

A bibliometric analysis of financial fraud exploiting the elderly in the digital age

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Abstract

Purpose – The purpose of this review is to conduct a bibliometric analysis of financial fraud exploiting the elderly by mapping its evolution, identifying major metrics and discussing directions for future research.

Design/methodology/approach – A bibliometric analysis was conducted, based on 434 articles retrieved from the Web of Science that represent the academic literature on the topic from 1995 to the first quarter of 2024. This paper analyses the antecedents of financial fraud exploiting the elderly, the publication trends and the most prolific countries, institutions, journals, research areas and authors. Bibliometric analyses based on co-citation and co-words explore the intellectual structure of the topic. A bibliographic coupling analysis reveals the hottest research trends in this field.

Findings – A significant increase in the number of publications in recent years shows the importance gained by this research stream. The bibliometric analysis identifies four clusters throughout the literature: differentiation of types of elder abuse; protection of the elderly from fraud; cognitive and decision-making capacity in ageing; and factors influencing fraud victimization of the eldest. The most recent research lines identified through bibliographic coupling focused on the contextual and personal antecedents of financial exploitation of the elderly, as well as the possible impact of interventions. Several key research gaps and additional suggestions for further studies, as well as action lines for the financial authorities and economic agents, are outlined.

Originality/value – This paper contributes to knowledge about financial fraud exploiting the elderly synthesizing the existing literature, stressing that the banking industry has to deal with such financial fraud in the context of a growing relevance of the silver economy.

Keywords Financial fraud, Banking industry, Financial exploitation, Financial literacy, Older-adults, Bibliometric analysis

Paper type Literature review

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1. Introduction

As the integration of information and communication technologies (ICTs) is advancing steadily in the financial industry, practitioners and researchers have focused their attention on the social, political and economic implications of this phenomenon, as well as the challenges faced by different segments of the population. The digital transformation of finance has been strongly pushed by the impact of COVID-19, increasing the implementation of personalized digital financial products for marginalized populations (Pinochet *et al.*, 2019; Mugume and Bulime, 2022).

Digitalization in finance has brought notable benefits, such as improvements in both private and social economic efficiency (Carbó-Valverde *et al.*, 2020), strengthening banking stability and fostering financial inclusion (Sodokin *et al.*, 2022; Kamble *et al.*, 2023), as well as achieving better financial outcomes (Nguyen *et al.*, 2021). These positive impacts have increased the interest of researchers in this field of study, revealing the significant potential of financial digitalization to drive the democratization of financial markets (Qureshi *et al.*, 2021), provide greater autonomy and accessibility to financial services (Muralidhar *et al.*, 2019), facilitate innovation in small and medium-sized enterprises (Yao and Yang, 2022) and contribute to the reduction of income disparity (Demir *et al.*, 2020). However, the implementation of digital financial technologies entails several risks related to cybersecurity, data theft and criminal activity in the digital financial sphere (Asif *et al.*, 2023; Shahana *et al.*, 2023).

The growing concern of the academic community about financial fraud in the digital era has led to a bloom of articles focused on this issue in recent years. The broad ramifications of financial fraud and its impact at various levels have fostered the generation of knowledge, exploring its relationship with other constructs such as financial literacy, financial well-being, financial capabilities, financial inclusion, responsible finance, accounting fraud, financial behaviour and sustainable fraud prevention strategies (Drew, 2013; Ingale and Paluri, 2020; Lee *et al.*, 2020; Panos and Wilson, 2020; Mao and Liu, 2022; Ratzinger-Sakel and Tiedemann, 2022; She *et al.*, 2022; Lim and Letkiewicz, 2023; Cucinelli and Soana, 2023; Maashi *et al.*, 2023); as well as identifying socio-demographic factors associated with both financial fraud exposure, which is related with the probability of receiving scam messages; and fraud victimization after this exposure (Deevy *et al.*, 2012; Joo and Koh, 2017; DeLiema, 2018; Xu *et al.*, 2022; Jensen *et al.*, 2024; Fan and Zhou, 2022).

Within the field of financial fraud, this paper focuses on financial fraud exploiting the elderly, a research stream that has gained notable relevance in recent years due to the ageing of the global population, the vulnerability of the eldest when facing the digitalization of financial services and the emergence of the silver economy as the development of new economic opportunities associated with the growth of the older population (Oertzen and Odekerken-Schröder, 2019; Rouzet *et al.*, 2019; Singh *et al.*, 2020; Krzyminiewska, 2020; Liyanaarachchi *et al.*, 2020; Oget, 2021; Mason *et al.*, 2023). Despite there are some literature reviews regarding financial fraud exploiting the elderly (Conrad *et al.*, 2011; Jackson, 2016; Reurink, 2018; Greene, 2022), no bibliometric analysis of this topic has been carried out.

Bibliometric analysis is a methodology that focuses on statistically examining scientific publications, providing a comprehensive and quantitative view of the development of the literature and the circulation of new knowledge in a particular research area (van Raan, 2005; Sánchez-Camacho *et al.*, 2020) and is often chosen as a tool to analyse the existing literature on financial fraud. For instance, Pandiya and Yadav (2023) analyse financial fraud in the context of Fintech, while Matei and Aivaz (2023) and Yu and Rha (2021) focus on accounting fraud, and Owusu *et al.* (2023) deal with corporate fraud. An analysis of public policy and financial regulation in preventing and combating financial fraud has been conducted by Filatova *et al.* (2023), while fraud detection systems have been studied by Soltani *et al.* (2023) and Mansour *et al.* (2021).

The exponential growth in the volume of research on financial fraud exploiting the elderly, together with the persistent trend towards its expansion, highlights the need to perform a

thorough analysis of the existing literature. This effort is critical to keep the academic community informed of relevant studies published in this constantly evolving research field. Therefore, a bibliometric analysis has been conducted to deepen the understanding of trends, patterns and research gaps related to financial fraud exploiting the elderly, thereby contributing to the generation of a stronger knowledge base and the identification of priority research areas in this emerging and critical field.

This study has three main objectives: (1) to describe the intellectual progress and structure of knowledge, analysing the evolution of the number of publications from 1995 to the first quarter of 2024; (2) to determine the leaders in this research stream, analysing the most influential countries, institutions, authors, articles and journals; and (3) to examine the main research trends and the structure of knowledge in this research stream, including collaborations between authors. Additionally, this bibliometric study not only provides an overview of this research field but also outlines the most probable directions for future research, identifying underdeveloped areas or emerging topics that could be the object of further in-depth study (Öztürk *et al.*, 2024). Finally, this paper offers a substantial contribution to the understanding of financial fraud exploiting the elderly, gathering relevant information for policy makers, regulators and institutions such as the World Health Organization (WHO) and the United Nations (UN), which have already demonstrated their interest and concern in this issue (Rouzet *et al.*, 2019; WHO, 2022). These findings can influence the formulation of regulatory policies and practices, as well as the implementation of preventive and corrective measures by the entities involved in the fight against financial fraud exploiting the elderly.

Consequently, we will address the following research questions (RQs) dealing with financial fraud exploiting the elderly research:

- RQ1. What has been the evolution of the publications until the first quarter of 2024?
- RQ2. What are the most influencing journals, countries, institutions, authors and articles in this research stream?
- RQ3. What is the main research structure of the research on financial fraud exploiting the elderly?
- RQ4. What research opportunities do this research field offer?

The structure of this analysis starts with [Section 1](#), providing an introduction of the research topic, as well as presenting the goals of this paper and the RQs. [Section 2](#) delivers a theoretical framework stressing the relevance of financial exploitation and fraud in the elderly. [Section 3](#) deals with the methodological aspects of this research. [Sections 4](#) and [5](#) show the results of this analysis, using different bibliometric techniques. [Section 6](#) identifies the emerging research themes and trends in this research stream, while the implications and key findings are finally summarized, in turn, in [Sections 7](#) and [8](#).

2. Research context

The remarkable increase in the literary output concerning financial fraud and exploitation in recent years may lead to conceptual ambiguity when dealing with certain terms. According to [Dufour \(2015\)](#), the term “exploitation” is described as the act of taking advantage of a position of strength at the expense of the interests of more vulnerable people. [Rabiner *et al.* \(2004\)](#) state that financial exploitation can deprive victims of their life savings and assets and their economic basis for independence. When financial exploitation affects the elderly, it often involves family members and acquaintances as perpetrators, a factor that increases the complexity of the problem and complicates its identification ([Chan and Stum, 2020](#)).

