# Digital well-being in the hyperconnected era: Mapping and bibliometric analysis

*Sovi* Septania[1 2], *Avin* Fadilla Helmi*[1], and *Haidar* Buldan Thontowi[1]

[1]Doctoral Program of Psychology; Psychology Faculty, Gadjah Mada University, Indonesia
[2]Faculty of Psychology, University of Muhammadiyah Lampung, Indonesia

**Abstract.** The hyperconnected era accelerated the integration of digital technologies into daily life, reshaping social, emotional, and cognitive experiences while raising urgent questions about digital well-being (DWB). Despite increasing scholarly attention, the conceptualization of DWB remained fragmented across disciplines, and a comprehensive mapping of its thematic evolution was lacking. This study conducted a bibliometric analysis of 226 Scopus-indexed publications from 2014–2024, applying performance analysis and science mapping through Biblioshiny and VOSviewer to explore publication trends, collaboration networks, and thematic clusters. Results showed an annual growth rate of 42.49%, with output surged after 2020. The United Kingdom, USA, and Australia led in productivity, with the UK also dominated international collaborations. Motor themes included digital mental health, youth well-being, and digital skills; basic themes involved digital wellness, fatigue, and user-centered design; emerging themes covered adolescent well-being, scale development, and sustainable digital engagement. The co-occurrence network revealed a highly interconnected yet siloed field, with "digital well-being" as the central bridging concept across mental health, education, workplace, and digital literacy contexts. This study offered theoretical, methodological, and policy implications, emphasizing the need for integrated frameworks, diverse population focus, and evidence-based interventions to foster healthier digital ecosystems.

## 1 Introduction

The pervasive integration of digital technologies into daily life has undeniably reshaped societal interactions and individual experiences, making the exploration of digital well-being an increasingly urgent academic imperative. This urgency stems from the unprecedented level of hyperconnectivity, where constant digital engagement profoundly influences mental, emotional, and social states, thereby necessitating a deeper understanding of its implications [1]. The rapid evolution of digital platforms and devices, while offering myriad benefits, also presents significant challenges to individual welfare, including issues such as digital overload, addiction, and the blurring

*. Corresponding author: avinpsi@ugm.ac.id

of work-life boundaries [2]. Consequently, individuals frequently experience psychological strain, fatigue, and reduced productivity due to extensive synchronous media interactions and prolonged working hours. This pervasive digital immersion highlights the critical need to identify mechanisms that maximize the positive potential of technology while mitigating its detrimental effects on human wellness [3].

Digital well-being (DWB) is generally understood as the capacity to maintain optimal mental, physical, and social health amid pervasive technology use [4]. However, its conceptualization remains evolving and multifaceted—sometimes defined by the absence of digital ill-being or linked to broader subjective well-being frameworks—yet often failing to fully capture the unique nuances of digital contexts [5]. This conceptual fluidity, coupled with fragmented research across disciplines, underscores the need for a systematic synthesis of existing knowledge. Over the past decade, DWB research has intersected with digital literacy, human–computer interaction, and mental health, with growing emphasis on interventions that promote balanced technology use [6]. Despite this expansion, there remains a lack of comprehensive bibliometric analysis mapping the intellectual structure, thematic evolution, and geographical patterns of DWB scholarship. Such synthesis is essential to identify leading authors, institutions, collaboration networks, and emerging research themes [7,8].

This evolving landscape necessitates a comprehensive scholarly examination to consolidate existing knowledge, identify emergent trends, and pinpoint critical gaps in understanding the multifaceted relationship between hyperconnectivity and human well-being. Therefore, this study addresses this critical need by conducting a bibliometric analysis to map the intellectual structure and thematic evolution of research on digital well-being in the hyperconnected era, thus providing novel insights into this rapidly expanding field. In contrast to prior literature reviews, which have predominantly synthesized qualitative findings or focused narrowly on specific subdomains, this study employs a systematic bibliometric approach to quantitatively map a decade of research output, reveal collaboration patterns, and identify thematic shifts over time. This methodological scope allows for a more comprehensive, data-driven understanding of the field's development, offering both a historical perspective and forward-looking directions for scholars, policymakers, and technology designers.

By systematically analyzing publication trends, influential authors, and co-citation networks, this research seeks to identify the core theoretical underpinnings and empirical advancements that have shaped the discourse on digital well-being. This analysis will also highlight prevalent research methodologies and emerging areas of interest, thereby providing a robust foundation for future investigations into the complex interplay between technology and human welfare [6]. Furthermore, by understanding the current state of research, policymakers, educators, and technology developers can create more effective interventions and design principles that foster positive digital experiences and mitigate potential harms [9]. Despite the growing recognition of its importance, a unified definition and comprehensive measurement of digital well-being remain elusive, underscoring the fragmented nature of current research [4].

