Vol. 6, No. 1, 2026, 1-16. DOI: 10.47909/ijsmc.319

pro-metrics

ORIGINAL ARTICLE

Transformation of public consciousness in the context of societal digitalization: A bibliometric study

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ABSTRACT

Objective. The objective of this study was to analyze the evolution, scientific structure, and thematic orientation of research on the transformation of public consciousness in the context of digitalization. The study placed particular emphasis on the emergent role of Kazakhstan and Central Asia in this domain.

Design/Methodology/Approach. A bibliometric study was conducted in Scopus using 1,885 documents (2008-2026), integrating performance, impact, productivity, and international collaboration analyses. The cognitive characterization process was executed through the implementation of science mapping in VOSviewer, encompassing the analysis of co-authorship, co-citation, and keyword co-occurrence networks.

Results/Discussion. Since 2018, an accelerated growth trend has been evident, accompanied by a polycentric collaboration structure led by the United States, China, and Saudi Arabia, and an increasing Kazakh presence. The thematic analysis identified five principal clusters; however, social values remained peripheral, indicating low theoretical cohesion.

Conclusions. The study identifies a rapidly expanding and highly interdisciplinary field, yet one characterized by a fragmented theoretical core and limited articulation between digitalization and social values. The consolidation of regional research agendas in Central Asia, particularly in Kazakhstan, engenders opportunities for the development of integrative theoretical frameworks and cross-cultural comparative studies that can deepen the understanding of how public consciousness is being reconfigured in digitalized societies.

KEYWORDS: digitalization; public consciousness; Central Asia; social values; international collaboration; misinformation.

Received: 17-08-2025. **Accepted:** 28-11-2025. **Published:** 19-12-2025.

How to cite: Mukanov, M., & Aitbayev, D. (2026). Transformation of public consciousness in the context of societal digitalization: A bibliometric study. *Iberoamerican Journal of Science Measurement and Communication; 6*(1), 1-16. DOI: 10.47909/ijsmc.319

1. INTRODUCTION

Digitalization has emerged as a pivotal structural force shaping contemporary sociocultural transformation. The accelerated growth of media ecosystems, digital infrastructures, and transnational information flows is profoundly altering modes of perception, cognitive architectures, and forms of symbolic interaction within public life (Abasilim & Esisio, 2025). In this context, public consciousness —defined as the dynamic set of collective representations, values, and dispositions— appears particularly susceptible to technological innovations that reconfigure socialization patterns, amplify informational availability, and generate new conditions for the construction of shared meanings (Jayakumar *et al.,* 2025; Rogalenko & Lvov, 2025). This process has given rise to a growing interest in understanding the sociocultural effects of digitalization on the public sphere. The most significant effects of this process can be seen in the reconfiguration of psychological and sociocognitive mechanisms (Ngubane & Madondo, 2025; Yang & Zhang, 2025). Information overexposure and constant interaction with digital platforms have been associated with increased social anxiety, changes in risk perception, and alterations in collective interpretation frameworks (Jankovic & Curovic, 2023; Shahzad & Muhammad, 2025). Concurrently, the advent of digitized media environments has precipitated the proliferation of hybrid forms of cultural creativity, thereby introducing novel symbolic repertoires that exert a profound influence on self-perception, identity, and public participation (Barlybayeva, 2022; Galiyeva *et al.,* 2024; Satybaldin, 2021). These psychological and cultural changes are directly linked to broader transformations in social value systems.

Concurrently, recent studies have identified profound transformations in the axiological structure of contemporary societies (Liang & Cai, 2026; Voukkali *et al.,* 2023). Digitalization has given rise to tensions between traditional values and novel cultural orientations that are characterized by immediacy, interconnectedness, and technologically mediated self-expression. These shifts have been shown to influence communication habits and reshape social consciousness in key dimensions such as sense of belonging, relations with authority, and expectations toward institutions (Galiyeva *et al.,* 2024; Solovev, 2025). Furthermore, the profound impact of massive mediatization on discursive practices and collective reference frameworks, even within highly institutionalized contexts, has been extensively documented (Rizal, 2025; Satybaldin, 2021). This observation underscores the intricate and multifaceted nature of the phenomenon, emphasizing its increasing complexity. Despite the thematic breadth of extant studies, the extant literature approaches digitalization through partial lenses, including psychological, sociocultural, communicational, and axiological lenses, without integrating these findings into a cohesive conceptual framework capable of explaining the transformation of public consciousness as a unified phenomenon (Barlybayeva, 2022; Rizal, 2025; Ryasnyanskaya *et al.,* 2022). Similarly, extant evidence indicates that no comprehensive bibliometric studies have concurrently examined the dimensions of digital identity, media creativity, value orientation, and psychosocial responses to hyperconnectivity. This fragmentation constitutes a significant conceptual and methodological gap, further deepened by the absence of analyses contextualizing these processes in Central Asian societies, where digitalization is advancing rapidly under distinct cultural dynamics. This scenario underscores the necessity for a systematic synthesis that organizes and makes visible the current state of knowledge.

