

Article

Social Media and Older Adults (1995–2023): A Bibliometric Analysis with Implications for Media Education in Lifelong Learning

Javier Gil Quintana ^{1,2,*} , José Javier Hueso Romero ² and Luis Miguel Romero Rodríguez ^{1,3} 

¹ Faculty of Communication Sciences, Rey Juan Carlos University (URJC), Camino del Molino, n° 5, Fuenlabrada, 28943 Madrid, Spain; luis.romero@urjc.es

² Faculty of Education, National University of Distance Education (UNED), Juan del Rosal, n° 14, 28040 Madrid, Spain; jjavierhuesoromero@edu.uned.es

³ ESAI Business School, Espiritu Santo University, Av. Samborondón 5, Samborondón 092301, Ecuador

* Correspondence: j.gil.2023@alumnos.urjc.es or jgilquintana@edu.uned.es

Abstract

This study examines the scientific output on older adults' use of social media by examining 2695 documents from the Web of Science database. These publications cover various areas, such as behavioral sciences, psychology, healthcare sciences, and computer sciences, and highlight institutions such as the University of Seville and the University of Michigan. The analysis was extended from 1995 to 2023, identifying 2012 as the year with the most significant increase. The United States led with 757 documents, followed by Spain with 511. Prominent authors include Jia Wu, Howard Giles, and Itai Himelboim. The study also highlighted frequent keywords such as “social networks, communication, and media”. A total of 41 countries were mentioned, and journals such as *Profesional de la Información* and *Comunicar* were analyzed. The historical perspective reveals theoretical connections between health, communication, and social networks in the elderly. Despite various challenges, such as the digital divide, the positive impact of social networks on the elderly stands out, providing a training demand for media education as an essential for all.

Keywords: social media; media literacy; lifelong learning



Academic Editor: Maria Beatrice Ligorio

Received: 1 April 2025

Revised: 20 June 2025

Accepted: 23 June 2025

Published: 25 June 2025

Citation: Gil Quintana, J., Hueso Romero, J. J., & Romero Rodríguez, L. M. (2025). Social Media and Older Adults (1995–2023): A Bibliometric Analysis with Implications for Media Education in Lifelong Learning. *Education Sciences*, 15(7), 811. <https://doi.org/10.3390/educsci15070811>

Copyright: © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Betting on formal and informal educational spaces for media literacy helps build well-formed, critical, and participatory citizenship capable of navigating complex media environments. This environment encompasses traditional media such as television, radio, and print press; digital media such as websites, social networks, mobile applications, and streaming; online communities; virtual and augmented reality; advertising; and all consumption patterns derived from these spaces.

Over the past two decades, social media has emerged as a digital platform where communities of people with something in common are formed, whether it is friendship, companionship, living in nearby locations, or sharing tastes and hobbies. Through these social spaces, horizontal, bidirectional, and interactive communication is promoted, allowing contact between people or, in recent years, between people and artificial intelligence (AI).

Justifying the importance of this study on social networks and the elderly clearly implies considering different social, technological, and psychological factors. Among other aspects, this importance lies in digital inclusion and the reduction of the generation gap,

the impact that social networks have on mental health and emotional well-being, access to information, the emergence of other models of communication at the family level, and even the participation of citizens and their empowerment.

This research aims to identify and analyze the networks found through an analytical bibliometric study of scientific production related to the use of social networks by the elderly. The different networks created and extracted from the analysis presented a generalized view of the searches, relationships, and connections among the elements under study, co-authorship, the frequency of scientific publications by individuals, and geographical distribution at the national and international levels. The research questions (RQs) underlying this study were as follows: RQ1: What types and perspectives can be identified when extracting and analyzing scientific production on the use of social media by the elderly? RQ2: What key concepts, countries, institutions, authors, and researchers are the focus of the most up-to-date scientific documents on the use of social media by older adults? RQ3: What challenges and educational challenges for media education in the elderly can be inferred from the interest and evolution of scientific production in this field of study?

Our study was organized into three categories: identifying three historical phases; pinpointing the most significant articles in relation to this field; and identifying authorship and co-authorship, organization, source and title, the year of publication, and producing countries, keywords, and references. Based on this, the following research objectives (O) are presented:

- Objective 1 (O1): Analyze scientific production on social networks and the elderly sector, identifying the main areas of study and trends in the Web of Science database.
- Objective 2 (O2): Identify key players in scientific production on social networks and the elderly, including authors, institutions, and countries with the greatest impact in terms of published papers and citations.
- Objective 3 (O3): Explore the historical evolution of the study of social networks and the elderly by evaluating the growth of scientific production and the interconnection of authors and organizations.

In this post-digital context of accelerated transformation and global population aging, it is important to analyze how the senior sector relates to social networks, not only through the instrumental use of these media, but also from an educational, social and cultural perspective. The data presented in this study reveal several gaps in the literature. There is a lack of longitudinal studies on the impact of social networks on the mental health of this sector of the population, as well as a lack of analysis on the effect of these networks on identity and sense of belonging, as well as the risks of misinformation, fraud, and privacy. Based on the global aging of the population and the dizzying increase in digitalization, addressing these and other gaps is essential to design digital inclusion strategies that are effective and maximize the benefits that these social spaces can have on older people. Media literacy for the elderly, based on perspectives arising from scientific research, not only allows them to stay connected with family and friends but also provides the necessary skills to consciously and safely participate in the post-digital environment. The educational projects derived from this study will aim at the digital and media inclusion of older people, lifelong education that encompasses all stages of the educational system, and all audiences, especially those who are more vulnerable.

This bibliometric analysis allows for a systematization and visualization of the trends, actors, and key concepts that contribute to the scientific production on social networks and older people, providing a strategic vision to guide future media literacy proposals.

2. Theoretical Framework

Lifelong education is a continuous process of acquiring knowledge that results in the updating and development of skills and the acquisition of competencies from childhood to old age (UNESCO, 1972). Learning is not something that corresponds only to childhood or youth when we pursue certain studies to access the job market; rather, it is necessary to adapt to the post-digital society in which cutting-edge digital technologies play a fundamental role. Lifelong education is fundamental because it improves our quality of life and allows us to participate at the social level as active, critical, and emancipated citizens (Freire, 1970). This training promotes social inclusion (Jarvis, 2004), holistic development (Yeaxlee, 1929), and meaningful experiences (Illeris, 2004). Related to the subject of this research, it allows us to adapt to the technological changes we are experiencing in a constantly changing society (Fiel, 2006). In this post-digital context, it is necessary to emphasize that within lifelong learning, media education encompasses the development of competencies, knowledge, and attitudes that enable people to access, analyze, evaluate, and create communication networks in multiple formats (UNESCO, 2018). It is an essential educational approach to prepare citizens at all stages of life to face challenges and seize opportunities in a post-digital, media-driven, and digitalized society, where misinformation reigns (Haidt, 2001) and the truth must be unveiled (Tejedor et al., 2024).

Social media are digital platforms designed for citizen interaction through the creation of personal profiles, networking, and the exploration of relationships. Through these platforms, you can not only share content, but also participate in online communities, establish connections, or access expanded networks on specific topics of interest, transcending geographical and generational barriers. The use of these environments has permeated all stages of human life (Gil-Quintana, 2023), even in adulthood and, of course, in old age (Balseca et al., 2019). The resistance of older adults to the use of these social networks is based more on existing prejudices than on reality, although we must indicate that the facilities provided by society are sometimes insufficient.

This fact is joined by the manifestation of ageism on social media, understood as discrimination against people or groups based on age, and projected through stereotypes or derogatory memes (Levy & Macdonald, 2016), presenting older people as digitally incompetent; exclusion in design and content (Nef et al., 2013), with content going viral that can be limiting and not very accessible for this sector; and the pressure to meet youth standards that can lead to self-ageism (Levy, 2009) and isolation (Cornwell et al., 2008) through comments like “this isn’t for your age” “ok, boomer”, etc. (Ng & Levy, 2018). We can even see how algorithms (Cotter, 2019) and influencer marketing tend to prioritize content for younger audiences (Iniesta-Alemán et al., 2024), affecting the sense of belonging of older adults.

