already 82 published articles, and therefore, based on the current trend, this year is expected to continue recording high research activity. This optimistic projection is indicative of a growing interest in understanding how the long-term overuse of social media affects people psychologically and socially.

Table 4

Average Citations per year

Year	Average Citations
2020	50.18
2021	30.91
2022	17.92
2023	8.27
2024	2.31
2025 till February 2025	0.23

Table 4 shows a decreasing trend in the mean citations per article between 2020 and the beginning of 2025, reflecting the typical citation lifecycle. The highest number of citations an article published in 2020 receives is 50.18, as it has been longer since publication to be referenced. A gradual decline is observed in the cases of 2021, 2022, and 2023, with rates of 30.91%, 17.92%, and 8.27%, respectively. The dramatic decline in 2024 (2.31) and in early 2025 (0.23) is not surprising, as newly published research typically requires time to gain citations. It is possible that in the next few years, there will be an increase in the number of citations to new publications as they contribute to the scholarly debate.
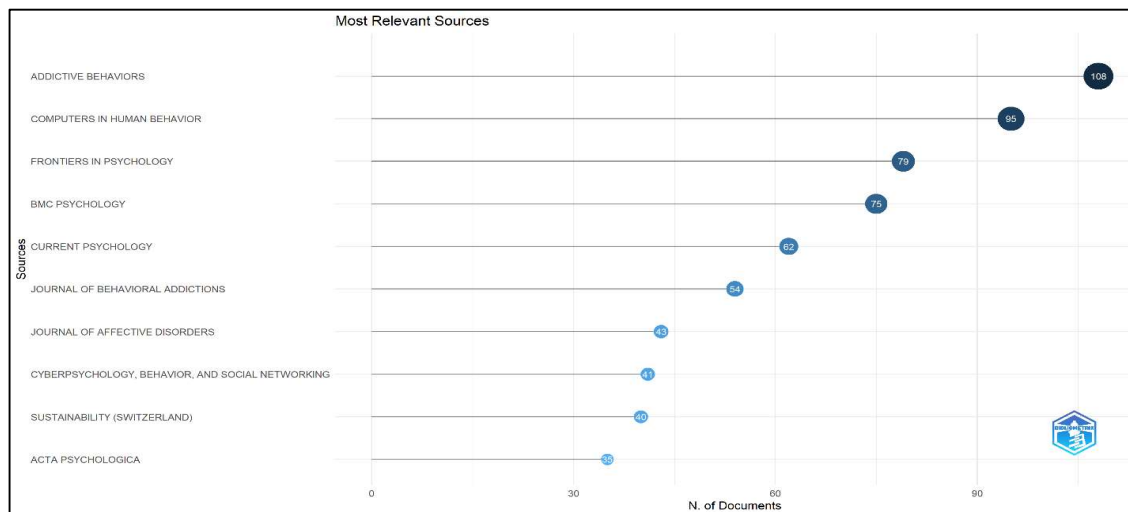
Table 5

Most relevant sources

Sources	Articles
Addictive behaviours	108
Computers in human behaviour	95
Frontiers in psychology	79
BMC psychology	75
Current psychology	62
Journal of behavioural addictions	54
Journal of affective disorders	43
Cyber psychology, behaviour, and social networking	41
Sustainability (Switzerland)	40
Acta Psychologica	35

Table No. 5 lists the top journals where research on Social Media Addiction (SMA) is published, ranked by the number of articles. The Addictive Behaviours journal holds the first position with 108 publications, indicating its focus on the study of behavioural addictions. Other contributors to a large number of articles on the psychological and digital nature of SMA are Computers in Human Behaviour (95 articles) and Frontiers in Psychology (79 articles). BMC Psychology (75), Current Psychology (62), and Journal of Behavioural Addictions (54) are other essential journals to mention that evidence the interconnection between mental health and addiction research. The existence of journals such as Cyber Psychology, Behaviour, and Social Networking (41) and Sustainability (Switzerland) (40) demonstrates that the development of social and ethical aspects of SMA is of increasing interest. These sources constitute the main bulk of the literature in the field of study and determine the academic and policy debate.

Figure 1
Most relevant sources

The list presents the most relevant scholarly sources that publish studies on social media addiction (SMA) and behavioural problems, categorized by the number of texts. The most prolific periodicals are Addictive Behaviours, which contributes 108 documents, followed by Computers in Human Behaviour (95) and Frontiers in Psychology (79). There are other important sources, such as BMC Psychology (75), Current Psychology (62), and the Journal of Behavioural Addictions (54), which demonstrate the extensive concern with the psychological and behavioural aspects of SMA. Cyber psychology, Behaviour, and Social Networking (41), or Sustainability (Switzerland) (40), point to the enhancement of digital behaviour and mental health, indicating that the broader ramifications of SMA are of increasing interest. The overall dispersion of publications on these sources reveals a multidisciplinary approach, with significant contributions in SMA research coming from psychology, behavioural sciences, and technology-oriented disciplines.