This fragmentation necessitates a rigorous bibliometric approach to systematically synthesize disparate findings and identify overarching themes and gaps, thereby providing a clearer understanding of how digital media use connects to well- being [1]. This study contributes to the extant literature by offering a structured overview of research conducted on well-being in digital contexts, identifying research directions and emerging opportunities [2]. Specifically, this research aims to consolidate the diverse academic discourse surrounding digital well-being, moving beyond fragmented perspectives to establish a cohesive understanding of its multifaceted dimensions [10]. Previous studies have highlighted the urgent need for comprehensive research to delineate patterns of digital use associated with both benefits and risks, emphasizing the importance of evidence-based product design and regulation [6]. Digital well-being (DWB) has emerged as a multidisciplinary construct reflecting the ability to maintain optimal mental, physical, and social health in the context of pervasive digital technology use. As the hyperconnected era intensifies, individuals' interactions with digital devices influence work productivity, education, and personal relationships. While technology offers unparalleled benefits, it also brings risks such as digital addiction, information overload, and cyber stress. Consequently, research on DWB is crucial for developing strategies to enhance positive digital engagement while mitigating potential harms.

Over the past decade, DWB has been conceptually linked with digital literacy, human-computer interaction, and mental health frameworks, with a growing emphasis on interventions that promote balanced technology use. However, despite the expansion of literature, a systematic mapping of its intellectual structure, thematic trends, and geographical patterns remains scarce. The research gap lies in the absence of a comprehensive bibliometric synthesis that spans a decade of global DWB research. Addressing this gap is essential to identify thematic evolution, research leaders, and collaboration networks. The objective of this study is to map the scholarly landscape of DWB research from 2014–2024, analyze its thematic clusters, and identify future research directions. This study also seeks to highlight leading authors, institutions, and countries, contributing to inform policymakers, educators, and technology developers in designing evidence-based strategies that foster positive digital engagement while mitigating associated risks [9,10].

## 2 Methods

We utilized a bibliometric analysis divided into two components: (1) science mapping, which produces structured bibliographic maps describing the conceptual and social structures of the research field as well as intellectual and structural connections, and (2) performance analysis, which evaluates the productivity and performance of the scientific literature based on various research metrics [11]. The first section examines the growth, quality, influence, and present condition of research in the field of digital well-being using metrics related to citations, publications, and country contributions. The second section highlights future tendencies in the field through co-word analysis to examine key terms and themes.

### 2.1 Search Strategy and Data Source

The bibliometric dataset was retrieved from the Scopus database. The exact search string used was: TITLE-ABS- KEY (”digital well-being” OR ”digital wellbeing” OR ”mobile well-being” OR ”online well-being” OR ”smartphone well-being” OR ”social media well-being”). This search was limited to articles, reviews, and conference papers published in English between 2014 and 2024. The year 2014 was selected as the starting point because it represents the earliest occurrence of the term “digital well-being” in Scopus-indexed literature.

### 2.2 Participants

This study analyzed 226 Scopus-indexed publications on digital well-being from 2014–2024. Inclusion criteria required documents to explicitly address digital well-being or closely related terms as specified in the search string. Non-English papers and non-research content (e.g., editorials, book reviews) were excluded. Metadata included publication year, authors, affiliations, country, keywords, and citations.

### 2.3 Data Cleaning & Processing

Prior to analysis, metadata were cleaned to ensure accuracy and consistency. Author name variations (e.g., initials vs. full names) were standardized to consolidate records. Affiliations were unified to account for institutional name changes. Duplicate records were removed, and keyword lists were harmonized by merging synonyms (e.g., "wellbeing" and "well-being").

### 2.4 Research Instrumen

Two primary tools were used: Biblioshiny for R to perform bibliometric calculations and visualize growth trends, and VOSviewer to construct co-authorship and keyword co-occurrence networks. These instruments were selected for their reliability in mapping scholarly structures and thematic developments.

### 2.5 Data Analysis Techniques

We applied bibliometric indicators, including annual scientific production, citation impact, author productivity (Lotka's Law), and co-authorship patterns. Thematic maps and trend topics analysis identified core and emerging research areas. Network visualizations were used to interpret intellectual structures.