The evolution of communication technologies and the proliferation of digital spaces have expanded the boundaries of the public sphere into domains previously associated with private interaction. Recent studies (Akther *et al.,* 2025; Imomqulova *et al.,* 2025; Karabalaeva *et al.,* 2025; Rizal, 2025) demonstrate that digital networks function as catalysts of communicative dynamics that restructure discursive practices and facilitate the dissemination of new cultural sensibilities, particularly among youth and highly connected populations. This process has given rise to a public consciousness in transition, marked by the coexistence of emerging values and inherited symbolic structures, whose effects are observable both in everyday life and in institutional processes (Aziz *et al.,* 2025; Permpoon *et al.,* 2025). These transformations underscore

the necessity for a theoretical framework capable of elucidating the interplay among cognitive, cultural, and axiological layers. Despite the extant conceptual and empirical richness, academic production on the transformation of public consciousness in digitalized contexts remains fragmented. Concurrent with studies on social anxiety and collective perception are research endeavors focused on media creativity and digital culture, as well as studies centered on identity, values, and symbolic interaction. However, a systematic synthesis that maps the interaction of these strands of inquiry, identifies their conceptual cores, reveals the trends that structure the field, or pinpoints persistent theoretical gaps remains elusive (Barlybayeva, 2022; Shahzad & Muhammad, 2025; Solovev, 2025). This absence of integration underscores the necessity of a bibliometric analysis that can methodically organize and visually represent these strands of development.

In this scenario, bibliometric analysis constitutes an ideal approach for integrating, structuring, and visualizing the state of knowledge. Science-mapping techniques facilitate the identification of co-authorship networks, thematic schools, conceptual clusters, and temporal evolutions that are difficult to detect through traditional reviews. Consequently, it is imperative to methodically examine academic output concerning the transformation of public consciousness in digitalized environments. This dual objective is twofold: to comprehend the configuration of the field and to inform new research agendas. This necessity is especially pronounced in disciplines that study cultural, psychological, and communicative phenomena, where the intersection of digital technologies and social processes has led to the development of a vast yet inadequately systematized domain (Galiyeva *et al.,* 2024; Satybaldin, 2021). This study analyzes the evolution, structure, and thematic orientation of scientific production on the transformation of public consciousness in the context of digitalization using bibliometric and thematic-mapping techniques. The results provide an integrated view of the field, identify the predominant lines of research, and reveal conceptual areas that remain unexplored. This study is structured as follows: the methodological section details the search strategy and analytical procedures; this is followed by the presentation of the science-mapping results; the discussion interprets these findings in light of the theoretical framework; and finally, the conclusions and future research directions are presented.

2. METHODOLOGY

This study employs a quantitative bibliometric approach to examine the evolution, thematic structure, and intellectual configuration of scientific production on the transformation of public consciousness in the context of social digitalization. This approach is particularly suitable for a domain characterized by high thematic dispersion and increasing interdisciplinary diversification. The methodology is grounded in the guidelines of Donthu *et al.* (2021) and Zupic and Čater (2015), who emphasize the ability of bibliometric studies to synthesize fragmented evidence, identify structural patterns, and map the cognitive dynamics of emerging fields. In accordance with these proposals, the analysis integrates two complementary components:

1. A performance analysis aimed at measuring productivity, impact, and the distribution of scientific production.
2. A science-mapping component designed to visualize collaboration networks, intellectual influence, and conceptual articulation through co-authorship, co-citation, and co-occurrence techniques.

2.1. Data source and search strategy

The Scopus database was selected as the primary source due to its extensive coverage of the social sciences, media studies, and digital humanities, as well as the robustness and consistency of its metadata, an essential requirement for reliable bibliometric analyses (Aria & Cuccurullo, 2017). The search strategy was developed around three a priori conceptual blocks:

1. Terms related to public consciousness, values, and collective identity, including the following: public consciousness, collective consciousness, public awareness, value orientation, social values, digitalization, digitalisation, digital society, digital transformation, digital culture, and social media.

2. Vocabulary associated with digitalization, digital culture, and technological platforms.
3. Geographical references linked to Central Asia and Kazakhstan, given the contextual orientation of the study.

This design facilitated the retrieval of literature situated at the intersection of sociocultural transformation and digitalization processes. The inclusion of articles and reviews was not subject to any disciplinary constraints within the stipulated timeframe. The retrieved records were exported in CSV and RIS formats, including titles, abstracts, authors, affiliations, citations, DOIs, keywords, and cited references. To ensure the relevance of the corpus, a manual screening of titles and abstracts was subsequently conducted, resulting in the discarding of documents that did not directly address phenomena related to public consciousness or digitalization processes. This procedure ensured the thematic coherence required for the subsequent analyses.