Table-6
Local and global citations with authors and document title

| Sr. No.	Document	Authors and Publication years	Publication source	Local Citations	Global Citations
1	Internet gaming disorder and problematic social media use in a representative sample of German adolescents: Prevalence estimates, comorbid depressive symptoms, and related psychosocial aspects	Wartberg, L., Kriston, L., & Thomasius, R. (2020).	Elsevier Ltd	54	158
2	Social Media and Depression Symptoms: A Meta-Analysis	Cunningham, S., Hudson, C. C., & Harkness, K. (2021).	Springer	38	141
3	How to overcome taxonomical problems in the study of Internet use disorders and what to do with "smartphone addiction"?	Montag, C., Wegmann, E., Sariyska, R., Demetrovics, Z., & Brand, M. (2021).	Akademiai Kiado ZRt.	36	239
4	The Social Media Party: Fear of Missing Out (FoMO), Social Media Intensity, Connection, and Well-Being	Roberts, J. A., & David, M. E. (2020).	Taylor and Francis Inc.	27	204

Sr. No.	Document	Authors and Publication years	Publication source	Local Citations	Global Citations
5	Bored and online: Reasons for using social media, problematic social networking site use, and behavioural outcomes across the transition from adolescence to emerging adulthood	Stockdale, L. A., & Coyne, S. M. (2020).	Academic Press	26	147
6	Determining the cut-off point for the Bergen social media addiction (BSMAS): Diagnostic contribution of the six criteria of the components model of addiction for social media disorder	Luo, T., Qin, L., Cheng, L., Wang, S., Zhu, Z., Xu, J., ... & Liao, Y. (2021).	Akademiai Kiado ZRt.	23	65
7	Estimation of Behavioural Addiction Prevalence During the COVID-19 Pandemic: A Systematic Review and Meta-analysis	Alimoradi, Z., Lotfi, A., Lin, C. Y., Griffiths, M. D., & Pakpour, A. H. (2022).	Springer Science and Business Media Deutschland GmbH	20	100
8	A systematic review of metacognitions in Internet Gaming Disorder and problematic Internet, smartphone, and social networking sites use.	Casale S, Musicò A, Spada MM. 2021	John Wiley and Sons Ltd	20	66
9	The relationship between social media addiction and depression: a quantitative study among university students in Khost, Afghanistan	Haand, R., & Shuwang, Z. (2020).	Routledge	19	57
10	The serially mediated relationship between emerging adults' social media use and mental well-being	Rasmussen, E. E., Punyanunt-Carter, N., LaFreniere, J. R., Norman, M. S., & Kimball, T. G. (2020).	Elsevier Ltd	18	77

Table 6 presents some fundamental academic articles on social media addiction (SMA) by the number of local and global citations, demonstrating their influence within the research community. Computers in Human Behaviour Research by Wartberg (2020) has 54 local citations and 158 global citations, indicating its excellent relevance to behavioural studies. Next comes Cunningham S. (2021) in Research on Child and Adolescent Psychopathology, which has 38 local and 141 global citations, indicating the growing interest in SMA among the younger population. The Journal of Behavioural Addictions states that Montag (2021) has garnered 36 local and 239 global citations, suggesting that it may have had widespread international repercussions. Additionally, Roberts JA. (2020) in International Journal of Human-Computer Interaction (27 local, 204 global), as well as Stockdale LA. (2020) in the Journal of Adolescence (26 local, 147 global) contributes to the field of human-computer interaction and youth-based SMA studies. More notable studies include those by Luo T. (2021), Alimoradi Z. (2022), Casale S. (2021), Haand R. (2020), and Rasmussen EE. (2020), which garnered considerable attention. The facts underscore that research on SMA spans multiple fields of study, with a combination of psychology, behavioural science, and human-computer interaction studies dominating the scholarly domain.
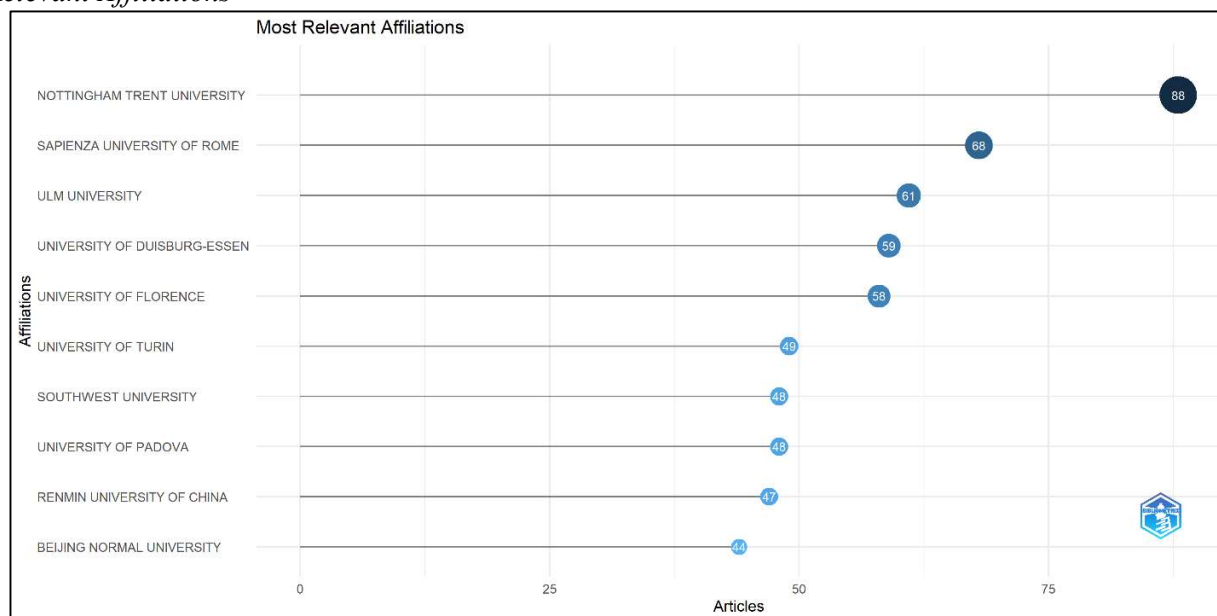
Figure 2
Three-field plot (Sankey Diagram)
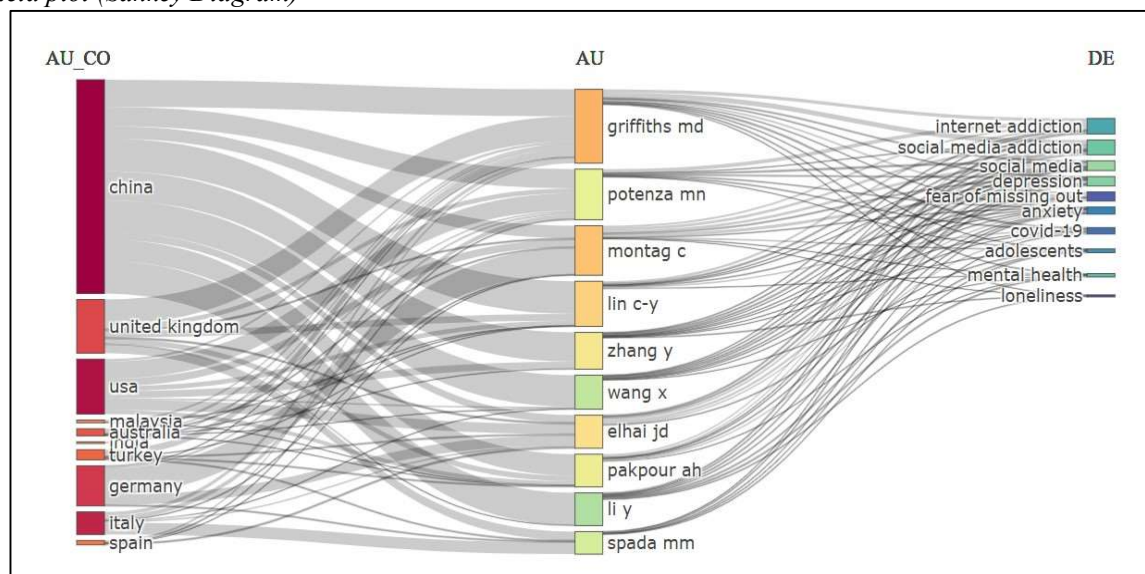
The visualization portrays the connection between countries (AU_CO), high-profile authors (Torous, et al.), and major focus areas (DE) of the study sphere of social media addiction and associated electro psyche issues. The most active contributors to this research are China, the United Kingdom, and the USA, whereas Malaysia, Australia, India, Turkey, Germany, Italy, and Spain contribute significantly to the research. Among the pioneers, Griffiths, MD, Potenza, MN, and Montag, C are the most influential in terms of their frequently explored topics that consist of internet addiction, social media addiction, depression, anxiety, and fear of missing out (FOMO). Also, the use of social media has been associated more and more with mental health, loneliness, and the well-being of adolescents, especially during the COVID-19 pandemic. The web of relations fosters a multidisciplinary and globally dispersed initiative to explore the psychological and behavioural consequences of excessive social media use.