## 3 Results

The field of digital well-being showed an annual growth rate of 42.49%, with publications rising notably after 2020. The annual growth rate of 42.49% was calculated directly from the Scopus dataset (226 documents, 2014–2024) using the compound annual growth rate (CAGR) formula implemented in Biblioshiny. The calculation is based on the number of documents published per year, taking the first and last years of the timespan as reference points. The top contributing countries were the United Kingdom, USA, and Australia, with the UK leading in both single-country publications (SCP) and multi- country publications (MCP). SCP refers to research where all authors are affiliated with institutions from the same country, whereas MCP involves collaboration between authors from different countries. Authorship patterns indicated that Ali R. led the field with 10 publications, whereas Nguyen M.H. and Vanden Abeele M.P.H. demonstrated substantial contributions with 6 publications each. The thematic map revealed motor themes such as digital mental health, digital skills, and youth well- being, while basic themes included digital wellness, fatigue, and user-centered design. Emerging themes were adolescent well-being, scale development, and sustainable digital engagement. Network analysis using VOSviewer highlighted "digital well-being" as the dominant keyword, strongly linked with clusters on mental health, students, interventions, and digital literacy.

Outliers and exceptional cases showed that while the UK, USA, and Australia dominated output, several countries produced smaller numbers of publications with disproportionately high impact. For instance, Switzerland and the Netherlands contributed fewer than 20 publications each but recorded higher-than-average citations per paper, indicating concentrated influence in the field. Similarly, Canada's modest publication count included multiple highly cited works that have shaped conceptual and methodological discussions in digital well-being.

This bibliometric summary presented the scope, scale, and collaborative nature of digital well-being research over a decade. The dataset spanned from 2014 to 2024, covering the formative years of digital well-being as an academic topic. The 42.49% growth rate indicated a rapidly expanding research area, with output accelerated significantly in recent years. A total of 226 publications were identified, spread across 159 different journals, conference proceedings, or book chapters, suggesting a multidisciplinary reach. The document average age was 2.85 years, showing that the field was relatively young, with a strong emphasis on recent studies. A total of 831 researchers contributed to the literature, indicating a broad academic base. Only 26 papers were single-authored papers, reflecting a high reliance on collaborative work. About 33.63% of documents involved authors from multiple countries, highlighting substantial cross-border collaboration. The number of co-authors per document was 4.11, suggesting medium-to-large research teams are the norm. A total of 797 unique terms were used, showing thematic diversity in the field. The 13,921 cited works provide a rich and varied intellectual foundation. Average citations per document were 14.31, indicating a healthy citation rate that reflected growing academic influence. Digital well-being has matured into a fast-growing, collaborative, and multidisciplinary research area, with strong international engagement and increasing scholarly influence. The relatively young document age and high growth rate signaled that the field was in an active expansion phase, with opportunities for deeper theoretical integration and cross-disciplinary synthesis. The bibliometric summary is shown in figure 1.


**Fig. 1.** Bibliometric summary of digital well-being research (2014–2024)

The annual publication trend showed a slow start from 2014–2019, followed by steady growth from 2020 and a sharp surge from 2021 onward. The peak was in 2024 with 69 documents, indicating rapidly rising scholarly interest in digital well-being, likely driven by post-pandemic digital transformation and increased awareness of technology's impact on health and lifestyle. The United Kingdom led digital well-being research with 42 publications, followed closely by the United States (37) and Australia (25). Italy, the Netherlands, and Germany contributed moderately (18–20 publications each), while Switzerland, China, Canada, and Spain showed emerging but smaller outputs. This distribution highlighted strong research activity in Western countries, with growing participation from Asia. The field was led by a small group of highly productive researchers, supported by a broader base of active contributors, indicating both concentrated expertise and diverse scholarly participation. The chart showed that the United Kingdom led in corresponding authorship for digital well-being research, followed by the USA and Australia. Many leading countries, such as the Netherlands, Germany, and Switzerland, displayed a strong proportion of Multiple Country Publications (MCP), indicating high levels of international collaboration. In contrast, countries like China, Italy, and Spain had a higher proportion of Single Country Publications (SCP), suggesting more domestically driven research. Digital well-being research was led by Western countries with significant cross-border collaborations, though patterns varied—some nations prioritized international partnerships, while others focused on national research agendas. The overall trend is shown in figure 2.