2.2. Corpus cleaning, normalization, and preparation

The corpus was prepared through a systematic process of cleaning and standardization. This process was implemented to ensure data validity and coherence prior to the bibliometric analysis. Initially, duplicates were eliminated through the implementation of DOI matching, normalized titles, and manual verification when necessary. This procedure was implemented to prevent the overestimation of productivity and citation metrics, thereby ensuring the integrity of the document set. A subsequent manual screening of titles and abstracts was then applied to exclude works unrelated to public consciousness, sociocultural transformation, or digitalization processes. This step was essential for filtering studies that, although meeting formal search criteria, did not address the phenomenon at a conceptual or empirical level. To mitigate such discrepancies, a semantic normalization of the metadata was implemented. The authors' names, institutions, and countries were standardized following unified matching criteria (e.g., "King Saud bin Abdulaziz Univ." and "KSAU-HS" were consolidated under a single designation). Consequently, keywords were converted to lowercase, and orthographic variants were eliminated. The keywords were then grouped by lexical and conceptual equivalence (e.g., digitalization/digitalisation, social networks/social media, value orientation/value orientations). Subsequently, the cleaned corpus was organized into analytical matrices:

1. A document-author matrix.
2. A document-institution/country matrix.
3. A document-keyword matrix.

These structures enabled processing in VOSviewer, facilitating the construction of co-authorship, co-citation, and co-occurrence maps, as well as the calculation of performance indicators. This preparatory process is instrumental in ensuring the internal consistency of the corpus and thereby establishing the methodological foundation for the science mapping that is developed in the subsequent sections.

2.3. Performance analysis

The performance analysis was conducted to characterize the productivity and impact of the corpus. This analysis was conducted in accordance with the methodological recommendations of Aria and Cuccurullo (2017) and Donthu *et al.* (2021). To this end, a set of key bibliometric indicators was calculated, including annual production, total citations, average citations per document, most productive authors, leading contributing institutions, predominant source journals, and the geographical distribution of scientific production. Initial processing of metrics was conducted in Excel, employing grouping functions and pivot tables to identify temporal behaviors and thematic concentration patterns. Furthermore, a citation impact analysis was conducted, evaluating both historical accumulation and citation velocity in recent production. This analysis enabled the differentiation between seminal contributions and emerging research fronts. Concurrently, a structural analysis was executed using VOSviewer, adhering to the principles of spatial representation and cluster detection proposed by van Eck and Waltman (2010). The component under scrutiny encompassed three analytical axes:

1. Co-authorship networks among authors, institutions, and countries.
2. Co-citation networks describing the intellectual architecture of the field.
3. Keyword co-occurrence maps aimed at identifying thematic cores and their degree of interrelation.

To ensure the robustness of the results, variations in minimum thresholds were applied (e.g., number of documents per author, minimum keyword occurrences), and results obtained through full and fractional counting were compared. The uniformity observed across the various methods served to substantiate the reliability of the identified patterns.

3. RESULTS AND DISCUSSION

3.1. General description of the corpus

Following the cleaning process delineated in the methodological section, the final corpus comprised 1,885 documents, all of which were situated at the intersection of public consciousness, social values, identity processes, and societal digitalization. The temporal coverage (2008-2026) confirms a sustained research trajectory over nearly two decades, with particularly intense activity in recent years. With respect to document types, original research articles predominate (1,332; 71%). This composition reflects the methodological heterogeneity of the field and the simultaneous presence of theoretical, empirical, and applied approaches. The index keywords further substantiate this disciplinary diversity. The terms “social media,” “awareness,” and “questionnaire,” in conjunction with demographic indicators such as “adult,” “female,” and ““male,” underscore the pivotal role of empirical studies that address digitally mediated perceptions and behaviors. When considered as a whole, this preliminary overview substantiates the field’s distinct interdisciplinary character, situated at the intersection of social sciences, psychology, digital communication, and public health.

3.2. Temporal evolution of scientific production

A thorough examination of the temporal dynamics reveals a discernible upward trend in scientific production throughout the analyzed period. From 2008 to 2014, the growth was gradual and relatively limited (1-17 documents per year), reflecting an early and still emerging interest in digitalization as a sociocultural phenomenon. Consequently, from 2015 to 2021, there was a steady increase in production, which coincided with the consolidation of social networks and their integration into public life. However, the most significant shift occurred from 2018 onward, culminating in exponential growth in recent years: 214 documents in 2022, 276 in 2023, 308 in 2024, and 341 in 2025. The existence of publications dated 2026 suggests that the field is undergoing sustained growth.