Financial fraud is considered by some authors the most common form of financial exploitation and a major problem for authorities ([Lichtenberg *et al.*, 2020](#)). [Reurink \(2018\)](#),

p. 7) defines financial fraud as “acts and statements through which financial market participants misinform or mislead other participants in the market by deliberately or recklessly providing them with false, incomplete, or manipulative information related to financial goods, services, or investment opportunities in a way that violates any kind of legal rule or law, be it a regulatory rule, statutory law, civil law, or criminal law”.

The rise and consolidation of financial technology companies (Fintechs), together with the evolution towards digitalization in the banking industry, driven especially by the need to remain competitive and the COVID-19 pandemic, have increasingly integrated the presence of digital banking and digital financial services in our day-to-day lives (Schueffel, 2017; Varga, 2017; Langley and Leyshon, 2020; Sandhu and Arora, 2020; Qi *et al.*, 2022; Schmidt-Jessa, 2022; Mogaji, 2023). This phenomenon has triggered a wave of digital financial fraud, resulting in considerable financial losses and a devastating impact on those affected (Cross and Blackshaw, 2014; Kemp, 2020).

Digital fraud can be defined as the use of ICTs in any suspicious criminal activity (Sarrab *et al.*, 2014), such as *phishing*, fake emails used to steal personal information from victims (Sharma and Kalra, 2016); *pharming*, redirecting web traffic by taking advantage of software vulnerabilities in domain name systems to a fraudulent website (Oxman, 2013); *smishing*, which mean the theft of private information through text messages (Mishra and Soni, 2020); or *vishing*, where the identity of a trusted company, organization or person is impersonated through a call to obtain sensitive information (Jones *et al.*, 2020).

Fraudsters’ techniques evolve over time, continuously challenging the authorities and public policies to catch up with the advance of fraudulent schemes in remote banking and digital financial services (Worthington, 2009; Ikeda *et al.*, 2021). Nevertheless, financial institutions are making significant investments in technologies to identify, prevent and detect fraud in order to mitigate reputational and financial risks, safeguard customer interests and maintain market integrity (Hoffmann and Birnbruch, 2012; Cheng *et al.*, 2017; Arner *et al.*, 2019). The spread of financial fraud resulting from the digitalization of financial services increases the fraud exposure of financial users, defined as the susceptibility to being a victim of deceptive practices online (López *et al.*, 2019).

According to Yu *et al.* (2022b), the elderly need to be especially protected from fraud exposure, given their vulnerability, ensuring the presence of capable guardians (DeLiema, 2018) and promoting the application of external fraud alert models (Kumar *et al.*, 2018). On the other side, it is crucial to provide immediate assistance to users after fraud victimization (Deem, 2000), as users who become victims of fraud tend to experience financial loss and decreased trust in the digital financial environment (Fan and Zhou, 2021; Yu *et al.*, 2022a; Xu *et al.*, 2022).

Moreover, political authorities should develop measures to mitigate financial fraud exploiting the elderly such as promoting consumer financial capability, financial literacy and digital competences and the generation of a proper silver economy, in order to maintain a sustainable socio-economic development and ensure a dignified quality of life for older people (Dobrokhleb and Barsukov, 2017; Barik and Sharma, 2019; Goyal and Kumar, 2020; Reshetnikova *et al.*, 2021; Xiao *et al.*, 2022; Fan and Lei, 2023; Yadav and Banerji, 2023; Kumar and Kumar, 2023). Likewise, Näsi *et al.* (2021) call for a more serious commitment by academics and financial authorities to this topic.

3. Methodology

3.1 Bibliometric analysis

As a variant of the systematic literature review, bibliometric analysis is presented as an excellent opportunity to contribute to theoretical and practical knowledge (Mukherjee *et al.*, 2022). By analysing large amounts of data from a specific area, this methodology effectively provides a comprehensive overview of a research field more objectively than traditional literature reviews (Braam *et al.*, 1991; Corsini *et al.*, 2019).

Bibliometric analysis yields valuable insights into the advances in a research field, enabling the identification of gaps in the literature and; revealing research trends for the coming years (Callon *et al.*, 1991; Gálvez-Sánchez *et al.*, 2021; Zainuldin and Lui, 2021); and mapping the most used keywords in the field and the most influential authors, as well as the topics being discussed, describing the theories, principles, factors and findings in the research area (Agbo *et al.*, 2021; Kholidah *et al.*, 2022). Following this approach, this paper carries out the analyses described in Table 1.

3.2 Data collection method and procedure

The first step is the selection of the documents to be analysed. The selection process should grant the representativity of the papers selected, not necessarily choosing a complete and exhaustive inventory including every document as, following Podsakoff *et al.* (2005), the leading journals in a research field account for the majority of the citations, having the rest of documents a negligible impact on the field. Therefore, amongst the numerous databases existing, a bibliometric review should cover the journals listed on either Web of Science (WoS) or Scopus to avoid misleading results, according to Paul and Menzies (2023) guidelines. WoS repository has been selected to perform this bibliometric review, due to its international and independent character as well as its academic prestige (Ahmad *et al.*, 2021; Guo *et al.*, 2022), aiming to ensure high standards of quality.

The selection of publications is based on a bibliographic search by keywords that cover the different aspects related to financial fraud in the elderly. To mitigate potential errors during the literature review, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method was used (Gomezelj, 2016; Feng *et al.*, 2017). This choice was based on the ability of this method to provide an adequate degree of rigour and transparency throughout

Table 1. Bibliometric methods used to analyse the research topic

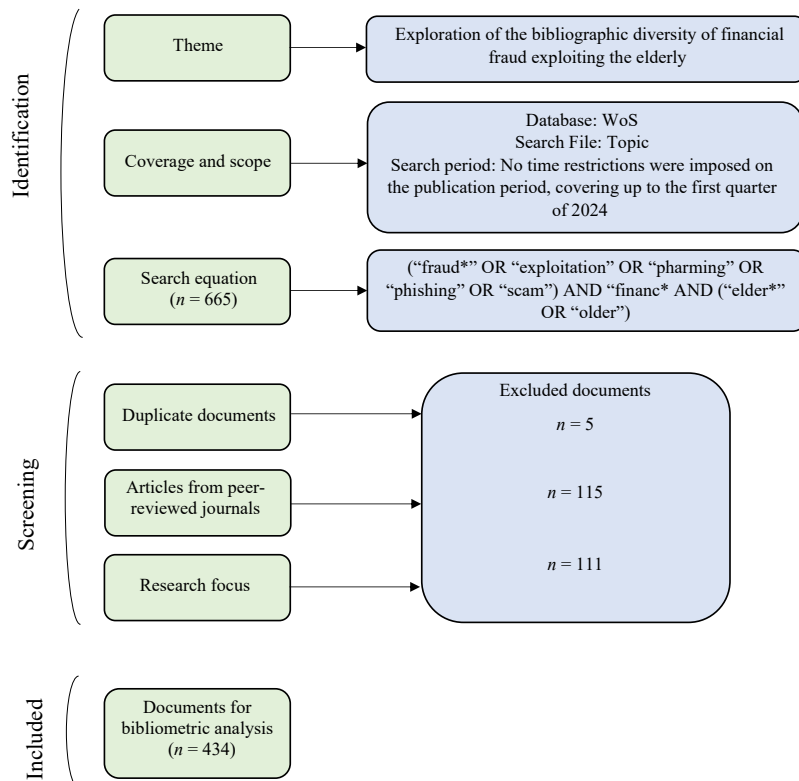
Techniques	Objective	Research questions	Bibliometric method	Analysis
Evaluative techniques: SCI-mat	(1) To assess academic impact and relative influence	RQ1: What has been the evolution of publications? RQ2: What are the major journals, countries, institutions, authors and articles in this research stream?	Measures of productivity	Historical evolution of publications Distribution of articles by journal Distribution of articles by author Citation analysis Co-citations analysis: documents
Relational Techniques: VOS Viewer	(2) To determine intellectual structure	RQ3: What is the main research structure of financial fraud in older adults' literacy research?	Impact metrics Co-citation	analysis: authors Co-citation analysis: journals Co-word analysis
	(3) To identify thematic organization (4) To identify conceptual structure	RQ4: What current research opportunities does this emerging research field offer?	Co-occurrence	
	(5) To identify the hottest research trends	RQ4: What current research opportunities does this emerging research field offer?	Bibliographic coupling	

Source(s): Gallego-Losada *et al.* (2023), p. 3). Authors' own work

the review process (Page *et al.*, 2021). Figure 1 illustrates the selection criteria implemented according to the PRISMA methodology.