For this reason, it is important, based on impact research, to identify the needs that have been investigated in this sector to establish media education perspectives for the elderly, specifically regarding the use of social networks. Training programs have increased from a lifelong learning perspective in adult centers, associations, nursing homes, and other non-formal educational spaces as a result of the COVID-19 pandemic (2020–2023), with the aim of developing digital competence in the elderly or achieving successful aging (Gasiorek et al., 2019).

These educational approaches for the elderly are still insufficient, compared to those aimed at adolescents and young people (Alcolea-Díaz et al., 2020; Alhothali, 2021; Kaufman, 2021), to overcome the fear of interaction on social media caused by the digital divide, and, above all, to address challenges such as the legal issues that arise in these spaces, misinformation, control, privacy, the use of communicative patterns (Bernhold, 2020), and the failure to adapt discourse to people from other generations (Giles et al., 2023).

Despite this, in this sector, there is no lack of enthusiasm for learning (Morillas & Navarro, 2013) and the need to feel immersed in the post-digital society (Fernández, 2012), using their devices to reduce social isolation (Lorente, 2017), fight against the passage of time (Bernhold, 2023), communicate with their close ones or assistants (Miguel Cruz et al., 2023; Conway et al., 2023), face difficult situations (Constantini et al., 2023; Hird et al., 2024), reduce disability, receive information, consult on specific health issues (Himmelboim et al., 2020), and engage in lifelong learning in specific digital labs (Verloo et al., 2021; Toso et al., 2023; Figueiredo et al., 2024), participate, and even create personal profiles to share their thoughts, productions, etc., and to be part of the post-digital culture (Escaño, 2023) of inclusive participation (Bunbury Bustillo et al., 2022).

Bibliometric analysis is justified as an ideal methodological tool for addressing these concepts. Through the visualization of co-occurrence, co-authorship, and citation networks, this methodology allows us to observe how media education, the digital divide, ageism, and digital literacy have been addressed in scientific production. Trends, gaps, and research patterns can be identified to guide the design of specific educational proposals for lifelong learning among older adults. This relationship between theory and method ensures a structured, evidence-based approach to interpreting the study's findings.

3. Materials and Methods

3.1. Justification of Bibliometric Study

Bibliometric analysis is justified as the most efficient method to address the objectives set out in this study because it offers a comprehensive and structured vision of the state of the art without the need to conduct deep qualitative syntheses typical of a systematic review. Through this approach, the identification of quantitative patterns and relationships in academic production is prioritized, using tools such as VOSviewer 1.6.20 to build networks of the co-occurrence of keywords, co-authorship, and institutions. In addition, this type of analysis is particularly useful in interdisciplinary studies, such as the link between social networks and the elderly, where scientific production spans multiple disciplines and geographical contexts. The ability of bibliometric analysis to quantify the influence of publications, authors, and institutions allows us to draw informed conclusions about the evolution and emerging perspectives in this field. Therefore, this approach ensures a valuable contribution to existing knowledge while avoiding methodological overlaps and confusions that could arise from integration with other research designs, such as systematic reviews.

3.2. Objectives, Database, and Selection Criteria

As previously indicated, this study aims to provide a bibliometric analysis (Pardal-Refoyo & Pardal-Peláez, 2020; Torres Salinas et al., 2023) of scientific production through the study and examination of the Web of Science database on the concept of social media use by the elderly. This database indexes scientific articles, books, conferences, and other types of academic publications in an interdisciplinary manner. Through this database, we can analyze the quality, citation index, and bibliometric indicators (H-index and impact factor). For this analysis, we used bibliometric analysis to extract all of the information we could gather on our subject of study, which can be understood as a research method for identifying, evaluating, and synthesizing the entire scope of scientific evidence around a specific object of study (Gough et al., 2012; Higgins & Green, 2008; Moher et al., 2009; Egger et al., 2001). Through this review, the literature was thoroughly searched, studies were selected, quality was assessed, and the results were synthesized. Similarly, this technique is informed by bibliometric analysis, which enables the study of scientific production in a quantitative manner and in the chosen object of study through qualitative indicators

(Solla Price, 1963; Garfield, 1979; Moed, 2005; Egghe & Rousseau, 1990; Waltman & van Eck, 2012). Thus, bibliometric analysis allows us to evaluate the impact of certain publications, emerging trends, and topics, as well as observe the collaborations and scientific networks generated around the object of study.

3.3. Process, Partnership Strength, and Search Algorithm

To ensure the scientific rigor of the present study, a carefully designed and reproducible search strategy was implemented in the Web of Science database, which ensured comprehensive coverage of relevant scientific production. The equation used covered a time period from 1995 to 2023 and was limited to articles, book chapters, or book-type documents. To increase accuracy, key terms in Spanish and English, including synonyms and related terms, were considered, ensuring that linguistic or terminological variations did not exclude important documents. Additionally, the results were manually reviewed to eliminate duplicates and documents that did not meet the previously established inclusion criteria, such as a direct relationship with social networks and the elderly. Regarding bibliometric analysis, a mathematical formula was introduced, the purpose of which is fundamental for the quantitative interpretation of connections in the scientific network. This formula was used to calculate the strength of the links between nodes in the graph generated by VOSviewer. This association strength metric is essential for identifying patterns of scientific collaboration and key relationships within the bibliometric network, such as featured authors, relevant institutions, and frequent terms in the keywords. For example, it allows differentiation between nodes with high connectivity and those with less impact within the network, providing a solid statistical basis for interpreting the relative relevance of the elements analyzed. The inclusion of this formula is part of the effort to ensure that the results of the analysis are both replicable and scientifically sound, explicitly linking the methodological procedures to the findings of the study. This combination of a clearly defined search strategy and quantitative analysis tool ensures that the study maintains a robust and coherent approach, complying with the standards required in bibliometric research and facilitating the reader's understanding of the methodology used.

The data presented in this study were generated using the VOSviewer software. The networks, which included journal articles and book chapters, were built based on citation, bibliographic coupling, co-citation, and co-authorship. Thanks to the use of VOSviewer, text mining was carried out to construct a co-occurrence network of all of the scientific literature on the subject of study, including document topics, titles, abstracts, and keywords.

The sample of records on which this study is based is presented in the search equation, which obtained a total of 2695 records in the Web of Science. This procedure included publications from various sources, regardless of the database of origin or language, offering a complete picture of the field of study and academic production (Table 1). The equation presented below expresses the strength of the association between nodes through the relationship between the weight of the number of links of a node $a_{i,j}$ and the expected number of links of all nodes in the network $e_{i,j}$:

$$\text{Strength of Association (i,j)} = S_{ij} = \frac{a_{i,j}}{e_{i,j}}$$

Table 1. Search and criteria.

Search Algorithm *	Database	n Registries
"Redes sociales" or "Social Networks" (Title) or "Comprensión crítica" or "Critical understanding" (Title) or "Comunicación" or "Communication" (Title) and "Personas mayores" or "vejez" or "Envejecimiento" or "Tercera edad" or "Gente mayor" or "ancients" or "Jubilados" or "Jubiladas" or "Gente mayor" or "Ancianía" or "Older people" or "Old age" or "Aging" or "Third age" or "Elderly" or "Retired" or "Older people" (Topic)	Web of Science (All database All Collections)	2605
Date range: 1995–2023		
Type of documents: AND dt = ("article" or "book chapter" OR "book")		

Source: Author’s elaboration. * Note: The search was conducted in English and Spanish, as these are the two languages in which most scientific documents on the subject have been published.