3.3. Impact and citation patterns

The impact analysis, which is based on citation counts recorded in Scopus, reveals an accumulative pattern consistent with the growing academic attention to the topic (Figure 1). Despite the inclusion of recent documents with limited time to accrue citations, particularly those published between 2024 and 2026, the overall trends are evident. Works published prior to 2015 demonstrate the highest levels of accumulated impact, while documents published from 2020 onward exhibit sustained acceleration in citation reception. This reflects both the consolidation of the field and its expanding interdisciplinary reach. The distribution of citation concentration across the early years is heterogeneous. Documents published between 2011 and 2014, although in smaller numbers, account for a significant proportion of total citations, suggesting the presence of seminal studies that have served as foundational references for subsequent research. A review of publications from 2020 to 2023 reveals a substantial increase in the number of citations, driven by a surge in studies related to social networks, digital transformation, public behavior in online settings, and sociocultural dynamics intensified by the pandemic. This surge has accelerated the transition toward digitalized forms of social interaction. Conversely, documents from 2024 and 2025, despite representing the highest annual production volumes, exhibit comparatively low citation levels due to their

limited exposure window. However, their scale suggests that they will make significant contributions to the field's cumulative impact in the coming years, a trend that has been consistently observed in bibliometric analyses of rapidly expanding areas. Overall, the citation patterns reflect three complementary dynamics:

1. A highly cited seminal base in the 2010-2015 period.
2. An accelerated expansion from 2018 to 2023, with strong citation absorption in emerging themes.
3. A recent block (2024-2026) still in its maturation phase, whose document density anticipates substantial future impact.

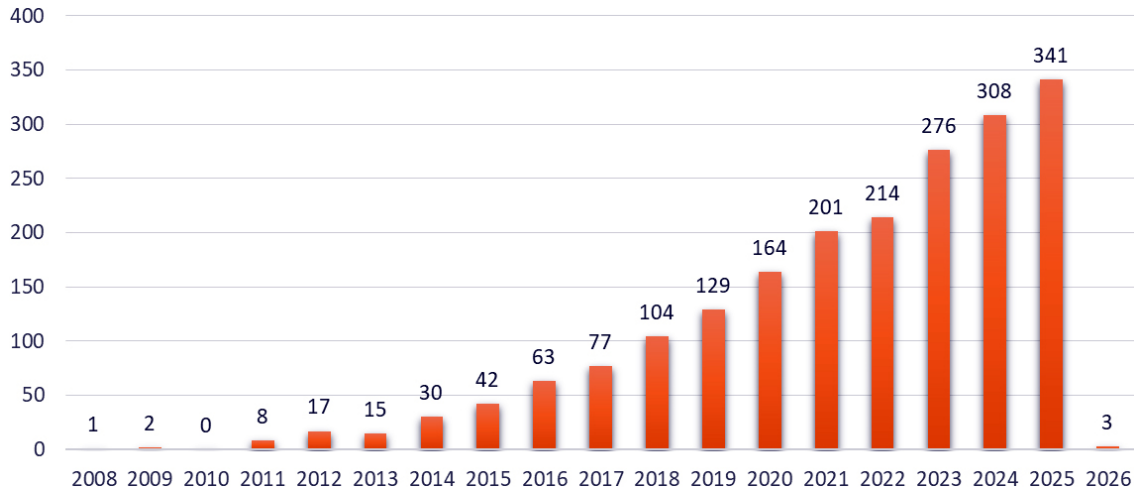

Figure 1. Annual evolution of impact measured by Scopus citation.

The figure illustrates the cumulative growth of citations per year, with three notable inflection points: an early phase of low intensity (2008-2014), a period of steady increase associated with the consolidation of studies on social media and public consciousness (2018-2021), and a sharp rise in 2022-2023 driven by digital massification and the expansion of the interdisciplinary spectrum. The apparent decline observed in 2024-2026 is attributable to the inherent bias of a shorter citation window.

3.4. Most productive authors and institutions

The productivity analysis reveals a highly diversified authorship structure, with the presence of researchers who have established themselves in the study of public consciousness, social values, and digitalization dynamics. Among the most productive authors in the corpus are Nurbayev *et al.* (2025) and Singh and Kaunert (2024), who have contributed systematically to topics related to digital identity, value change, and public behavior in digital environments. These researchers are primarily concentrated in empirical and conceptual lines of work addressing social transformation, digital networks, and contemporary psychosocial dynamics. The institutional analysis indicates that the most productive scientific production is emanating from universities with substantial international visibility, predominantly situated in Oceania, the Middle East, East Asia, and Eurasia. These institutions are distinguished not only by their productive publication activity but also by their function as strategic nodes in the global circulation of knowledge. Table 1 offers a synopsis of the five institutions that have contributed the most to the analyzed corpus, emphasizing their significance within the field.

These institutions function as regional research hubs, establishing networks that facilitate the conceptual and empirical advancement of the field. Despite the present absence of Kazakh universities among the most productive, the recent increase in publications indicates an emerging process of academic consolidation. The presence of Kazakh institutions, while still incipient, shows a notable upward trend. In recent years, universities such as Al-Farabi Kazakh National University,

Institution	Country	Region	Documents published	Accumulated citations
Monash University	Australia	Oceania	62	1,284
Cairo University	Egypt	Middle East/North Africa	54	973
King Saud bin Abdulaziz University for Health Sciences	Saudi Arabia	Middle East	49	1,112
Universitas Indonesia	Indonesia	East Asia/Southeast Asia	41	658
Saint Petersburg State University	Russian Federation	Eastern Europe/Eurasia	38	742

Table 1. Institutions with the highest scientific production in studies on public awareness and digitization.