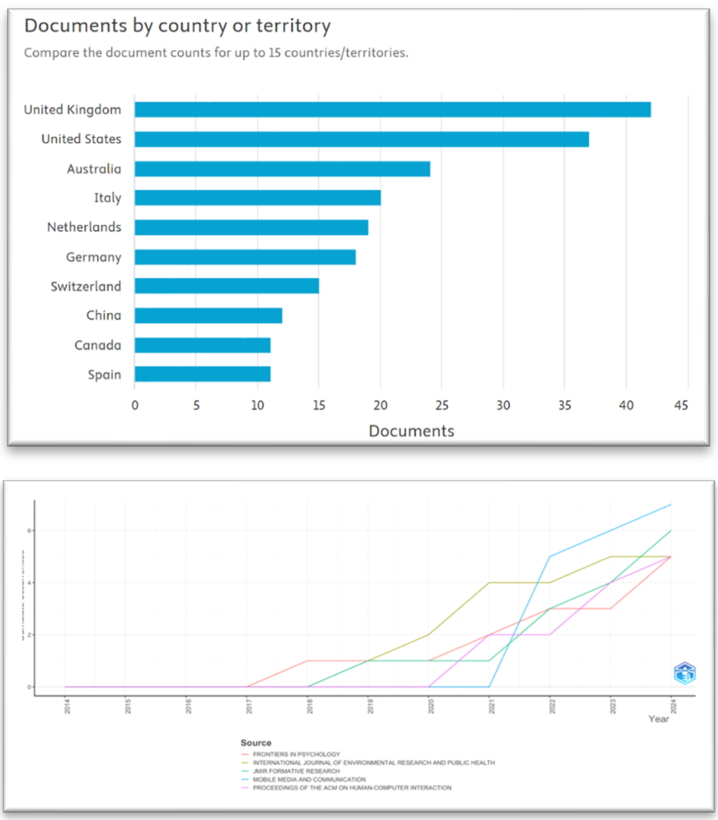


**Fig. 2.** Annual publication trend (2014–2024) showing sharp increases post-2020

The trend topics analysis showed shifting research priorities in digital well-being over time. Early terms (2016–2018) such as mindfulness, social network, and outcome assessment reflected an initial focus on psychological regulation and online interaction. Between 2019–2021, topics expanded to include mobile applications, qualitative research, and social media, signaling growing attention to technology-specific contexts and methodological diversity. From 2022 onward, high-frequency terms like human, learning, well-being, male, female, and adult indicated a broader demographic scope and more inclusive studies. By 2024, middle aged, cross-sectional study, and learning emerged strongly, suggesting a maturing field with diversified populations and research designs. The evolution of trend topics revealed a progression from conceptual and psychological themes toward applied, demographic-specific, and methodologically varied research, highlighting the field's increasing maturity and inclusivity. The trend topics analysis of digital well-being studies is shown in figure 3.

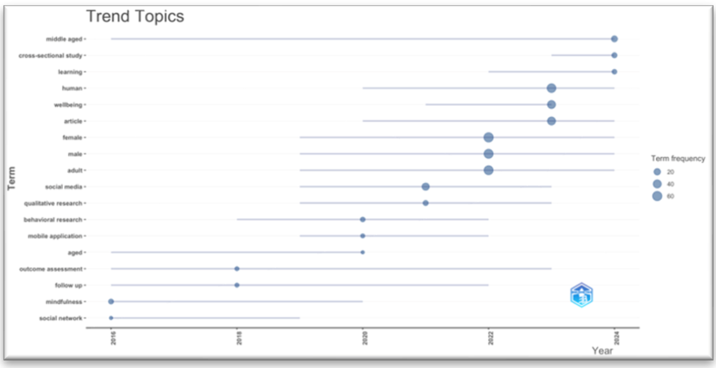


**Fig. 3.** Trend topics analysis of digital well-being studies (2014–2024)

The conceptual map, generated through Multiple Correspondence Analysis (MCA), revealed the main thematic clusters in digital well-being research, based on co-occurrence patterns of keywords. It showed that digital well-being research was anchored in three main domains: (1) technology use and behavioral outcomes, (2) pandemic-era educational and mental health studies, and (3) clinical/health-focused interventions. The presence of a central transitional zone highlighted the multidisciplinary nature of the field, with demographic and psychological factors serving as connective elements across domains. Future research can benefit from stronger integration between these clusters to build more comprehensive frameworks for understanding and enhancing digital well-being. The conceptual map is in figure 4.

Thematic map of digital well-being research categorized themes in digital well-being based on their development degree (density) and relevance degree (centrality). The field of digital well-being was anchored in mental health, well-being, and intervention research, with specialized subfields on smartphone addiction and privacy, and foundational areas like digital wellness and instructional design that held potential for deeper exploration. Strengthening connections between niche, emerging, and basic themes could lead to a more integrated and innovative research landscape. Motor themes (high density, high Centrality) involved key topics, such as: well-being, mental health, well-being, social media, digital well-being, e-mental health, digital mental health, healthcare, co-design, interventions, happiness, sleep quality. These were well-developed and highly relevant themes driving the research agenda. They integrated psychological health, technology use, and intervention design, making them central to current and future studies. Niche themes (high density, low centrality) involved key topics, such as: online well-being, smartphone addiction, privacy. These topics were methodologically mature but less connected to the broader digital well-being research network, possibly serving specialized subfields such as privacy ethics and addiction