Figure 3
Most Relevant Affiliations

Title: Scrolls and Shadows: Mapping the Silent Surge of Social Media Addiction and Social Anxiety through Bibliometric Analysis

81

The chart illustrates the most prominent academic affiliation associated with research on social media addiction, based on the number of articles published. Nottingham Trent University, in its turn, is the author of 88 publications, which indicates its leading position in the sphere. The Sapienza University of Rome comes in second place, with 68 articles, followed by Ulm University (61), the University of Duisburg-Essen (59), and the University of Florence (58). Others are the University of Turin (49), Southwest University (48), the University of Padova (48), Renmin University of China (47), and Beijing Normal University (44). There is a high representation of SMA research in Europe, and efforts are being made in China. These associations are major research centres in the field of psychological and behavioural, and digital addiction, and they play a significant role in advancing the rapidly developing discussion on the effect that social media has on mental health and well-being.

Figure 4

World clouds-Keywords
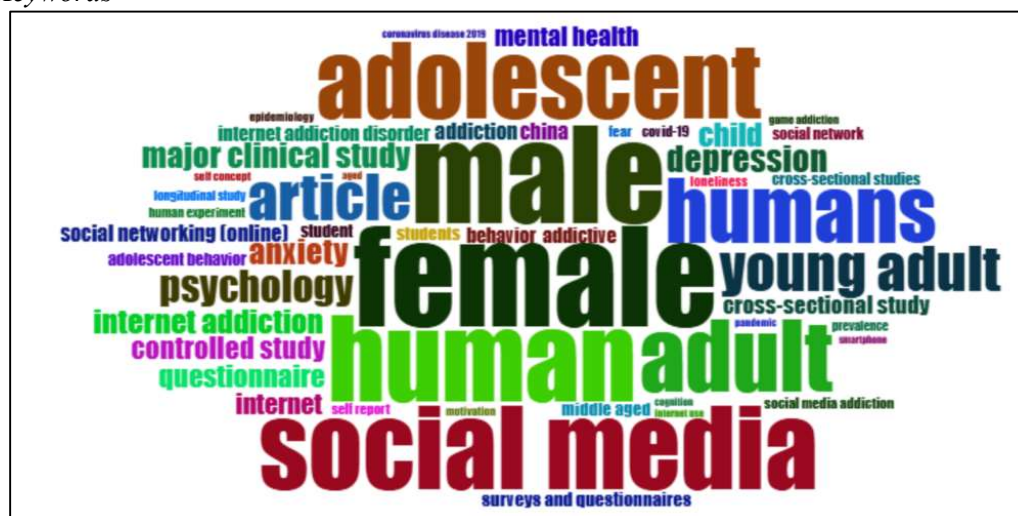
The visualization of the most significant topics in the research of social media addiction (SMA) is provided through a word cloud that highlights aspects of demographics, the psychological impacts of social media addiction, and research methods (Abdullahi, Bahari, Miskon, & Abu Yazid, 2024). The highlighted valid words, including social media, female, male, humans, and adolescents, indicate that a majority of studies have been conducted on gender and age disparity in SMA. The presence of keywords such as young adult, child, and adult also signifies that the studies encompass a wide age range, reflecting the pervasive influence of digital engagement across different life stages. Notions such as anxiety, depression, mental health, loneliness, and self-concept outline psychological effects of SMA, which are among the widely discussed concerns about the well-being outcomes of SMA, particularly in relation to body image, social comparison, and fear of missing out (FOMO). Moreover, such concepts as internet addiction, addictive behaviour, and social networking (online) relate SMA to the issue of extended digital dependency, with emerging discussions on platform-specific risks (e.g., Instagram and TikTok's role in compulsive use). The aspects related to methods and methodology reflect a diverse research approach, encompassing elements of clinical studies, questionnaires, longitudinal studies, and cross-sectional studies, as well as emerging techniques like eye-tracking and neuroimaging to assess cognitive impacts. The inclusion of COVID-19* implies that the pandemic may impact the investigation of recent SMA studies, possibly due to an increase in social media use during lockdowns, alongside shifts in digital socialization and remote work habits. Additionally, terms like algorithmic bias and personalized content suggest growing attention to how platform design fuels addictive behaviours. In general, the use of a word cloud indicates that SMA research falls within the fields of multidisciplinary studies, psychology, behavioural studies, and digital addiction, with expanding intersections in neuroscience, public health, and regulatory policy to address mitigation strategies.