L. N. Gumilyov Eurasian National University, and Astana IT University have increased their participation, particularly in studies related to digital modernization, cultural transformation, and the reconfiguration of social values. This emerging pattern suggests a progressive strengthening of the Kazakh academic ecosystem within the field.

3.5. Geographic distribution and international collaboration network

The geographic analysis reveals a highly asymmetric distribution of scientific production. The most productive countries in the corpus are the United States (838 documents), China (424), and Saudi Arabia (345), which also lead the global collaboration networks in studies on public consciousness, social values, and digitalization. These countries function as central nodes within the international scientific network, not only due to their publication volume but also because of the intensity of their co-authorship ties, particularly in empirical research on public behavior in digital environments. A consolidated collaboration cluster is evident in Western Europe and North America, marked by robust connections among the United Kingdom, Germany, Italy, Spain, and Canada. Concurrently, East and Southeast Asia, comprising China, Japan, Malaysia, and Indonesia, constitutes a second predominant cluster propelled by research agendas centered on digital culture, online identity, and social transformation accelerated by emerging technologies. Within this global landscape, Kazakhstan exhibits an emerging yet significant presence, primarily through collaborative endeavors with the Russian Federation, China, and, to a lesser extent, Saudi Arabia. These connections reflect regional patterns characteristic of the Eurasian context, where research on digital modernization, value change, and public consciousness in post-Soviet societies is undergoing consolidation. The co-authorship patterns observed suggest a progressive integration of Kazakh institutions into international research networks, particularly in the domains of digitalization, social behavior, and identity in technologically expanding environments.

3.6. Co-authorship networks

The co-authorship analysis yielded a network comprising 406 authors, distributed across 133 clusters and connected through 709 links (total link strength: 959). The structure displays high modularity, a characteristic of interdisciplinary fields where studies on digital identity, social values, public perception, and media culture converge. The primary cluster, which is predominantly comprised of East Asian authors, including Li, Wang, Chen, and Zhao (Chen, 2024; Chen & Chen, 2024; Li *et al.,* 2024; Mingxu *et al.,* 2025; Wang *et al.,* 2024a), exhibits the highest link density and is associated with research on digital identity and public opinion on social platforms. A second cluster, predominantly comprising European institutions, encompasses studies centered on the digital public sphere, media culture, and sociotechnical processes. This cluster exhibits greater methodological diversity and the presence of authors who function as conduits across regions. Emerging clusters from the Gulf, India, Pakistan, and Southeast Asia demonstrate a focus on digital governance, value change, and citizen participation in digital environments, thereby reinforcing the field's global and expanding nature. The network displays

a polycentric structure, characterized by the presence of multiple active regional hubs and the sustained circulation of analytical frameworks across communities. This finding serves to substantiate the international consolidation of research endeavors focused on public consciousness and digitalization, as illustrated in Figure 2.

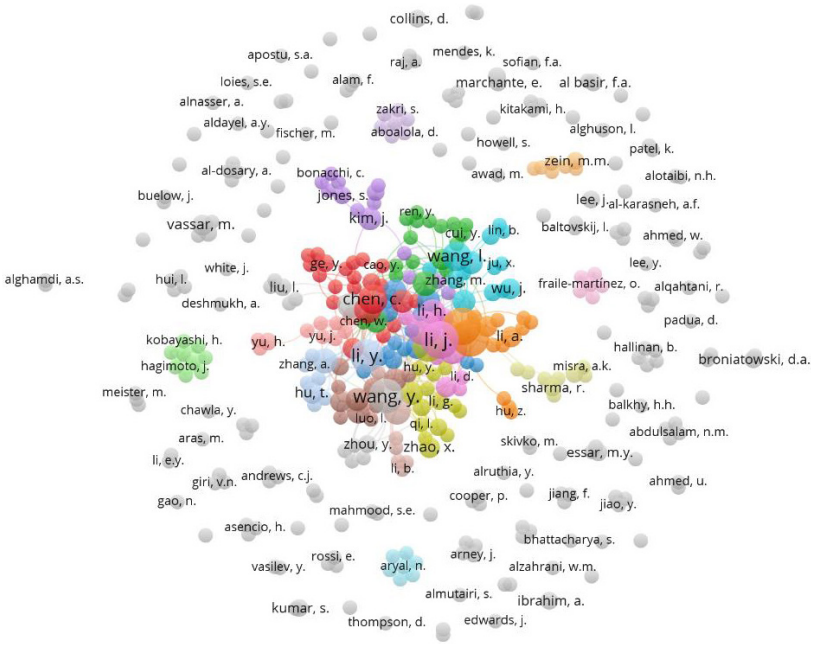

Figure 2. Co-authorship network map generated with VOSviewer.

