

Evolution in “Fear of Missing Out” Studies A Bibliometric Investigation

Neeraj Sudhakar Rai

Senior. Asst. Professor
Post Graduate Department of Business Administration
Alva’s Institute of Engineering and Technology
Shobhavana Campus, Moodbidri D.K.,
Karnataka, India.

Abstract

Introduction / Background: New-age Advertising tools deployed by e-sellers provide targeted content to their intended audience. These cookie-based, browser-embedded adverts follow the target and expose them to external stimuli, motivating them to purchase a product/offering that they showed some curiosity about in the past. These promotional instruments can persuade customers into purchasing, thereby falling prey to its FoMO inducements.

Bibliometric is integral to library sciences and has been drawn from two Greek words '**Biblio**' - meaning book and '**Metron**' - meaning measurement or tool for measuring. Hence, the literal meaning of bibliometric is measuring specific parameters related to books. Bibliometrics, in light of research, is the use of specialised statistical tools to analyse texts, articles and other publications.

Purpose of the Study: The major purpose of this paper is to appraise the current trends in FoMO research. It would attempt to enhance our understanding with respect to the research topic’s intellectual structure, impactful authors and frequently studied topics.

Methodology: Bibliography data for 518 articles published between 2002 and 2022 were extracted from a Scopus-indexed database using the keywords - “FoMO”, “Fear of Missing Out” etc. VOSviewer and Biblioshiny were used to analyse the extracted data, in terms of its structure, trend direction, keyword analysis, co-citation analysis etc.

Findings: The analysis provides several insights into FoMO research. These outcomes among other things indicate that even though such studies picked up pace since 2014-15, they still remained limited to a few authors and articles. Keyword analysis threw up 9 clusters namely FoMO, Social Media, Social Media Addiction, Depression, Social Networking Sites, Mental Health, Problematic Social Media Use, Adolescent well-being, and Mental Health. Further, FoMO research too focuses on 5 clusters of study topics.

Implications and Future Scope: The study opens wide opportunities for other research topics such as social media lethargy, troublesome smart-handset use, mobile phone dependency, and internet enslavement disorder.

Keywords

Bibliometric Analysis, Fear of Missing Out, Quantitative Analysis, Scopus, VOSviewer.

Introduction

Fear of Missing Out (FoMO)

FoMO, or "fear of missing out" [18] is a term that refers to the feeling of anxiety or concern that one may experience when they feel like they are missing out on something important or desirable. This can manifest as a desire to constantly check social media or other sources of information to stay updated on events or activities, or as a feeling of anxiety or stress when one is unable to participate in or attend certain events or activities.

FoMO is often linked with social media, as the constant stream of updates and notifications can create a sense of urgency or pressure to stay connected and engaged. It can also be fueled by a desire to keep up with the perceived activities or accomplishments of others or to not miss out on opportunities for personal or professional growth.

FoMO can have negative consequences on an individual's well-being, as it can lead to feelings of anxiety, stress and FoMO can also contribute to social comparison, which can further fuel feelings of inadequacy or insecurity [18]. It is important to be aware of FoMO and to try to manage it in a healthy way, such as by setting boundaries around social media usage and finding ways to disconnect and focus on the present moment.

Among the various social media handles, Facebook contributes to people's FoMO the most (72%), Instagram ranks a distant second (14%), followed by Twitter 11%), and finally Pinterest (8%) (OptinMonster, 2021). Travel (59%), Events and Parties (56%), and Food (29%) create the most FoMO among millennials.

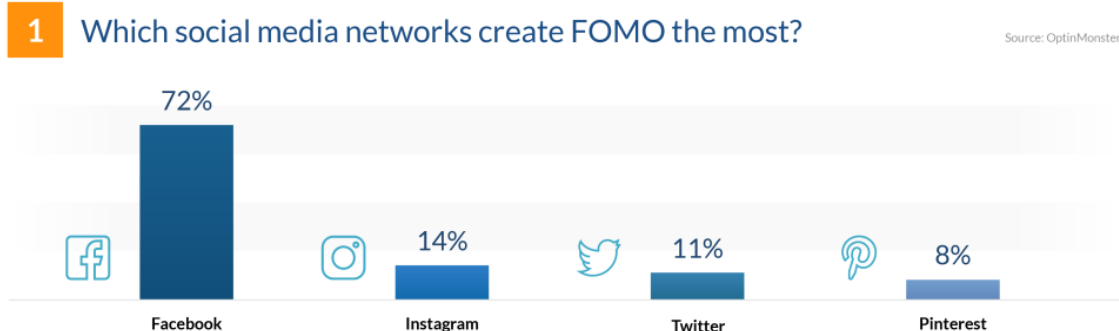
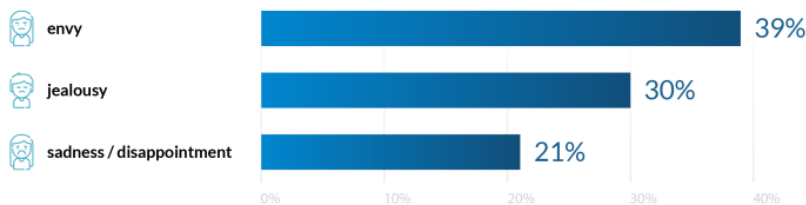


Figure 1: Interesting FoMO Statistics & Facts

2 Among Millennials, which posts and events create FOMO the most? Source: OptinMonster



3 What does FOMO make people feel? Source: OptinMonster



*Source: OptinMonster, 2021

Bibliometric Analysis

Bibliometric is integral to library sciences and has been drawn from two greek words ‘**Biblio**’ - meaning books and ‘**Metron**’ - meaning measurement or tool for measuring. Hence, the literal meaning of bibliometric is measuring certain measurements related to books. Bibliometrics, with regard to research, is the use of specialised quantitative tools to analyse books, articles and other publications.

The first recorded usage of the word bibliometrics was in the year 1969 by Alan Pritchard when he suggested this phrase, as a substitute for the term “Statistical Bibliography” - convey the study of the history of Science [Hulme, Wyndham E.(1922)]. Bibliometrics was defined as “the application of mathematics and statistical methods to books and other media of communication” [17].

