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Research Article

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The Phubbing Phenomenon: Ontological Contradictions of Digital Sociality



Faruk Dursun¹  

¹ Sakarya Üniversitesi, İşletme Fakültesi Yönetim Bilişim Sistemleri Bölümü, Sakarya Üniversitesi, Sakarya Üniversitesi İşletme Fakültesi Esentepe Kampüsü Sakarya, Türkiye.

Abstract

This study systematically examines the position of the phubbing phenomenon, a concrete manifestation of the transformation in social interaction paradigms in the digital age, within the academic literature. A bibliometric analysis of 537 academic publications obtained from the Scopus database, conducted within the framework of PRISMA protocols, reveals the epistemological structure of this field, its interdisciplinary development dynamics, and the configuration of global research networks. Methodologically, the multidimensional analysis conducted using VOSviewer 1.6.19 software encompasses author collaborations, institutional networks, country-based productivity metrics, and conceptual mapping processes. Temporal analysis documents the evolutionary course of the phubbing literature from its inception in 2014-2015 to its peak in 2024 with 118 publications. The findings show that phubbing research is geographically concentrated in China (27.1%), the US (12.9%), and Turkey (8.8%), while disciplinarily it is shaped around psychology (31.18%) and social sciences (19.59%). Keyword analyses reveal that the literature crystallises around three main thematic clusters: “digital addiction,” “developmental psychopathology,” and “family interaction dynamics.” This study makes three unique contributions to the phubbing literature: (1) it provides the first comprehensive bibliometric mapping of the entire research field (2014-2025), revealing epistemological structures and disciplinary trajectories previously unexamined; (2) it empirically demonstrates that phubbing has evolved from a marginal behavioural anomaly to a critical conceptual tool in understanding digital-age sociality, challenging its prior treatment as merely an etiquette violation; and (3) it identifies critical gaps in geographic representation, methodological approaches, and interdisciplinary integration that have practical implications for researchers, educators, and policymakers. The strategic orientations proposed for the future research agenda—cross-cultural comparative studies, longitudinal cohort analyses, and theoretical conceptualisation of hybrid sociality models—offer actionable pathways for advancing scholarship and applied interventions in educational, clinical, and organisational contexts.


Keywords

Phubbing · Digital addiction · Social interaction · Digital sociology · Bibliometric analysis



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 Corresponding author: Faruk Dursun farukdursun@sakarya.edu.tr



Introduction

One of the deepest rifts created by the digital revolution in the social fabric is the redefinition of the contradictory relationship between physical proximity and psychological distance. Phubbing stands before us as the concrete manifestation of this paradox. Derived from the combination of the words “phone” and “snubbing,” the concept of phubbing refers to individuals ignoring the person in front of them during social interactions and directing their attention to their mobile devices (Ortuño-Sierra et al., 2024). The fundamental social unit conceptualised by traditional sociology as “face-to-face interaction” has undergone a radical transformation with the intervention of smartphone technology.

The way phubbing is defined in academic literature poses serious challenges in determining the epistemological boundaries of the concept. Defined by Chotpitayasunondh and Douglas (2018) as “disregarding someone in a social setting by focusing on a cell phone,” this phenomenon is actually a superficial manifestation of a more complex socio-technological interaction network.

Much of the existing literature treats phubbing as a direct result of smartphone addiction (Field, 2024; Isrofin & Munawaroh, 2021). However, this approach falls into the trap of technological determinism and disregards the agency of social actors. We argue that phubbing behaviour is part of the process of reproducing and transforming social norms beyond individual choices.

The socially exclusionary effect of phubbing, highlighted by Nuñez and Radtke (2023), is ironically itself a product of the fear of digital exclusion (Yahya et al., 2024). This cyclical structure reflects one of modernity's fundamental contradictions: individuals' search for social connection leads to behaviours that weaken social connection.

A key methodological issue in phubbing research is that the observational nature of the behaviour is open to subjective interpretation. The “decrease in trust and attention judgments” measure proposed by Pesch et al. (2024) does not sufficiently account for cultural and contextual factors. This raises serious questions regarding cross-cultural validity.



The “phubbing contagion” hypothesis proposed by Chen et al. (2021) explains that the behaviour can be explained within the framework of social learning theory. However, methodological shortcomings in determining causality question the reliability of findings in this area.

Phubbing, characterised by Leuppert and Geber (2020) as “inappropriate behaviour in most social contexts,” can be argued to be in the process of forming new social norms. Its prevalence among high school students, as observed by Alpaslan and Canal (2024), indicates that this behaviour may be indicative of normative transformation.

Phubbing challenges traditional sociology's concept of “physical co-presence” and represents a hybrid form of sociality. The fact that individuals can be present in multiple social arenas simultaneously calls into question the fundamental assumptions of our social theory (Avgustis, 2023).

The correlations between depression, loneliness, and anxiety documented by Wu (2022) and Al-Saggaf (2023) and phubbing should be read as symptoms of the ontological insecurity of modern life. The phenomenon of “declining trust” noted by Knausenberger et al. (2022) is part of a broader process of erosion of social capital.

Phubbing behaviours observed in educational settings by Baranova et al. (2022) and Musdalifah & Qamariah (2023) reveal the inadequacy of traditional pedagogical models. The learning strategies of digital native generations show incompatibility with current educational paradigms.

Findings by Cebollero-Salinas et al. (2022) that “particularly affect girls” demonstrate the complex relationship between phubbing and gender dynamics. This situation indicates the need for a more in-depth analysis of how digital technology reshape power relations.

The phenomenon of phubbing should be approached not as a simple behavioural disorder but as a social fact crystallising the contradictions of modernity. The ethical approach proposed by Zavalii and Zhalinska (2024) falls short because it seeks technocratic solutions to the problem.

Future research should focus on the following fundamental questions:

1. How can the transformative power of phubbing on social norms be assessed?
2. What theoretical frameworks can be developed to conceptualise hybrid forms of sociality?

3. How can strategies for coping with the ontological insecurity of the digital age be developed?

These questions require multidisciplinary approaches that encompass not only psychological and sociological dimensions but also philosophical and anthropological ones. Understanding phubbing is one of the fundamental issues of 21st-century social theory, and the development of this field is critical for the future of the social sciences.

Method

In this study, a comprehensive bibliometric analysis was conducted to examine the academic status, thematic orientations, and intellectual structure of the field of phubbing. Within the scope of the research, a search was conducted on the Scopus database on September 2, 2025, using the keyword “Phubbing.” 537 English publications published between 2014 and 2025 from the Scopus database were systematically analysed in accordance with the PRISMA rules. Using VOSviewer software, author collaborations, institutional connections, country-based productivity, and keyword matching patterns were examined, and evolutionary trends and paradigmatic shifts across temporal phases were identified.

The analysis process was conducted in two stages. In the first stage, bibliometric data obtained from the Scopus database were evaluated using descriptive indicators provided by the platform; the data were converted into numerical distributions, trend analyses, and graphical presentations using Microsoft Excel. In the second stage, the data set was processed using Vosviewer 1.6.19 software; (i) inter-author collaboration networks, (ii) academic partnerships at the institutional and country levels, and (iii) keyword co-occurrence networks were visualised. In addition, thematic clusters were mapped to reveal the conceptual structure of the field.

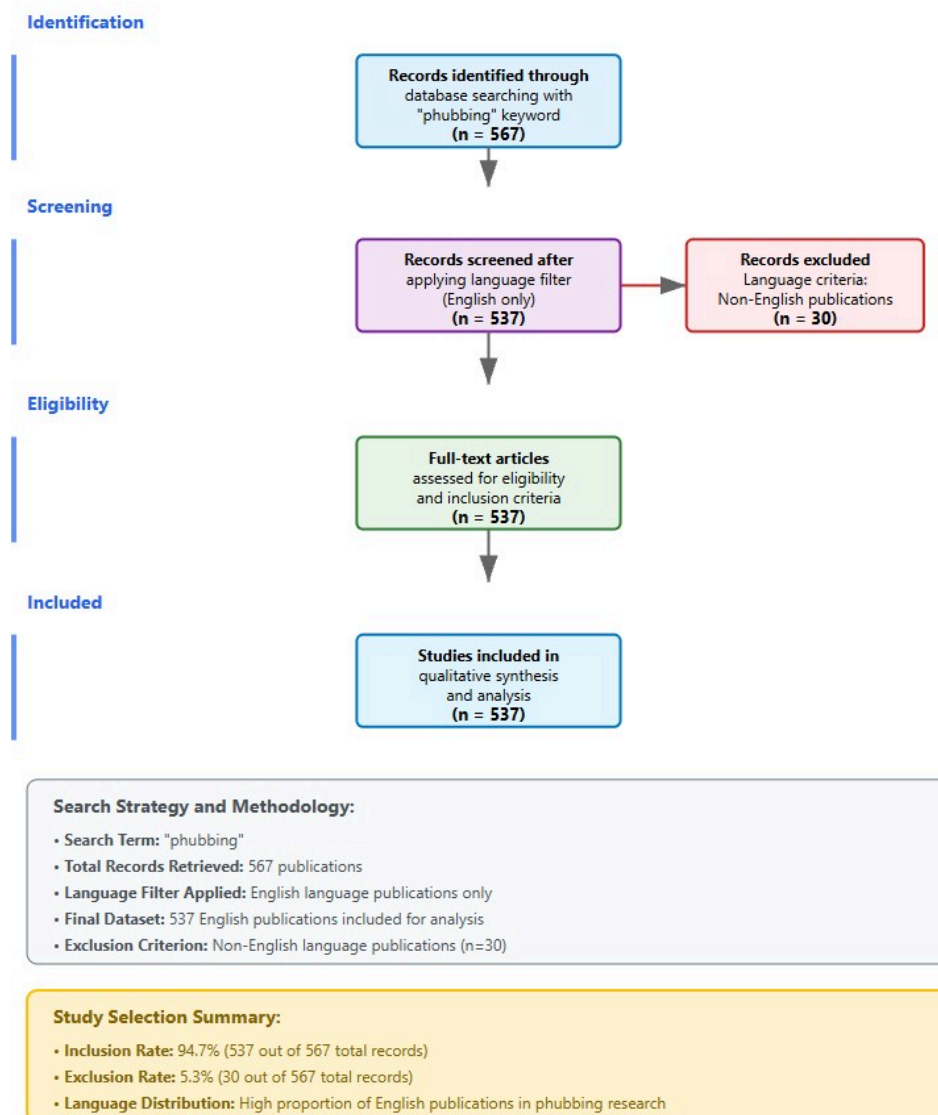
This study seeks to answer the following research questions:

1. How are academic publications on phubbing distributed across years and countries?
2. How are academic publications on phubbing classified by discipline?
3. What are the structural characteristics of co-authorship networks between authors, institutions, and countries in the field of phubbing?