An initial search of articles using keywords on financial fraud in the eldest was performed. This process must be carried out carefully, as the keywords chosen have a decisive influence on the selection of articles. The terms selected were “fraud*” OR “exploitation” OR “pharming” OR “phishing” OR “scam”; AND “financ*”; AND “elder*” OR “older”. We decided not to add synonyms for fraud such as “ponzi” OR “crime” to the search string because they did not provide relevant information for the bibliometric analysis. Additionally, this search was conducted based on several criteria for the selection of documents: (1) only articles from peer-reviewed journals were included, ensuring the quality of the content (Sabando-Vera *et al.*, 2022); (2) English was selected as the publication language, given its dominance in the academic community (Herrera-Franco *et al.*, 2021); and (3) no time restrictions were imposed on the publication period, allowing the maximum possible number of publications to be covered up to the first quarter of 2024. For further bibliographic coupling analysis, the same search strategy was used, restricted to the period from 1/1/2022 to 4/15/2024.

The initial sample was composed of 665 research articles from WoS database that met the search requirements. Following the inclusion and exclusion criteria established, the process of double-checking was performed. By applying manual exclusion criteria, it is possible to avoid errors in the selection of documents and to ensure that only papers that contribute significantly to the analysis and understanding of the topic are included (Cagriotta *et al.*, 2018), as many



Source(s): Authors’ own work

Figure 1. Selection process using PRISMA methodology

bibliometric analyses have done before (She *et al.*, 2022; Singh and Malik, 2022; Didion *et al.*, 2024; Carè *et al.*, 2024). These articles were excluded from the sample for one or more of the following reasons: (1) they did not address financial fraud; (2) they did not address financial exploitation; and (3) they did not focus on the elderly. As a result, 434 articles were confirmed as relevant for this bibliometric analysis.

4. Performance analysis

The application of bibliometric analysis ranges from the study of publication patterns to the analysis of collaboration networks and the exploration of the intellectual structure of the research field. Bibliometric techniques have been classified into two different categories: (1) performance analysis and (2) scientific mapping (Donthu *et al.*, 2021).

Performance analysis includes productivity measures, such as the assessment of the trend in the number of publications; the classification of the articles by institutions, journals, countries and authors; and the evaluation of the core documents of the academic literature, according to their influence in the research field (Ramos-Rodríguez and Ruiz-Navarro, 2004). SciMAT software (Cobo *et al.*, 2012; <https://sci2s.ugr.es/scimat/>) is considered an accurate tool for performance analysis, due to its robustness in pre-processing compared to other bibliometric software (Dong *et al.*, 2023). SciMAT software allows the elimination of implicit biases and conceptual errors in the literature itself, taking part in all phases of the process, making it an integral tool for bibliometric analysis (Sánchez-Camacho *et al.*, 2020; Bagheri *et al.*, 2023).

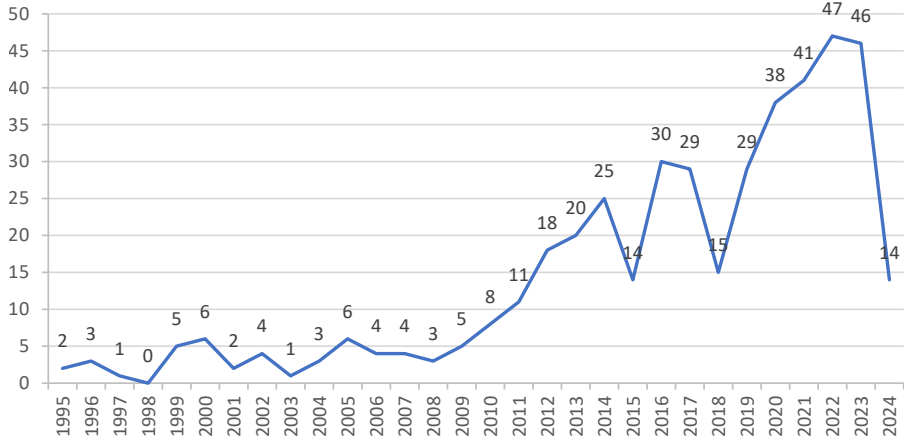
Scientific mapping, in turn, focuses on the intellectual interactions and structural connections between research components, including citation analysis, co-citation analysis and co-word analysis (Donthu *et al.*, 2021). The final sample was subjected to mapping analysis using the VOS Viewer software, known for its ability to visualize bibliometric networks (Van Eck and Waltman, 2014). This tool facilitates the organization and visual representation of connections within a large set of elements, having high credibility and acceptance in the scientific community (Kumar *et al.*, 2021; Nath and Chowdhury, 2021).

4.1 Evolution of publications

The first RQ deals with the trend in the number of publications throughout the period studied. Figure 2 summarizes the evolution of the scientific production dealing with this topic. The first articles on the subject were published in the mid-1990s, already referring to the financial exploitation of the elderly as one of the most important types of abuse (Choi *et al.*, 1999). From 2008, an upward trend begins to be appreciated. The financial crisis started and the digitalization of financial services assumed a critical role, driven by financial institutions that sought to reduce costs (Románova and Kudinska, 2016; Buchak *et al.*, 2018). Scholars describe the financial exploitation of the elderly as a typical crime of the 21st century, and stress how little has been done so far to protect these vulnerable people (McClurg, 2014).

After some ups and downs, the slope raises again in 2019, mainly due to the increasing transformation of traditional banks towards online banking. The publications of 2020–2023 confirm this trend, reinforced by the emergence of COVID-19 and its impact on online transactions (Nugrahini and Alfian, 2021) and data security (Stewart and Jürjens, 2018). Academics emphasize the importance of financial literacy and digital literacy in detecting and preventing financial fraud in this new era, dominated by technological innovation (Giannouli and Tsolaki, 2022; Sur *et al.*, 2023; Li *et al.*, 2024).

The evolution of academic production reveals a lack of maturity in this field of knowledge, which has only been considered a critical issue by the academic literature in recent years due to the escalation of digital fraud (Priya and Saradha, 2021). In the coming years, we can expect a consolidation of the main research lines, while other ones could be abandoned or become less important.



Source(s): Authors' own work

Figure 2. Evolution of the number of articles during the study period

4.2 Institutions and countries

Table 2 shows the top 10 institutions with the highest research output in financial fraud in the elderly. The top 10 research institutions include the Rush University, with 41 publications record, as the most influential one, followed by Wayne State University (28 publications), University of Southern California (26), State University System of Florida (21) and University of California System (21). Closely behind in the number of publications are Cornell University (19) and Weill Cornell Medicine (15). Located in Israel, Bar Ilan University (13) outstands as the only institution in the top 10 outside the United States (US), while the University of Minnesota Twin Cities, University of Minnesota System and University of Illinois System complete the top 10 positions with 12 publications each. Although the degree of concentration of the institutions to which the authors are linked is relatively low, it is worth noting the high degree of concentration in terms of countries, as most of this top 10 research institutions are located in the USA.