Bibliometric analysis [16] is the study of patterns, trends, and relationships in academic literature, typically through the use of quantitative methods. It involves the use of tools such as citation analysis and publication counts to measure the impact, influence, and productivity of a researcher, journal, or field of study.

Bibliometric analysis is commonly used in the field of library and information science to evaluate the quality and impact of research, assess the performance of researchers and institutions, and identify patterns and trends in the literature. It can also be used to identify key players in a particular field, identify emerging research areas, and inform the development of research policies and strategies.

There are several types of bibliometric measures that are commonly used, including

Citation counts: The sum total times a particular article has been referred by other researchers.

Impact factor: A measure of the frequency with which the "average article" in a journal has been cited in a particular year.

H-index: A measure of the productivity and impact of a researcher, based on the number of papers they have published and the number of times those papers have been cited.

Co-citation analysis: A method of identifying groups of articles that are frequently cited together, which can be used to identify emerging research areas or key players in a field.

VOSviewer

VOSviewer [15] is a network visualisation tool for mapping bibliographic data. Bibliometric maps are graphical representations of the relationships between various elements in a bibliometric dataset, such as journals, authors, or research topics. VOSviewer is often used in the field of science and technology studies to analyze and visualize patterns and trends in research.

VOSviewer [15] was developed by Leiden University's Centre for Science and Technology Studies (CWTS) and is available for free download from the CWTS website. It is a Java-based application and is available for Windows, Mac, and Linux operating systems.

To use VOSviewer, one first needs to import a bibliometric dataset in a specific format, such as a file containing information on journal articles and their citations. VOSviewer can then analyze the data and create a visual representation of the relationships between the elements in the dataset. One can customise the appearance of the map and use various tools and features to explore and analyse the data.

VOSviewer is a useful tool for researchers and scholars who want to understand patterns and trends in research and identify connections between different elements in a bibliometric dataset. It can also be used to identify influential researchers, journals, or research topics in a particular field.

Review of Literature

Fear of Missing Out

Przybylski et al., (2013) [18]: This paper tries to gauge the pervasiveness of FoMO and its correlation to social media enslavement. The study aims to advance a sound theoretical foundation for fear of missing out.

The researchers carried out their study in three stages. As an initial study, the researchers designed a set of 32 questions to maximise gauging of the respondent's level of FoMO. The second study tried to ascertain how demographic factors and the motivational framework of Self Determination Theory interacted with FoMO. The third study was directed at taking cognizance of how FoMO related to the psychological experience of social media and real-life behaviours.

Factor Analysis, Item Response Theory analysis, Principle Component Analysis, And Regression Analysis were conducted on the collected data. The study quite strongly hints at the Fear of missing out being a strong precursor to enhanced online engagement. It also suggested that individuals with low levels of satisfaction with basic needs as well as frame of mind and all-around life contentment tend towards having an elevated fear of missing, leading to among other things distracted learning, distracted driving, addiction to phone and online usage etc.

Hodkinson (2019) [7]: This paper was among the front runners to explore the individual buying decision-making process in light of externally instigated FoMO stimuli. The researcher adds that alcohol-based beverages, fashionable clothing, female sanitary products, housing for first-time buyers etc. have successfully used FoMO-loaded adverts to increase sales. Broad research questions raised by the researcher through this paper included detailing the structure of buying responses to extrinsic prompts.

This exploratory research used a five-stage focus-group-based methodology to collect data from undergraduate students. Content Analysis and Textual Analysis were used for concept generation and model building. Many thought-provoking constructs saw the light of day because of this study. The researcher suggests that FoMO enticements work not just during the pre-purchase phase but they are equally potent during the utilisation and post-utilisation phases too. The researcher adds that even though an individual might have missed the purchase opportunity in the past, FoMO appeals make him more receptive to them the next time. This understanding, the researcher argues, would definitely help marketers develop a multi-tiered FoMO marketing approach, in addition to its purchase behaviour instigating appeals.

Bibliometric Analysis

Pan, X. et al (2018) [14]: This article scrutinises the reference, prevalence and use of bibliometric tools that were most widely used in scientific research. The three tools selected for this study were CiteSpace, HistCite and VOSviewer. They first did a content analysis to try and understand the extent of citations and mentions of the selected tools in research. After that, they used several diffusion techniques to understand their usage patterns in mainstream research. Through this study, the authors found evidence that there was no unanimity in the way that these tools were formally cited. This they suggest may be because of a lack of software mentioning standards. In terms of usage, VOSviewer was the fastest-growing tool.

Moral-Muñoz, José A. et al (2020) [12]: The author and his team have evaluated many of the visualisation and analytical tools currently available for Bibliometric analysis of publications. The authors have also discussed the various databases like Web of Science, Scopus, Google Scholar, Microsoft Academic, and Dimensions that may serve as the source of bibliometric data. The highlighted tools were segregated into 3 groups, viz., general bibliometric and performance analysis, science mapping analysis and libraries. A detailed discussion of all the 3 groupings was included. The comparative specialised tools available, the platform's advantages and relative disadvantages were also highlighted. As per the detailed analysis of all the tools, certain platforms such as VOSviewer, Rstudio-based Biblioshiny, SciMat, CitNetExplorer, Citespace etc. may be used by researchers, basis the analytical and visualisation capabilities desired.

Pellegrino, A. et al (2022) [16]: The authors of this research paper conducted a review of the existing knowledge base in the area of social media and analysed worldwide research effectiveness for the selected timeline: 2013 - 2022. Bibliometric tools were employed to analyse 501 articles drawn from the Scopus-indexed database, these articles being extracted using keywords such as "social media dependency" and "problematic social media use". Visualisation software, VOSviewer was used to map citations, co-citations, keyword co-occurrences, volume, growth trajectory, and knowledge structure of the research studies among others. The study findings were more critical for Government entities and parents. The authors feel that social media platforms must be regulated and adolescents' access to these platforms should be strictly regulated. Regulations can mandate content providers to put up caution labels on their apps and other online content or prescribe the optimum number of hours for daily usage.

The following research questions drive this investigation.