4. What are the most frequently used keywords in the publications examined, and what are their co-occurrence patterns?
5. What are the prominent thematic clusters, focal topics, and conceptual trends in phubbing research?

The findings obtained from this methodological process reveal the developmental trajectory of the field, its interdisciplinary nature, and global production centres; they evaluate the position of the concept of phubbing from an analytical and holistic perspective.

Figure 1
PRISMA Model



The PRISMA flow diagram demonstrates a comprehensive and methodologically transparent review of the phubbing literature (Figure 1). Of the 567 records identified in the Scopus database using the keyword “phubbing” in all languages, 537 studies published in English were screened, assessed for eligibility, and included in the analysis.

The inclusion of all identified English-language studies ensured the comprehensiveness and analytical consistency of the review and provided a solid foundation for both bibliometric and thematic/qualitative analyses. The transparent reporting of records enhances the reproducibility and reliability of the findings, enabling a comprehensive and reliable analysis of the literature.

Purpose of the Study

The main purpose of this study is to examine the academic production of phubbing from a bibliometric perspective, revealing the structural characteristics, intellectual evolution, and thematic focuses of the literature. The study goes beyond the epistemological boundaries of the concept and questions whether phubbing can be positioned as a reflection of social norms, cultural practices, and the ontological insecurities of the digital age beyond being an individual addictive behaviour.

Uniquely, this research addresses a critical gap in existing phubbing scholarship: the absence of comprehensive bibliometric mapping that synthesises the field's epistemological structure, identifies research clusters and gaps, and provides strategic directions for future inquiry. While narrative reviews (Field, 2024; Nuñez & Radtke, 2023) and systematic reviews (Yahya et al., 2024) have contributed valuable syntheses, no prior study has employed bibliometric methodologies to visualise collaboration networks, track temporal evolution patterns, map geographic distributions, or identify thematic crystallisation through keyword co-occurrence analysis across the entire phubbing literature. This methodological approach enables meta-level insights that individual empirical studies cannot provide, offering practical value for researchers designing studies, funding agencies allocating resources, institutions developing policies, and educators creating interventions.

Importance of the Study

Phubbing is a critical concept in understanding the socio-technological transformations of the digital age. However, studies in the literature are mostly limited to the psychosocial level and do not sufficiently reflect the multidimensional nature of the phenomenon. This study reveals how phubbing research has taken shape on a global scale through bibliometric analysis, what thematic axes it focuses on, and where it is positioned among disciplines; thus, it points to the gaps necessary for methodological and theoretical deepening in the field. Furthermore, by demonstrating that phubbing affects not only interpersonal relationships but also a wide range of areas, from education to work life, social norms to cross-cultural comparisons, it provides a guiding framework not only for the social sciences but also for the disciplines of health and engineering.

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The practical significance of this study extends beyond academic knowledge production to offer concrete benefits for multiple stakeholder groups. For researchers, bibliometric mapping identifies under-researched domains—including neuroscientific substrates, organisational dynamics, and Global South perspectives—enabling strategic allocation of scholarly resources and international collaboration opportunities. The identification of methodological gaps, particularly the overreliance on cross-sectional designs, provides a roadmap for securing funding for longitudinal studies that can establish causal mechanisms and developmental trajectories. For educators and school administrators, the documentation of phubbing prevalence in educational settings (Baranova et al., 2022; Musdalifah & Qamariah, 2023) and its documented interference with learning processes justify institutional policies regulating device use while informing digital citizenship curricula. The parental parenting findings have direct implications for family education programmes, enabling evidence-based interventions to enhance parent-child interaction quality in digital environments. For policymakers, the geographic concentration patterns reveal inequalities in research capacity that warrant investment in Southern research infrastructures, while the public health implications (de-



pression, anxiety, and loneliness correlations) justify the integration of digital well-being into health policy frameworks. For technology designers and engineers, the documentation of phubbing's sociotechnical nature provides empirical foundations for designing notification systems, interface features, and digital wellness tools that discourage socially disruptive device use—operationalising ethical design principles. For clinical psychologists and counsellors, the comprehensive mapping of psychopathological correlates (FOMO, loneliness, and relationship dissatisfaction) equips practitioners with diagnostic awareness and identifies clear therapeutic targets. Importantly, by revealing that over 50% of phubbing research originates from just three countries, this study challenges the universalist assumptions underlying current interventions, highlighting the necessity of culturally adapted approaches that respect diverse social norms around technology use and interpersonal attentiveness. This bibliometric synthesis serves as both a scholarly resource and a practical guide for evidence-based decision-making across educational, clinical, technological, and policy domains.

Findings

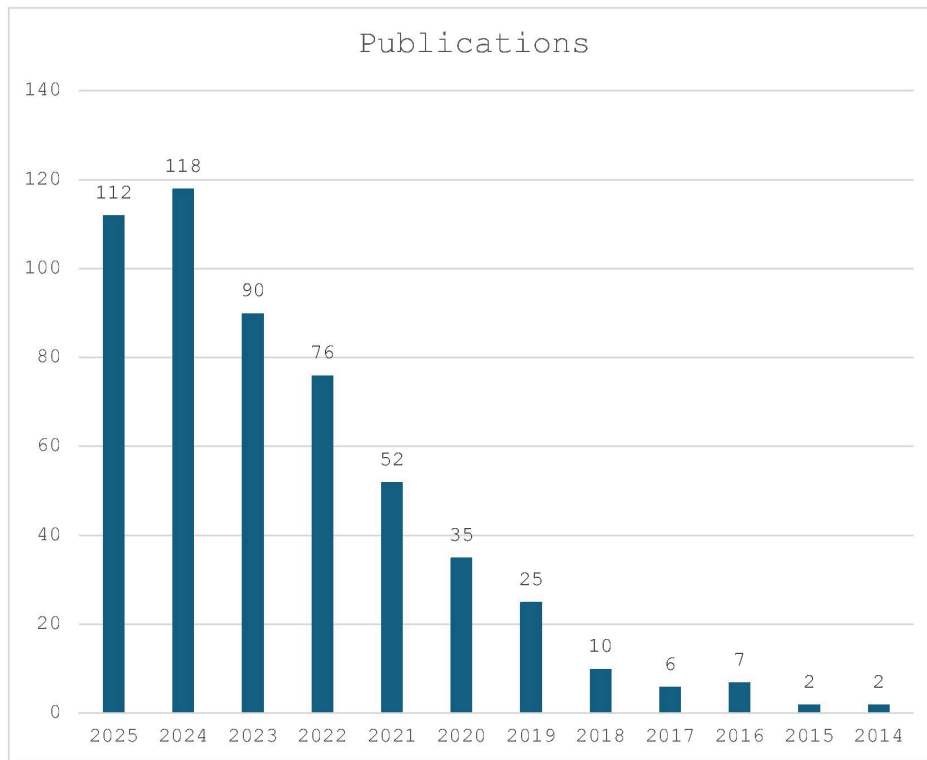
The distribution of publications on phubbing over the years clearly demonstrates the transformation of the topic in the literature through numerical data (Figure 2). The fact that only two studies were published in 2014 and 2015 indicates that the concept was new to the academic field, and this period was exploratory in nature. However, the beginning of an upward trend, albeit with minor fluctuations, from 2016 onward can be interpreted as a sign that the concept began to gain recognition and enter the research agenda. Reaching 10 publications in 2018, 25 in 2019, and 35 in 2020 shows that the visibility of the topic has increased, and this increase has gained considerable momentum with an average growth rate of 58%.

On the other hand, the increase observed after 2021 can be directly attributed to the widespread use of digital devices during the pandemic. Indeed, the number of publications, which was 52 in 2021, rose to 76 in 2022 and 90 in 2023. This rise shows that phubbing is beginning to be discussed not only as an individual behaviour but also in social, familial, and institutional contexts. However, the annual average growth rate falling below 30% after 2020 indicates that the rapid rise in this field has been partially balanced.

2024 is the peak with 118 publications, exceeding the total output between 2014 and 2020. The decline to 112 in 2025 can be interpreted not as a decrease per se but as a process of saturation and consolidation. This is because this level remains above all previous years. Therefore the phubbing literature has evolved from a marginal concept to a rapidly emerging field of research and then to a mature and interdisciplinary structure. However, the relative slowdown in the rate of increase indicates that future research will focus more on qualitative diversity, cross-cultural comparisons, and the development of application-oriented models rather than numerical intensity.