The USA leads the field in financial fraud investigations due to its strong legal framework, which includes specific laws to fight securities fraud and bank fraud (Bartlett, 2015; Schwartz

Table 2. Author's affiliation

Affiliations	Country	Number	Percentage (N/434)
Rush University	United States	41	9.45%
Wayne State University	United States	28	6.45%
University of Southern California	United States	26	5.99%
State University System of Florida	United States	21	4.84%
University of California System	United States	21	4.84%
Cornell University	United States	19	4.38%
Weill Cornell Medicine	United States	15	3.46%
Bar Ilan University	Israel	13	3.00%
University of Minnesota Twin Cities	United States	12	2.76%
University of Minnesota System	United States	12	2.76%
University of Illinois System	United States	12	2.76%

Source(s): Own elaboration. Authors' own work

et al., 2021). In addition, its extensive experience in this field has generated precedents and effective practices that enhance research. Additionally, its population has aged significantly over the past 2 decades, with the elderly accounting for 17% of the US population (World Bank, 2022), which has increased the attention and academic interest on this research topic.

United States Census Bureau (2022) highlights two Florida counties (Sumter and Charlotte) among the six most aged ones in the nation. This fact is more than probably the reason why the State University System of Florida is in the top 10 of the most influential institutions in this research field (Table 2). One last noteworthy aspect is that no public institutions have been found amongst the 10 most productive affiliations. Bearing in mind that the accelerated ageing of the population and the increased vulnerability of the elderly to financial fraud have relevant implications for world economies, income inequality and the sustainability of public finances, both authorities and public institutions should increase resource allocation to this field of research.

Table 3 shows the top 10 countries considering their publications on the topic in WoS. The USA clearly leads the scientific production on financial fraud in older adults (69.12%), followed by the United Kingdom (6.45%), Canada (6.45%), Australia (6.22%), People's Republic of China (5.07%) and Israel (3.92%). As can be seen in Table 3, Greece, Germany, Italy and Japan, despite having shares lower than 2%, are among the top 10 countries in this research field. This inclusion suggests a growing relevance of these countries, as well as their institutions and authors.

The high US presence in the production of research on financial fraud exploiting the elderly is consistent with the discussion on the top ten research institutions. The countries leading the research on financial fraud in the elderly are mainly developed ones, belonging to the OECD, where the rates of population ageing and digitalization of financial services are higher (Gordon, 2018; Kamchatova *et al.*, 2022). The sum of the number of articles when analysing the institution or the country is higher than the final sample (434 articles), as some articles are co-authored by researchers from different countries/institutions, reflecting the extensive cross-country collaboration network that exists in this research stream.

4.3 Journals and research areas

The 434 articles selected for this bibliometric analysis have been published in 194 different journals. Table 4 shows the top 10 most productive ones, representing 40.78% of the total production on the topic. These journals are included in the *Journal of Citation Report (JCR)*, indexed in different research areas.

Table 3. Most influential countries on the topic

Country	Amount of articles	% de 434
USA	300	69.12%
United Kingdom	28	6.45%
Canada	28	6.45%
Australia	27	6.22%
People's Republic of China	22	5.07%
Israel	17	3.92%
Greece	8	1.84%
Germany	8	1.84%
Italy	7	1.61%
Japan	6	1.38%

Note(s): Note that the sum of the number of articles is higher than 434, the final sample, due to articles co-authored by authors from different countries

Source(s): Own elaboration. Authors' own work

Table 4. Most prolific journals on the topic

Journal	Articles	IF (2022)/Area
<i>Journal of Elder Abuse Neglect Gerontologist</i>	74	0.50 (JCI) Gerontology – SSCI (Q3)
<i>Journal of Applied Gerontology</i>	21	1.73 (JCI) Gerontology (Q1)
<i>Clinical Gerontologist</i>	18	0.80 (JCI) Gerontology (Q2)
<i>Journal of Gerontological Social Work</i>	14	0.72 (JCI) Gerontology (Q2) Geriatrics and Gerontology (Q3) Psychiatry (Q3)
<i>Journal of Adult Protection</i>	11	0.78 (JCI) Gerontology (Q2) Social Work (Q1)
<i>Generations-Journal of the American Society on Aging</i>	11	0.43 (JCI) Social Work (Q4)
<i>Journal of Interpersonal Violence</i>	7	0.08 (JCI) Gerontology (Q4)
<i>Aging Mental Health</i>	7	1.33 (JCI) Criminology and Penology (Q2) Family Studies (Q2) Psychology, Applied (Q3)
<i>Journal of the American Geriatrics Society</i>	7	0.78 (JCI) Geriatrics and Gerontology (Q3) Gerontology (Q2) Psychiatry (Q2)
	7	1.47 (JCI) Geriatrics and Gerontology (Q1) Gerontology (Q1)

Source(s): Own elaboration. Authors' own work

Journal of Elder Abuse Neglect, belonging to the area of Gerontology, stands out as the most productive journal, publishing 74 articles included in the selection. Within the same research field, *Gerontologist* (21 articles), *Journal of Applied Gerontology* (18 articles), *Clinical Gerontologist* (14 articles), *Generations-Journal of the American Society on Aging* (7 articles) and *Journal of the American Geriatrics Society* (7 articles) are worth mentioning. *Journal of Adult Protection* (11 articles) and *Journal of Gerontological Social Work* (11 articles) are, in turn, focused on Social Work. Also, among the most prolific journals are the *Journal of Interpersonal Violence* (7 articles) and *Aging and Mental Health* (7 articles), specialized in the fields of Criminology and Penology and Psychiatry, respectively.

International Review of Economics and Finance, *Journal of Financial Economics* and *Journal of Financial Services Marketing*, associated with the areas of *Business*, *Business (Finance)* and *Economics* of the JCR have published some articles related to financial fraud in the elderly throughout the years 2023 and 2024, revealing a growing, but still incipient, interest in the financial community.

As [Table 5](#) shows, Geriatrics/Gerontology is the field of knowledge that leads the study of financial fraud exploiting the elderly, accounting for 55.07% of the academic literature produced. Areas such as Psychology (12.21%), Psychiatry (9.68%), Criminology/Penology (8.53%) and Social Work (7.60%) have also showed a relevant role.

Table 5. Most influential research areas on the topic

Area	Articles	% (N/434)
Geriatrics Gerontology	239	55.07%
Psychology	53	12.21%
Psychiatry	42	9.68%
Criminology Penology	37	8.53%
Social Work	33	7.60%
Business Economics	23	5.30%
Neurosciences Neurology	19	4.38%
Health Care Sciences Services	18	4.15%
Family Studies	16	3.69%
Government Law	16	3.69%

Source(s): Own elaboration. Authors' own work

This finding is aligned with the results of the analysis of the 10 most productive journals in this research field, where journals around Geriatric Gerontology stand out significantly. Despite Business Economics currently represents a 5.30% of the literature, scholars from this area have increased their interest in the most recent years. Other areas of knowledge that have paid attention to this topic are Neurosciences Neurology (4.38%), Health Care Sciences Services (4.15%), Family Studies (3.69%) and Government Law (3.69%). Nevertheless, the social relevance of this concern could anticipate an imminent growth in the production about this topic in *Economics, Business, Management and Finance* publications, given the potential impact of financial abuse on the economic well-being of the eldest.

4.4 Most prolific authors

The 434 articles included in the selection were published by 1,118 different authors. Table 6 shows the 10 authors with the highest number of publications on financial fraud exploiting the elderly. Lichtenberg leads this table with 26 articles, followed by Boyle (19 articles), Dong (19 articles), Han (15 articles), Bennett (15 articles) and Yu (15 articles). It is also worth highlighting the academic contribution to this line of research of authors like Deliema (13 articles), Weissberger (12 articles), Wilber (12 articles) and Mosqueda (11 articles). The majority of these top 10 authors are affiliated with institutions placed amongst the most prominent in this research field (Table 2). In addition, as it was shown before, research on financial fraud exploiting the elderly is primarily led by the USA (Table 3).

In total, 822 authors (78.44%) have contributed with at least one publication, while 143 authors (13.65%) have published two articles, showing the emergence of new experts and pointing to a likely continued growth in the years to come. The concentration of the research in terms of authors is still low, so it can be considered that there is not a single academic school, but a few clusters of researchers analysing this problem from different angles and perspectives, as will be shown by the bibliographic coupling analysis.

4.5 Most cited articles

Citation analysis is traditionally used to assess the impact and influence of research papers, as citations reflect how the original work has been used and referenced by the scientific community (Collado *et al.*, 2021). It has the advantage of being a persistent and unambiguous measure over time (Huang *et al.*, 2015).