Specifically, the parameters used to delimit the selected studies were made explicit, ensuring that each decision reflected a rigorous methodological framework. The period 1995–2023 was selected to cover the historical evolution of research on social networks and the elderly, ranging from the emergence of key concepts to the consolidation of social networks in the post-digital society. Regarding the types of documents considered, articles from scientific journals, book chapters, and books were included, as they represent the main sources of academic knowledge in this area, while other formats such as conference abstracts or documents without peer review were excluded to ensure the quality of the data. Regarding the theme, an approach was established that prioritized documents that explicitly addressed the relationship between social networks and older adults. To do this, a specific search equation was constructed that combined key terms such as “social networks”, “third age”, “aging”, and synonyms in different languages, which allowed obtaining a set of highly relevant records.

The map in Figure 1 shows the nodes that represent scientific production and the connections (edges) between them. The closer two nodes appear in the documents, the stronger the association between them and the closer they are on the map. The strength of the association is represented by the thickness of the connections, indicating a stronger association due to a greater number of connections in both input and output. The graph identifies patterns within the bibliometric dataset, which makes it easier for us to understand the structure and dynamics of scientific information. In this search, of the 2695 documents obtained, 2544 belong to journal articles, 135 to book chapters, and 16 to books. The graph and/or diagram in this context represents the relationships and connections between the extracted documents. In our case, the nodes are represented by authors, while the arcs represent their connections.

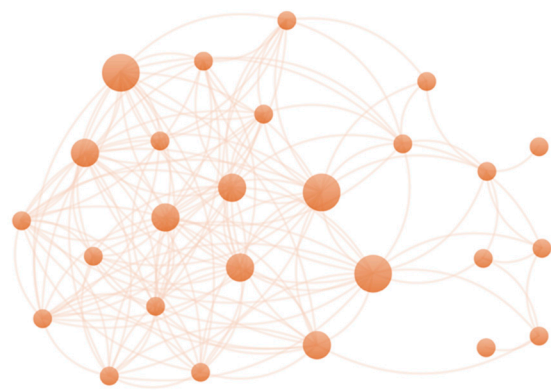


Figure 1. Graph extraction. Source: Author’s elaboration based on the WoS and VOSviewer software.

3.4. Limitations of Analysis

Regarding languages, the decision to limit our searches to English and Spanish was based on two main aspects: the predominance of English in the global scientific literature and the relevance of Spanish in the regional context of the topic studied. Bibliometric studies have shown that English is the dominant language in global scientific publications. For example, Montgomery (2020) points out that more than 90% of international scientific publications are in English, making it the main language for disseminating academic knowledge. This predominance justifies its inclusion as the main focus of our search.

Spanish, on the other hand, was included due to its regional importance. This language is particularly relevant in Latin American countries and Spain, where significant research related to our topic has been published. Its inclusion allowed us to capture key literature from Spanish-speaking regions that might otherwise have been underrepresented in our analysis.

Additionally, as part of our methodological design, we conducted exploratory searches in other languages, such as French and German, using equivalent terms. These searches resulted in an extremely limited number of relevant papers (less than 2% of the total number of papers). This shows that the significant contribution of scientific publications in other languages is marginal compared with English and Spanish. Therefore, we consider that including searches in other languages would not have significantly altered the results obtained but would have presented considerable practical challenges, such as the need for additional resources for translation and analysis, which were beyond the capabilities of this study.

4. Results

4.1. Category 1: Perspectives in Scientific Production

4.1.1. Research Areas and/or Categories of Web of Science

Taking the 2695 documents extracted in the search for this study as a reference, the areas and categories of the Web of Science database are presented in Table 2. It should be noted that some documents are associated with two or more categories of Web of Science. For example, “Communication” (66.75%) and “Education Educational Research” (33.22%) resulted in a total of 2829 records for which the percentage of each research area was calculated. Table 2 lists the areas with a significant number of published documents. The extracted documents focused on different areas such as behavioral sciences, psychology, health care sciences, and computer science. Other areas that should be highlighted are geriatric gerontology, sociology, occupational health, and mathematics.

Table 2. Research areas and/or categories of Web of Science.

Id	Research Areas	N Documents	%
1	Behavioral Sciences	775	28.8
2	Psychology	754	28.0
3	Health Care Sciences Services	649	24.1
4	Computer Science	612	22.7
5	Geriatrics Gerontology	475	17.6
6	Sociology	402	14.9
7	Public Environmental Occupational Health	268	9.9
8	Mathematics	233	8.6

Source: Author’s elaboration.

4.1.2. Network of Institutions and Organizations

The search algorithm for networks of institutions and organizations offered 73 articles published on the topic selected for this research between 1995 and 2023. The network of institutions is shown in Figure 2 and Table 3, and those that published at least 10 documents were selected.

The Spanish organizations with the strongest co-authorship ties are the University of Seville with twelve and Rey Juan Carlos University with nine. At the international level, the University of Michigan stands out with 23 publications and the University of Maryland with 17 publications. In the field of record production, the University of Seville stands out in Spain with 51 documents, followed by the Complutense University of Madrid with 40 and Rey Juan Carlos University with 28 documents. At the international level, CENT South University is strongly positioned, with 28 documents, and similarly, in terms of link strength, so is the University of Maryland.

Focusing on citations, the University of California Los Angeles stands out with 1320, followed by the University of Maryland with 1175, and the University of Illinois with 860. If we observe the citations in Spanish institutions, the Complutense University of Madrid stands out again with 672 citations and the University of Seville with 648.

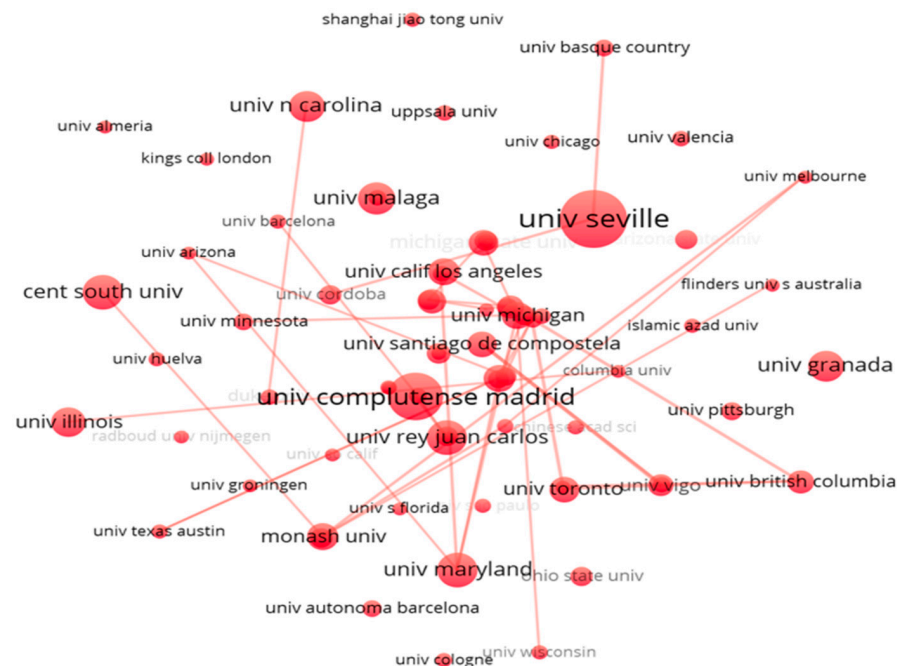


Figure 2. Institutional and organizational network for co-authorship. Source: Author's elaboration based on the WoS and VOSviewer software.

Table 3. Organizations by documents, citations, and the link strength.

Organization	<i>n</i> Documents	<i>n</i> Citations	Link Strength
University of Seville	51	648	12
Complutense University of Madrid	40	672	6
Cent South University	28	550	4
University of Maryland	28	1175	17
Rey Juan Carlos University	28	163	6
University of Malaga	26	330	5
University of Granada	25	190	3
University of North Carolina	25	619	12
University of Illinois	24	860	11
University of Michigan	22	751	23
Monash University	21	190	11

Table 3. Cont.