Figure 2

Number of Publications by Year

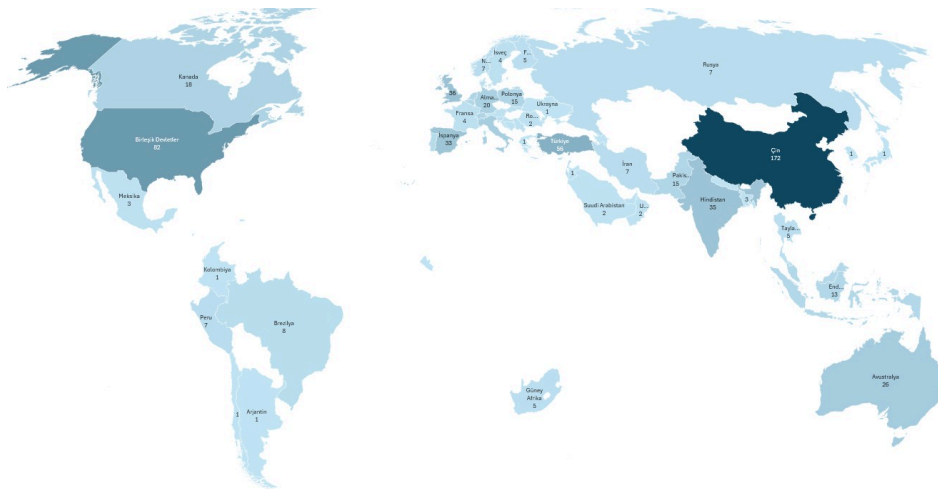


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This temporal evolution pattern corroborates several key observations in the existing literature. Chotpitayasunondh and Douglas (2018) noted that the phubbing concept was still in its infancy within academic discourse, requiring conceptual clarification and empirical validation. The exponential growth observed after 2020 aligns with Field's (2024) assertion that the COVID-19 pandemic fundamentally altered digital device usage patterns, normalising behaviours that were previously considered socially deviant. The 58% average growth rate between 2016 and 2020 reflects what Nuñez and Radtke (2023) characterised as the "paradigm establishment phase" in their systematic meta-analytic review, where theoretical frameworks and measurement instruments underwent standardisation. Furthermore, the relative deceleration after 2024 supports Ortuño-Sierra et al.'s (2024) prediction of a "theoretical saturation phase," where research shifts from quantitative expansion to qualitative deepening and methodological sophistication. This pattern is consistent with typical bibliometric trajectories in emerging technological phenomena, as documented by Donthu et al. (2021), where initial exponential growth gives way to consolidation and interdisciplinary integration.

Figure 3

Number of Publications by Country



for 8.8%. Turkey's high contribution is noteworthy in that it shows that the literature is concentrated in new geographical areas, unlike traditionally productive Western-centred structures.

The United Kingdom contributes at a moderate level with 5.7%, India with 5.5%, and Spain with 5.2%. These countries enable the interdisciplinary and intercultural diversification of the phubbing literature due to their different cultural and academic traditions. Australia's 4.1%, Italy's 3.6%, and Germany's 3.1% contributions also support this diversity. However, the relatively limited output from countries with strong academic infrastructures, such as Germany, Canada (2.8%), and the Netherlands (2.7%), suggests that phubbing does not hold a central position among research priorities.

Looking at the lower ranks, countries such as Israel, Slovenia, Lebanon, and Taiwan each contribute 0.9%, while European countries such as France, Sweden, Denmark, and Croatia have only a 0.6% share. Countries at even lower levels (e.g., Saudi Arabia, Austria, and Romania, 0.3%; Japan, South Korea, Greece, Chile, and similar countries, 0.15%) are marginally represented in the literature.

Therefore, this picture requires a two-sided interpretation. On the one hand, research on phubbing is spreading globally, and many countries are contributing to the literature; on the other hand, more than 55% of the production is carried out by only the top three countries (China, the US, and Turkey), revealing an imbalance in geographical representation in the literature. This imbalance may limit the examination of phubbing as a global phenomenon in different cultural contexts. However, increased research contributions from countries with low production in the coming years will allow the literature to mature within a more inclusive and comparative framework.

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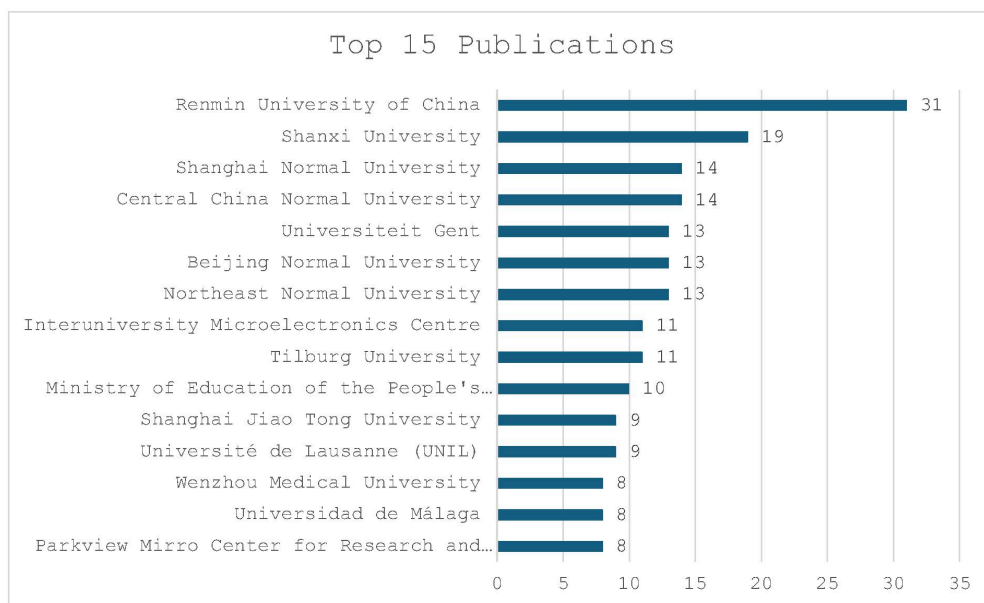
The geographic concentration patterns revealed in this analysis resonate strongly with existing theoretical and empirical observations. China's dominance (27.1%) substantiates Al-Saggaf's (2023)



findings regarding the Asia-Pacific region's unprecedented smartphone penetration rates and the complex interplay between collectivist cultural values and technology-mediated social behaviours. Specifically, Chen et al. (2021) developed the "phubbing contagion hypothesis" from Chinese research contexts demonstrating that cultural norms around social conformity may amplify phubbing transmission patterns. Turkey's substantial contribution (8.8%) validates Alpaslan and Önal's (2024) empirical documentation of high phubbing exposure rates among Turkish adolescents, reflecting broader patterns of intensive digital media consumption in transitional societies. The United States' 12.9% contribution, while significant, appears disproportionately modest given its traditional dominance in psychological research, potentially indicating what Leuppert and Geber (2020) describe as a "cultural blind spot"—wherein Western researchers may underestimate phubbing's social significance due to its normalisation in individualistic contexts. The limited output from established research powerhouses such as Germany (3.1%), France (0.6%), and Japan (0.15%) corroborates Avgustis's (2023) critique that Western European and East Asian scholarship has been slow to recognise phubbing as a legitimate sociological phenomenon rather than merely an etiquette violation. This geographic asymmetry raises critical questions about knowledge production inequalities and the universalisability of research findings across diverse cultural contexts, echoing broader debates in digital sociology about Western-centric theoretical frameworks (Zavalii & Zhalinska, 2024).

Figure 4

Top 15 Universities by Number of Publications



The data in Figure 4 shows that publication output on phubbing is highly concentrated at the university and research institution levels. Institutions in China are particularly prominent. Renmin University of China is the clear leader with 31 publications, followed by Shanxi University (19), Central China Normal University, and Shanghai Normal University (14 publications each). Although this table shows that phubbing research is widespread on a global scale, it reveals that research production exhibits a tendency towards regional concentration. The heavy representation of Chinese universities at the top of the list indicates that this country has developed a strong scientific interest in both digital addiction research and the examination of the sociopsychological effects of social media and smartphone use.

In the European context, the contributions of established research institutions such as Universiteit Gent (13), Tilburg University (11), Université de Lausanne (9), and McGill University (5) are noteworthy. However, it is understood that the contributions of European universities are based more on interdisciplinary approaches and stand out for their collaborations in the fields of psychology, sociology, and communication sciences. In the United States, the contributions of institutions such as Baylor University, Illinois State University, and Fordham University are considered important in terms of methodological diversity, although limited in number.

Turkey is represented in the table noteworthy. The contributions of institutions such as Sakarya University, Ondokuz Mayıs University, Akdeniz University, Artvin Çoruh University, Yıldız Technical University, Niğde Ömer Halisdemir University, Atatürk University, Pamukkale University, Anadolu University, and Dicle University at different levels show that the issue of phubbing is increasingly being brought to the academic agenda in our country. This reflects the growing interest in this topic in Turkey, particularly among the young population, in the context of intensive digital media use and smartphone addiction.

In Figure 4, a centralised structure in the distribution of publication output is evident: Chinese universities take the lead on a global scale, whereas the contribution of Western universities is shaped more by qualitative depth and methodological diversity. This situation indicates that regional research agendas play a complementary role in the literature. The high density of publications in China indicates that the subject is strongly addressed through quantitative research, whereas



the more limited contributions from the West and other countries add different dimensions to the literature through theoretical discussions and critical approaches.

Therefore, there is a distribution in phubbing research that manifests itself as a centre-periphery relationship on a global scale. This distribution reflects both the spatial clustering of scientific production and interdisciplinary methodological differences. In the coming period, it is expected that more comprehensive, cross-cultural, and comparative studies will emerge as these two approaches complement each other.