The most referenced articles are shown in Table 7. Along with the author, it includes the affiliation country of the first author, the journal of publication and the research field in which

Table 6. Most prolific authors on the topic

Rank	Authors	Country of Author	University/Institution	Number of publications
1	Lichtenberg PA	USA	Wayne State University	26
2	Boyle PA	USA	Rush University	19
3	Dong XQ	USA	Rush University	19
4	Han SD	USA	University of Southern California	15
5	Bennett DA	USA	Rush University	15
6	Yu L	USA	Rush University	15
7	Deliema M	USA	University of Minnesota Twin Cities	13
8	Weissberger GH	USA	University of Southern California	12
9	Wilber KH	USA	University of Southern California	12
10	Mosqueda L	USA	University of Southern California	11

Source(s): Own elaboration. Authors' own work

Table 7. Most frequently cited publications on the topic

R	Article	Authors	Country (1st aut)	Publication	IF(2022)/ Categories	Cit WoS	(C/ Y) WoS
1	Elder abuse as a risk factor for hospitalization in older persons	Dong and Simon (2013)	USA	<i>JAMA Internal Medicine</i>	4.75 (JCI) Medicine, General and Internal (Q1)	182	15.17
2	Elder Abuse, Neglect and Exploitation: Risk Factors and Prevention Strategies	Choi and Mayer (2000)	USA	<i>Journal of Gerontological Social Work</i>	0.78 (JCI) Gerontology (Q2) Social Work (Q1)	126	5.04
3	Correlates of Susceptibility to Scams in Older Adults Without Dementia	James et al. (2014)	USA	<i>Journal of Elder Abuse Neglect</i>	0.50 (JCI) Gerontology (Q3)	121	11.00
4	Is Elder Abuse and Neglect a Social Phenomenon? Data from the First National Prevalence Survey in Israel	Lowenstein et al. (2009)	Israel	<i>Journal of Elder Abuse Neglect</i>	0.50 (JCI) Gerontology (Q3)	120	7.5
5	Financial Exploitation and Psychological Mistreatment Among Older Adults: Differences Between African Americans and Non-African Americans in a Population-Based Survey	Beach et al. (2010)	USA	<i>Gerontologist</i>	1.73 (JCI) Gerontology (Q1)	120	8.00
6	Financial Exploitation of Older Adults: A Population-Based Prevalence Study	Peterson et al. (2014)	USA	<i>Journal of General Internal Medicine</i>	1.40 (JCI) Health Care Science and Services (Q1) Medicine, General and Internal (Q1)	100	9.09
7	Elder abuse and neglect in an Urban Chinese population	Dong et al. (2007)	USA	<i>Journal of Elder Abuse Neglect</i>	0.50 (JCI) Gerontology (Q3)	99	5.50
8	Victimization of persons by fraud	Titus et al. (1995)	USA	<i>Crime and Delinquency</i>	1.02 (JCI) Criminology and Penology (Q2)	98	3.27

(continued)

Table 7. Continued

R	Article	Authors	Country (1st aut)	Publication	IF(2022)/ Categories	Cit WoS	(C/ Y) WoS
9	Prevalence and correlates of elder mistreatment in South Carolina: The South Carolina elder mistreatment study	Amstadter et al. (2011)	USA	<i>Journal of Interpersonal Violence</i>	1.33 (JCI) Criminology and Penology (Q2) Family Studies (Q2) Psychology, Applied (Q3)	95	6.79
10	A Review on the Prevalence and Measurement of Elder Abuse in the Community	Sooryanarayana et al. (2013)	Malaysia	<i>Trauma Violence and Abuse</i>	1.50 (JCI) Criminology and Penology (Q1) Family Studies (Q1) Social Work (Q1)	78	6.50

Source(s): Own elaboration. Authors' own work

it is integrated, as well as the total number of citations in WoS and the number of citations per year for each paper.

The articles have been ranked according to their relative citation (citations per year) in the WoS database, from the most cited to the least cited ones. The top 1 is [Dong and Simon \(2013\)](#), with 182 citations, followed by [Choi and Mayer \(2000\)](#), with 126 citations, and [James et al. \(2014\)](#), with 121 citations. These studies analyse elder abuse from different perspectives, addressing several variables including the likelihood of hospitalization as a result of abuse, the risk factors and prevention strategies for elder abuse, neglect and exploitations and the associations between susceptibility to scams and potential correlates, finding that older age, lower income levels, lower cognitive function, lower psychological well-being and lower levels of health and financial literacy are associated with greater susceptibility to scams.

The remaining documents stress the relevance of financial fraud from different points of view. [Lowenstein et al. \(2009\)](#) analyse the prevalence and severity of various forms of abuse from the perspective of the victims, examining correlations and predictors and profiling vulnerable elders, identifying financial exploitation as the second most common type of elder abuse. [Beach et al. \(2010\)](#) analyse racial disparities in financial exploitation and psychological abuse among older adults, finding higher rates among African-Americans. [Peterson et al. \(2014\)](#) point out that financial exploitation is the most common and least studied kind of elder abuse, concluding that elderly groups are more likely to self-report financial exploitation; and [Dong et al. \(2007\)](#) study the prevalence of elder abuse and neglect in an urban Chinese population, with financial exploitation being the second most common form of elder abuse.

[Titus et al. \(1995\)](#) focus on the victimization of persons by personal fraud, defining it as the deliberate intent to deceive people with promises of goods, services or other financial benefits that do not actually exist or were never intended to be provided; while [Amstadter et al. \(2011\)](#) identify contextual risk factors, such as low family income, which may increase vulnerability to abuse. The review of [Sooryanarayana et al. \(2013\)](#) highlights elder abuse as a common problem in both developed and developing countries, as well as the lack of a single standard test to detect abuse.

As can be observed in [Table 7](#), most of the journals where the most cited articles have been published belong to the research areas of Medicine and Gerontology, showing again their dominance over other areas. Fraud and financial exploitation of the elderly have hardly been

studied in finance. With financial fraud becoming an increasingly major issue, a deeper engagement of the financial academic community, boarding the study of the relationship between financial fraud in the elderly and other financial variables such as financial inclusion and financial literacy, constitutes a research opportunity, both for the academic community and for the sake of the society.

4.6 Degree of concentration of selected variables

After a deep analysis of the most influential countries, institutions, journals, research areas and authors in the field of financial fraud in the elderly, it is worth estimating the degree of concentration of these productivity variables in the literature.

The Herfindahl–Hirschman Index (HHI) is one of the most widely applied and popular indices in social sciences. The degree of concentration of a variable in the market can be calculated by adding the squares of the elements to be analysed (Rhoades, 1993). The result of this index will oscillate between 0 and 10,000, representing a perfectly competitive market and a monopoly, respectively.

$$HHI = \sum_{i=1}^n (MS_i)^2 .$$

In a perfect competition environment, HHI results would be less than a hundred, as well as less than 1,500 will be considered a normal competitive market. If the value is placed between 1,500 and 2,500, it means a moderate degree of concentration in the market. A highly concentrated market is identified by an HHI greater than 2,500, a situation that may be detrimental to consumer protection.

HHI has been selected to determine the degree of concentration of the academic literature dealing with this research topic, due to its clarity and simplicity, as well as its extensive and prior recognition by the academic literature (Brütigam *et al.*, 2014; Hu, 2022; Gallego-Losada *et al.*, 2023; Laporte and Muñoz-Repiso, 2024).

In this research, MS_i represents the market share of variable *i* (country, journal, institution, research area or author) and *n* is the number of total items for variable *i* to be studied. HHI values for the variables analysed are collected in Table 8.

Research areas show a high degree of concentration, as Geriatrics Gerontology alone includes a 55.07% of the articles. In terms of countries, the vast majority of authors are from the United States (68.03% and 300 articles). As could be expected, HHI indicates that the concentration is lower regarding the journals, authors and institutions, which is a clear indicator that financial fraud in the elderly has an important potential for development in the immediate future, due to its relative lack of maturity as a research stream.

5. Science mapping

In the co-citation network, each node stands for a single reference and its size represents its number of citations. The links represent the co-citation relationship that exists between different nodes. The thicker the link, the stronger the relationship between the connected nodes. The colours reveal different groups according to their similarity.