Figure 5
KGN VOS Viewer
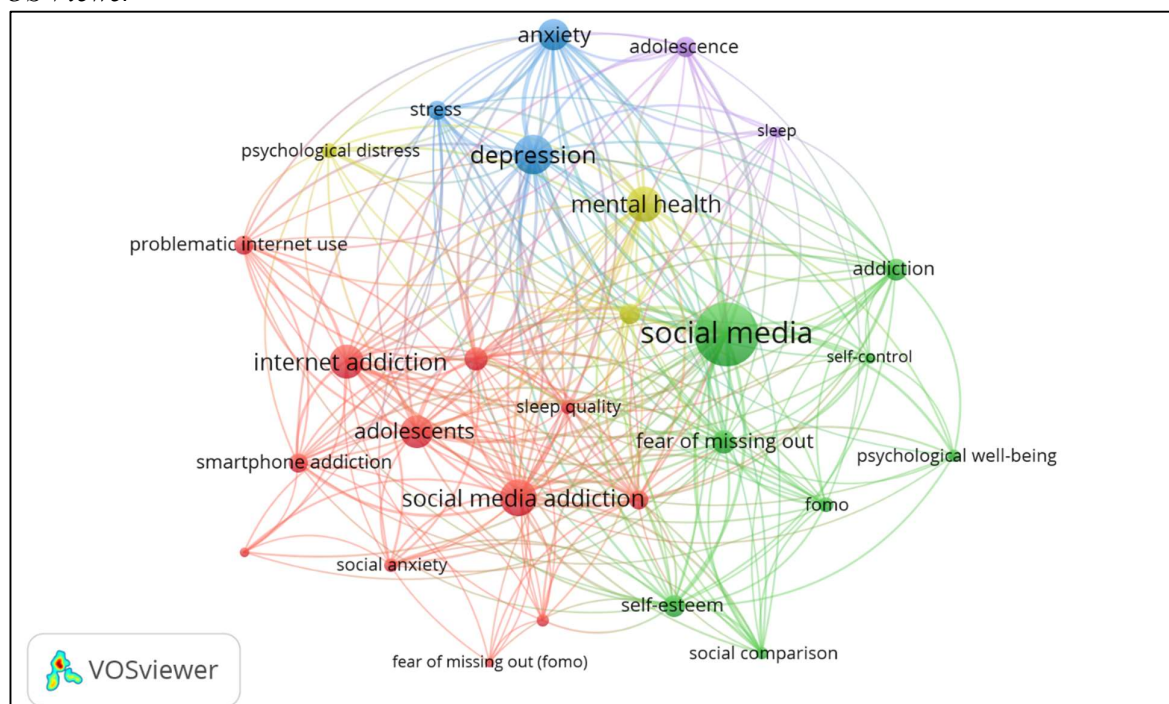
As can be seen in the VOS viewer network visualization of the research on social media addiction (SMA), there are four principal clusters of interconnected themes. The core, including the green section, focuses on social media and its subjective expressions regarding phenomena such as the fear of missing out (FOMO), self-esteem, social comparison, self-control, and psychological well-being, as well as the emotional and cognitive effects of using social media (Garg, 2023). The red cluster follows the concepts of social media addiction, internet addiction, which is tightly connected with teens, smartphone addiction, problematic internet use, and anxiety in social communication, meaning that there is high emphasis on young people's age, and problems with behaviour disorders. The blue cluster links the terms depression and anxiety to some of the related terminologies such as stress, psychological distress, and sleep, which are the psychological implications related to overuse. The smaller clusters, which contain words such as mental health and adolescence, are used as connections between themes and can indicate the interdisciplinary nature of SMA research. All in all, the map shows that SMA is closely related to mental health, emotional control, and digital behaviours, especially in adolescents, which requires a comprehensive and interdisciplinary inquiry.