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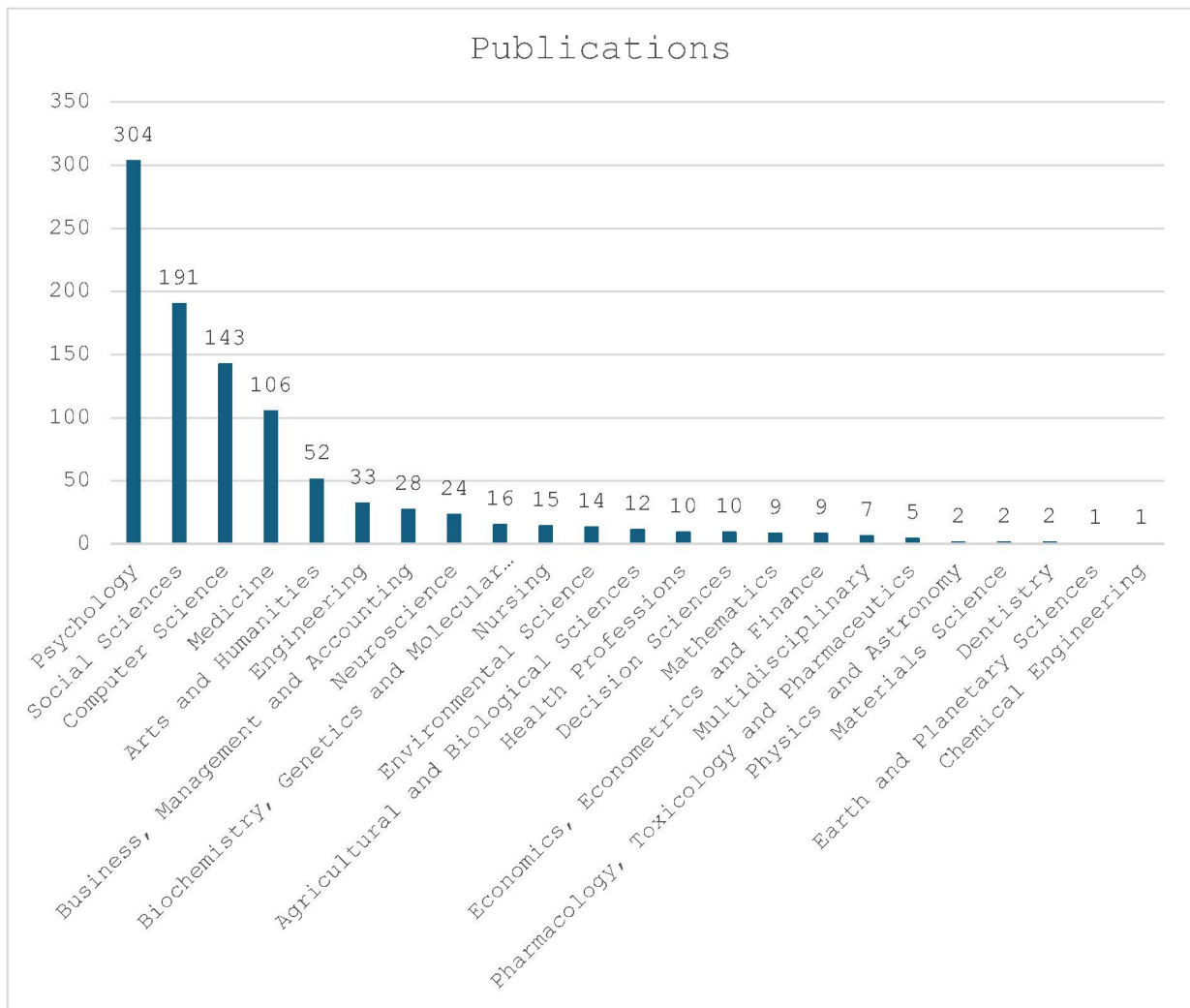
The institutional concentration patterns documented here illuminate several critical dynamics in the global research ecosystem. The dominance of Chinese universities—particularly Renmin University (31 publications, 1,067 citations) and Shaanxi University (19 publications, 722 citations)—reflects what Wu (2022) identifies as China's strategic investment in understanding technology-mediated relationship dynamics, driven by concerns about social cohesion in rapidly digitalising societies. The emphasis of European institutions on collaborative network intensity over sheer output volume exemplifies what Knausenberger et al. (2022) term "quality-oriented research ecosystems," where methodological rigour and theoretical sophistication are prioritised over publication quantity. The presence of multiple Turkish universities in the rankings validates the observation by Cebollero-Salinas et al. (2022) that emerging research hubs in non-Western contexts are increasingly contributing unique cultural perspectives to phubbing scholarship. Notably, Baylor University's exceptional citation impact (1,032 citations from 6 documents, approximately 172 citations per document) demonstrates the transformative influence of pioneering conceptual work, specifically the foundational scale development studies that established phubbing as a measurable construct (Chotpitayasunondh & Douglas, 2018). The modest representation of elite Western institutions suggests that phubbing research has not yet achieved mainstream status within traditional acad-



emic hierarchies, supporting Pesch et al. (2024) argument that the phenomenon is still perceived as a "peripheral" rather than "central" topic in psychological and sociological discourse. This centre-periphery dynamic raises important questions about epistemic justice and the potential for Southern theory perspectives (Isrofin & Munawaroh, 2021) to reshape dominant paradigms in digital behaviour research.

Figure 5

Number of Publication by Dicipline



When examining the distribution by discipline, it is evident that publications on phubbing show a distinct concentration in psychology. The 304 publications in the field of psychology (31.18%) alone provide the largest contribution among all disciplines and reveal that phubbing is primarily addressed in terms of its individual, cognitive, and behavioural dimensions. The social sciences



field, which examines social contexts and relationships, follows with 191 publications (19.59%). The combined contribution of these two fields exceeds 50% (50.77%), indicating that more than half of the literature is shaped by sociopsychological perspectives.

However, it is noteworthy that computer science, which can be seen as directly related to technology and digitalisation, ranks third with 143 publications (14.67%). This indicates that phubbing is increasingly being studied not only as a psychosocial phenomenon but also in the context of digital behaviour, artificial intelligence, mobile technologies, and human-computer interaction. However, the discipline's contribution is still more limited compared to psychology and social sciences, indicating that phubbing has not yet gained sufficient depth in terms of technical and engineering-based approaches.

The medical field ranks fourth with 106 publications (10.87%), revealing that phubbing is also being seriously addressed in clinical dimensions such as health, addiction, neuropsychiatric processes, and digital well-being. In addition, contributions from neuroscience (24), biochemistry-genetics and molecular biology (16), nursing (15), and health professions (10) show that phubbing is increasingly being considered in biological and medical contexts. However, these contributions remain below 7% (6.89%), meaning that the neurobiological foundations of phubbing are still positioned as a secondary research axis.

Another noteworthy point is that phubbing is also beginning to be studied in applied fields such as engineering (33), business and management (28), decision sciences (10), and economics and finance (9). This indicates that the concept is linked to the individual and clinical levels but also to organisational performance, workplace dynamics, and decision-making processes. However, the total contribution of these fields is limited to 8.21%, revealing that phubbing is still an emerging theme in the business world and engineering context.

The interdisciplinary imbalance is particularly striking: the fields of psychology and social sciences alone account for more than half of all production, while the contribution of the natural sciences and engineering fields is less than 5% in total. There is almost marginal contribution in fields such as physics (2), materials science (2), dentistry (2), earth and planetary sciences (1), and chemical engineering (1). This situation shows that phubbing is conceptualised more from the



perspective of human behaviour and social interaction phenomenologically but has not yet entered the research agenda from the perspective of natural sciences.

This distribution clearly shows that interdisciplinary deepening in phubbing research is still limited and that production is concentrated around a few specific areas. The controversial point is that although phubbing is a behaviour based on technology and digitalisation, fields such as computer science and engineering still remain in a secondary position. If the concept is to play a central role in understanding the social transformation of the digital age, more comprehensive research beyond psychosocial perspectives, encompassing technical, biological, and organisational dimensions, appears inevitable.

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The disciplinary distribution patterns revealed in this analysis have significant implications for understanding the epistemological boundaries of phubbing research. The overwhelming dominance of psychology (31.18%) and social sciences (19.59%)—collectively representing over 50% of all publications—validates Knausenberger et al.'s (2022) observation that phubbing is predominantly conceptualised through the lens of interpersonal dynamics, fundamental psychological needs, and social exclusion mechanisms. This psychosocial hegemony reflects what Field (2024) describes as the "individualisation bias" in digital behaviour research, where structural and technological determinants are subordinated to psychological explanations. The medical field's substantial contribution (10.87%) corroborates Wu's (2022) and Al-Saggaf's (2023) documentation of phubbing's associations with clinical outcomes, including depression, anxiety, and relational distress, suggesting that the phenomenon is increasingly recognised as a public health concern rather than merely a social etiquette issue. However, the limited engagement from computer science (14.67%) despite