Table 8. Herfindahl–Hirschman index (HHI)

Country	4,960.18	Very high concentration
Journal	397.60	Low concentration
Institution	447.40	Low concentration
Research Area	3,529.59	Very high concentration
Author	303.63	Low concentration

Source(s): Own elaboration. Authors' own work

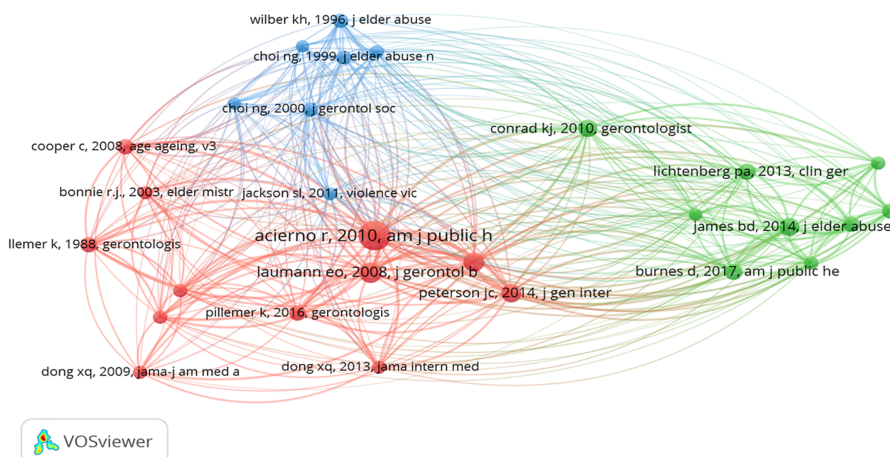
The minimum thresholds were established with the aim of presenting maps that link all the documents analysed in an accessible and understandable way for the scientific community (Randhawa *et al.*, 2016).

5.1 Co-citation network of documents

A total of 11,605 cited references were found among the 434 documents analysed in this study. Only 29 of these met the minimum threshold of 25 citations. Document co-citation analysis reveals the existence of three different clusters (Figure 3).

5.1.1 Cluster 1 (red network): prevalence of elder abuse. Elder abuse can take place in different ways, which have been studied by the literature gathered in this cluster. *Acierno et al. (2010)* found a high prevalence of elder abuse, being defined as the frequency with which different types of abuse or neglect happen in a population of older adults in a given period, while *Bonnie and Wallace (2003)* define prevalence as the proportion of individuals in a population who have a particular characteristic at a specific point in time or along a specific period of time. *Peterson et al. (2014)* highlight financial exploitation as the most serious and frequent problem among the different types of elder abuse. Moreover, the incidence of elder abuse and financial exploitation is not uniform across the elderly, as factors such as age, race, poverty and cognitive impairment are significant determinants of vulnerability to elder abuse (*Beach et al., 2010; Laumann et al., 2008; Lachs et al., 1997*). According to *Pillemer et al. (2016)*, it is imperative to develop effective preventive strategies to ensure the financial security of older people, avoiding consequences such as increased hospitalization or mortality rates and negative implications for social and health policy (*Lachs, 1998; Dong and Simon, 2013*). In this specific domain, the academic literature remarks on the importance of establishing agreed standards for the measurement of financial fraud exploiting the elderly, as well as addressing it from different perspectives, including research, policy and practical intervention.

5.1.2 Cluster 2 (green network): decision-making and cognitive impairment in fraud and financial exploitation vulnerability. *Boyle et al. (2012)* state that decision-making becomes even more important for health and well-being during the ageing stage, when many influential decisions are made just when cognitive function declines. *Burnes et al. (2017)* show that, despite being cognitively intact, 1 in 18 older adults is a victim of financial fraud and scams. On



Source(s): Authors' own work

Figure 3. Co-citation network of documents in the field of financial fraud exploiting the elderly

the other hand, [Conrad et al. \(2010\)](#) and [Lichtenberg et al. \(2013, 2015, 2016\)](#) consider the need to advance in the measurement of fraud, thus developing tools such as the Older Adult Financial Exploitation Measure (OAFEM) and the Lichtenberg Financial Decision Rating Scale (LFDRS) in order to evaluate the financial decision-making capacity and vulnerability of the elderly. [DeLiema \(2018\)](#) tries to explain vulnerability to financial fraud by applying routine activity theory, which analyses how social isolation increases criminal opportunities, while [James et al. \(2014\)](#) identify demographic and cognitive factors as markers of susceptibility to fraud. [Spreng et al. \(2016\)](#) review how changes in the brain and cognition increase the risk of abuse. Multidisciplinary collaboration is a key and essential component to protect seniors from exposure and victimization to fraud and financial exploitation, thus promoting their health and financial well-being.

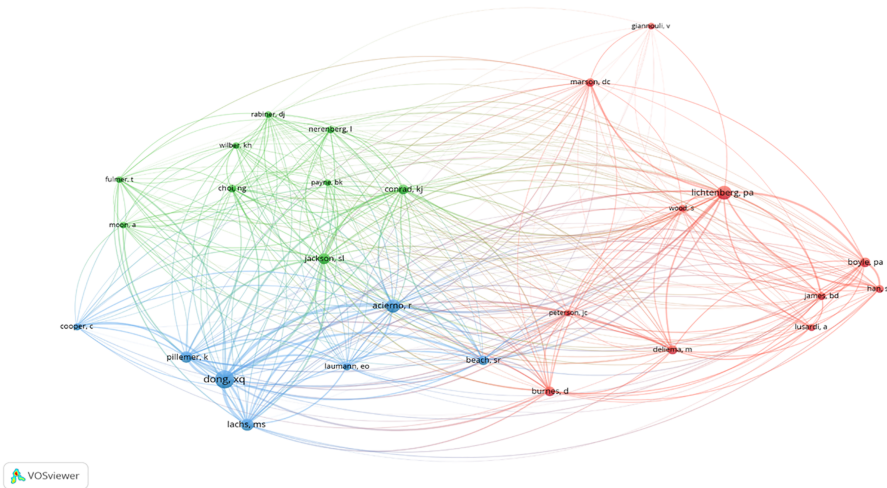
5.1.3 Cluster 3 (blue network): risk factors and prevention strategies for financial exploitation. Assessing the demographic and cognitive characteristics that increase vulnerability to financial exploitation is critical to understanding the nature of elder abuse and developing conceptual models to guide the formulation of preventive strategies and intervention policies. [Choi and Mayer \(2000\)](#) identified risk factors such as gender, age, mental and physical health status and size of social support. However, according to [Jackson and Hafemeister \(2011\)](#), a correct differentiation of the types of elder abuse is essential for properly identifying these risk factors. [Choi et al. \(1999\)](#) suggest the implementation of case management involving frail and cognitively impaired elders, preventive education programmes and ongoing collaboration between adult protective services, financial institutions and law enforcement agencies, while [Rabiner et al. \(2004\)](#) suggest the development of policies and programmes based on a thorough understanding of elder abuse and financial exploitation, using conceptual frameworks to guide these initiatives. The relevance of formulating effective preventive strategies has been boarded in recent years by different initiatives: increasing collaboration between countries in different continents to address financial fraud in older people globally; developing international financial security standards; creating global awareness campaigns about the risks of financial fraud in older people; and establishing international cooperation mechanisms to investigate and combat transnational financial fraud affecting this population ([Alonso et al., 2023](#)).

5.2 Co-citation network of authors

[Chabowski et al. \(2011\)](#) state that the intellectual structure of a research stream can be expressed through a pattern of co-citations of authors from the bibliographic core of the field. The selection of articles cited 7,911 authors. 27 of them had a minimum of 50 citations. There are three significant clusters, as can be seen in [Figure 4](#). One of the most outstanding findings of this analysis is, again, the scarce presence of economic or business management perspectives in the analysis of financial fraud exploiting the elderly.

5.2.1 Cluster 1 (red network). Authors such as Boyle, Lichtenberg, Giannouli and Han belong to the red cluster, sharing some areas of expertise such as the analysis of decision-making capacity, the elderly vulnerability to financial exploitation and the influence of cognitive impairment in financial fraud. Furthermore, authors such as DeLiema and Burnes study victimization and exposure to financial fraud exploiting the elderly. Thus, the authors included in this first cluster dedicate their efforts to the investigation of financial fraud from a psychological and neuropsychological perspective, focusing on the cognitive capacities of the elderly and their fragility in the face of possible fraud.