Table No. 7

Most Cited countries

Sr. No.	Country	Total Citation	Average Article Citations
1	China	5769	13.90
2	USA	4256	15.30
3	Italy	2071	19.20
4	Germany	2050	22.30
5	United Kingdom	1556	19.70
6	Turkey	1280	11.50
7	Hong Kong	1150	32.90
8	Norway	933	49.10
9	Finland	880	29.30
10	Netherlands	769	19.20

Sr. No.	Country	Total Citation	Average Article Citations
11	Canada	590	15.90
12	Spain	572	9.40
13	Australia	535	7.60
14	Iran	500	12.50
15	India	362	8.60
16	Malaysia	359	8.80
17	Israel	294	13.40
18	Switzerland	288	16.90
19	Czech Republic	224	24.90
20	Belgium	209	17.40
21	Ireland	202	25.20
22	Pakistan	195	15.00
23	New Zealand	194	97.00
24	Poland	186	8.90
25	Lebanon	181	16.50

Social Media Addiction (SMA): A citation analysis of studies on Social Media Addiction conducted in various countries reveals both volume-based and impact-based trends. The total number of citations for the countries amounts to 5,769 (China), 4,256 (USA), 2,071 (Italy), 2,050 (Germany), and 1,556 (the United Kingdom), which testifies to the strong contribution of these nations to the body of SMA literature as a whole. Nevertheless, in terms of average citations per article, which serves as a proxy for research impact, New Zealand stands out as the best, with the highest number of 97.0 average citations against a total of 194. Similarly, countries such as Norway (49.1), Hong Kong (32.9), Finland (29.3), Ireland (25.2), and the Czech Republic (24.9) demonstrate a high quality and impact on their research, despite having a lower volume of publications. This comparison suggests that, although countries such as China and the USA have a larger number of research projects, small countries are conducting research projects that can have a greater impact. Even countries like Pakistan (15.0), Iran (12.5), and Malaysia (8.8) are emerging as being of concern, which also boast competitive average citations that indicate increased research activity in SMA. All in all, the data reiterate the multicultural nature of the research on SMA, emphasizing that a high scholarly impact cannot be achieved solely by the volume of data produced, but also by the significance of the study and its implications.

Figure 6

Thematic Map
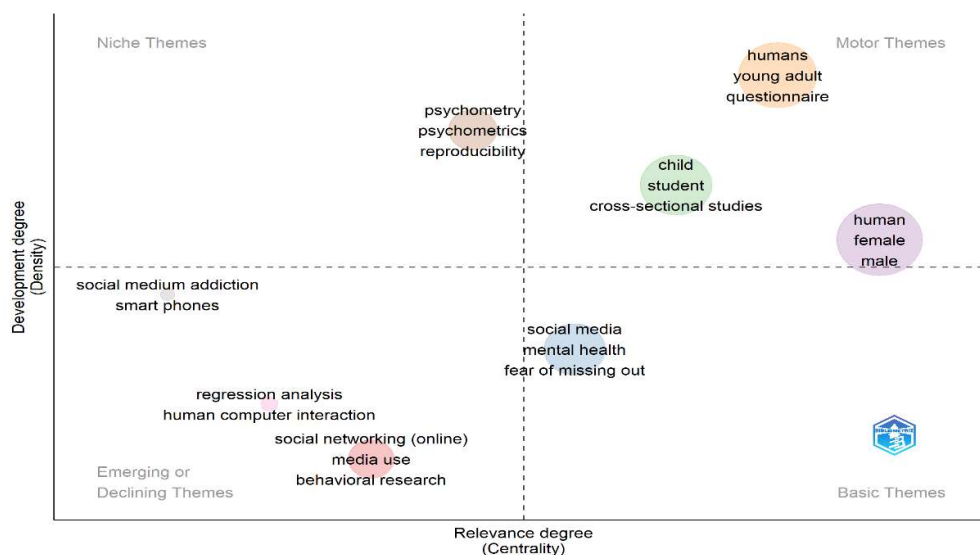
The thematic map categorizes essential research areas within the study of social media addiction (SMA) by pertinence (centrality) and growth (density). The Motor Themes (top-right quadrant) encompasses humans, young adults, and questionnaires, which already shows some well-advanced and highly relevant fields that initiate conducting SMA research. The Basic Themes (bottom-right quadrant), including social media, mental health, fear of missing out, and human (female, male), are some of the central concepts in SMA studies, but they are less developed. Niche Themes (top-left quadrant). This group encompasses psychometry, psychometrics, and reproducibility, which are areas that have been well-developed yet remain relevant. In the meantime, the Emerging or Declining Themes (the bottom-left quadrant) presuppose emerging or decaying research themes, such as social media addiction, smartphones, social networking (online), human-computer interaction, and media use. This map provides an overview of how the investigation of SMA is evolving, with a focus on the severe consequences for mental health, demographic issues, and methodology.

Results and Discussion

This section presents the critical interpretation of the results from the bibliometric analysis, considering the three primary research objectives (RO1, RO2, and RO3). Analysing the publication pattern, authorial and institutional productivity, and emerging intellectual foci, this paper provides a holistic explanation of the discourse on scholarly interest in social media addiction (SMA) and social anxiety between 2020 and the first months of 2025. Its results indicate the evolution and the widening of the discipline of interdisciplinary research in this way.

RO1: Mapping the Bibliometric Profile – Publication Dynamics, Journal Productivity, and Citation Impact

Based on the temporal development of SMA-related publications, it has been observed that there has been a sharp and consistent rise in scholarly activity over the past five years. Starting with 168 articles in 2020, the number of publications rose to 683 in 2024, demonstrating a cumulative response to the societal upheavals brought about by the COVID-19 pandemic and the subsequent increase in digital dependence (Zhang, Chen, & Li, 2025). This growing trend underscores the field's sensitivity to changing behavioural patterns, particularly as researchers have sought to understand the psychological and cognitive effects of long-term digital interactions during global lockdowns. Even though the output in the first part of 2025 seems to be smaller (82 articles as of February), it is most likely that it includes the partial statistics of the daily year, and the general tendency indicates a permanent interest in scholars.