Organization	n Documents	n Citations	Link Strength
University of California Los Angeles	21	1320	5
University of California Santa Bárbara	21	402	12
Michigan State University	20	743	10
University of Santiago de Compostela	20	364	11

Source: Author's elaboration.

4.2. Category 2: Actors and Networks of Scientific Production

4.2.1. Scientific Production 1995–2023 and Its Growth

In this section, Figure 3 details the scientific articles published in the Web of Science database associated with social networks and older adults. The first publications appeared in 1995, the year the first social network emerged (SixDegrees), and until 2023, the number of publications increased progressively. Starting in 2012, production on this topic skyrocketed, with 130 documents, increasing each year until 2020, which was the most productive year to date, with 248 documents. Over the last three years, this number has declined to 200.

The data provided the trend line equation $y = 9.427x - 48.724$ with a coefficient of determination $R^2 = 0.8712$. This coefficient evaluates the strength of the linear relationship between two variables and provides information on the variability in the data that is explained by the regression model. The results of this analysis indicate that approximately 87.12% of the variability in the data can be explained by the trendline equation. This suggests that the linear regression model fits the data well, although 12.88% of the variability is not explained by the trend line equation.

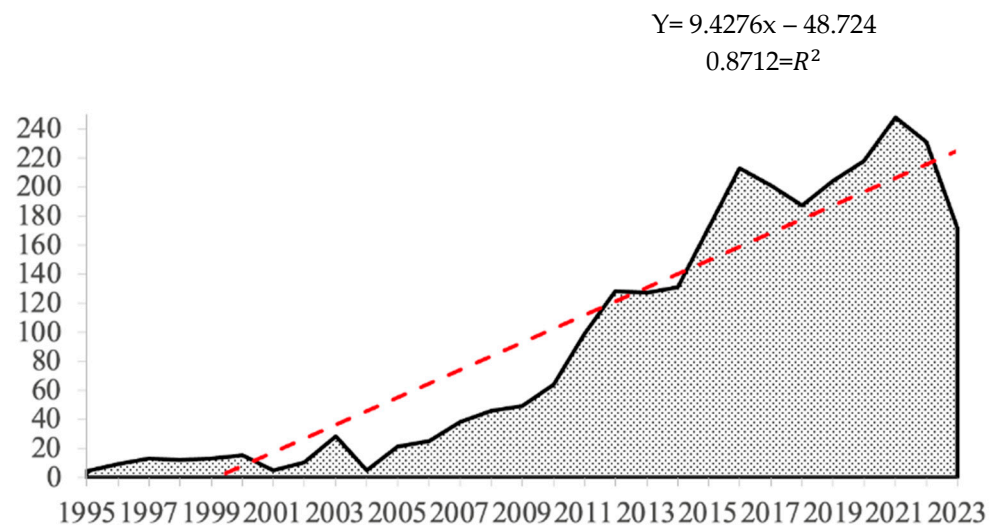


Figure 3. Growth of scientific production in the period 1995–2023. Source: Author's elaboration.

4.2.2. Production, Connections, and Citations of Documents by Country

A total of 101 countries produced scientific literature related to the topics selected for this study. However, only those with 10 or more published documents were selected, resulting in a total of 41 countries, as presented in Table 4. In addition, those with a higher number of citations and stronger connections were selected. The United States has the highest number of scientific publications and citations, with 757 documents, 24,268 citations, and a link strength of 225. These data imply that this node has greater strength than the others, according to the calculations and algorithms of the software used to process the data.

Spain should be highlighted as the second-largest producer, with 511 documents, 4674 citations, and a link strength of 115. Other countries that produce documents stand out, with a higher number of citations and stronger links: China, England, Australia, Canada, and Brazil are the most prominent.

Table 4. Articles, citations, and link strengths by country with ten or more documents.

Id	Country	<i>n</i> Documents	<i>n</i> Citations	Link Strength
1	United States	757	24,268	225
2	Spain	511	4674	115
3	China	244	4446	118
4	United Kingdom	158	5610	117
5	Australia	119	2896	61
6	Canada	113	2715	94
7	Brazil	93	398	27
8	Germany	90	1455	53
9	The Netherlands	69	1541	51
10	Italy	61	1015	42
11	Mexico	59	299	29
12	Colombia	52	185	19
13	France	48	810	38
14	Russia	44	118	8
15	Sweden	44	626	38

Source: Author's elaboration.

4.2.3. Notable Authors in Scientific Production

The Web of Science search algorithm, in relation to the concepts relevant to this study, offers 8040 authors in 2695 documents. Table 5 details the authors who produced at least three documents, for a total of 15 individuals. Jia Wu stands out as the top producer; he is currently an Associate Professor and the Director of Research at the Centre for Applied Artificial Intelligence at Macquarie University, with 26 papers and 523 citations. Howard Giles ranks second from the University of California, founding editor and consultant of the “Journal of Language & Social Psychology” and the “Journal of Asian Pacific Communication”, with 16 papers and 244 citations. In third place, is Christina Kuehnl from the University of Stuttgart. Christina Kuehnl, a Marketing professor, conducts research on digital marketing and sales and customer experience, with 11 papers, but no citations.

Itai Himelboim, professor of Media Analytics and director of the SEE Suite, studies the role of social media in news, politics, and international communication; through the application of network analysis, he examines political discourse and information flow. Although he ranks twelfth in terms of production, with six documents, he ranks second in the number of citations, specifically 307. Table 5 is closely related to Figure 4 (presented in the following section), which details the co-authorship network concerning the documents extracted in the analysis.

Table 5. Authors with the highest scientific production.

Id	Author	<i>n</i> Documents	<i>n</i> Citations	Connections
1	Wu, Jia	26	523	35
2	Giles, Howard	16	244	19
3	Kuehnl, Christina	11	0	0
4	Bernhold, Quinten S.	9	35	3
5	Chen, Zhigang	9	262	22
6	Gasiorek, Jessica	9	145	10
7	Daly, Alan J.	8	168	11

Francis) stands out with 31 and 23 records, respectively, and is a journal that publishes on topics including the interaction between the provider and the patient (or family), health campaigns, health information, health promotion, health public relations, and gerontological concerns.

In terms of the number of citations, the following stand out: *PLoS ONE*, with 878, is a journal specializing in publications in the natural sciences, medical research, engineering, social sciences, and humanities, followed by the journals *Health Communication* with 651 and *Journal of Health Communication* with 518. In terms of bond strength, in addition to those previously mentioned, the Spanish journals *Revista Latina de Comunicación Social*, specializing in interdisciplinary communication, with 29, and *Icono 14*, with 18, stand out.

Table 6. Sources with the highest production of scientific articles on elderly and social networks.

Source	<i>n</i> Documents	<i>n</i> Citations	Total Link Strength
Profesional de la información	34	343	14
International Journal of Environmental	31	295	13
Revista Icono 14	29	251	18
Revista Latina de Comunicación Social	29	251	29
Plos One	25	878	2
Health Communication	23	651	17
Vivat Academia	20	33	7
Comunicar	18	992	75
Cuadernos info	18	182	7
Journal of Health Communication	17	518	3
Patient education and Counseling	17	430	10
Question	17	5	4
Journal of Communication	17	46	4
Information Technologies and learning tools	16	32	0
IEEE Access	15	214	3

Source: Author's elaboration.

4.3.2. Most Cited Articles

In 2016, the most cited record (489 citations) was the book, *Mood and Mobility: Navigating the Emotional Spaces of Digital Social Networks*. Its author Richard Coyne considers that as we interact with social media on our digital devices, we receive, modify, intensify, and transmit our moods. Another publication to highlight is “Older people and new communication technology narratives from the literature” (Richardson et al., 2011), which reviews previous research on older adults and new communication technologies, focusing particularly on their experiences with personal computers and the Internet. As of November 2024, this article had 123 views: seven in CrossRef, zero in Web of Science, and zero in Scopus. Notable in the realm of references for this study are the articles published by authors such as Castleton (2022) and Jiang et al. (2022), and Castleton et al. (2020).