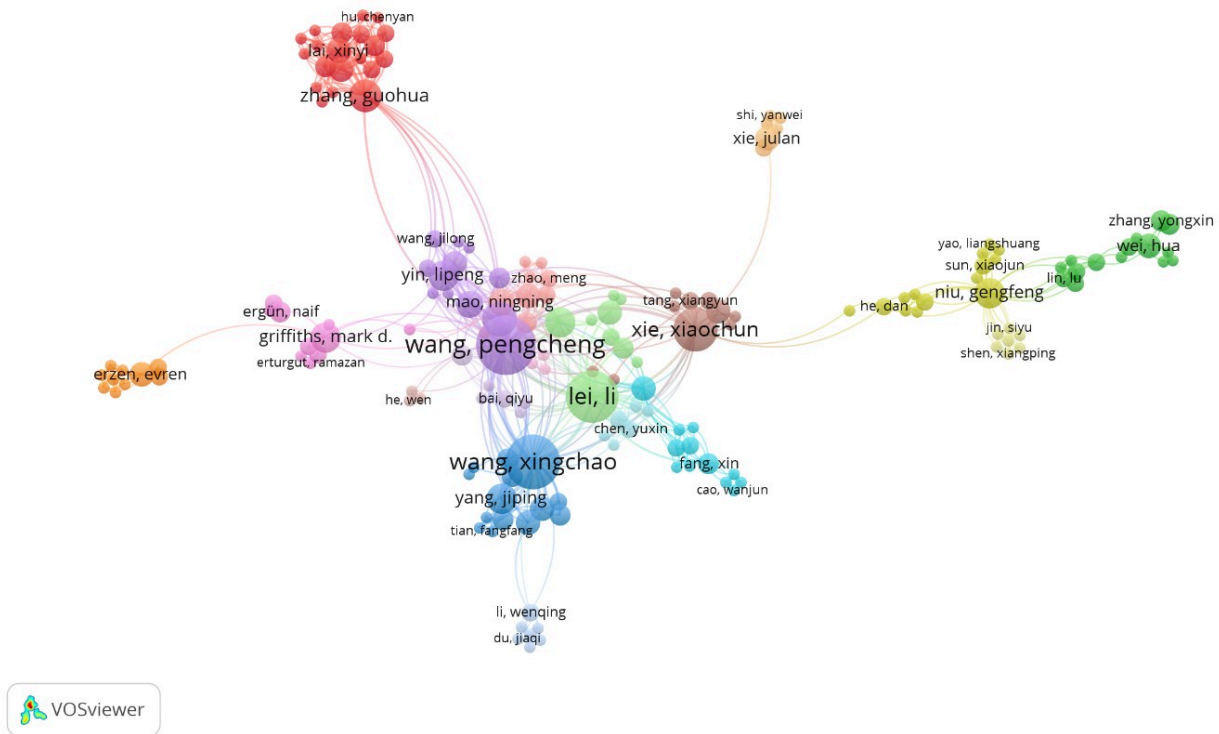
phubbing's technological foundations supports Avgustis's (2023) critique that human-computer interaction scholarship has failed to adequately theorise the sociotechnical assemblages that enable and perpetuate phubbing behaviours. The near absence of engineering perspectives contradicts the calls by Baranova et al. (2022) for design-oriented interventions that could architecturally discourage disruptive smartphone use. The minimal contributions from business and management fields (8.21% collectively) highlight a significant gap, given Musdalifah and Qamariah's (2023) findings on phubbing's harmful effects in organisational and educational settings. This disciplinary imbalance indicates that phubbing research remains trapped within what Yahya et al. (2024) term "methodological silos," limiting the development of truly integrative theoretical frameworks. The underrepresentation of neuroscience (2.46%) is particularly problematic given the neurobiological substrates of compulsive smartphone use, indicating that the field has not yet fully embraced biopsychosocial models of digital addiction, as advocated by recent neuropsychiatric research.

Bibliometric Analysis of Phubbing Literature

Increasing academic studies in the field of phubbing have led to the increasingly widespread use of bibliometric analyses to reveal research trends and development dynamics in this field. Donthu et al. (2021) emphasise that bibliometric methods are widely used for purposes such as evaluating article and journal performance, mapping academic collaboration networks, identifying emerging research trends, and explaining the intellectual structure of a particular field. In this study, Vosviewer software was used to examine academic production on the topic of phubbing. A comprehensive analysis was conducted based on inter-author collaboration networks, keyword matches, article titles, and abstracts.

Inter-Author Collaboration

Inter-author collaboration analyses were conducted at the author-author, author-institution, and author-country levels using Vosviewer. In the network structures created, researchers, institutions, and countries become interconnected based on the number of publications they produce together, revealing the structure of scientific collaboration and knowledge sharing in the field (Van Eck, N.J., & Waltman, 2014).

Figure 6*Collaboration Among Authors*

When examining phubbing research, it is evident that author contributions are distributed unevenly and are concentrated around certain names (Figure 6). David and Meredith E., in particular, have not only been highly productive with nine publications but have also achieved the highest impact in the field with over 1,100 citations. David's work focuses particularly on experimental design and scale development; he has systematically modelled the relationship between social interaction and digital addiction, establishing a methodological standard in the literature. Similarly, Błachnio, Agata P. is one of the core authors in the field in terms of productivity and visibility, with eight publications and 385 citations. Błachnio's work involves psychometric analysis and survey-based data collection methodologies, demonstrating how the phenomenon of phubbing emerges in different contexts through cross-cultural comparisons.

On the other hand, while Al-Saggaf, Yeslam stands out as the author with the highest production volume with 11 publications, he has only received 269 citations. This situation shows that the balance between quantity and quality in phubbing research is debatable, and that producing a large number

of publications does not always correspond to high impact. Al-Saggaf's work has focused particularly on online social media use and the corporate context; cross-sectional and correlational analyses have been used more as a method.

The analysis of author contributions shows that individual studies can also achieve high visibility in the literature. For example, Babadağ, Burcu; Bostan, Nalan; Culha, İlkey; and Duru, Pınar, despite producing only one publication each, have each received 293 citations, placing them among the most cited authors in the field. These authors' studies have generally focused on experimental manipulation and the validity of measurement tools; thus, even some strong studies have had a wide impact in the literature and influenced research orientations.

Furthermore, strategic positioning in collaboration networks strengthens methodological diversity. For example, Blanca, María J. stands out not only for her production volume, with five publications and 104 citations, but also for the adaptation of experimental designs across different cultural contexts. Similarly, Chen, Zhuo has assumed a pivotal role in the literature through strong collaborative ties, despite a relatively small number of publications. His work focuses particularly on the quantitative analysis of online behaviour and social interaction models.

Overall, the phubbing literature exhibits a clear imbalance between “a few strong centres” and “a large number of peripheral contributions.” Core authors set the methodological standards and experimental frameworks in the field, whereas numerous researchers are present in the field with only one or two studies but are unable to establish a long-term research trajectory that would systematically shape the literature. This situation highlights that the field is still young and in its formative stages and that a sustainable research ecosystem must be established in the future through more comprehensive experimental designs, cross-cultural comparisons, and longitudinal data sets.

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a sustainable research ecosystem must be established in the future through more comprehensive experimental designs, cross-cultural comparisons, and longitudinal data sets.

The collaboration network structure illuminates critical power dynamics in knowledge production. The exceptional impact of Roberts and David's work (9 publications, 1,100+ citations) stems directly from their seminal scale development studies, which established the psychometric foundation for measuring phubbing behaviours—a methodological contribution that Ortuño-Sierra et al. (2024) recently refined with the Spanish short-form PS-6 scale. Błachnio's cross-cultural comparative methodology (8 publications, 385 citations) operationalises Leuppert and Geber's (2020) theoretical arguments about the cultural specificity of phubbing norms, demonstrating that behaviours considered deviant in some contexts may be normative in others. The quantity-quality paradox exemplified by Al-Saggaf (11 publications, 269 citations) versus single-publication high-impact authors (e.g., Babadağ et al., 293 citations from 1 publication) reflects broader debates in bibliometrics about research evaluation metrics (Donthu et al., 2021). The latter's influence derives from experimental manipulation designs that causally demonstrated phubbing's effects on trust and relational quality—addressing the methodological limitation that Chen et al. (2021) identified in predominantly correlational research. The network centrality of authors like Chen and Zhuo, despite modest publication counts, illustrates what Pesch et al. (2024) term "strategic positioning"—wherein scholars bridge disconnected research communities, facilitating knowledge transfer across geographic and disciplinary boundaries. The prevalence of peripheral researchers with minimal sustained engagement suggests that phubbing has not yet developed the "invisible colleges" characteristic of mature research fields, supporting Field's (2024) assessment that the area remains in a pre-paradigmatic stage. This fragmentation may explain the conceptual inconsistencies and measurement heterogeneity that Nuñez and Radtke (2023) in their meta-analysis, where effect sizes varied dramatically across studies due to operational definition differences. The absence of strong Global South representation in core authorship networks—despite substantial production volume from countries like China and Turkey—raises questions about epistemic authority and the potential marginalisation of non-Western theoretical perspectives (Zavaliı & Zhalinska, 2024).



The standout European countries are the Netherlands (18 publications, 1,059 citations, 56 links), Italy (23 publications, 602 citations, 71 links), and Portugal (11 publications, 214 citations, 65 links), which play a critical role in both intra-European and international collaborations. Belgium (13 publications, 546 citations, 49 links) and Israel (5 publications, 47 citations, 50 links) also hold influential positions in the literature due to their high number of connections in the collaboration network, despite their relatively lower production volume.

In Asia, India (35 publications, 437 citations, 63 links) and Malaysia (13 publications, 47 citations, 8 links) stand out, while countries such as Japan and Azerbaijan contribute to the field with individual publications but have limited visibility. In Latin America, Brazil (10 publications, 50 citations, 56 links) and Argentina (1 publication, 6 citations, 1 link) stand out; these countries represent the potential for regional collaboration.

The analysis reveals that the global phubbing literature is concentrated around certain centres, with some countries shaping the literature through high production volume and visibility, while others contribute more locally with limited visibility. Total link strength values are a critical indicator for measuring the intensity of international cooperation and the network of interactions between countries. In this context, the US, UK, China, Italy, and Turkey play a central role in the literature in terms of the collaboration network.

Future research should aim to understand the phenomenon of hubbing holistically on a global scale through more cross-cultural comparative studies, international collaborations, and longitudinal data sets.