RQ1 - Explore the volume and document citation of FoMO-related research for the period 2002 to 2022.

RQ2 - Determine which authors and documents in the knowledge base on FoMO have had the greatest influence on reference over the past two decades.

RQ3 - Identify the countries that contributed most to the knowledge base of FoMO-related research for the past twenty years.

RQ4 - Assess the key Journals that have published the most referred-to articles on FoMO and determine their attributes.

RQ5 - Establish the Intellectual Structure of the FoMO knowledge base.

RQ6 - Evaluate the important postulations that have been prospected on the topic of FoMO and how are they related.

Research Design

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses [12] in conjunction with Research Positioning and Trend Identification Toolbox [18] protocol provides a 3-step methodology:

1. Data Compilation and Evaluation (inclusion/exclusion criteria),
2. Data Analysis / Visualisation, and
3. Data Interpretation.

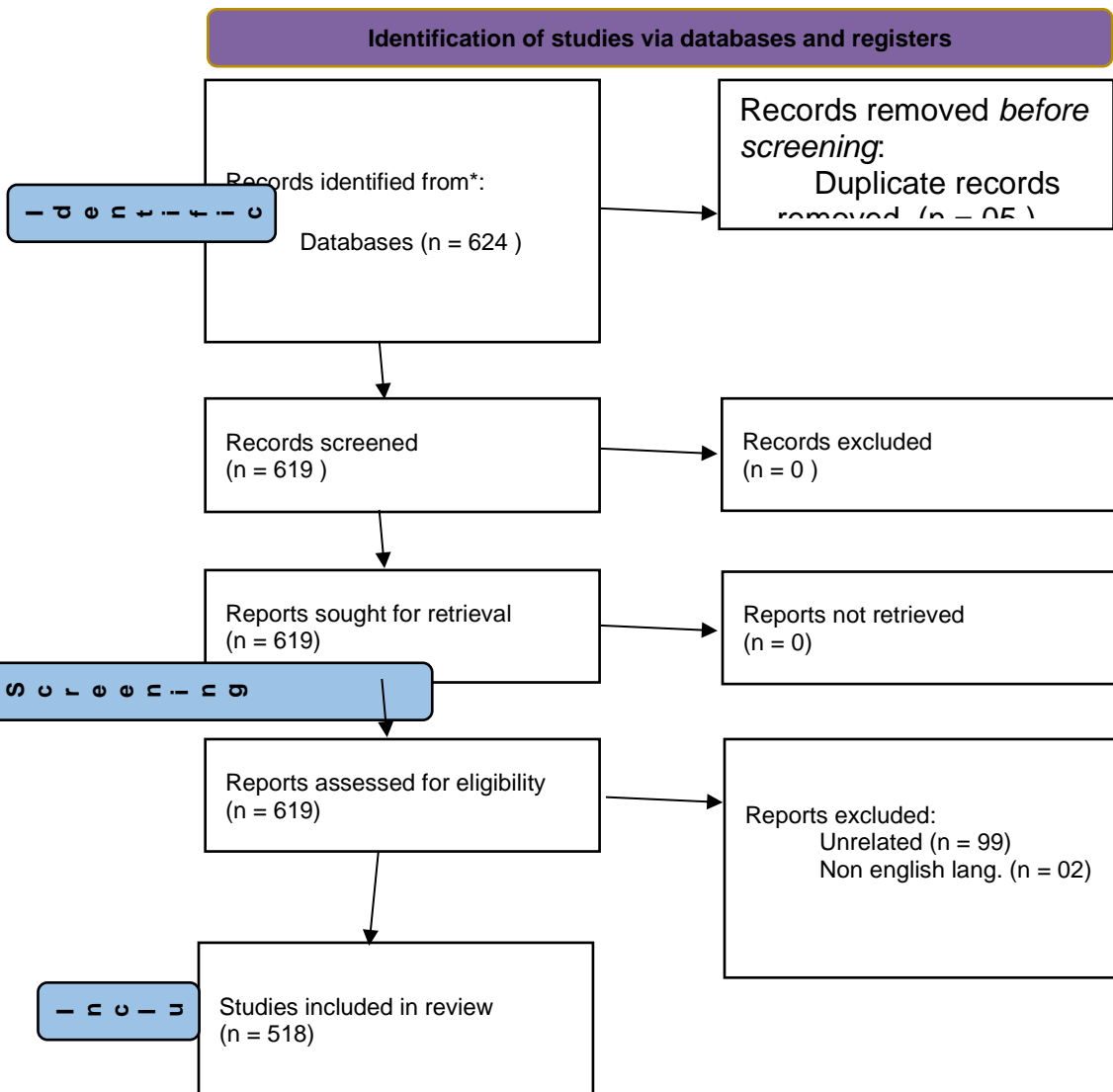


Figure 2: Research Method in Bibliometric Investigation

Source: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

Data Compilation and Evaluation

This literature review paper intends to highlight the evolution, growth and trends in FoMO-related global studies using bibliometric analysis. The Scopus-indexed database was queried using “FoMO” and “Fear of Missing Out” keywords. A sample of 624 English-language journal papers/articles that refer to or mention the searched keywords were initially chosen. This dataset was vetted whereby, duplicate (05) and unrelated (101) articles were weeded out. After the screening process, 518 journal papers were available for bibliometric analysis using VOSviewer.

Data Analysis

Bibliography data analysis is the process of examining and interpreting bibliographic information, typically for the purpose of understanding patterns, trends, and relationships within a body of literature. This can be done for a variety of purposes, such as to identify key players and influential works within a field, to map the development of ideas over time, or to understand how different sources are related to one another.

Some common methods include bibliometric analysis, which uses quantitative measures such as citation counts to identify patterns and trends within a body of literature; content analysis, which involves systematically coding and analysing the content of a set of texts; and network analysis, which uses network theory to examine the connections between different sources. For the purpose of this article, Scopus Analytical tool and Excel were used for the descriptive analysis and VOSviewer software[22] was used to conduct the criteria mappings.