A protocol for a study on the impact of social networks on knowledge transfer in long-term care facilities, published in the journal *Implementation Science*, also stands out. This study designed optimal interventions that employed social media as a method to promote planned behavior change (Sales et al., 2010). As of November 2024, this article has had 14,000 views, 28 citations in CrossRef, 26 citations in Web of Science, and 35 citations in Scopus. The most important references made to this study in relation to the topic are based on leading authors such as Thompson et al. (2024), Sabot et al. (2020), and Cassel et al. (2020).

The publication “Acceptance, adoption, and usability of information and communication technologies for people living with dementia and their care partners: A systematic review” (Miguel Cruz et al., 2023), published in the journal *Disability and Rehabilitation: Assistive Technology*, is noteworthy. The purpose of this review was to examine instruments, approaches, scales, or evaluation tools that have been used to assess the acceptance of digital technologies and their usability for people with dementia or their caregivers. This article currently has 1676 views, and regarding citations, there are 18 CrossRef, 23 Web of Science, and 23 Scopus citations. This article has been cited by others also relevant in this field of study, authored by Figueiredo et al. (2024), Chien et al. (2024), and Browne et al. (2024).

4.3.3. Networks of Scientific Evolution from a Historical Perspective

Figure 6 illustrates the scientific evolution of these three historical perspectives. From the first perspective, the titles of scientific articles addressed a wide variety of topics related to communication and aging, focusing on issues such as marital interdependence, speech adjustments related to aging, communication problems in aging, changes in the way of communicating with older adults, social skills and networks in the school context, aggressive behavior on social networks, patient–physician communication, communication education programs for older adults, social networks of people with disabilities, and many other topics related to communication in diverse populations and contexts. An interdisciplinary or transdisciplinary approach is observed, addressing both the social and health aspects of the aging process. The diversity of topics suggests a global interest in understanding and improving communication among various population groups and contexts.

Second, the titles of scientific articles reveal a comprehensive and multidimensional approach to communication research, highlighting the importance of social networks in various contexts. The topics encompass the influence of social media on public health, the promotion of sexual health, aging, and education. Additionally, the relationship between communication and technology is examined, especially in terms of healthcare and the use of digital tools, which is an emerging recurring theme. These studies also analyzed how social media affects attitudes and perceptions of health issues and explored intergenerational communication patterns in specific cultural contexts, such as Ghana, South Africa, and India. Overall, these titles reflect a comprehensive interest in understanding the intersection of social media, communication, and various aspects of everyday life in different communities and regions worldwide.

The third perspective presents the titles of scientific articles addressing a wide range of topics related to social media and communication in various contexts. Aspects such as the influence of social media on public health, education, sexual health, technology, and job searching were also explored. Additionally, the specific dynamics of social networks are examined in areas such as telemedicine, teaching and learning, agriculture, and healthcare. The studies also analyzed the impact of social media on gender issues, the promotion of community health, the public perception of health topics, and the training of teachers and researchers. Together, these titles reflect a multidimensional interest in understanding how social networks influence and integrate various facets of everyday life in different communities and contexts across the globe.

The text addresses research on the impact and application of social media in various contexts, from evaluating medical science students’ perceptions of social media for educational purposes to analyzing university reputational crises through platforms such as Twitter and Facebook. Topics such as government communication during the COVID-19 crisis, gender characteristics in social media aggression, the vaccine debate, and the use of social media in educational, journalistic, and research fields were explored. The topics of

health, aging, and intergenerational relationships were addressed, reflecting the diversity of research areas related to human interaction and technology.

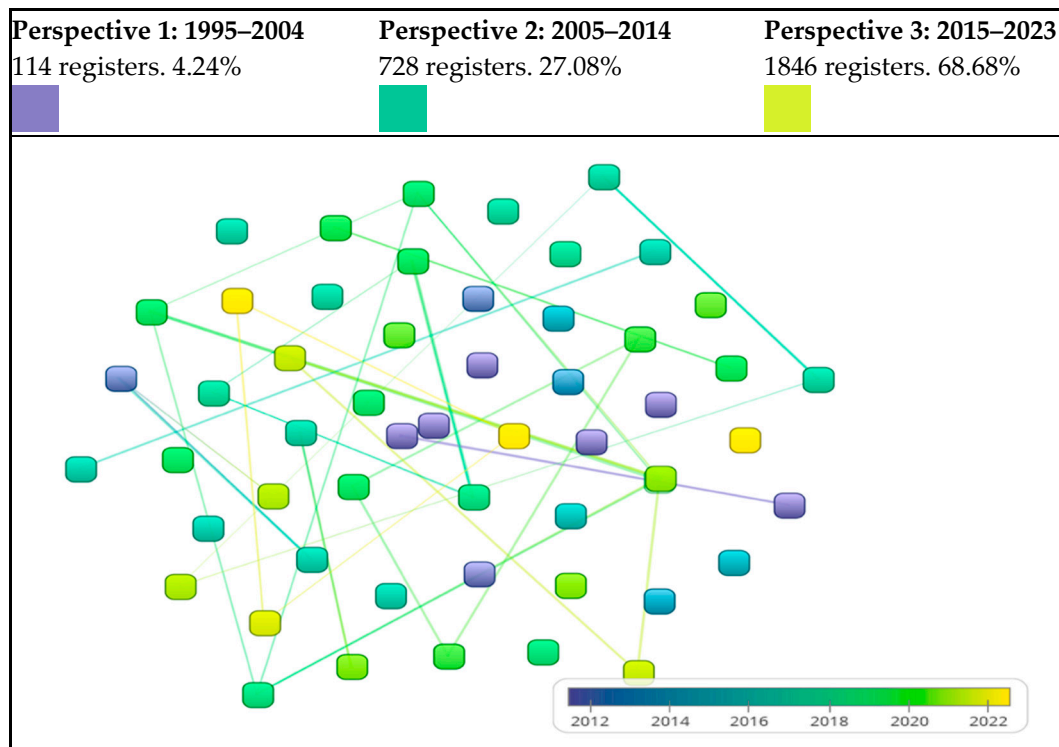


Figure 6. Networks of scientific evolution from a historical perspective. Source: Author's elaboration.

Based on this analysis, problems/areas of interest can be identified from three perspectives.

- Perspective 1: Communication and aging. This perspective reflects communication in old age, social skills, behavior, the interdisciplinary approach, and communication education.
- Perspective 2: Social media, public health, and technology. This perspective includes the influence of social media on public health and its promotion, healthcare, attitudes and perceptions of health, intergenerational communication, and aging in relation to social media.
- Perspective 3: Social media, education, and diverse contexts. This perspective includes public health and sexual health, telemedicine, healthcare, teacher, and research training, government and health crisis communication, gender and aggression, journalism, and research.

We observe that the first perspective focuses on communication and aging, while the second integrates social media with public health and technology. The third perspective broadens the focus to include multiple social and educational contexts and emerging issues such as gender and health crises, highlighting the evolution and diversification of the field.

In this context, the data extracted allow us to identify specific training opportunities. The high frequency of terms such as “social networks,” “communication,” and “media” reveals fertile ground for the design of educational programs for older adults that address critical media literacy, safe browsing, combating misinformation, and strengthening a sense of digital belonging. The relevance of academic institutions such as the University of Seville and the University of Michigan suggests the development of alliances to create training projects tailored to the context and the senior sector. This bibliometric analysis not only provides insight into theoretical aspects but also offers applicable proposals for educational policies that promote lifelong learning in the senior sector.

5. Discussion

Social media, which are vital communicative spaces in this post-digital society (Escaño, 2023), have positioned themselves in the scientific field with great strength in terms of production, impact, and interest from the academic community. Through this study, we have not only highlighted the interest that this topic holds for researchers, but more specifically, its relationship with older adults. The bibliometric analysis conducted shows the current panorama and evolution of scientific production related to social networks and the elderly sector, highlighting the relevance of the topic from different research perspectives.