**Fig. 4.** Conceptual map generated through Multiple Correspondence Analysis, illustrating thematic clusters

prevention. Emerging or declining themes (low density, low centrality) involved key topics, such as: adolescence, scale development, sustainability goals, self-control, self-regulation. These themes were underdeveloped and peripheral, potentially representing new research areas yet to gain traction or older topics in decline. Basic themes (low density, high centrality) involved key topics, such as: digital wellness, instructional design, digital technologies, university students. These were central to the field's conceptual structure but needed further theoretical and empirical development to match the maturity of motor themes. The field of digital well-being was anchored in mental health, well-being, and intervention research, with specialized subfields on smartphone addiction and privacy, and foundational areas like digital wellness and instructional design that held potential for deeper exploration. Strengthening connections between niche, emerging, and basic themes could lead to a more integrated and innovative research landscape. Thematic map is shown in figure 5.

The VOSviewer visualization depicted the co-occurrence network of keywords from research on digital well-being. The network was clustered into distinct thematic areas, each represented by color, illustrating how research topics were conceptually and contextually related. The size of each node reflected the frequency of keyword occurrence, while the proximity and thickness of connecting lines indicated the strength of co-occurrence relationships. Figure of conceptual structure map and co-occurrence networks shown in figure 6.

The visualization revealed that digital well-being research was a highly interconnected and multidimensional field, anchored in user-centered frameworks and extending into education, workplace, youth development, and health interventions. While the central concept was well-established, the distribution of clusters indicated parallel but sometimes siloed research streams. Future studies should strengthen cross-domain integration, ensuring that insights from youth, workplace, health, and educational contexts inform a more cohesive and universally applicable framework for digital well-being in the hyperconnected era. The network spanned education, workplace health, youth development, and digital health, indicating that digital well-being is a multidisciplinary construct. Pandemic-related keywords remained visible, highlighting the

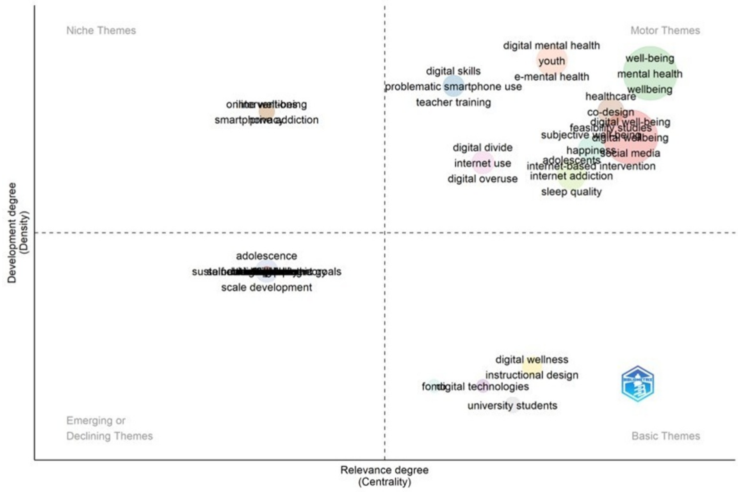


**Fig. 5.** Thematic map categorizing research themes by development (density) and relevance (centrality)

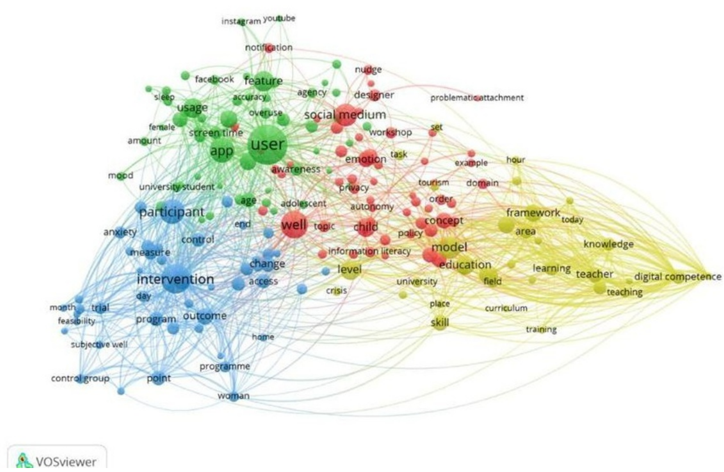


**Fig. 6.** Conceptual Keyword co-occurrence networks generated via VOSviewer, illustrating thematic relationships and cluster strength

surge of studies on remote life transitions and technology's role during crisis periods. "Designing" as a frequent term reflected a growing emphasis on embedding well-being principles in technology development. Distinct attention was given to specific user groups—students, employees, children, older adults—suggesting tailored approaches rather than a one-size-fits-all model. Specific explanation on each cluster is shown on table 1.