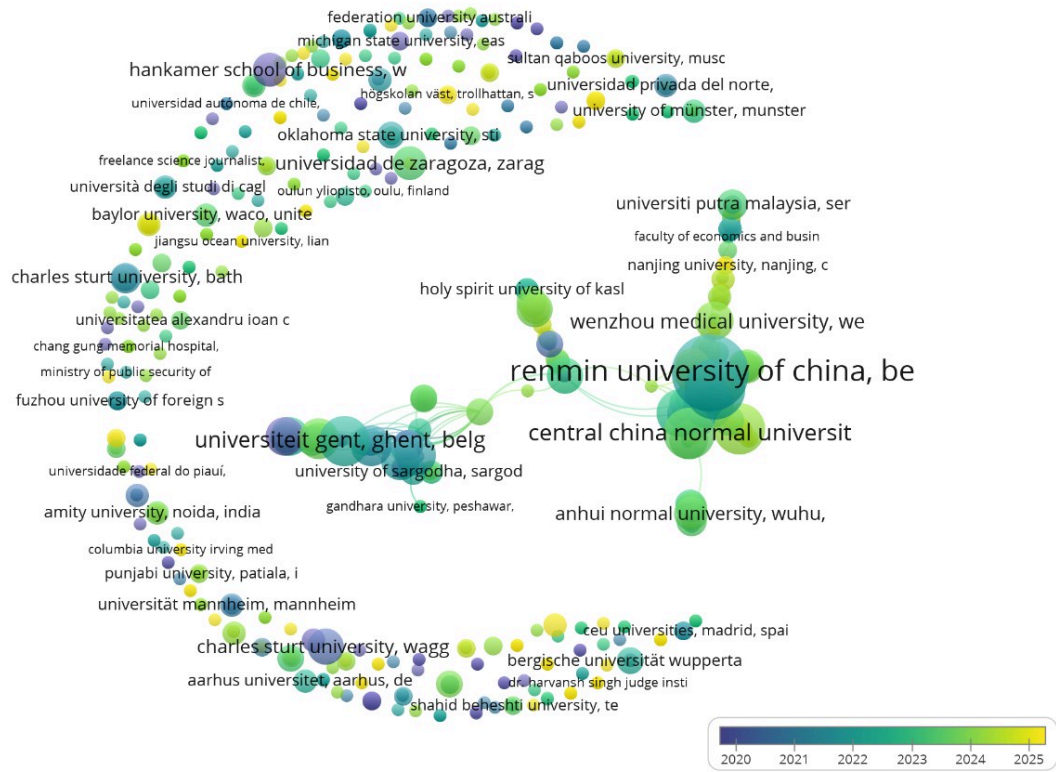
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The international collaboration network reveals both opportunities and constraints in global collaboration research. The United States' central position (80 publications, 2,646 citations, and 93 link strength) reflects its traditional role as a knowledge broker, connecting disparate research communities through collaborative partnerships—a function that Chotpitayasunondh and Douglas (2018) leveraged in disseminating the original phubbing conceptualisation globally. China's high

production but moderate link strength (174 publications, 64 links) suggests relative insularity, potentially limiting the cross-cultural validation of findings—a concern raised by Al-Saggaf (2023) regarding the generalizability of collectivist culture-based findings to individualistic contexts. The United Kingdom's strong network position (36 publications, 85 links) exemplifies European research integration strategies, facilitating the methodological pluralism that Avgustis (2023) advocates for understanding phubbing's sociotechnical dimensions. Turkey's strategic positioning (61 publications, 65 links) bridges European and Asian research communities, enabling the cultural comparative studies that Alpaslan and Önal (2024) identify as critical for understanding regional variations in adolescent phubbing behaviours. The Netherlands' disproportionate influence (18 publications, 1,059 citations, 56 links) stems from Tilburg University's pioneering work on phubbing's relationship dynamics, which established theoretical frameworks that Knausenberger et al. (2022) later extended to examine ostracism and fundamental need satisfaction. The limited collaboration from traditionally productive nations like Japan, South Korea, and Germany contradicts expectations given their technological advancement and strong academic infrastructures, suggesting that cultural factors may influence research agenda-setting—potentially supporting Leuppert and Geber's (2020) hypothesis that phubbing is less socially problematised in certain cultural contexts. Brazil's modest output but strong link strength (10 publications, 56 links) indicates active participation in international consortia, potentially addressing the Latin American perspective gap that Cebollero-Salinas et al. (2022) identified in predominantly Northern-centric research. The near-absence of African representation constitutes a critical knowledge gap, given the continent's rapid mobile technology adoption and unique sociocultural contexts—an oversight that Yahya et al. (2024) highlight as limiting the universality of phubbing theories. These collaboration patterns indicate that future research must deliberately cultivate South-South partnerships and decolonise knowledge production practices to develop genuinely global understandings of phubbing phenomena.

Figure 8

Distribution of Publications by University and Citation Impac



Analysis of global research productivity and collaboration networks reveals distinct geographical concentrations and strategic differentiation among academic institutions (Figure 8).

In terms of geographical distribution, the Asia-Pacific region, particularly China-based institutions, exhibits remarkable research productivity. Shaanxi University's 19 publications and 722 citations and Renmin University of China's 31 publications and 1,067 citations demonstrate the tangible results of China's strategic investments in higher education and research infrastructure over the past decade. These findings highlight the transformative impact of state-supported research policies on institutional outputs.

European institutions, on the other hand, have adopted a different strategy, focusing on the intensity of international collaboration rather than the volume of research. The high total connection power scores of institutions in the Netherlands, Germany, and the United Kingdom reflect the impact of the European Union's research policies, which encourage collaboration. Tilburg University's

achievement of 365 total connection power points for 9 documents demonstrates its capacity for intensive international networking despite its moderate output.

Collaborative network dynamics reveal centralisation trends in the global academic ecosystem. Ghent University's 546 connection strength points across 13 documents indicate it functions as a hub in European research networks. The 569 connection power points at the University of Illinois prove the intensity of transatlantic academic partnerships and point to the existence of American-European research corridors.

Citation impact and research quality metrics reveal significant differences in institutional strategies. Baylor University's Hankamer School of Business, with 1,032 citations from 6 documents, achieving a citation rate of approximately 172 per document, emphasises the critical importance of research quality and field selection. This performance indicates that pioneering research is being produced in the fields of business and management or that systematic reviews have a high impact.

However, the existence of institutions with high publication productivity but modest citation performance highlights the quantity-quality dilemma. This situation may reflect either that the publications have not yet had sufficient time to accumulate citations or that niche research areas have limited citation potential.

Regional specialisation patterns reveal the division of labour character of the global research ecosystem. The 8% representation of Turkish institutions in the dataset and the majority's medium-high citation performance indicate a growth trend in Turkey's research capacity. The strong collaboration patterns of Lebanese and Iranian institutions, on the other hand, indicate the development of trans-border academic networks in the Middle East region and possibly the formation of regional research consortia. These findings offer important clues about the democratisation process of global research production and the transformation of traditional centre-periphery dynamics.

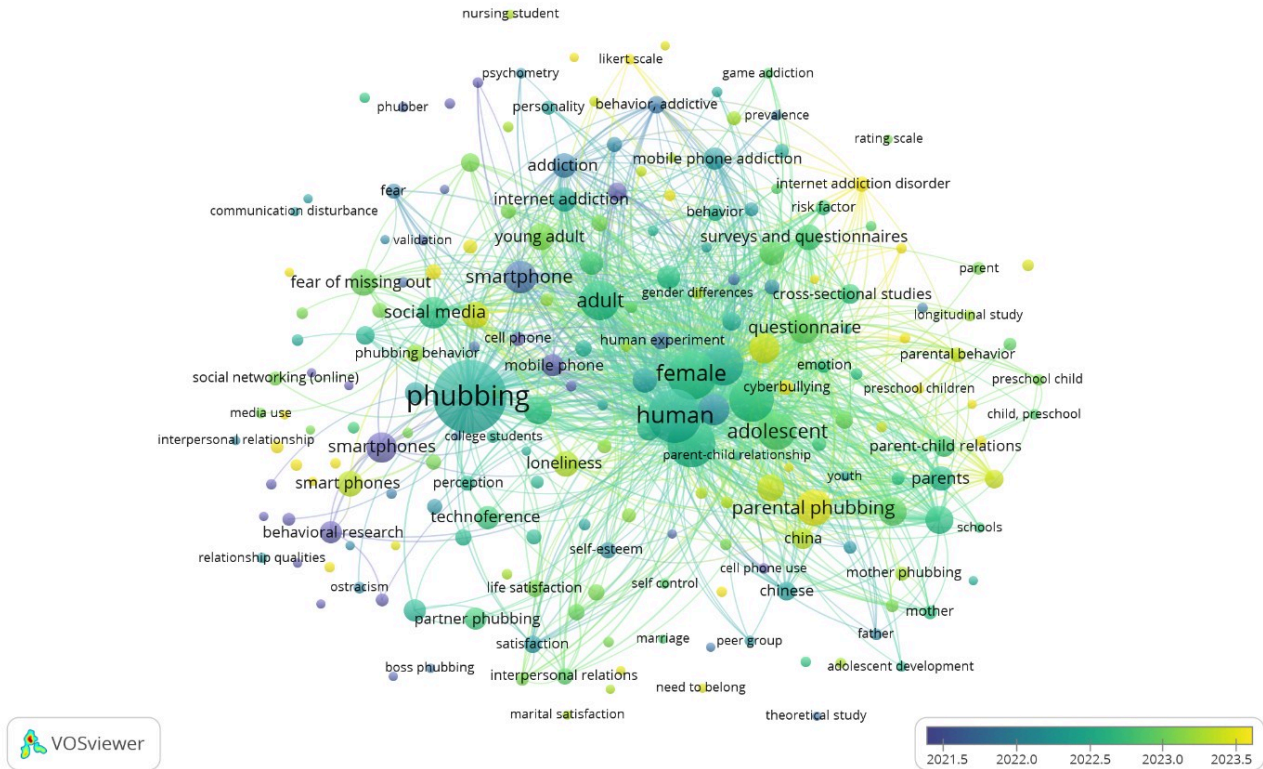
Keyword Matches

Keywords used in academic articles provide researchers with important information about the main focus points of the research, related subject areas, methods used, and conceptual content addressed. These keywords can be derived from the publication title and abstract, or they can be



obtained from keyword lists specifically determined by the author for the article (Van Eck, N.J and Waltman, 2014).

Figure 9
Key topic approaches



The concept of phubbing, with a frequency of 289 and a connection strength of 1,817, forms the epistemological core of the research field. High co-occurrence values of the terms “smartphone” and “smartphones” confirm the decisive role of technological tools in behavioral pathologies. In the context of digital addiction, the strong network positions of the concepts “internet addiction,” “mobile phone addiction,” and “smartphone addiction” indicate that the research field addresses the digital addiction spectrum from a central perspective. These findings reveal that the technological and behavioural dimensions of phubbing research form an inseparable whole.