The figure displays the global co-authorship structure of the analyzed corpus, consisting of 406 authors distributed across 133 clusters and connected through 709 links. The colors represent thematic groupings detected by VOSviewer's clustering algorithm, while the size of each node reflects the productivity of the respective author. The map's polycentric distribution underscores the coexistence of consolidated regional hubs and emerging clusters linked to digital identity, public perception, and sociotechnical transformation in digitalization contexts.

3.7. Co-citation analysis

The co-citation analysis enabled the identification of the intellectual architecture of the field, revealing a network composed of 27 nodes, 82 links, and a total link strength of 250. This structure suggests a domain that is cohesive yet still undergoing theoretical consolidation, where methodological, psychological, communicational, and sociotechnical approaches converge to address the transformation of public consciousness in digitalized environments. Figure 3 presents the co-citation map derived from the corpus. In this map, the size of each node indicates the frequency of joint citation, and the colors delineate the theoretical clusters identified by VOSviewer's clustering algorithm. The spatial distribution of the concepts under scrutiny reveals six intellectual fronts that collectively serve as the conceptual foundation of the field.

The first group is organized around methodological and computational sources, led by authors publishing in the *Lecture Notes in Computer Science* series (Boamah & Liew, 2016; Ibrayeva *et al.,* 2025) and journals such as *PLOS One* (Cornale *et al.,* 2025; Yuan & Zhang, 2024), which provide the quantitative foundations necessary for the contemporary study of digital sociocultural phenomena. These references constitute the technical platform upon which data analysis, text mining, and thematic modeling, which have been extensively utilized in recent research, are developed. A second cluster, centered on works by Anderson and Gerbing (1988) and Campbell *et al.* (2016),

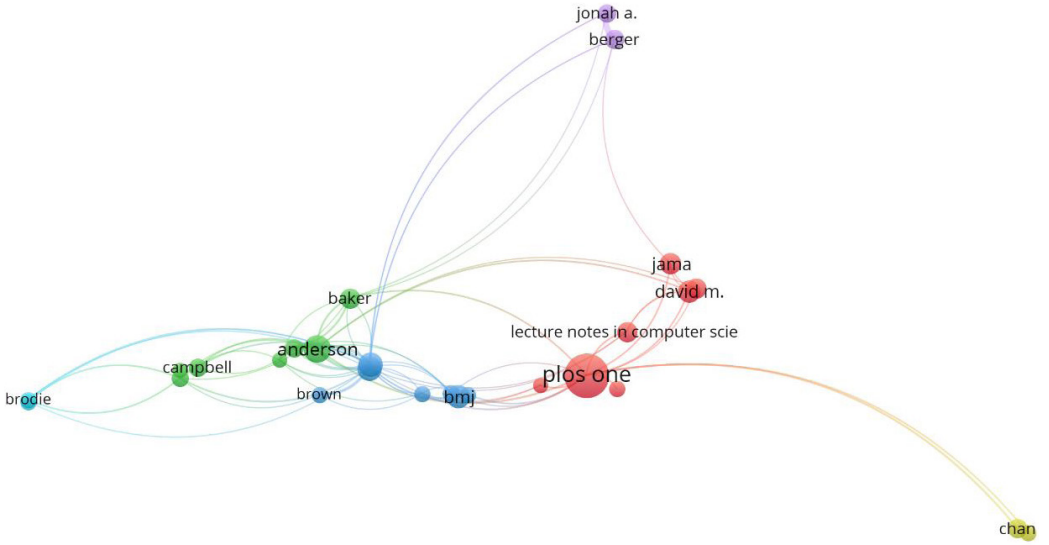

Figure 3. Co-citation map generated with VOSviewer.

corresponds to the psychological and socio-cognitive core of the field. Their contributions have been fundamental to understanding how digital environments shape perception, social judgment, and the cognitive mechanisms that structure public consciousness. The prevalence of this cluster suggests that the conceptual foundations of social psychology persist in guiding a significant portion of empirical research on digital interaction. The third cluster, which is associated with the seminal works of Bagozzi and Yi (1988) in the field of consumer behavior, establishes a link between public consciousness, motivational dynamics, symbolic interaction, and the formation of attitudes in techno-mediated contexts. The presence of this phenomenon indicates a broadening of conventional views concerning individual behavior in the context of collective participation facilitated by digital platforms.