**Table 1.** Cluster Terms, Connections, and Interpretation

| Cluster/Theme | Terms | Connection | Intrpretation |
|---|---|---|---|
| Red/ Digital Well-Being | "User," "designing," "digital health," "life," and "digital age" are closely linked, reflecting discussions on user-centered design, lifestyle implications, and health-oriented digital interactions. | Digital well-being is the largest and most central node, signifying it as the focal keyword across the analyzed literature. It is highly interconnected with multiple clusters, acting as the thematic bridge among diverse research areas. | This cluster represents conceptual and definitional work, exploring frameworks, interventions, and principles for promoting digital well-being. It also captures methodological debates on measurement and theoretical grounding. |
| Green/Educational and Youth Focused Research | "Child," "young person," "adolescent," "school," "teacher," "project," and "youth." | "Strong ties to "user" and "digital well- being" suggest an emphasis on the impact of technology on developmental stages, digital literacy, and educational interventions. | This cluster addresses how digital environments affect younger populations, with research often centering on safeguarding, pedagogy, and balancing online/offline engagement. |
| Yellow/Higher Education and Learning Contexts | "Student," "digital well," "higher education," "learning," "future," "relation," and pandemic-related terms like "covid." | The link between "student" and "covid" reflects pandemic-era research on remote learning, digital adaptation, and well-being challenges in academic environments. | This area focuses on how higher education institutions adapt to technological integration, addressing stress, digital literacy, and educational technology design for student well-being. |
| Blue/Workplace and Employee Well-being | "Work," "employee," "employee well-being," "stress," "older adult," "workplace," "effectiveness." | These terms link to "digital intervention" and "measure," indicating research on workplace digitalization, productivity, remote work, and the psychological implications of technology-mediated work. | This cluster represents occupational health studies, exploring digital tools' role in both enhancing and impairing job satisfaction, productivity, and mental health. |
| Red-Blue/Health and Digital Interventions | "Digital health," "life," "digital intervention," "effectiveness." | While partially overlapping with workplace and central digital well-being themes, these terms point toward applied research on digital therapeutics, health behavior change interventions, and digital lifestyle management. | This cluster emphasize the need for digital well-being measurement |

## 4 Discussion

The findings of this bibliometric analysis underscored the rapid maturation and diversification of digital well-being research over the past decade. With an annual growth rate of 42.49% and a peak in publication output in 2024, the field demonstrated a steep upward trajectory, particularly after 2020. This surge aligned with the global shift toward remote work, online learning, and heightened awareness of digital health precipitated by the COVID-19 pandemic. The predominance of publications in the last three to four years confirmed that digital well-being is not only a relevant but also a timely research domain, remaining responsive to global socio-technological changes.

The geographical distribution of contributions revealed a concentration of research activity in Western countries, notably the United Kingdom, the United States, and Australia. The UK emerged as both the most prolific and the most collaborative contributor, excelling in both single-country and multi-country publications. This leadership position may have reflected strategic research investments and policy initiatives aimed at addressing digital health and well-being. Meanwhile, countries such as China, Italy, and Spain maintained significant but more domestically oriented research output, suggesting potential for enhanced international collaboration to enrich the diversity and applicability of findings. Authorship patterns indicated a core group of prolific scholars, including Ali R., Nguyen MH, and Vanden Abeele MMP, whose sustained contributions are shaped the intellectual contours of the field. The low proportion of single-authored papers (26 out of 226) and the average of 4.11 co-authors per document pointed to a strongly collaborative research culture, likely driven by the multidisciplinary nature of digital well-being, which spans psychology, education, computer science, public health, and human–computer interaction.

The thematic map analysis illustrated the conceptual complexity of the field. Motor themes—such as digital mental health, digital skills, and youth well-being—are well-developed and highly central, indicating their pivotal role in driving the research agenda. Basic themes, including digital wellness, fatigue, and user-centered design, occupied a central position but lacked the development density of motor themes, signaling fertile ground for future theoretical and empirical work. Niche themes—such as smartphone addiction, online well-being, and privacy—despite being methodologically mature, remained less integrated into the broader research discourse. This may have been due to policy gaps (e.g., insufficient regulation on privacy and digital addiction), ethical sensitivities (e.g., surveillance concerns, the stigma around addiction), or lack of interdisciplinary uptake where insights from ethics, law, and human rights were not fully embedded into mainstream digital well-being frameworks. Addressing these limitations could have elevated these niche topics into central research priorities. Emerging themes, such as adolescent well-being, scale development, and sustainable digital engagement, highlighted areas of nascent but growing interest that could have shape the next phase of research evolution.