Results, Findings & Discussion

Descriptive Analysis

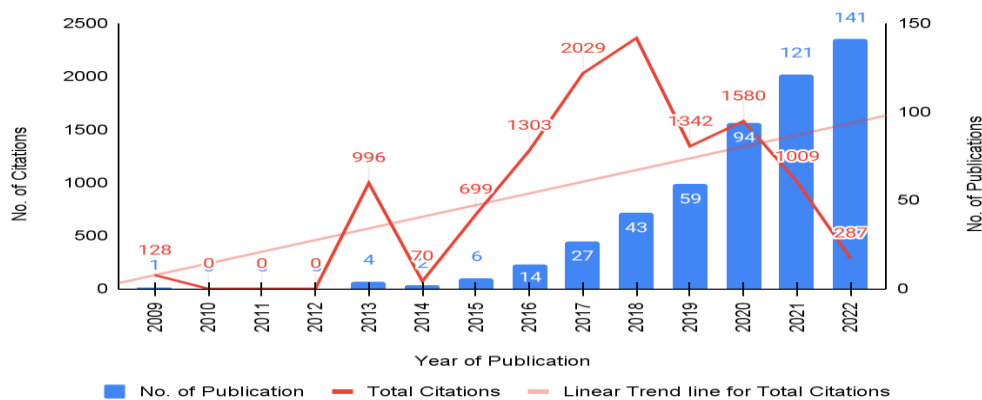


Figure 3: No. of Publications and Total Citations between 2009-2022

Source: Scopus Analytics Trending by Publications/Citations (summarised by Author) (2022)

Figure 3 depicts the number of FoMO-centric publications and total citations earned by those publications. As visually evident FoMO-related studies started getting published in 2013 and took off in

2016. Thereafter it has shown exponential growth right up to 2022. In terms of citations too, there has been steady growth, peaking in 2018. The linear trend line for citations too shows a positive slope from the bottom left to the top right corner.

Table 1: FoMO Publications - Ten Most influential Authors by Citation (SCOPUS)

Cited by	First Author	Title	Year	Country
987	Przybylski A.K.	"Motivational, emotional, and behavioural correlates of fear of missing out".	2013	United Kingdom
399	Kuss D.J.	"Social networking sites and addiction: Ten lessons learned".	2017	United Kingdom
381	Fox J.	"The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances".	2015	United States
373	Elhai J.D.	"Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use".	2016	United States
330	Blackwell D.	"Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction".	2017	United States
328	Oberst U.	"Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out".	2017	Germany
316	Dhir A.	"Online social media fatigue and psychological wellbeing—A study of compulsive use, fear of missing out, fatigue, anxiety and depression".	2018	Vietnam
292	Beyens I.	"'I don't want to miss a thing': Adolescents' fear of missing out and its relationship to adolescents' social needs, Facebook use, and Facebook-related stress".	2016	Netherlands
292	Chotpitayasunondh V.	"How 'phubbing' becomes the norm: The antecedents and consequences of snubbing via smartphone".	2016	United Kingdom
273	Hunt M.G.	"No more FOMO: Limiting social media decreases loneliness and depression".	2018	United States

Source: Scopus Data-set summarised by Author (2022)

Table 1 lists the 10 most influential authors in terms of publication citations. Clearly Przybylski A.K. (UK) with 987 citations for his paper "Motivational, emotional, and behavioural correlates of fear of missing out", 2013 [17] forms the cornerstone for all FoMO-centric studies having the highest number of citations to date. Without a doubt, Przybylski A. K. et al acts as a beacon of knowledge throwing light and directing related studies.

Table 2: FoMO Publications - Impactful Author as per h-index score

h-index	Name	Latest Affiliation Country	Total Documents	Total Citations	First Publication Year
107	Griffiths, Mark D.	United Kingdom	1,156	21,944	1989
80	Martinez, Todd	United States	343	10,802	1992
64	Ho, Chun Man Roger	Singapore	468	17,174	2004
60	Elhai, Jon D.	United States	358	8,543	1997
59	Demetrovics, Zsolt	Hungary	382	7,294	1998
55	Brand, Matthias	Germany	274	7,662	2000
49	Montag, Christian	Germany	311	5,264	2007
49	Dhir, Amandeep	Norway	201	4,352	2011
48	Kwee, Thomas Christian	Netherlands	377	6,307	2006
44	Kuss, Daria Joanna	United Kingdom	123	5,537	2011

The h-index is a measure of the productivity and impact of a researcher or scholar. It is used to evaluate the scientific output of a researcher and is calculated by identifying the highest number h such that the researcher has published h papers that have each received at least h citations. The h-index is useful because it provides a single number that reflects both the quantity and the quality of a researcher's work.

Table 2 lists authors on the basis of their h-index. On the basis of their h-index, the highest-rated author turns out to be Griffiths, Mark D. associated with Nottingham Trent University, UK with 1,156 documents, and 21,944 citations for an h-index of 107.