5.2.2 Cluster 2 (blue network). In the second cluster, there are authors such as Acierio, Beach, Cooper and Dong who focus on the analysis of the risk factors involved in fraud and financial exploitation of the elderly, such as demographic features, contextual characteristics, social support, race, age, gender and personality traits. Likewise, some authors of this cluster such as Lachs and Pillemer have studied in detail the prevalence of financial fraud in the



Source(s): Authors' own work

Figure 4. Co-citation network of authors in the field of financial fraud exploiting the elderly

elderly. This analysis of the risk factors that cause the prevalence of fraud and financial exploitation should set the grounding for prevention policies.

5.2.3 Cluster 3 (green network). Authors belonging to the green cluster focus on establishing a conceptual model and a theoretical framework to provide researchers and policy makers with clear guidance on financial fraud and financial exploitation of the elderly (Jackson, Payne, Fulmer). At the same time, Choi, Conrad, Rabiner and Wilber develop a series of preventive and response strategies for fraud cases, thus providing practical implications for protective services and financial and political institutions.

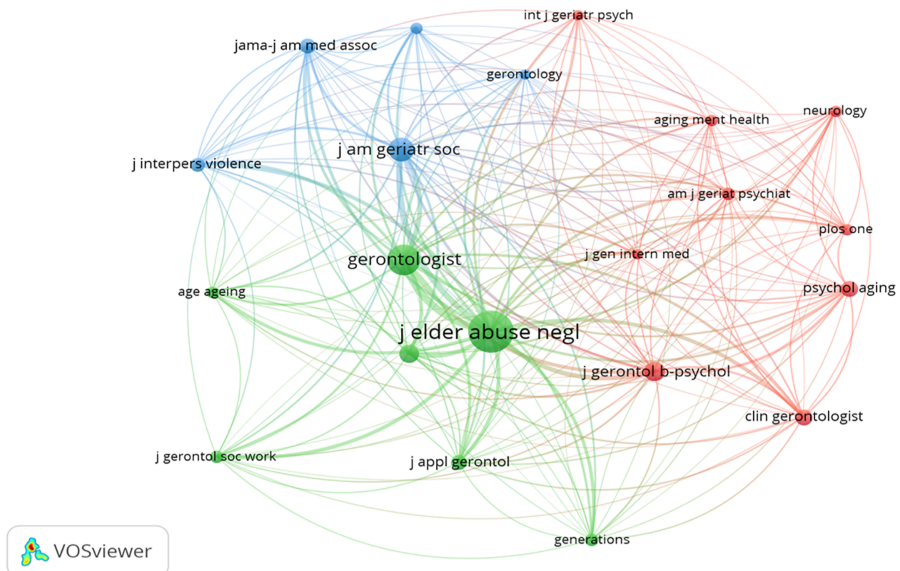
5.3 Co-citation network of journals

As can be observed in [Figure 5](#), articles about financial fraud exploiting the elderly are grounded on the publications of three kinds of journals.

The green cluster mostly includes sources related to gerontology and geriatrics (e.g. *Gerontologist* and the *Journal of Applied Gerontology and Age and Ageing*). *Journal of Elder Abuse and Neglect* stands out as the most cited one (1,188 citations), with the highest total link strength (12,767). As could be seen in the productivity analysis ([Table 5](#)), the research areas of gerontology and geriatrics are outstanding in the study of financial fraud and financial exploitation of the elderly, being much more prolific and holding a greater impact.

The blue cluster includes basically criminology/penology and family studies journals (e.g. the *Journal of Interpersonal Violence*), as well as social work journals (e.g. *Journal of the American Geriatrics Society*), caring mainly for the legal and social consequences of elder financial abuse. Finally, the red cluster includes mainly publications in the fields of psychology and psychiatry (e.g. *Clinical Gerontologist*, *Psychology and Aging* and the *American Journal of Geriatric Psychiatry*) and clinical neurology (e.g. *Neurology*), dealing with both the neurological antecedents and consequences of financial fraud exploiting the elderly.

Some journals included in this bibliometric analysis are included in multidisciplinary categories (e.g. *Plos One*), which shows the interconnection of disciplines of financial fraud exploiting the elderly and the need for more cooperation between researchers from different areas of knowledge. Also, the analysis of citations, journals and authors shows that none of the foundations of research on financial fraud in the elderly is finance or economic regulation.



Source(s): Authors' own work

Figure 5. Co-citation network of journals in the field of financial fraud exploiting the elderly

Once again, we must remark that the financial community should pay specific attention to this problem, especially regarding areas such as financial literacy and financial inclusion.

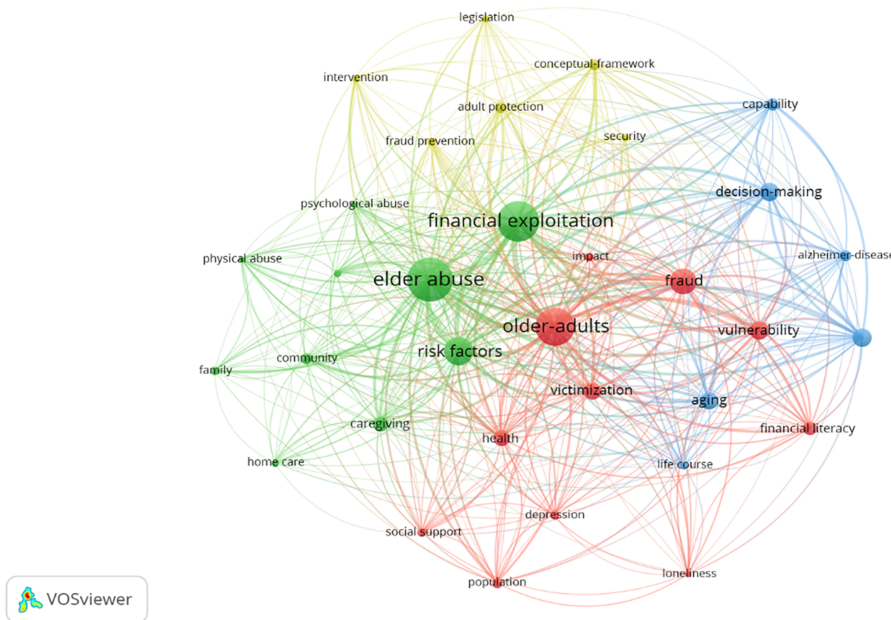
6. Thematic graph

The identification of emerging research themes and trends is essential for nations to establish strategic priorities, for companies to adapt to new business strategies and for institutions to focus on research areas (Huang *et al.*, 2021). In order to determine these trends, a co-word analysis and a bibliographic coupling study, as well as an analysis of the top 10 keywords, have been performed.

6.1 Co-occurrence network of keywords

The conceptual structure of financial fraud exploiting the elderly is developed in this section through a thematic map (Figure 6). The co-word analysis found that one of the most prominent keywords is “United States” (67 occurrences and 366 total link strength), as many researchers in this field are based in this country and have conducted their studies through US surveys and databases. Despite the significant presence of American works in the field of study, it has been decided to eliminate “United States” as a keyword, as it cannot be directly linked to the intellectual structure of financial fraud in the elderly. Therefore, four different groups of keywords have been identified.

6.1.1 Cluster 1 (green network): types of elder abuse. In this first cluster, the most interconnected keywords within the thematic map stand out: “elder abuse” (250 occurrences and a total linking strength of 922) and “financial exploitation” (219 occurrences and a total linking strength of 918). Both are interconnected with the rest of the keywords. Financial exploitation, like physical and psychological abuse, is a form of elder abuse, which is often perpetrated by family members, intimate partners, caregivers or other people in care institutions. The study of the various types of elder abuse, together with the investigation of the



Source(s): Authors' own work

Figure 6. Co-occurrence network of keywords in the field of Financial Fraud Exploiting the Elderly

associated risk factors, represents the core of the research in the field of financial fraud exploiting the elderly, constituting a consolidated topic amongst the scientific community. Physical abuse of the elderly, generally carried out by family members or caregivers, represents the origins of this field of study, being these keywords the oldest within the cluster.