The evolution of the field can also be understood in a more nuanced way, taking into account the dynamics of citation. Not surprisingly, both old and new publications had the highest average citations, at 50.18 and 30.91, respectively, published in 2020 and 2021, indicating that they formed the basis of the entire discussion (Lin & Hassan, 2025). These declining quotient rates in the later years (e.g., 2.31 in 2024; 0.23 in 2025) are also in line with citation latency, indicating that newly published academic work requires time to gain academic research visibility and momentum. Notably, the temporal delay can be viewed as a CEO-deficient scholarly value but must be seen as a structural characteristic of citation activity in disciplines.

As the discussion on journal-level productivity demonstrates, scholarly research is highly concentrated in a limited number of specialized academic journals. The most prolific sources were Addictive Behaviours, with 108 publications, and Computer in Human Behaviour, with 95; followed by Frontiers in Psychology, with 79, and BMC Psychology, with 75. The group of journals together forms the epistemological hub of SMA research, faithfully mirroring the high degree of anchoring of the field in psychological science, behavioural health, and digital media studies (Wang, Qureshi, & Park, 2025). The popularity of Cyber psychology, Behaviour, and Social Networking and Sustainability (Switzerland) shows that the socio-technological and ethical aspects of SMA have become a growing focus of interest, implying a gradual epistemic diversification of the discipline.

More so, the citation can be described by a few highly cited anchor texts. The post-publication analysis of Wartberg et al. (2020) on SMA and comorbid depression in adolescents has resulted in 158 global citations. In contrast, the analysis of Montag et al. (2021) on the taxonomic study of internet use disorders has garnered 239 citations. Having been established as such intellectual scaffolds of more recent research pathways, they provide methodological rigor and conceptual illumination that are still used in new directions (Maheux et al., 2025). Citation characteristics also demonstrate that SMA is becoming increasingly intertwined with other

digital behavioural disorders, situating the subject matter within the broader context of the problem of compulsive technology use and digital well-being.

RO2: Identifying Prolific Authors, Influential Institutions, and Leading National Contributions

Regarding the second research objective, the study identifies a small group of super-prolific scholars who have repeatedly made a significant impact on SMA research in an outstanding manner. Christian Montag, Mark D. Griffiths, and Marc N. Potenza are among the most outstanding ones. They include authors who have a high citation index and large collaborative networks, whose work spans multiple levels, such as psychometric scales, neurobehavioral models of addiction, and internet-mediated dysregulation of emotions. The problem is that the long-term impact of these publications is not only a matter of the sheer number of publications these scholars produced, but also relates to their contributions to the conceptualization of SMA, particularly in light of SMA being a psychosocial rather than a pathological condition (Wan et al., 2020). It can be compared to clinically define behavioural addictions like gaming disorder and compulsive use of the internet.

Institutionally, the pre-eminence of European universities in SMA research can hardly go unnoticed. Nottingham Trent University is the leader with 88 published documents, followed by Sapienza University of Rome (68), Ulm University (61), and University of Duisburg-Essen (59). The facilities have formed hubs of interdisciplinary studies on behaviour, utilizing their knowledge of psychology, sociology, and technology to expand the understanding of multiplicity, thereby contributing to this phenomenon (Haand & Shuwang, 2025). Their increased production indicates not only significant expenditure on research but also institutional responsiveness towards the prevention of emerging problems of well-being related to digital intervention.

At the national level, China is most prolific on an absolute measure of citation (5,769), followed by the United States (4,256), Italy (2,071), and Germany (2,050). Notably, lower-scoring countries like Norway and Hong Kong had a very high average citations per article (49.1 and 32.9, respectively), suggesting that they are concentrated on research with high impact and high-quality methods employed. These results indicate that both SMA studies and their manifestations are unevenly geographically distributed, with varying national research cultures, funding patterns, and priorities in clinical care (Li et al., 2025). The international spread of scholarship demonstrates the universality of SMA as a socio-psychological phenomenon, as well as the necessity of adopting cross-cultural research methods.

RO3: Determining Emergent Themes in Social Media Addiction and Social Anxiety Research

The pattern of thematic organization in SMA research, as revealed through keyword co-occurrences and thematic mapping, serves as a representation of the evolving intellectual design of the field. Depression, anxiety, mental health, young adults, and fear of missing out (FoMO) are the central thematic nodes identified as elements via the cluster analysis of frequently occurring keywords. Such notions represent a psychological backbone to SMA studies, and the overuse of social media gains more and more validation through the prism of emotional vulnerabilities, poor coping styles, and affective disorders (Casale, Fioravanti, Gori, Nigro, & Bocci Benucci, 2025). The fact that terms related to demographics, such as female, adolescent, and university students, are mentioned reveals a tendency to put more emphasis on population-specific risk profiles, especially among young people who are in transitional stages of life.

A thematic map also categorizes research topics into four main categories: motor, basic, niche, and increasing or falling themes. The motor themes, including humans, questionnaires, and young adults, demonstrate well-developed and widely accepted research objects that continue to fuel empirical research (Mainata, Hanafi, Setiyono, & Research, 2025). By contrast, common topics such as social media, mental health, and FoMO are placed right at the centre but remain insufficiently developed, revealing a promising potential field for future conceptual material. Technically advanced, narrow branches of research are referred to in niche formats, such as psychometry and reproducibility. At the same time, the appearance of the themes referring to the notion of smartphone, human-computer interaction (HCI), and media use allows suggesting that a paradigm shift occurs: instead of considering SMA a specific behavioural problem, we approach the discussion of SMA within the framework of issues that concern digitally informed ethics, user experience, and algorithmic power (Roberts & David, 2025).