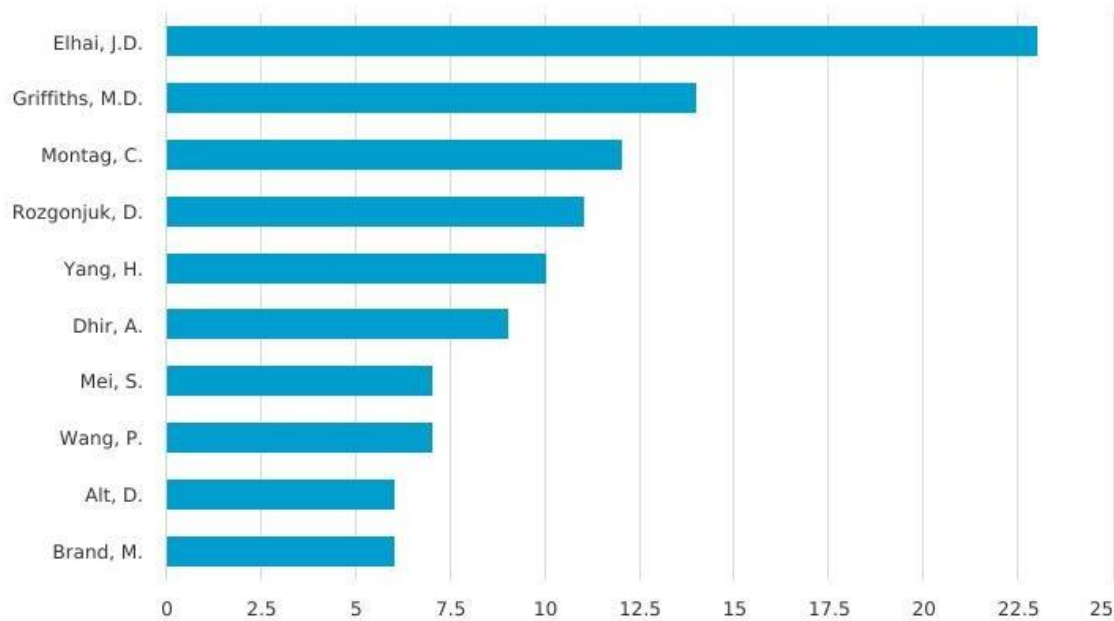


Figure 4: No. of Documents by Authors

Source: Scopus Analytics Trending by Documents by Author (2022)

Figure 4 shows the list of top contributing authors in terms of the number of research studies. Right at the top is Elhai, J.D. with 23 FoMO-related studies to his name. Following him in the second position is Griffiths, M.D. with 14 studies to his name.

Table 3: Top 10 Countries publishing FoMO-related Research Studies

COUNTRY	No. of Documents
United States	171
China	82
United Kingdom	74
Turkey	43
Germany	40
India	33
Australia	27
Italy	27
South Korea	19
Canada	16

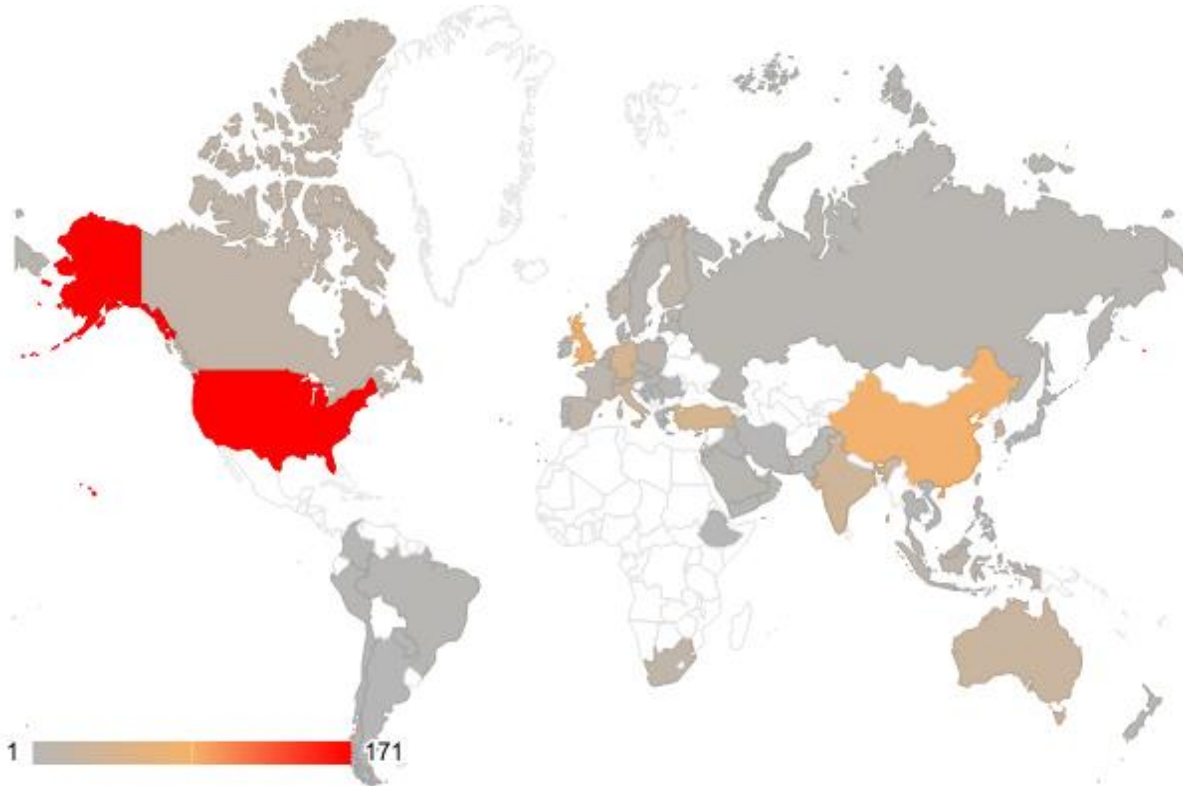


Figure 5: No. of Publications by Country/Territory

Source: Scopus Data-set Trending by Country (2022)

Table 3 shows that with 171 Research studies originating from The United States, it is the most impactful country with respect to FoMO-related studies. It is followed by China, The UK and Turkey. India with 33 publications is ranked sixth on the list.

Data Visualisation / Mapping / Network Analysis

Table 4: List of Journals that have published the most cited articles on FoMO.

Name of Journal	TP	TC	CPP	CiteScore*	SNIP*	SJR**
<i>Computers in Human Behavior</i>	34	3566	105	14.9	3.234	2.174 Q1
<i>International Journal of Environmental Research and Public Health</i>	19	584	31	4.5	1.44	0.814 Q1
<i>Addictive Behaviors</i>	15	569	38	6.7	1.527	1.372 Q1
<i>Personality and Individual Differences</i>	8	462	58	5.3	1.685	1.178 Q1
<i>Addictive Behaviors Reports</i>	5	371	74	5.2	1.261	0.956 Q2
<i>Current Psychology</i>	24	250	10	3.4	0.936	0.513 Q2
<i>Technological Forecasting and Social Change</i>	6	151	25	13.7	3.097	2.336 Q1

<i>International Journal of Mental Health and Addiction</i>	5	127	25	6.8	1.962	1.326 Q1
<i>Frontiers in Psychology</i>	12	111	9	4.0	1.605	0.873 Q1
<i>Cyberpsychology, Behavior, and Social Networking</i>	10	89	9	6.7	1.797	1.154 Q1