The VOSviewer keyword co-occurrence network reinforced the multidimensional and interconnected nature of digital well-being research. "Digital well-being" itself was the dominant and most central keyword, serving as a thematic bridge among clusters focusing on mental health, education, workplace well-being, and digital literacy. The network's structure— spanning educational and youth-focused research, higher education contexts, workplace health, and health-oriented digital interventions—demonstrated both the breadth and specialization of the field. However, the presence of parallel and sometimes siloed streams suggested that cross-domain integration remains an important challenge.

Connecting these findings that digital well-being framework, which emphasized the interplay between digital literacy, self-regulation, and contextual affordances, it became clear that the field's fragmentation may partly have stemmed from insufficient integration of these core dimensions [1]. While motor themes align well with Büchi's emphasis on user competencies and psychological health, niche and emerging themes could have been better anchored within such frameworks to ensure conceptual cohesion and applicability across contexts.

Temporal analysis of trend topics reflected a shift from early conceptual and psychological themes (e.g., mindfulness, social networking) toward applied and demographically diverse studies (e.g., middle-aged well-being, cross-sectional studies, learning outcomes). This trajectory indicated a field moving from foundational theory-building toward practical, population- specific interventions and policy-relevant outcomes. The MCA-based conceptual map further supported this evolution, revealing three core domains: technology use and behavioral outcomes, pandemic-era educational and mental health studies, and clinical/health-focused interventions, connected through demographic and psychological variables.

Overall, the synthesis of bibliometric indicators, thematic mapping, and network analysis painted a portrait of digital well-being as an emerging but increasingly sophisticated field. It was characterized by high growth, multidisciplinary collaboration, and thematic diversity, yet it still faced the challenge of integrating fragmented research streams into a unified conceptual and methodological framework.

## 5 Conclusion

This bibliometric study provided a comprehensive mapping of digital well-being research from 2014 to 2024, revealing a dynamic and rapidly growing field shaped by global socio-technological transformations. The United Kingdom, United States, and Australia led in scholarly output, with the UK exhibiting the strongest collaborative network. Core contributions from a small group of prolific authors were complemented by a wide base of international collaborators, reflecting the field's inherently interdisciplinary nature.

The thematic analysis identified digital mental health, digital skills, and youth well-being as mature and central research areas, while digital wellness, fatigue, and user-centered design remained foundational yet underdeveloped. Emerging topics— adolescent well-being, scale development, and sustainable digital engagement—presented promising avenues for future inquiry. The co-occurrence network highlighted the centrality of "digital well-being" and its connections across education, workplace, health, and digital literacy contexts, underscoring the need for cross-domain integration.

For policymakers and practitioners, these findings offer a clear roadmap for action. Integrating digital well-being principles into public health policies, educational curricula, and workplace wellness programs can help mitigate risks while enhancing positive digital engagement. Investment in community-based initiatives and cross-sectoral collaborations can ensure that interventions are inclusive and culturally relevant. Looking ahead, the rapid evolution of artificial intelligence, wearable health technologies, and adaptive learning systems presents unprecedented opportunities to personalize and scale digital well-being interventions. Future research should explore how these emerging tools can be ethically and effectively integrated into daily life, ensuring they enhance rather than compromise human well-being in an increasingly hyperconnected world.

## 6 Implication

**Theoretical implication.** The analysis identified motor themes—such as digital mental health, youth well-being, and digital skills—that signaled the maturity of certain conceptual domains within digital well-being research. However, the presence of underdeveloped yet central basic themes, including digital wellness and user-centered design, highlighted the necessity for a more unified theoretical framework. By integrating insights from psychology, education, human–computer interaction, and public health, future research can move beyond fragmented perspectives toward a holistic understanding of digital well-being. This integrated framework would not only clarify conceptual boundaries but also enhance construct validity and cross-study comparability.

**Methodological implication.** The study showed a relatively high proportion of multi-country collaborations and co-authored works, suggesting that digital well-being research was inherently interdisciplinary and global in nature. Methodologically, this called for the adoption of mixed-method approaches and cross-cultural validation of measures to ensure robustness across contexts. Additionally, longitudinal research designs were prioritized to track changes in digital well-being across different technological cycles, allowing for the identification of both short-term and long-term effects of emerging digital tools and platforms. Emerging themes such as scale development indicated a growing awareness of the need for reliable and comprehensive measurement tools that could capture both the positive and negative aspects of digital engagement.