Developmental and demographic stratification analyses reveal critical differences in the phenomenon along the axes of age and gender. The dominance of the terms “adolescent” and “young adult” indicates that digital behaviour disorders are concentrated in critical developmental periods, while the high connectivity of the “adult” category emphasises the importance of a lifelong

perspective. Along the gender axis, the more central position of women's experiences in the research network indicates methodological sophistication and demographic sensitivity. Similarly, conceptual connections within the context of family and romantic relationships reveal that the phubbing phenomenon has a systemic and relational dimension; specifically, the co-occurrence values of the concepts "parental phubbing" and "partner phubbing" indicate that digital interventions in family and romantic relationships are systematically examined.

The psychological and methodological foundation demonstrates the theoretical depth and statistical sophistication of the research field. Psychological constructs such as "FOMO," "loneliness," "depression," and 'anxiety' address the mental health dimension of digital behaviours from a central perspective; concepts such as "cross-sectional study," "major clinical study," "structural equation modelling," and "confirmatory factor analysis" demonstrate methodological diversity and quantitative analytical depth. Disciplinary convergence is supported by contributions from psychology, social psychology, human-computer interaction, and communication sciences, while geographical and cultural dimensions emphasise the localised and culturally specific characteristics of the phenomenon. This holistic structure enables a deep understanding of the theoretical and applied aspects of the field by highly integrating the epistemological, psychological, methodological, and cultural dimensions of phubbing research.

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The keyword co-occurrence network validates and extends several theoretical propositions in the existing literature. The central position of "phubbing" (289 occurrences, 1,817 link strength) alongside "smartphone" variants confirms Field's (2024) argument that technological affordances are inextricably linked to behavioural manifestations, challenging purely psychological explanations. The strong clustering of addiction-related terms—"internet addiction," "mobile phone addiction," and "smartphone addiction"—empirically substantiates Wu's (2022) conceptualisation of phubbing as situated within a broader digital dependency spectrum rather than constituting an isolated behavioural phenomenon. The prominence of developmental categories ("adolescent," "young adult")



alongside psychological distress indicators ("depression," "anxiety," and "loneliness") corroborates Alpaslan and Önal's (2024) findings that critical developmental periods intersect with vulnerability to technology-mediated social disruption. Notably, the visibility of the gender dimension—with "female" exhibiting substantial co-occurrence—validates Cebollero-Salinas et al. (2022) observation that phubbing dynamics are gendered, potentially reflecting differential socialisation patterns regarding relational attentiveness and digital media use. The relational context keywords—"parental phubbing," "partner phubbing"—operationalize Chen et al.'s (2021) social contagion hypothesis, demonstrating that phubbing transmission occurs across multiple relationship domains. The methodological sophistication evidenced by terms like "structural equation modelling" and "confirmatory factor analysis" reflects the field's evolution towards rigorous quantitative assessment, addressing earlier critiques about measurement validity (Ortuño-Sierra et al., 2024). The centrality of the FOMO construct empirically confirms Yahya et al.'s (2024) systematic review findings that fear of missing out mediates the relationship between social media use and phubbing behaviours. The presence of "cross-sectional study" as a dominant methodological descriptor highlights a critical limitation that Nuñez and Radtke (2023) identified in their meta-analysis—the predominance of correlational designs that constrain causal inference. The integration of geographic and cultural keywords indicates growing recognition of phubbing's cultural specificity, responding to Leuppert and Geber's (2020) critique that early research inappropriately universalised Western norms. The convergence of psychological, sociological, and human-computer interaction terminologies exemplifies the interdisciplinary synthesis that Avgustis (2023) argues is essential for understanding phubbing as a sociotechnical phenomenon rather than merely a psychological disorder or social etiquette violation.



phubbing” (10; TLS: 94) reveal that phubbing behaviours associated with different actors in a social context are treated as separate dimensions in the literature.

2. Addiction and problematic behaviours: Terms such as “addiction” (34; TLS: 772), “internet addiction” (34; TLS: 756), and “mobile phone addiction” (28; TLS: 653) show that addiction phenomena related to the use of digital technologies are at the centre of research. These findings confirm that psychological problems associated with social media and mobile device use are gaining increasing importance in academic research.
3. Adolescent and adult psychosocial development: Terms such as “adolescent” (81; TLS: 1807), “adolescent behaviour” (17; TLS: 512), and “adolescents” (39; TLS: 395) show that studies focusing on adolescence occupy a strong position in the literature. Similarly, the keywords “adult” (85; TLS: 2083) and “human” (155; TLS: 3412) point to research examining the psychosocial processes of adults. Furthermore, psychological health-focused terms such as “depression” (34; TLS: 667), ‘anxiety’ (29; TLS: 645), and “loneliness” (37; TLS: 431) show that individuals' mental states in the context of digital use are an important dimension of the research.
4. Parenting and social relationships: “Parental parenting” (71; TLS: 747), “child-parent relation” (43; TLS: 1107), and “parenting” (19; TLS: 415) reveal that the impact of parenting behaviours on children’s social and psychological development is being intensively studied academically. This context offers important evidence on how family interactions are influenced by digital media use.
5. Methodological diversity and scale usage: Terms such as “Questionnaire” (52; TLS: 1344), “cross-sectional study” (34; TLS: 864), “behavioural addiction” (3; TLS: 76), and “self-control” (6; TLS: 144) show that the studies are mostly based on quantitative methods and that behavioural and addiction phenomena are evaluated with psychometric measurements. Furthermore, keywords such as “longitudinal study” (8; TLS: 221) and “experimental study” (3; TLS: 56) indicate that different research designs are also present in the literature.

In conclusion, the table reveals the research intensity in the literature focusing on the effects of digital addiction and phubbing behaviours in individual, social, and parenting contexts. The high frequency of keyword connections indicates that studies examining the effects of digital behaviours

on adolescent and adult psychosocial development and parent-child relationships occupy a central position in the literature. These findings serve as a guide for future research in terms of conceptual focus and methodological diversity.

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The keyword frequency and co-occurrence patterns provide empirical validation for several key theoretical developments in phubbing research. The dominance of addiction-related terminology—"addiction" (34 occurrences, 772 TLS), "internet addiction" (34, 756 TLS), and "mobile phone addiction" (28, 653 TLS)—confirms Isrofin and Munawaroh's (2021) argument that phubbing cannot be understood in isolation from broader patterns of digital dependency and compromised self-control. The strong representation of parenting dimensions—"parental phubbing" (71, 747 TLS), "child-parent relation" (43, 1,107 TLS)—substantiates Baranova et al. (2022) findings that intergenerational technology-mediated disconnection has profound implications for child development and family systems. The adolescent focus—"adolescent" (81, 1,807 TLS), "adolescent behaviour" (17, 512 TLS)—reflects what Musdalifah and Qamariah (2023) identified as a critical developmental vulnerability period where peer norms and digital identity formation intersect. The prominence of psychological distress indicators—"depression" (34, 667 TLS), "anxiety" (29, 645 TLS), "loneliness" (37, 431 TLS)—empirically supports Knausenberger et al. (2022) findings that phubbing induces ostracism-like psychological states, threatening fundamental needs for belonging and social connection. The methodological keywords—"questionnaire" (52, 1,344 TLS), "cross-sectional study" (34, 864 TLS)—while demonstrating the field's quantitative sophistication also highlight the limitation that Pesch et al. (2024) critique: the relative absence of experimental and longitudinal designs that could establish causal mechanisms and developmental trajectories. The presence of the self-control keyword (6 occurrences, 144 TLS) operationalises the self-regulation failure hypothesis, suggesting that phubbing represents what Al-Saggaf (2023) terms a "volitional deficit" rather than merely a



normative violation. The modest representation of longitudinal methodologies (8 occurrences, 221 TLS) underscores a critical gap that Field (2024) identified—the lack of prospective studies tracking how phubbing behaviours and their consequences evolve over time. The gender representation in keywords aligns with Cebollero-Salinas et al. (2022) observation that phubbing research has increasingly attended to sex and gender differences, potentially reflecting differential social expectations regarding relational attentiveness. The partner phubbing dimension (28 occurrences, 180 TLS) validates Wu's (2022) work on romantic relationship disruption, suggesting that intimate partnerships constitute a distinct context wherein phubbing's effects may be particularly consequential. The behavioural addiction terminology (3 occurrences, 76 TLS) indicates an emerging recognition of phubbing's potential classification within behavioural addiction frameworks, though Zavalii and Zhalinska (2024) caution against overly pathologizing what may partly reflect evolving social norms. These keyword patterns collectively indicate that phubbing research is maturing towards a biopsychosocial model that integrates individual psychological vulnerabilities, relational contexts, and broader sociocultural transformations—though significant methodological and theoretical development remains necessary.

Conclusion and Recommendations

This comprehensive bibliometric analysis demonstrates that the position of the phubbing phenomenon in academic literature has evolved from a marginal behavioural anomaly to a critical analytical concept for understanding the social dynamics of the digital age during the period 2014-2025. The 537 publications analysed reveal that this field has undergone a significant maturation process in terms of both quantitative growth and conceptual sophistication.