The scientific production related to the field of social networks projected in the third age stands at 2695 documents in the Web of Science database. These publications reflect the multidisciplinary nature of the topic and are classified into different areas such as behavioral sciences, psychology, health care sciences, and computer sciences, as well as other areas such as gerontology, sociology, occupational health, and mathematics. The notable percentage of publications in “computing” indicates a growing interest in digital technologies and aging, opening doors to future research in areas such as accessibility, inclusive design, and media literacy (Gil-Quintana et al., 2024).

Referring to the institutions, the bibliometric analysis shows that different universities are positioned as benchmarks in this object of study, highlighting Spanish institutions such as the University of Seville, Complutense University of Madrid, and Rey Juan Carlos University. At the international level, other institutions are strongly positioned, such as the University of Michigan, University of Maryland, Central South University, University of California Los Angeles (UCLA), and University of Illinois.

In relation to scientific production and growth, although there are data that go back to 1980, the first relevant publications appeared in 1995, extracting a total of 248 records. The year 2012 was the moment when the subject of study skyrocketed in terms of publications, with 130 documents, and there was a progressive increase until 2020, with 248 documents, which was detected as the year with the greatest impact in the three decades analyzed, coinciding with the projection of social networks (O1; H1). This increase is attributed to the confluence of social, technological, and academic factors: the consolidation of social media as dominant platforms for global communication, international concern about the aging population, and the launch of media literacy programs for seniors as key players in the digital ecosystem.

Further specifying the analysis, we were able to verify that the elderly have interested authors, institutions, and developed countries from different parts of the world. Of the 101 countries in which these studies were published, 41 were selected as relevant, with a higher number of citations and stronger links. The United States is the most important country in this regard, with 757 documents, 24,268 citations, and 225 link strengths, as well as the leading scientific producer, both as a contributing source and producer. Spain ranked second in document production, with 511 citations, 4674 citations, and 115 link strengths (O2; H2). Other countries, such as China, England, Australia, Canada, and Brazil, have also contributed.

In relation to the prominent actors and co-authorship networks, the relevant authors are located in countries such as Canada, the United States, and Germany, and they are primarily Jia Wu, Howard Giles, and Itai Himelboim (O2; H3). These authors are also well positioned in the co-authorship network in scientific production and connections, highlighting Jia Wu, Howard Giles, Quinten S. Bernhold, Juan Pablo Rocha Marcenaro, Christina Kuehnl, Liu Chang, and Leilei Wang. However, we did not observe a high impact generated from scientific publications based on collaboration between networks of authors (O3; H4).

Along with the previous analysis, we also encountered another important factor, which is the keywords used by the authors that offer us the different fields related to the object of study. Thus, we can conclude that the most frequent occurrences are in “social networks”, “communication”, and “media”. The set of keywords selected in the study covers topics around social networks and the elderly, breaking down into other words such as communication, the Internet, specific social networks, health, education, information, care, and impact. In turn, concepts related to health, care, and education have appeared in the study, opening up new areas of research. The strength of the link between these keywords, especially “internet” and “impact” underscores the importance of exploring the practical applications of social media in relation to improving the quality of life in all aspects related to aging and old age.

Countries, authors, and keywords are important for consolidating a bibliometric analysis study, such as the one we present, which serves as a basis for the development of media education training projects. However, it is also essential to present the journals with the highest production during the analyzed period, among which Spain stands out with sources such as *Profesional de la Información*, *Comunicar*, *Icono 14*, and *Vivat Academia*. Beyond Spain, we found other sources such as the *International Journal of Environmental Research and Public Health*, *Health Communication*, and the *Journal of Health Communication*. The most cited articles include “Mood and mobility: navigating the emotional spaces of digital social networks” (Coyne, 2016), “Older people and new communication technologies: narratives from the literature” (Richardson et al., 2011), and “The impact of social networks on knowledge transfer in long-term care facilities: Protocol for a study” (Sales et al., 2010). We also highlight the publication “Acceptance, adoption, and usability of information and communication technologies for people living with dementia and their care partners: a systematic review” (Miguel Cruz et al., 2023).

The scientific evolution presented in these three historical perspectives offers great possibilities for theoretically establishing connections between fields, areas, and concepts. From the first perspective, the titles of the scientific articles address topics from an interdisciplinary approach, thus coinciding with other bibliometric analysis studies on media education and critical thinking (López-González et al., 2023). This research highlights disciplines in health sciences and their fields of communication, problems and forms of communication, aging, communication education programs for the elderly, and social networks for people with disabilities. From the second perspective, the titles covered public health, sexual health promotion, medical care, aging, and education topics. They also explored intergenerational communication patterns in Ghana, South Africa, and India. Finally, the third perspective explores the influence of social media on public health, education, sexual health, technology, and job searching, and analyzes social media in gender issues, community health, and the formation of research and teaching teams. Most studies included in this bibliometric analysis did not explicitly address training strategies (O3; H5). Consequently, it is essential to work from an interdisciplinary approach and educational proposals in this field and sector.

Therefore, we verified that as part of the difficulties and challenges, there are educational challenges such as unequal access, as well as a lack of knowledge in the use of digital technologies or the accommodation of communication (Giles et al., 2023), and challenges related to misinformation or personalized misleading advertising (Weiding & Kuehn, 2023) and security in the completion of procedures (Castleton et al., 2020), which we call the digital divide that leads to ageism and social isolation (Cornwell et al., 2008). These platforms continue to be positive tools for the elderly, their families, and institutions responsible for their care (Alcolea-Díaz et al., 2020; Alhothali, 2021; Nygård et al., 2021; Kaufman, 2021). Older adults, with their concerns regarding their health (Himmelboim et al.,

2020, 2023; Chien et al., 2024), successful aging (Gasiorek et al., 2019), well-being, safety, and control, as well as loneliness, the passage of time (Bernhold, 2023), and their life in nursing homes (Thompson et al., 2024) or geriatric hospitals (Castleton et al., 2020) and social isolation, find social media relevant, not only as a form of communication with their family and friends but also as a means of promotion and personal development (Castleton et al., 2020), and a space to be part of and feel integrated into the post-digital culture (Escaño, 2023) of inclusive participation (Bunbury Bustillo et al., 2022; Jarvis, 2004).

6. Conclusions

Social networks, therefore, once again open the door to lifelong learning, a formative process that public programs must respond to from adult educational spaces, both formal and non-formal. The analysis conducted in this study results in the following formative perspectives:

- Digital divide: Inequality in access, a lack of knowledge regarding the use of social networks, and communicative adaptation in social media.
- Access challenges: Although social media are positive spaces, difficulties can arise when accessing virtual environments, as well as technological limitations or a lack of familiarity with their use.
- Disinformation and misleading advertising: Exposure to potential online risks requires the development of specific skills for safe browsing.
- Health and well-being: Concerns regarding health, successful aging, well-being, and loneliness are necessary areas to work on for sensitively promoting an environment that fosters well-being.
- Social isolation: Maximizing the potential of social media to foster social connections.

The trends and perspectives identified in this study can be used as references in adult education, both in formal and non-formal contexts, summarizing the need for training in this sector in areas related to social networks and, more specifically, media literacy. This need is based on the digital divide, access issues, misinformation, health concerns, well-being, and the risk of social isolation.

To translate these insights into concrete educational strategies, we must design programs that address the digital divide through practical workshops aimed at improving media literacy in this sector. This media literacy must include developing skills that help identify misinformation and misleading advertising, ensuring safe browsing and critical thinking on these platforms.

Addressing these issues is essential for promoting the benefits of social media in the lives of older adults. For this reason, the media literacy of the elderly in the use of social networks must be encouraged, taking into account the studies that have been conducted and the training needs of this sector.