TP = Total Publication; TC = Total Citations; CPP = Citations per Publication; SNIP = Source Normalised Impact per Paper; SJR = Scimago Journal Rating; *Figures for 2021 provided by Scopus; **Figures for 2021 provided by ScimagoJR

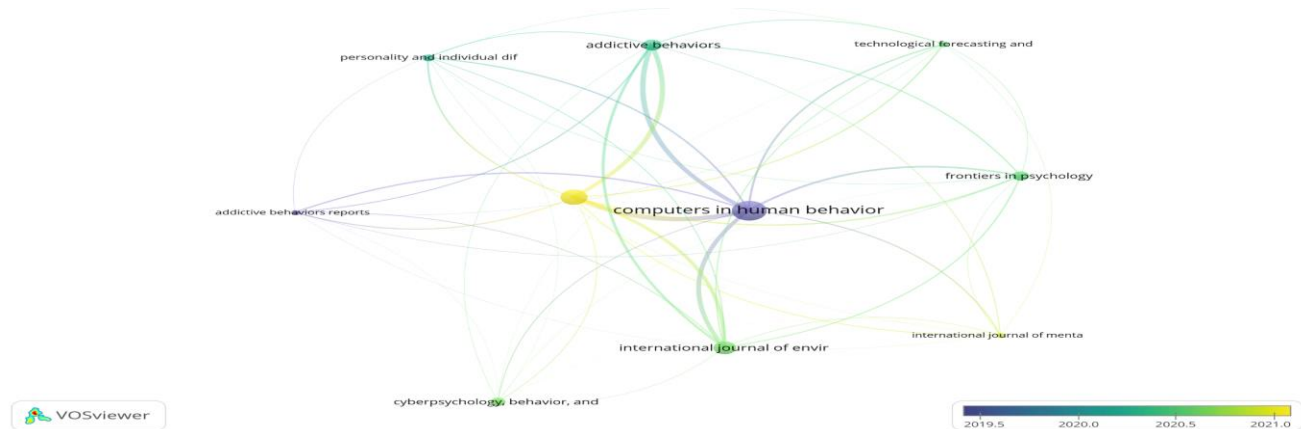


Figure 6: Bibliographic Coupling by Source/Journal

Source: Scopus Data-set Bibliographic Coupling by Source overlay visualisation using VOSviewer (2022)

Table 4 lists the Journals that have published the most cited FoMO-related articles. These journals are ranked as per the number of citations. **Figure 6** shows the VOSviewer-generated network visualisation of the data in **Table 4**. Computers in Human Behavior has published articles that have received the most number of citations, followed by International Journal of Environmental Research and Public Health and Addictive Behaviors.

CiteScore is a metric developed by Elsevier that measures the average number of citations received per document in a particular subject area. It is calculated by dividing the number of citations received by the number of documents published in the same subject area over a specific time period. CiteScore is used to evaluate the impact of journals and to compare the performance of journals within a particular subject area.

SNIP (Source Normalized Impact per Paper) is a metric developed by the CWTS Leiden Ranking that measures the relative impact of a journal within its subject field. It is calculated by dividing the journal's raw impact factor (the average number of citations received by articles published in the journal) by the average impact factor of the journals in the same subject field. The result is then normalized to take into account differences in citation practices between subject fields.

SJR (SCImago Journal Rank) is a metric developed by the SCImago Research Group that measures the relative importance of a journal within its subject field. It is based on the number of citations received by the journal but takes into account the prestige of the journals citing the journal, as well as the overall impact of the citing journals. SJR is calculated using a variant of the PageRank algorithm, which was

developed by Google to rank websites based on the number and quality of links pointing to them. In the case of SJR, the algorithm takes into account the number of citations received by a journal, the importance of the citing journals, and the overall impact of the citing journals. The resulting score is then normalized to take into account differences in citation practices between subject fields.

Overall Computers in Human Behavior stands out as the most impactful journal publishing FoMO-centric publications followed closely by International Journal of Environmental Research and Public Health and Addictive Behaviors.