Unique Contributions to Educational Sciences: This study makes several distinctive contributions specifically to the field of educational sciences that warrant explicit recognition. First, it provides the first comprehensive epistemological mapping of phubbing research, revealing that educational contexts have been systematically underexplored despite documented evidence of phubbing's detrimental effects on learning outcomes (Baranova et al., 2022; Musdalifah & Qamariah, 2023). The bibliometric analysis demonstrates that only a small fraction of phubbing research (less than 15%) explicitly addresses pedagogical implications, representing a critical gap given that adolescents



and young adults—the primary populations in educational institutions—constitute the demographic most vulnerable to phubbing behaviours. Second, by documenting the geographic concentration of research in China, the US, and Turkey, this study reveals that educational interventions and policies are disproportionately informed by findings from specific cultural contexts, potentially limiting their effectiveness when applied in diverse educational settings globally. This finding has direct implications for comparative education scholarship and cross-cultural adaptation of digital citizenship curricula. Third, the identification of methodological limitations—particularly the predominance of cross-sectional designs and quantitative approaches—suggests that educational research would benefit significantly from longitudinal studies tracking how phubbing behaviours evolve across educational transitions (elementary to secondary, secondary to tertiary) and qualitative investigations exploring students' lived experiences of phubbing in learning environments. Fourth, the demonstration that parental hubbing research (71 occurrences, 747 TLS in keyword analysis) has emerged as a major thematic cluster provides theoretical foundations for parent education programmes and family-school partnership initiatives aimed at creating consistent expectations for device use across home and school contexts. The documented association between phubbing and psychological distress indicators (depression, anxiety, and loneliness) has particular relevance for school counselling services and mental health support systems within educational institutions. Finally, by revealing disciplinary silos—with psychology and social sciences dominating while education-specific scholarship remains peripheral—this study identifies the urgent need for educational technology researchers to claim intellectual ownership of the phubbing phenomenon by developing pedagogically grounded theoretical frameworks and intervention strategies tailored specifically to teaching-learning contexts rather than merely importing psychological models. These contributions position this bibliometric analysis as a foundational resource for educational researchers, curriculum developers, school administrators, and teacher educators seeking to understand and address technology-mediated social disruption in learning environments.

Geographical Asymmetries and Academic Hegemony: The fact that more than 55% of the literature was produced by only three countries (China, the US, and Turkey) highlights structural inequalities in global knowledge production. China's 27.1% dominance signals the emergence of new hegemonic



centres in digital behaviour research, whereas Turkey's 8.8% contribution bears witness to the transformation of traditional centre-periphery dynamics.

Interdisciplinary Hybridisation: The dominance of psychology (31.18%) and social sciences (19.59%) shows that phubbing is predominantly conceptualised as a psychosocial phenomenon. However, the 14.67% contribution of computer science reveals that the field is being enriched by the technology-human interaction perspective. However, the limited representation of engineering and natural sciences (less than 5%) indicates that the interdisciplinary potential has not yet been fully realised.

Conceptual Ecosystem and Theoretical Crystallisation: Keyword analyses show that the literature is structured around three main thematic clusters: “digital addiction spectrum,” “developmental psychopathology,” and “family interaction dynamics.” This crystallisation indicates that the epistemological boundaries of the field have become clearer and theoretical frameworks have matured.

Methodological Sophistication: The fact that the vast majority of studies rely on quantitative methodologies and the widespread use of advanced statistical techniques, such as structural equation modelling and confirmatory factor analysis, indicates that the field has reached a sophisticated methodological level.

Recommendations for Researchers:

1. **Cross-cultural Comparative Studies:** To balance the geographical asymmetry of the existing literature, it is critical to design comparative studies covering African, Latin American, and Central Asian countries.
2. **Longitudinal cohort studies:** Given the predominance of cross-sectional designs, longitudinal research tracking the developmental trajectory of phubbing behaviour should be prioritised.
3. **Mixed Method Designs:** To counterbalance the hegemony of quantitative research, developing mixed methodology designs incorporating ethnographic, phenomenological, and critical discourse analyses is recommended.



4. **Neuroscience Integration:** Researching the neural substrates of phubbing through studies supported by fMRI, EEG, and neurophysiological measurements will increase the theoretical depth of the field.

Recommendations for Policymakers:

1. **Digital Well-Being Strategies:** It is recommended that the findings of this literature be referenced in the development of evidence-based digital health policies.
2. **Curriculum Reform:** The social and psychological effects of phubbing must be systematically addressed in digital literacy programmes.
3. **Public Health Interventions:** It is critical to design awareness campaigns, particularly regarding the effects of parental bullying on child development.

Recommendations for Educational Practitioners and Institutions:

1. **Curriculum Integration:** Incorporate evidence-based digital citizenship education that explicitly addresses phubbing's social and psychological consequences, drawing on the documented correlations with loneliness, depression, and relationship disruption identified in this review.
2. **Teacher Professional Development:** Design training programmes that equip educators with strategies for managing classroom phubbing, recognising that traditional prohibitions may be ineffective given the normalisation of device use among digital native generations (Alpaslan & Önal, 2024).
3. **School-Wide Policies:** Develop institutional guidelines that balance educational technology integration with protection against socially disruptive device use, informed by the cultural specificity of phubbing norms revealed in cross-national comparisons.
4. **Parent Education Programmes:** Implement evidence-based workshops addressing parental parenting, given its documented effects on parent-child relationships and potential modelling of problematic behaviours for adolescents.

5. **School Counselling Services:** Train counsellors to recognise phubbing as both a potential indicator of underlying psychological distress (given associations with FOMO, anxiety, and depression) and as a contributor to social difficulties, enabling early intervention.
6. **Learning Environment Design:** Create educational spaces that architecturally discourage phubbing—such as device-free discussion zones—while providing legitimate opportunities for device use and acknowledging students' needs for digital connectivity.
7. **Assessment of Learning Outcomes:** Conduct institutional research examining relationships between phubbing behaviours and academic performance, student engagement, and peer relationship quality to establish evidence-based rationales for intervention.
8. **Collaborative Learning Protocols:** Develop pedagogical strategies that harness peer influence, given the documented "phubbing contagion" effects (Chen et al., 2021), by establishing group norms that prioritise face-to-face engagement during collaborative activities.

Recommendations for Academic Institutions:

1. **Interdisciplinary Research Centres:** It is recommended to establish research centres that combine the fields of psychology, sociology, computer science, and neuroscience.
2. **International Collaboration Programmes:** Academic partnership programmes with developing countries should be developed to address geographical imbalances.
3. **Methodological Diversification:** Institutional policies should be developed to strengthen qualitative research methodologies and encourage mixed-method designs.

Future Research Agendas:

1. **Hybrid sociality theory:** Developing theoretical frameworks to conceptualise social situations where physical and digital interactions are experienced simultaneously.
2. **Post-Pandemic Phubbing:** Systematically examining the long-term effects of post-COVID-19 digital behaviour changes.
3. **Artificial intelligence and phubbing:** Conducting a critical analysis of the effects of algorithm-driven notification systems on phubbing behaviours.



4. Digital Minimalism Interventions: Designing evidence-based intervention programmes aimed at reducing phubbing behaviour and testing their effectiveness.
5. Educational context-specific research: Conducting systematic investigations of phubbing in diverse educational settings (K-12, higher education, and vocational training) to understand how institutional norms, pedagogical approaches, and learning modalities mediate phubbing behaviours and their consequences for academic engagement and achievement.
6. Parental Phubbing Longitudinal Studies: This study implements prospective cohort studies tracking how parental phubbing during early childhood affects children's socio-emotional development, attachment security, and later technology use patterns, addressing the critical gap identified in this review regarding developmental trajectories.
7. Intervention Effectiveness Trials: Conducting randomised controlled trials of theory-driven interventions (cognitive-behavioural, mindfulness-based, digital literacy programmes) targeting phubbing reduction, with rigorous measurement of both behavioural change and psychological/relational outcomes.
8. Cultural adaptation research: Developing culturally adapted conceptual frameworks and measurement instruments that account for diverse social norms regarding interpersonal attentiveness, collectivism-individualism dimensions, and technology-mediated communication preferences across Global South contexts.
9. Qualitative Phenomenological Studies: Employ interpretive methodologies to explore lived experiences of being dubbed and engaging in phubbing, capturing nuances of meaning-making, identity negotiation, and normative ambivalence that quantitative approaches miss.
10. Sociotechnical Systems Analysis: Investigates the algorithmic, interface design, and business model features of social media platforms and communication apps that systematically encourage or discourage phubbing behaviours, informing ethical design principles and regulatory frameworks.



11. Workplace Phubbing Research: Extending research beyond interpersonal and family contexts to examine phubbing prevalence and consequences in professional settings, including effects on team collaboration, organisational trust, and productivity.
12. Developmental Transitions Research: Conducting longitudinal studies tracking phubbing behaviours across critical life transitions (adolescence to emerging adulthood, pre-parenthood to parenthood, and pre-retirement to retirement) to understand how life stage, role changes, and generational cohorts shape phubbing dynamics.

These recommendations provide strategic guidance that will shape the future trajectory of phubbing research while supporting the goals of increasing the epistemological depth of the field and maximising its societal benefit. Importantly, this bibliometric synthesis demonstrates that phubbing research has matured from an exploratory phase characterised by conceptual ambiguity into a consolidated field with established methodological standards and theoretical frameworks. However, significant developmental work remains necessary to achieve true interdisciplinary integration, geographic inclusivity, and methodological pluralism. The practical contributions of this study are threefold: (1) it provides a comprehensive evidence base for educators, policymakers, and clinicians seeking to design interventions addressing technology-mediated social disruption; (2) it identifies strategic research priorities that can guide funding allocation and international collaboration; and (3) it offers a conceptual framework for understanding hubbing not as an isolated behavioural aberration but as a crystallisation of fundamental tensions in digital-age sociality—the dialectic between connection and disconnection, presence and absence, autonomy and dependency. By revealing both the achievements and limitations of existing scholarship, this analysis serves as a foundation for the next generation of phubbing research: one that is more globally representative, methodologically sophisticated, theoretically integrative, and practically oriented towards improving human well-being in an increasingly mediated social world. The field's continued development depends on transcending disciplinary boundaries, challenging Western-centric assumptions, embracing mixed-method and longitudinal designs, and maintaining constant dialogue between scholarly inquiry and real-world applications in educational, clinical, organisational, and policy contexts. Thus, this bibliometric study functions not merely as a retrospective documentation of past research but as a

prospective blueprint for a more mature, inclusive, and impactful scholarship that can meaningfully contribute to understanding and navigating the profound social transformations of the digital age.



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Author Details Faruk Dursun

¹ Sakarya Üniversitesi, İşletme Fakültesi Yönetim Bilişim Sistemleri Bölümü, Sakarya Üniversitesi, Sakarya Üniversitesi İşletme Fakültesi Esentepe Kampüsü Sakarya, Türkiye.

0000-0003-1571-1107 farukdursun@sakarya.edu.tr

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