In the area of health and wellness, we must implement interventions that leverage social media as platforms to reduce loneliness and promote active and successful aging. Maximizing the social function of these platforms through interaction can help mitigate loneliness in this sector.

In short, the results of the bibliometric analysis that we have developed in this study on social networks and the elderly have reached a level of academic maturity, although with an opportunity for expansion in areas that have not yet been explored. Multidisciplinary collaboration from different cultural approaches could be the key to further advances in the understanding of different social spheres, psychological, health, and, of course, digital technologies and new media in this sector of the population. This interdisciplinary collaboration is essential for designing and implementing effective training programs tailored to the real demands and needs of the senior living sector.

Author Contributions: Conceptualization, J.G.Q. and L.M.R.R.; Methodology, J.G.Q. and J.J.H.R.; Software, J.G.Q. and J.J.H.R.; Validation, J.G.Q. and L.M.R.R.; Formal analysis, J.G.Q. and J.J.H.R.; Investigation, J.G.Q. and J.J.H.R.; Resources, J.G.Q.; Data curation, J.G.Q. and J.J.H.R.; Writing—original draft, J.G.Q.; Writing—review and editing, J.G.Q.; Visualization, J.G.Q.; Supervision, L.M.R.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data available upon request to the corresponding author.

Acknowledgments: Doctoral School, Rey Juan Carlos University. MELISE Project, CREA-CROSS-2023-MEDIALITERACY, European Commission. National University of Distance Education (UNED).

Conflicts of Interest: The authors declare no conflicts of interest.

References

- Alcolea-Díaz, G., Reig, R., & Mancinas-Chávez, R. (2020). UNESCO's media and information literacy curriculum for teachers from the perspective of structural considerations of information. *Comunicar*, 28(62), 99–109. [CrossRef]
- Alhothali, H. M. (2021). Inclusion of 21st century skills in teacher preparation programs in the light of global expertise. *International Journal of Education and Practice*, 9(1), 105–127. [CrossRef]
- Balseca, N., Carrillo, F., Merchan, J. M., & Moreno, C. J. (2019). Influencia del marketing, el internet y las redes sociales en adultos mayores: Una revisión de la literatura. *Revista Espacios*, 40(14), 8. Available online: <https://www.revistaespacios.com/a19v40n14/a19v40n14p08.pdf> (accessed on 2 December 2024).
- Bernhold, Q. S. (2020). Future time perspective as a moderator of the associations between own age-related communication and aging efficacy. *Mass Communication and Society*, 24(1), 1–30. [CrossRef]
- Bernhold, Q. S. (2023). Perspectiva del futuro como moderador de las asociaciones entre la comunicación relacionada con la edad y la eficacia del envejecimiento. *Southern Communication Journal*, 88(2), 131–147. [CrossRef]
- Browne, B., Ali, K., Ford, E., & Tabet, N. (2024). Determinants of hospital readmissions in older people with dementia: A narrative review. *BMC Geriatrics*, 24(1), 336. [CrossRef]
- Bunbury Bustillo, E., Pérez Calle, R., & Osuna-Acedo, S. (2022). Las competencias digitales en personas mayores: De amenaza a oportunidad. *Vivat Academia*, 155, 173–195. [CrossRef]
- Cassel, K. D., Hughes, C., Higuchi, P., Lee, P., Fagan, P., Lono, J., Ho, R., Wong, N., Brady, S. K., & Ahuna, W. (2020). No Ke Ola Pono o Nā Kāne: A culturally grounded approach to promote health improvement in Native Hawaiian men. *American Journal of Men's Health*, 14(1), 1557988319893886. [CrossRef]
- Castleton, A. (2022). Older adults, tablets, and ambivalence: A grounded theory study of a one-tablet-per-older-person, public program in Uruguay. *Journal of Aging & Social Policy*, 36(2), 325–346. [CrossRef]
- Castleton, A., Cid, A., & Silva, D. (2020). "For older folks like me, these things are over us . . .": The challenge of embedding tablet computers in everyday life within a geriatric hospital in Uruguay. *Educational Gerontology*, 46(4), 167–181. [CrossRef]
- Chien, S. Y., Zaslavsky, O., & Berridge, C. (2024). Technology usability for people living with dementia: Concept analysis. *JMIR Aging*, 7, e51987. [CrossRef]
- Constantini, J., Bliem, H. R., Crepaz, M., & Marksteiner, J. (2023). Una búsqueda cualitativa de literatura y un estudio piloto de grupos de apoyo en línea para pacientes con demencia y sus cuidadores. *Gerontología y Medicina Geriátrica*, 9, 23337214231205689. [CrossRef] [PubMed]
- Conway, A., Ryan, A., Harkin, D., & Mc Cauley, C. (2023). It's another feather in my hat: Explorando los factores que influyen en la adopción de aplicaciones con personas que viven con demencia. *Dementia*, 22(7), 1487–1513. [CrossRef]
- Cornwell, B., Laumann, E. O., & Schumm, L. P. (2008). The social connectedness of older adults: A national profile. *American Sociological Review*, 73(2), 185–203. [CrossRef] [PubMed]
- Cotter, K. (2019). Playing the visibility game: How digital influencers and algorithms negotiate influence on Instagram. *New Media & Society*, 21(4), 895–913. [CrossRef]
- Coyne, R. (2016). *Mood and mobility: Navigating the emotional spaces of digital social networks*. The MIT Press. [CrossRef]
- Egger, M., Smith, G. D., & Altman, D. (Eds.). (2001). *Systematic reviews in health care: Meta-analysis in context* (2nd ed.). BMJ Books.
- Egghe, L., & Rousseau, R. (1990). *Introduction to informetrics: Quantitative methods in library, documentation and information science*. Elsevier Science Publishers.