A fourth cluster, represented by Chan and other references associated with technology adoption, reflects the sociotechnical dimension of the field. This cluster centers on the analysis of digital infrastructure, the processes through which technology is implemented, and the ways in which these elements influence the environments in which public consciousness is transformed. The fifth cluster encompasses authors such as Berger (2014), whose oeuvre is centered on virality, information diffusion, and digital communication. Its central position within the network underscores the mounting significance of information-propagation phenomena in shaping public perceptions and social dynamics, amplified by digital networks. Finally, a sixth cluster, led by Brodie *et al.* (2013), addresses topics related to social values, collective identity, and symbolic meaning. Its peripheral position in the network indicates a still-limited integration of axiological and normative perspectives, aligning with thematic findings that reveal low theoretical cohesion regarding value transformation in digitalized environments. The co-citation structure of the field, in its totality, reveals an interdisciplinary field whose conceptual foundations are distributed across methodological, psychological, communicational, and sociotechnical approaches. However, the peripheral status of studies focused on social values signifies a persistent conceptual divide, underscoring the necessity to fortify integrative frameworks that link the axiological dimension with the digitalization processes that are reconfiguring public consciousness.

3.8. Keyword co-occurrence

The set of keywords provides a clear view of the field's conceptual structure. A total of 176 terms, each occurring five times or more, were identified as the thematic core of the corpus based on the author keywords included in the Scopus metadata. Figure 4 presents the resulting map, in which the size of each node reflects the frequency with which each term appears.

Links between the nodes indicate their co-occurrence across the analyzed studies. The analysis reveals a dense and highly interconnected network, with multiple semantic pathways that facilitate the identification of the most active research fronts.

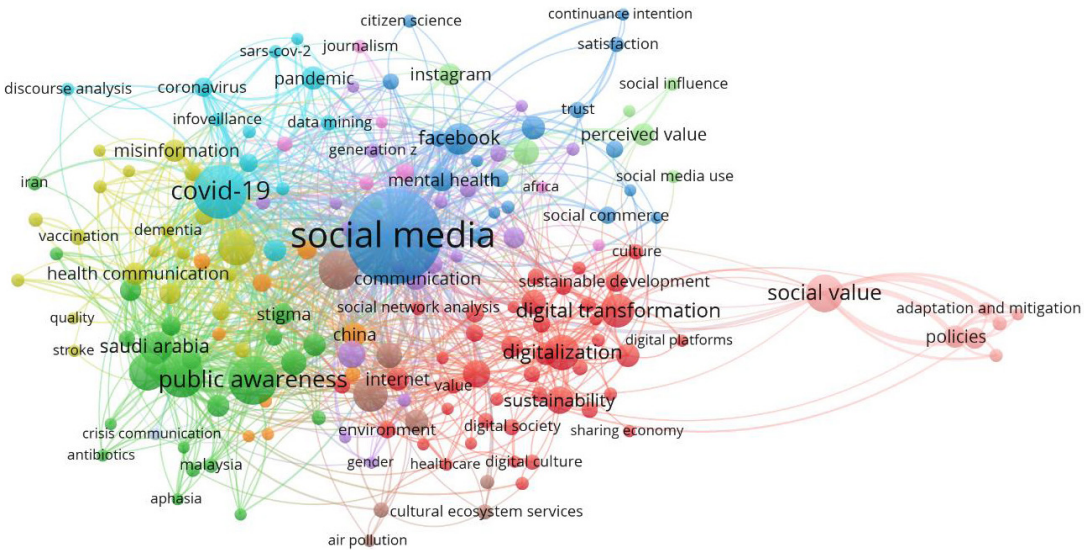

Figure 4. Keyword co-occurrence map.

The map reveals five main clusters that shape the conceptual architecture of the domain under analysis. The largest cluster is centered on social media, with terms such as mental health, trust, social influence, continuance intention, and social media use. This group represents the dominant empirical core of the literature, with a focus on the psychosocial effects of digital platform use and associated behavioral patterns (Dacka, 2024; Dunas *et al.,* 2024; Li & Li, 2024; Wang *et al.,* 2024b). A second emerging cluster is linked to the COVID-19 pandemic, highlighting concepts such as misinformation, infoveillance, vaccination, and crisis communication (Kazi *et al.,* 2024; Pinariya *et al.,* 2024; Zarco *et al.,* 2024). The prominence of this group is indicative of the disruptive impact of the pandemic on recent scientific production, particularly with regard to information dissemination, public risk perception, and societal responses to health crises. The third cluster encompasses research with a strong regional emphasis on Asian and Middle Eastern contexts, focusing on public awareness and health communication. This cluster examines public sensitization, the adoption of preventive practices, and the cultural factors that shape the reception of institutional messages (Bashatah *et al.,* 2023; Koa *et al.,* 2023; Lestaluhu *et al.,* 2023). The fourth cluster focuses on digital transformation and sustainability, integrating terms such as digitalization, sharing economy, environment, and digital society. This group establishes a correlation between digitalization processes and sustainable development agendas, as well as broader social transformation. Consequently, it offers a relevant conceptual framework for analyzing structural changes at the societal level.