**Practical implications.** This study offers actionable insights for technology developers, educators, health professionals, and policymakers. By fostering interdisciplinary collaboration, advancing measurement science, and prioritizing inclusivity in both theory and practice, stakeholders can collectively contribute to building healthier, more sustainable digital ecosystems in the hyperconnected era.

**Acknowledgements:** We express our gratitude to the Indonesian Education Scholarship (BPI), the Center for Higher Education Funding and Assessment (PPAPT) Ministry of Higher Education, Science, and Technology of the Republic of Indonesia, and the Indonesia Endowment Fund for Education (LPDP) for the funding provided, which has enabled this research to be completed successfully.

**Funding:** Indonesian Education Scholarship (BPI), the Center for Higher Education Funding and Assessment (PPAPT) Ministry of Higher Education, Science, and Technology of the Republic of Indonesia, and the Indonesia Endowment Fund for Education (LPDP)

**Data Availability Statement:** The bibliometric data analyzed in this study were obtained from the Scopus database and processed using the Biblioshiny package within the R statistical environment and VOSviewer software. Access to the raw Scopus data is subject to the database's licensing restrictions and cannot be publicly shared. Researchers interested in replicating this analysis may obtain the data directly from Scopus (https://www.scopus.com) using the search strategy described in the methodology section. All processed datasets, analysis scripts, and visualization parameters used in this study are available from the corresponding author upon reasonable request.

**Authors' Contributions Statement:** SS conceptualized the study, designed the research framework, conducted the bibliometric analysis, interpreted the results, and drafted the manuscript. AFH served as the promotor, providing overall supervision, critical revisions, and guidance in aligning the research with the study objectives. HBT, as co-promotor, contributed to refining the methodological approach, validating the analysis, and reviewing the manuscript for intellectual content. All authors read and approved the final manuscript.

**Competing Interest:** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

## References

1. M. Büchi, Digital well-being theory and research. New Media Soc. **26**, 172 (2021). https://doi.org/10.1177/14614448211056851

2. J. F. M. Ribeiro, F. P. da Silva, and P. R. Vieira, Remote workers' well-being: Are innovative organizations really concerned? A bibliometrics analysis. J. Innov. Knowl. **9**, 100595 (2024). https://doi.org/10.1016/j.jik.2024.100595

3. J. F. Hunter, L. C. Walsh, C. Chan, and S. M. Schueller, The good side of technology: how we can harness the positive potential of digital technology to maximize well-being. Front. Psychol. **14,** 1304592 (2023). https://doi.org/10.3389/fpsyg.2023.1304592

4. S. Cao and H. Li, A scoping review of digital well-being in early childhood: Definitions, measurements, contributors, and interventions. Int. J. Environ. Res. Public Health **20**, 3510 (2023). https://doi.org/10.3390/ijerph20043510

5. S. Chen, O. V. Ebrahimi, and C. Cheng, New perspective on digital well-being by distinguishing digital competency from dependency: Network approach. J. Med. Internet Res. **27**, 70483 (2025). https://doi.org/10.2196/70483

6. D. McDuff, A. Barakat, A. Winbush, A. Jiang, F. Cordeiro, R. Crowley, L. E. Kahn, J. Hernandez, and N. B. Allen, Research protocol for the Google Health digital well-being study. arXiv: 2307.05795 (2023). https://doi.org/10.48550/arxiv.2307.05795

7. E. R. Johar, N. Rosli, H. O. Zaki, and D. F. M. F. Fernandez, Does happiness really matter? Exploring employee wellbeing recent research trends: A bibliometric analysis using R. Int. J. Acad. Res. Bus. Soc. Sci. **13**, 16274 (2023). https://doi.org/10.6007/ijarbss/v13-i2/16274

8. S. Bhardwaj, R. Chopra, N. Donthu, and P. Choudhary, Unraveling the adverse effects of social media on teenagers: Current and future research directions. J. Interact. Mark. (2024). https://doi.org/10.1177/10949968241288483

9. C. James, K. Davis, L. Charmaraman, S. Konrath, P. Slovák, E. Weinstein, and E. Yarosh, Digital life and youth well-being, social connectedness, empathy, and narcissism. Pediatrics **140**, e20161758 (2017). https://doi.org/10.1542/peds.2016-1758f

10. R. J. Tumpa and L. M. Naeni, Improving decision-making and stakeholder engagement at project governance using digital technology for sustainable infrastructure projects. Smart Sustain. Built Environ. (2025). https://doi.org/10.1108/sasbe-10-2024-0451
11. N. Donthu, S. Kumar, D. Mukherjee, N. Pandey, and W. M. Lim, How to conduct a bibliometric analysis: An overview and guidelines. J. Bus. Res. **133**, 285 (2021). https://doi.org/10.1016/j.jbusres.2021.04.070