- Esaño, C. (2023). Educación postdigital: Un enfoque desde la pedagogía crítica y mediática para un contexto post-COVID19. *Revista Mediterránea de Comunicación*, 14(2), 243–257. [CrossRef]
- Fernández, M. (2012). Redes sociales y mujeres mayores: Estudio sobre la influencia del uso de las redes sociales en la calidad de vida. In *Trabajo de posgrado*. Universidad de Oviedo.
- Fiel, J. (2006). *Lifelong learning and the new educational order*. Trentham Books.
- Figueiredo, T., Midão, L., Carrilho, J., Videira Henriques, D., Alves, S., Duarte, N., Bessa, M. J., Fidalgo, J. M., García, M., Facal, D., Felpete, A., Filgueira, I. R., Carlos Bernárdez, J., Rodríguez, M., & Costa, E. A. (2024). A comprehensive analysis of digital health-focused living labs: Innovative approaches to dementia. *Frontiers in Medicine*, 11, 1418612. [CrossRef]
- Freire, P. (1970). *Pedagogía del oprimido*. Siglo XXI Editores.
- Garfield, E. (1979). *Citation indexing: Its theory and application in science, technology, and humanities*. ISI Press.
- Gasiorek, J., Fowler, C., & Giles, H. (2019). Communication and successful aging: Testing alternative conceptualizations of uncertainty. *Communication Monographs*, 86(2), 229–250. [CrossRef]
- Giles, H., Edwards, A. L., & Walther, J. B. (2023). Communication accommodation theory: Past accomplishments, current trends, and future prospects. *Language Sciences*, 99, 101571. [CrossRef]
- Gil-Quintana, J. (2023). *Educación y comunicación en una sociedad postdigital: Investigación documental y análisis de perspectivas*. Editorial Octaedro.
- Gil-Quintana, J., García Blazquez, E., Hueso-Romero, J. J., & Rodríguez Romero, L. M. (2024). Redes comunicativas universitarias sNOOC por la educación mediática de la tercera edad. *Texto Livre, Belo Horizonte-MG*, 18, e53823. [CrossRef]
- Gough, D., Oliver, S., & Thomas, J. (2012). *An introduction to systematic reviews*. SAGE Publications.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108(4), 814–834. Available online: <https://bit.ly/3KYeL4r> (accessed on 19 December 2024). [CrossRef]
- Higgins, J. P. T., & Green, S. (Eds.). (2008). *Cochrane handbook for systematic reviews of interventions*. Wiley-Blackwell.
- Himmelboim, I., Janice Lee, J., Cacciatore, M. A., Kim, S., Krause, D., Miller-Bains, K., Mattson, K., & Reynolds, J. (2023). Vaccine support and hesitancy on Twitter: Opposing views, similar strategies, and the mixed impact of conspiracy theories. In T. Ginossar, S. F. A. Shah, & D. Weiss (Eds.), *En: Vaccine Communication Online*. Palgrave Macmillan.
- Himmelboim, I., Xiao, X., Lai Lee, D. K., Wang, M. Y., & Borah, P. (2020). A Social Networks Approach to Understanding Vaccine Conversations on Twitter: Network Clusters, Sentiment, and Certainty in HPV Social Networks. *Health Communication*, 35(5), 607–615. [CrossRef]
- Hird, N., Osaki, T., Ghosh, S., Palaniappan, S. K., & Maeda, K. (2024). Habilitar la personalización para la estimulación cognitiva digital para apoyar la comunicación con personas con demencia: Estudio de intervención piloto como preludio al desarrollo de la IA. *Investigación Formativa JMIR*, 8, e51732. [CrossRef]
- Illeris, K. (2004). *The three dimensions of learning: Contemporary learning theory in the tension field between the cognitive, the emotional and the social*. Krieger Publishing.
- Iniesta-Alemán, I., Berlanga Fernández, I., & Bandrés-Goldára, E. (2024). La eficacia publicitaria del marketing de influencers en el sector de la moda. *Revista ICONO 14. Revista científica de Comunicación y Tecnologías Emergentes*, 22(1), e2064. [CrossRef]
- Jarvis, P. (2004). *Adult education and lifelong learning: Theory and practice*. Routledge.
- Jiang, M., Rifon, N. J., Cotten, S. R. M., Alhabash, S., Tsai, H. Y. S., Shillair, R., & Larose, R. (2022). Bringing older consumers onboard to online banking: A generational cohort comparison. *Educational Gerontology*, 48(3), 114–131. [CrossRef]
- Kaufman, C. (2021). Civic education in a fake news era: Lessons for the methods classroom. *Journal of Political Science Education*, 17(2), 326–331. [CrossRef]
- Levy, B. R. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science*, 18(6), 332–336. [CrossRef]
- Levy, S. R., & Macdonald, J. L. (2016). Progress on understanding ageism. *Journal of Social Issues*, 72(1), 5–25. [CrossRef]
- Lorente, R. (2017). *La soledad en la vejez: Análisis y evaluación de un programa de intervención en personas mayores que viven solas* [Doctoral thesis, Universidad Miguel Hernández].
- López-González, H., Sosa, L., Sánchez, L., & Faure-Carvalho, A. (2023). Educación mediática e informacional y pensamiento crítico: Una revisión sistemática. *Revista Latina de Comunicación Social*, 81, 399–423. [CrossRef]
- Miguel Cruz, A., Daum, C., Comeau, A. M., Salamanca, J. D. G., Mclellan, L., Neubauer, N., & Liu, L. (2023). Acceptance, adoption, and usability of information and communication technologies for people living with dementia and their care partners: A systematic review. *Disability and Rehabilitation: Assistive Technology*, 18(4), 443–457. [CrossRef]
- Moed, H. F. (2005). *Citation analysis in research evaluation*. Springer.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine*, 6(7), e1000097. [CrossRef] [PubMed]

- Morillas, A. S., & Navarro, G. M. (2013). La influencia de las nuevas tecnologías: Videojuegos, redes sociales e internet, en los consumidores seniors en España. *En Actas del I Congreso Internacional Comunicación y Sociedad*. Available online: <https://dialnet.unirioja.es/servlet/articulo?codigo=4249417> (accessed on 20 June 2025).
- Nef, T., Ganea, R. L., Müri, R. M., & Mosimann, U. P. (2013). Social networking sites and older users—A systematic review. *International Psychogeriatrics*, 25(7), 1041–1053. [CrossRef] [PubMed]
- Ng, R., & Levy, S. R. (2018). The influence of age-based stereotypes on older adults' memory performance: A meta-analysis. *Psychology and Aging*, 33(5), 743–756. [CrossRef]
- Nygård, T., Hirvonen, N., Räisänen, S., & Korkeamäki, R. L. (2021). Ask your mother! Teachers' informational authority roles in information-seeking and evaluation tasks in health education lessons. *Scandinavian Journal of Educational Research*, 65(6), 972–985. [CrossRef]
- Pardal-Refoyo, J. L., & Pardal-Peláez, B. (2020). Anotaciones para estructurar una revisión sistemática. *Revista ORL*, 11(2), 155–160. [CrossRef]
- Richardson, M., Zorn, T. E., & Weaver, K. (2011). Older people and new communication technologies narratives from the literature. *Annals of the International Communication Association*, 35(1), 121–152. [CrossRef]
- Sabot, K., Blanchhet, K., Berhanu, D., Spicer, N., & Schellenberg, J. (2020). Professional advice for primary healthcare workers in Ethiopia: A social network analysis. *BMC Health Services Research*, 20(1), 551. [CrossRef]
- Sales, A. E., Estabrooks, C. A., & Valente, T. W. (2010). The impact of social networks on knowledge transfer in long-term care facilities: Protocol for a study. *Implementation Science*, 5(1), 1–10. [CrossRef]
- Solla Price, D. (1963). *Little science, big science*. Columbia University Press.
- Tejedor, S., Romero-Rodríguez, L. M., & Gracia-Villar, M. (2024). Desvelando la verdad: Una revisión sistemática de la investigación sobre verificación de datos y noticias falsas en ciencias sociales. *Revista Electrónica de Tecnologías de la Comunicación y los Medios*, 14(2), e202427. [CrossRef]
- Thompson, C., Gordon, A., Khaliq, K., Daffu-O'Reilly, A., Willis, T., Noakes, C., & Spilsbury, K. (2024). Quality in care homes: How wearable devices and social network analysis might help. *PLoS ONE*, 19(5), e0302478. [CrossRef]
- Torres Salinas, D., Robinson García, N., & Jiménez Contreras, E. (2023). *La ruta bibliométrica hacia el cambio tecnológico y social: Revisión de problemas y desafíos actuales*. Available online: <https://digibug.ugr.es/handle/10481/81091> (accessed on 1 December 2024).
- Toso, F., Brankaert, R., Hendriks, N., Lenaerts, L., & Wilkinson, A. (2023). Reflexionando sobre Living Labs como redes de colaboración de múltiples partes interesadas para evaluar productos tecnológicos para personas que viven con demencia. *Revista internacional de investigación ambiental y salud pública*, 20(3), 1673. [CrossRef]
- UNESCO. (1972). *Aprender a ser: La educación del futuro*. Herder.
- UNESCO. (2018). *Media and information literacy*. Available online: <https://bit.ly/2TKTTzP> (accessed on 21 December 2024).
- Verloo, H., Lorette, A., Rosselet Amoussou, J., Gillès de Pélichy, E., Matos Queirós, A., von Gunten, A., & Perruchoud, E. (2021). Uso de Living Labs para explorar las necesidades y soluciones para adultos mayores con demencia: Revisión del alcance. *Envejecimiento JMIR*, 4(3), e29031. [CrossRef]
- Waltman, L., & van Eck, N. J. (2012). A new methodology for constructing a publication-level classification system of science. *Journal of the American Society for Information Science and Technology*, 63(12), 2378–2392. [CrossRef]
- Weiding, J., & Kuehn, C. (2023). Improving the effectiveness of personalized recommendations through attributional cues. *Psychology & Marketing*, 40(12), 2559–2575. [CrossRef]
- Yeaxlee, B. (1929). *Lifelong education*. Cassel and Company.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.