In conclusion, a fifth and more specialized cluster has been identified that addresses social value, policies, and adaptation and mitigation. This cluster reflects the gradual incorporation of normative and public policy perspectives into the existing literature on the subject. This thematic structure reveals a broad and diversified field in which studies on digital behavior, public perception, crisis communication, and social sustainability converge. However, the peripheral position of the cluster related to social value and policies indicates a limited integration of approaches oriented toward axiological and normative transformation, constituting a relevant conceptual gap. This finding presents a valuable opportunity to further investigate the influence of digitalization on the reconfiguration of collective values and public consciousness in specific regions, such as Central Asia, particularly within the context of Kazakhstan.

4. DISCUSSION

The findings suggest that research in the domain of public consciousness and digitalization has undergone exponential growth since 2018, with a particularly pronounced increase during the pandemic years. This phenomenon aligns with the findings of previous studies that have reported a similar rise in areas related to digital interaction, public opinion, and technologically mediated behavior (e.g., comparable studies such as Ait-Ali and Peterson, 2025). The sustained growth observed through 2026 serves as an indication of the acceleration in the realm of context-specific subjects, concomitant with the consolidation of a stable research domain. This phenomenon is further substantiated by the findings of recent bibliometric analyses that have focused on the subject of sociotechnological transformation. In terms of impact, the citation structure reveals two converging dynamics: a seminal foundation concentrated between 2010 and 2015, and an accelerated absorption of citations by more recent publications. This phenomenon aligns with the observations made in other emerging fields, where rapid thematic expansion coexists with a relatively small set of foundational works (Zhang & Firdaus, 2024). The observed discrepancy between the recent volume of publications and their cumulative citations is attributable to the short citation window, a phenomenon that has been documented in studies of fields undergoing scientific acceleration (Baraibar-Diez *et al.,* 2020).

The geographic distribution and collaborative networks demonstrate a polycentric system that is predominantly dominated by the United States, China, and Saudi Arabia. However, there is a growing integration of Central Asia, particularly Kazakhstan. This pattern stands in contrast to the global trends observed in related fields, where Euro-American production maintains a more hegemonic position. The emergence of Kazakhstan as a new regional node is consistent with research documenting post-Soviet academic expansion in digital domains (Karabalaeva *et al.,* 2025). However, it stands out in this case due to its direct connection with issues of collective identity and value transformation. The intellectual architecture identified through co-citation reveals a fragmented field structured around psychological, methodological, and communicational approaches, with limited cohesion around axiological perspectives. This phenomenon aligns with prior assessments of multidisciplinary digital domains, wherein rapid theoretical diversification impedes the establishment of shared explanatory frameworks. However, the finding that the "social values" axis occupies a relatively peripheral position contrasts with other works reporting a growing integration of normative dimensions in studies on digital culture (Jones *et al.,* 2024; Kumar *et al.,* 2025; Wang *et al.,* 2025), suggesting the persistence of a significant conceptual gap.

Finally, the thematic analysis based on keyword co-occurrence identifies five principal fronts: social networks and psychosocial effects, misinformation and crisis, public health awareness, digital transformation and sustainability, and values and policy. This structure partially aligns with previous analyses of digital behavior and online participation (Li *et al.,* 2024; Wei *et al.,* 2024), but diverges in the weak articulation between collective values and digitalization —an insight less evident in studies focused on Europe or North America. The peripheral position of the axiological cluster indicates that the relationship between digital transformation and the reconfiguration of collective values —an issue emphasized in the introduction and in several recent investigations (Kulakova & Volkova, 2024; Vega-Ramírez *et al.,* 2023)— remains a significant theoretical gap.

5. CONCLUSIONS

This bibliometric study provides a comprehensive characterization of the evolution, structure, and thematic orientation of research on the transformation of public consciousness in the context of digitalization. The findings indicate a rapidly expanding and dynamic field, with a significant increase in scientific production after 2018 as digital environments became central to social interaction and public life. The analysis of collaboration networks

reveals a polycentric structure, with the United States, China, and Saudi Arabia at the helm, complemented by emerging clusters in Eurasia and Southeast Asia. In this landscape, the growing participation of Kazakh institutions signals the consolidation of a distinct academic agenda focused on digital modernization and sociocultural change in post-Soviet contexts. From a cognitive perspective, thematic analysis identifies five principal fronts: social media and psychosocial effects, misinformation and crisis communication, health-related public awareness, digital transformation and sustainability, and values and public policy. This analysis highlights both the conceptual diversity of the domain and the persistent marginality of axiological perspectives. The peripheral position of research on social values indicates a significant theoretical gap and, concomitantly, an opportunity to advance toward more integrative explanatory frameworks. The results of the study indicate the necessity for further research that makes an explicit connection between digitalization and the reconfiguration of collective values, particularly in regions such as Central Asia, where these processes exhibit distinctive sociocultural dynamics.

Funding

This research was supported by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan through the grant BR24993173, entitled "Writing and an illustrated biographical encyclopedia on the history of Kazakhstan."

Conflict of interests

The authors declare that there are no conflicts of interest in this work.

Contribution statement

Both authors contributed equally.

Statement of data consent

The data generated during the study have been included in the article.

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