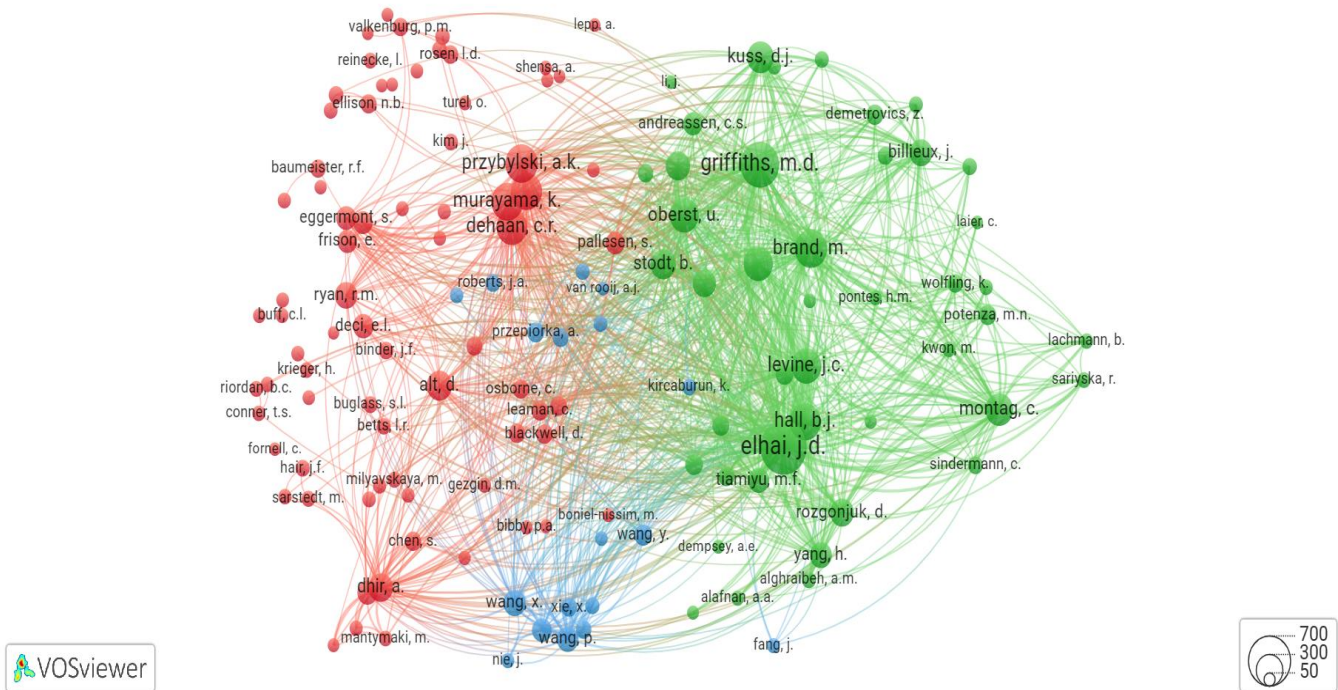


Figure 7: Co-citation Mapping Analysis

Source: Scopus Data-set Co-citation visualisation using VOSviewer (2022)

Figure 7 shows the Co-citation for cited authors mapping for FoMO-related documents from 2002 to 2022. As seen in the network mapping above, there are 3 clusters containing 137 authors who have been cited at least 50 times or more.

Przybylski, A.K. (citations: 409, total link strength: 16,478). This article establishes the connection between social media use, FoMO and well-being;

Wang, X. (citations: 194, total link strength: 11,106). This article explores the detrimental effects of problematic smartphone usage, FoMO and procrastination;

Elhai, J. D. and others (citations: 827, total link strength: 53,097). This article provides an overview of the concept of FoMO and its potential negative effects on well-being and technology use.

This forms the Intellectual Structure of the FoMO knowledge base.

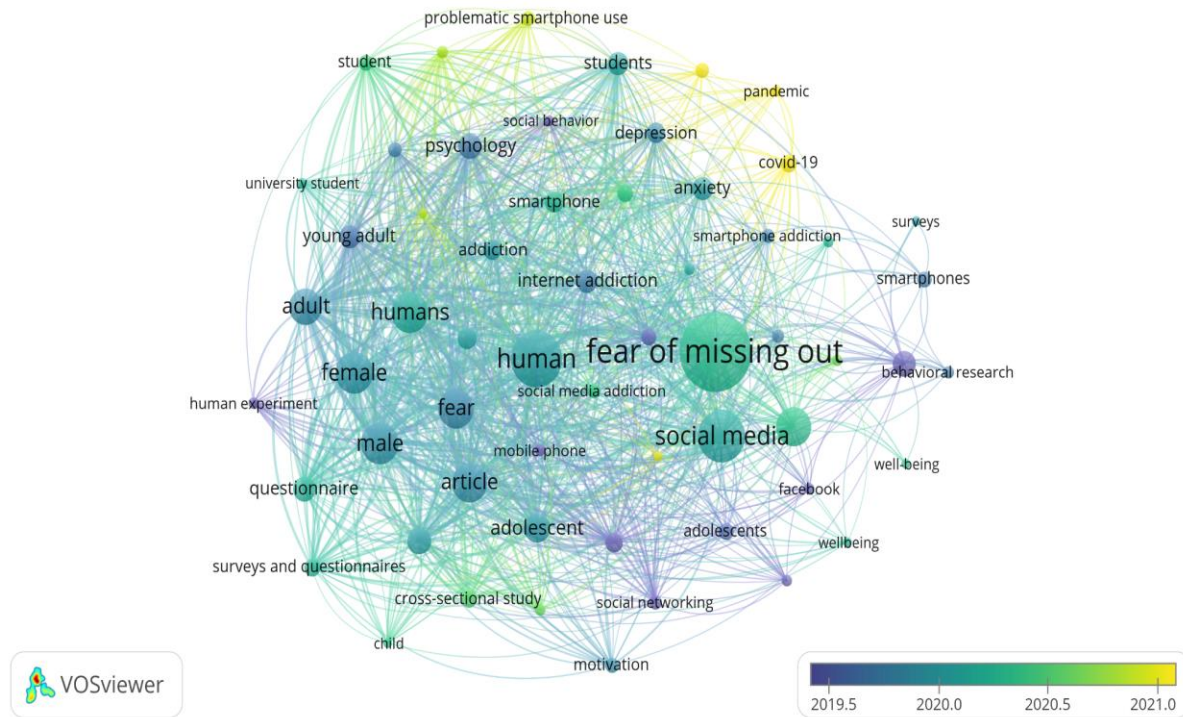


Figure 8: Keywords Co-occurrence Mapping

Source: Scopus Data-set Keyword Co-occurrence visualisation using VOSviewer (2022)

Figure 8 depicts the keyword co-occurrence network mapping for FoMO-centric publication for the period 2002 to 2022. As can be visually observed, the above consists of 5 clusters, each representing a themed grouping of keywords. Cluster 1 with 24 keywords talks about the psychological aspects of the “Fear of Missing Out”. Cluster 2 with 16 keywords talks about clinical studies conducted on humans to understand their interaction with smartphones. Cluster 3 with 13 keywords talks about the various additions that have befallen human beings. Cluster 4 with 3 keywords talks about human behaviour on social networking sites. Cluster 5 with 3 keywords talks about university students.

Further, researchers are probing contemporary topics like adolescence, problematic smartphone use, and disorders related to mobile phone/internet addiction in relation to FoMO.

Scope for Future Studies & Limitations

There are several potential areas of study related to FoMO (fear of missing out) that could be explored in future research:

1. The association between FoMO and social networking site usage: Many researchers have suggested that social media platforms may contribute to FoMO by presenting users with an endless stream of content and events, leading them to feel like they are missing out on something. Future studies could examine this relationship more closely and explore potential interventions or strategies for reducing FoMO related to social media use.
2. The impact of FoMO on mental health: FoMO has been linked to negative outcomes such as anxiety and depression, but more research is needed to understand this relationship better.

Future studies could explore the mechanisms through which FoMO contributes to mental health problems and identify strategies for addressing these issues.