These results were supported by an additional word cloud visualisation that showed the diversity of

Title: Scrolls and Shadows: Mapping the Silent Surge of Social Media Addiction and Social Anxiety through Bibliometric Analysis

86

SMA methodologies in the studies. The appearance of terminologies such as cross-sectional study, clinical sample, longitudinal design, and psychometric validation implies a methodological sophistication that is on the rise in recent research. The overall results of frequent mention of the term COVID-19 in various thematic clusters indicate how the pandemic has altered the course of user behaviour and academic research as part of the rebalanced state of affairs (Çalışkan, 2025). It triggered an avalanche of studies that associated SMA with emotional burnout, cyber fatigue, and behavioural dysregulation, and prompted the discipline to undertake more interdisciplinary, policy-relevant studies (Cunningham, Williamson, Bowman, & Evolution, 2025).

Conclusion

The given bibliometric study provides a thorough and systematic overview of the academic landscape of social media addiction (SMA) and social anxiety from 2020 to early 2025. In the context of a period marked by a massive digital transformation and deeper virtualization of connectivity, especially following the outbreak of the COVID-19 pandemic, this paper presents a notable increase in scholarly interest in the phenomenon of SMA as a behavioural and psychological issue. The review analyses 239 peer-reviewed articles in detail, providing evidence of the temporal expansion of SMA research, the intellectual organization of the field, and the work of prolific authors, as well as highlighting significant thematic changes over time.

In support of the observed publication trends, the data indicate a significant upward trend in volumes of scholarly production, particularly between 2021 and 2024, as the topics of mental health and the implications of excessive social media use progressively become a subject of concern. Popular journals such as Addictive Behaviours, Computers in Human Behaviour, and Frontiers in Psychology have proven to be the most important sources of information about empirical and theoretical developments in this field. In the meantime, the patterns of citations confirm the roots of influence of works carried out at the very beginning of the pandemic period, shaping the debate around diagnosis and guiding conceptual models in the fields of psychology, psychiatry, and media studies.

The study further notes that scholars such as Christian Montag, Mark D. Griffiths, and Marc N. Potenza, among others, have laid the groundwork for significant research paths in digital addiction. Similarly, other reputable universities, such as the University of Nottingham Trent, Sapienza University of Rome, and Ulm University, have become hubs of behavioural research. The involvement of various nations also underscores the international nature of this scholarly ecosystem, as China and the United States demonstrated the highest levels of research production. At the same time, Norway and Hong Kong showed the highest levels of high-impact and methodologically diverse studies.

When supporting the thematic depth of the field, the analysis has found some problems of research dominance, such as depression, anxiety, FoMO, and vulnerability of adolescents. Keyword co-occurrence networks and thematic maps identify the aspects of SMA studies that are grouped by the elements of psychology, demographics, and methodology. Notably, both mature (motor) and underdeveloped (basic and emerging) themes are identified in this study, allowing for the delineation of significant areas for further investigation. Among them is a trend away from device-oriented studies (e.g., smartphone addiction) and towards more multifaceted consideration of algorithmic persuasion, immersive design, and human-computer interaction, which reveals an evolution of the paradigm in which SMA can be thought about.

Collectively, the review not only consolidates existing knowledge but also serves as a blueprint for future research and policy interventions. With the ongoing changes in digital platforms, along with the growing interest in the SMA in the fields of public health and education, collaborations among disciplines, longitudinal evaluation, and culturally responsive interventions are not only robustly demanded but also necessary. Ethical principles of design, digital literacy educational strategies, and regulatory approaches to address the psychological harm related to excessive social media use also need to be considered by researchers (Rahsepar Meadi et al., 2025). Summarizing the bibliometric review, the urgent reality of SMA as a global psychological and sociotechnical issue should be emphasized. It provides a path of empirical studies that can serve as a basis for future research, enabling scholars, practitioners, and policymakers to gain a better understanding of how the field has progressed and what it needs next.

Limitations of the study

The research has some limitations. The authors cannot state that the list is complete because the

Title: Scrolls and Shadows: Mapping the Silent Surge of Social Media Addiction and Social Anxiety through Bibliometric Analysis

87

database used within the scope of the study represents only the Scopus database. All other databases have not been included in this research because Scopus, which is believed to have extensive coverage of high-quality papers and can be considered satisfactory, is deemed appropriate (Singh, Singh, Karmakar, Leta, & Mayr, 2021). However, an additional benefit of this study would be compiling information from other databases, such as Web of Science and PubMed, among others.

Future research

The following areas are recommended for further research.

1. 1. Social media and social anxiety are phenomena that are prevalent worldwide, and it would be wise to heed their impact.
2. The practice should be to create partnerships, thereby also influencing the possibility of the addictive nature of social Media and social anxiety, and the means of containing it.
3. In some countries, such as Pakistan, internet and social media usage are very high. There should be more profound studies of social media addiction and social media addiction in Pakistan.
4. They could consider all essential databases, such as PubMed and Web of Science, to capture work that may not have been captured under Scopus. The bibliometric analysis also provides insight into the research conducted, as well as a future direction for the researchers to follow in studying the field of social media addiction. The present paper presents the signs of future research in SMA.

References

Abdullahi, O. A., Bahari, M., Miskon, S., & Abu Yazid, M. (2024). Social media addiction and academic performance: A bibliometric analysis approach. *International Journal of Academic Research in Business and Social Sciences, 14*(1), 1217-1228.