3. The role of individual differences in FoMO: Some people may be more prone to experiencing FoMO than others, and it is important to understand why this is the case. Future research could examine individual differences such as personality traits, coping styles, and social support as potential moderators of FoMO.
4. The effects of FoMO on decision-making: FoMO may influence people's choices and behaviours in various ways, and future research could explore these effects more thoroughly. For example, FoMO may lead people to make impulsive or risky decisions to avoid missing out on an opportunity.
5. The development of interventions and treatments for FoMO: Given the negative consequences of FoMO, there is a need for effective interventions and treatments that can help people reduce their fear of missing out and improve their well-being. Future research could focus on developing and testing such interventions, including cognitive-behavioural therapies, mindfulness-based approaches, and other evidence-based treatments.

5.1 Limitations

This paper restricts itself to FoMO-centric research articles available in the Scopus-indexed database, pertaining specifically to the last two decades (2002-2022). Further, network visualisation was limited to VOSviewer.

References

- ¹Argan, M. (2019). *TOWARD A NEW UNDERSTANDING OF FOMO: 'FOMSUMERISM.'* 26.
- ²Alt, D., & Boniel-Nissim, M. (2018). Links between Adolescents' Deep and Surface Learning Approaches, Problematic Internet Use, and Fear of Missing Out (FoMO). *Internet Interventions, 13*, 30–39. <https://doi.org/10.1016/J.INVENT.2018.05.002>
- ³Celik, F., Koseoglu, M. A., & Elhai, J. D. (2022). Exploring the Intellectual Structure of "Fear of Missing Out" Scholarship: Current Status and Future Potential. *International Journal of Human-Computer Interaction, 1*-25.
- ⁴Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). Science mapping software tools: Review, analysis, and cooperative study among tools. *Journal of the American Society for Information Science and Technology, 62*(7), 1382–1402. <https://doi.org/10.1002/asi.21525>
- ⁵Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021a). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research, 133*, 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- ⁶Donthu, N., Kumar, S., Pattnaik, D., & Lim, W. M. (2021). A bibliometric retrospection of marketing from the lens of psychology: Insights from *Psychology & Marketing*. *Psychology & Marketing, 38*(5), 834–865. <https://doi.org/10.1002/mar.21472>
- ⁷Hodkinson, C. (2019). 'Fear of Missing Out' (FOMO) marketing appeals: A conceptual model. *Journal of Marketing Communications, 25*(1), 65–88. <https://doi.org/10.1080/13527266.2016.1234504>

- ⁸Lim, K. W., & Buntine, W. (2016). Bibliographic analysis on research publications using authors, categorical labels and the citation network. *Machine Learning*, 103(2), 185–213. <https://doi.org/10.1007/s10994-016-5554-z>
- ⁹Linnenluecke, M. K., Marrone, M., & Singh, A. K. (2020). Conducting systematic literature reviews and bibliometric analyses. *Australian Journal of Management*, 45(2), 175–194. <https://doi.org/10.1177/0312896219877678>
- ¹⁰Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group*. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of internal medicine*, 151(4), 264–269.
- ¹¹Moher, D., Stewart, L., & Shekelle, P. (2016). Implementing PRISMA-P: Recommendations for prospective authors. In *Systematic Reviews* (Vol. 5, Issue 1). BioMed Central Ltd. <https://doi.org/10.1186/s13643-016-0191-y>
- ¹²Moral-Muñoz, J. A., Herrera-Viedma, E., Santisteban-Espejo, A., & Cobo, M. J. (2020). Software tools for conducting bibliometric analysis in science: An up-to-date review. *El Profesional de La Información*, 29(1). <https://doi.org/10.3145/epi.2020.ene.03>
- ¹³Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *Systematic Reviews*, 10(1), 89. <https://doi.org/10.1186/s13643-021-01626-4>
- ¹⁴Pan, X., Yan, E., Cui, M., & Hua, W. (2018). Examining the usage, citation, and diffusion patterns of bibliometric mapping software: A comparative study of three tools. *Journal of Informetrics*, 12(2), 481–493.
- ¹⁵Patra, S. K., Bhattacharya, P., & Verma, N. (2006). Bibliometric Study of Literature on Bibliometrics. *DESIDOC Bulletin of Information Technology*, 26(1), 27–32. <https://doi.org/10.14429/dbit.26.1.3672>
- ¹⁶Pellegrino, A., Stasi, A., & Bhatiasevi, V. (2022). Research trends in social media addiction and problematic social media use: A bibliometric analysis. *Frontiers in Psychiatry*, 13, 1017506. <https://doi.org/10.3389/fpsy.2022.1017506>
- ¹⁷Pritchard, A. (1969). Statistical bibliography or bibliometrics. *Journal of Documentation*, 25, 348.
- ¹⁸Przybylski, A. K., Murayama, K., Dehaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioural correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841–1848. <https://doi.org/10.1016/j.chb.2013.02.014>
- ¹⁹Ranjbar-Sahraei, B., & Negenborn, R. R. (2017). Research positioning & trend identification: a data-analytics toolbox.
- ²⁰Salini, S. (2016). An Introduction to Bibliometrics. In T. Greenfield & S. Greener (Eds.), *Research Methods for Postgraduates: Third Edition* (pp. 130–143). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781118763025.ch14>

- ²¹Universitas Multimedia Nusantara, Tangerang, Indonesia, Utomo, P., Kurniasari, F., Universitas Multimedia Nusantara, Tangerang, Indonesia, Yudiono, A. K., & Universitas Multimedia Nusantara, Tangerang, Indonesia. (2021). FEAR-OF-MISSING-OUT BEHAVIOR PHENOMENA: A BIBLIOMETRIC ANALYSIS. *BUSINESS EXCELLENCE AND MANAGEMENT*, 11(4), 5–18. <https://doi.org/10.24818/beman/2021.11.4-01>
- ²²Van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538.
- ²³Van Eck, N. J., & Waltman, L. (2014a). Visualizing Bibliometric Networks. In Y. Ding, R. Rousseau, & D. Wolfram (Eds.), *Measuring Scholarly Impact* (pp. 285–320). Springer International Publishing. https://doi.org/10.1007/978-3-319-10377-8_13
- ²⁴Wortham, J. (2011). As Facebook users die, ghosts reach out. Copyright Fountainhead Press.