Adie, L. E., Willis, J., & Van der Kleij, F. M. (2018). Diverse perspectives on student agency in classroom assessment. *The Australian Educational Researcher, 45*(1), 1-12.

Amundsen, P. A., Evans, D. W., Rajendran, D., Bright, P., Bjørkli, T., Eldridge, S., . . . Froud, R. J. B. m. d. (2018). Inclusion and exclusion criteria used in non-specific low back pain trials: a review of randomised controlled trials published between 2006 and 2012. *19*, 1-13.

Azizan, A. J. J. o. S. R. (2024). Exploring the role of Social Media in Mental Health research: A bibliometric and content analysis. *13*(1), 01-08.

Baldini, V., Varallo, G., Liguori, R., Rapelli, G., Di Stefano, R., Scorza, M., . . . Plazzi, G. (2024). Suicidal thoughts and their relationship with sleep quality, depressive symptoms, and quality of life in adults with Spinal Muscular Atrophy.

Çalışkan, M. M. T. J. S. Ü. S. B. D. (2025). A Bibliometric Analysis of International Relations In Sights Across Economics, Business Finance and Social Sciences. *9*(1), 726-774.

Casale, S., Fioravanti, G., Gori, A., Nigro, F., & Bocci Benucci, S. J. P. R. (2025). Investigating the Role of Avoidance Expectancies and Metacognitions About Social Compensation Through SNSs in the Pathway From Psychological Distress to Problematic Social Networking Sites Use. 00332941251320309.

Cunningham, C. X., Williamson, G. J., Bowman, D. M. J. N. E., & Evolution. (2025). Reply to: Increases in the world's most extreme wildfire events probably driven by fire size and simultaneity. 1-4.

Garg, G. (2023). A study of Social Networking Addiction, FOMO and Self Esteem among young adults. *International Journal of Interdisciplinary Approaches in Psychology, 1*(3), 152-232.

Goncalves, M., & Ahumada, E. D. L. V. (2025). A Bibliometric Analysis of Women Entrepreneurship: Current Trends and Challenges. *Merits, 5*(2), 9.

Li, X., Yuan, K., Li, B., Guan, F., Shao, Y., Yu, Z., . . . Yao, S. (2025). *NTIRE 2025 challenge on short-form ugc video quality assessment and enhancement: Methods and results.* Paper presented at the Proceedings of the Computer Vision and Pattern Recognition Conference.

Maheux, A. J., Burnell, K., Maza, M. T., Fox, K. A., Telzer, E. H., Prinstein, M. J. J. J. o. C. P., & Psychiatry. (2025). Annual Research Review: Adolescent social media use is not a monolith: toward the study of specific social media components and individual differences. *66*(4), 440-459.

Title: **Scrolls and Shadows: Mapping the Silent Surge of Social Media Addiction and Social Anxiety through Bibliometric Analysis**

88

Mainata, D., Hanafi, M. M., Setiyono, B. J. J. o. I. A., & Research, B. (2025). Mapping global trends and future opportunities in Islamic banking windows: a 15-year bibliometric perspective (2008–2023).

Ng, J. R., Sim, J. X. V., & Goh, V. Z. X. (2024). *Social media addiction (SMA), internet gaming disorder (IGD), and online shopping addiction (OSA) as predictors of psychological well-being (PWB)*. UTAR.

Organization, W. H. O. J. G. W. H. (2018). The 11th revision of the International Classification of Diseases (ICD-11).

Pelissari, R., Oliveira, M. C., Amor, S. B., Kandakoglu, A., & Helleno, A. L. J. A. o. O. R. (2020). SMAA methods and their applications: a literature review and future research directions. *293*, 433-493.

Rahsepar Meadi, M., Sillekens, T., Metselaar, S., van Balkom, A., Bernstein, J., & Batelaan, N. J. J. m. h. (2025). Exploring the ethical challenges of conversational AI in mental health care: scoping review. *12*, e60432.

Roberts, J. A., & David, M. E. J. C. i. h. b. (2016). My life has become a major distraction from my cell phone: Partner phubbing and relationship satisfaction among romantic partners. *54*, 134-141.

Singh, V. K., Singh, P., Karmakar, M., Leta, J., & Mayr, P. (2021). The journal coverage of Web of Science, Scopus and Dimensions: A comparative analysis. *Scientometrics, 126*(6), 5113-5142.

Su, Y.-S., Lin, C.-L., Chen, S.-Y., & Lai, C.-F. J. L. H. T. (2020). Bibliometric study of social network analysis literature. *38*(2), 420-433.

Torous, J., Bucci, S., Bell, I. H., Kessing, L. V., Faurholt-Jepsen, M., Whelan, P., . . . Firth, J. J. W. P. (2021). The growing field of digital psychiatry: current evidence and the future of apps, social media, chatbots, and virtual reality. *20*(3), 318-335.

Uwalaka, T., Nwala, B. J. C., & Public, t. (2023). Examining the role of social media and mobile social networking applications in socio-political contestations in Nigeria. *8*(3), 175-190.

Wan, H. W., Carey, K. A., D'Silva, A., Vucic, S., Kiernan, M. C., Kasparian, N. A., & Farrar, M. A. (2020). Health, wellbeing and lived experiences of adults with SMA: a scoping systematic review. *Orphanet Journal of Rare Diseases, 15*(1), 70.

Widyanty, W., Oktasari, D. P., Riyanto, S., Nusraningrum, D., Damayanti, S., Sumaedi, S., . . . Management. (2025). Employee green behavior: mapping knowledge structures and future directions. *12*(1), 2440814.

Title: **Scrolls and Shadows: Mapping the Silent Surge of Social Media Addiction and Social Anxiety through Bibliometric Analysis**

89