6.1.2 Cluster 2 (yellow network): protecting older-adults from fraud. The second group of keywords focuses on safeguarding the elderly against fraud. Researchers adopt various approaches, such as the formulation of a conceptual framework to guide the development of effective preventive strategies against fraud, the establishment of protective services for adults or security intervention and regulations. The debate around legislation to regulate financial fraud exploiting the elderly has been widely discussed in the academic community, being “legislation” the most established and long-standing keyword in this cluster. However, there is a resurgence of this subtopic due to the digital transformation, as well as the increase of fraudulent activities, which poses new legislative challenges for politicians and academics.

6.1.3 Cluster 3 (blue network): cognitive and decision-making capacity in ageing. Blue cluster reveals cognitive and decision-making capacity in ageing as a relevant topic in the field. With research on elder abuse and financial exploitation firmly established, scholars have shifted their focus in recent years to the study of decision-making capacity throughout the life course and the ageing process, as well as the role that cognitive decline and conditions such as Alzheimer’s disease have on the financial capacity of older adults.

6.1.4 Cluster 4 (red network): variables influencing fraud victimization of older adults. “Older-adults” is revealed as the most important keyword in the cluster and the third of the whole thematic map (200 occurrences and 887 total link strength), followed by “fraud” (110 occurrences and 440 total link strength). The determinants of fraud victimization in the elderly constitute a highly relevant area of research in the scientific field. Factors such as social isolation, depressive symptomatology, lack of social support, deteriorating health or limited financial competence have a significant influence on the vulnerability of older adults to be

victims of fraudulent activities. Vulnerability and financial literacy emerge as the most recent keywords in the context of this thematic map, highlighting the increased vulnerability of the older population, as well as the growing emphasis on financial education as a means to protect this segment of the population from potential financial scams, especially in the context of the digital transformation of traditional financial institutions and the banking industry.

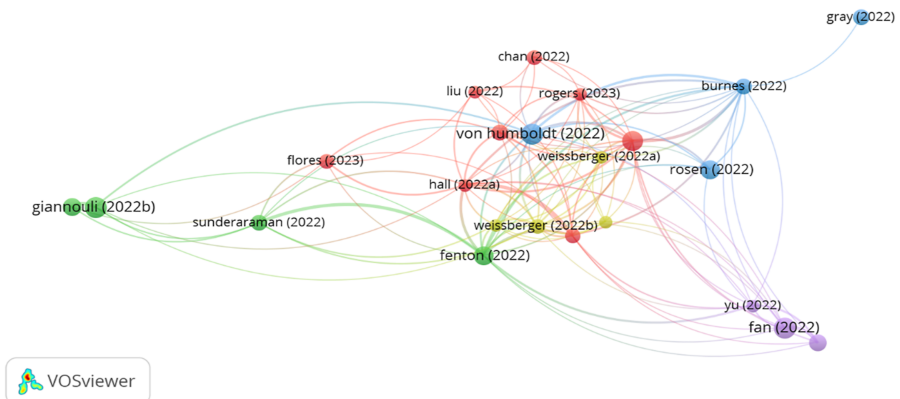
6.2 Recent trends and future research directions

Bibliographic coupling is one of the most spread bibliometric techniques used to determine the trending topics inside a research stream (Martyn, 1964). Coupling takes place when two articles cite the same reference, showing a highly probable relationship between them, as they share the same theoretical groundings (Zupic and Cater, 2015). Bibliographic coupling is frequently used in dealing with the most recent literature, completing the information delivered by co-word analysis (Patel et al., 2022; Migliavacca et al., 2022).

A group of 107 articles published between 1/1/2022 and 4/15/2024, selected following the same strategy that had been used in previous sections to carry out the productivity and mapping analyses, has been the starting point to identify the most recent research trends dealing with financial fraud exploiting the elderly. Amongst this literature, Figure 7 shows the papers which have been cited at least 4 times, revealing the existence of five clusters which identify the hottest research trends.

The red cluster, the most populated one, includes 8 papers, which mainly try to find out the circumstances under which elder financial exploitation can be more frequent, which could lead to anticipate potential abuse conducts. The commonalities studied by the articles included in this cluster can be both external, related to the sociodemographic, environmental of familiar context; and personal features, related to the victim or the abuser. These studies have been published in journals related to gerontology or family counselling.

The most cited paper in this cluster, Fraga Dominguez et al. (2022), compares financial abuse with other kinds of abuse, finding out that the prevalence of risk factors (physical or mental health problems, dependency, troublesome attitudes, previous victimization, substance abuse and cohabitation with the perpetrator) is lower in cases of financial abuse when it appears isolated and higher when it happens together with some other kinds of abuse. While co-habitation with the perpetrator and dependency are more frequently associated with non-financial abuse or combined financial and non-financial exploitation, mental health and cognitive problems appear typically in financial elder abuse, allowing the perpetrator to take



Source(s): Authors' own work

Figure 7. Bibliographic coupling

advantage of the situation. The study of [Chan and Stum \(2022\)](#) identifies up to 23 family configurations, considering both the number of victims and perpetrators and finds out that the family can act either as a shield against financial abuse or become a risk itself. The critical role of Adult Protective Services (APS) in reducing the prevalence of different kinds of abuse is studied by [Liu et al. \(2022\)](#), finding that financial planning services are associated with financial abuse reduction. [Rogers et al. \(2023\)](#) found out that elder adults with dementia have a higher risk of suffering financial abuse.

Comparing two groups of older adults, victimized and non-victimized of financial abuse, [Hall et al. \(2022a, b\)](#) showed that victims were less healthy, had poorer memory and executive functioning, had less social support and showed greater stress. Financial counselling after the abuse could help them to regain confidence and reduce their levels of stress. Some vulnerabilities detected by [Hall et al. \(2022b\)](#) were loneliness, lower levels of education, poorer financial literacy and financial vulnerability. The lack of preparation to make financial decisions (so, a lower degree of financial literacy), along with family conflicts and attitudes of entitlement are also risk factors associated with financial exploitation of the eldest when it happens using powers of attorney ([Ries, 2022](#)). Finally, [Flores and Lichtenberg \(2023\)](#) assess the LFDRS, an evaluation tool that can be used to measure the ability of an individual to make financial decisions and, therefore, his/her risk of financial exploitation.

The green cluster gathers four papers, including two published by Giannouli, the most cited author in the last years. This literature is specifically associated with the cognitive condition of the victims of elder financial exploitation. Therefore, they have been published in medical journals associated with neurology.

The study of [Giannouli and Tsolaki \(2022\)](#) found a severe impairment of the financial decision-making capacity of patients of mild Alzheimer's disease, being the arithmetic question included in one test, the Mini-Mental state examination, an adequate predictor of this capacity. The same research team found out that depression is clearly associated with a poorer financial decision-making capacity [Giannouli et al. \(2022\)](#). [Fenton et al. \(2022\)](#) point out that financial exploitation vulnerability can be an early behavioural manifestation of Alzheimer's disease. Finally, [Sunderaraman et al. \(2022\)](#) found out that overconfidence in financial decision-making in healthy adults can lead to lower accuracy.

The yellow cluster includes four papers which deal with the association between objective (numerical) or subjective (based on feelings) age and financial exploitation vulnerability. Consequently, these studies have been published in journals belonging to the area of gerontology. Weissberger is the most important author on this topic, having published three papers since 2022.

Analysing the calls received by the National Center on Elder Abuse (NCEA), [Weissberger et al. \(2022\)](#) found out that, as had been reflected in the Introduction section of this paper, the change in the lifestyle brought by COVID-19 meant an increase in elder financial abuse. [Weissberger and Bergman \(2022\)](#) identified a higher financial vulnerability of people who subjectively felt older in the absence of social support. Ageism, which consists of the generalization of negative stereotypes against the eldest, can increase financial vulnerability, especially amongst those with an older subjective age [Weissberger et al. \(2023\)](#). Finally, comparing the vulnerability considering different schemes, the eldest show a higher probability than younger people of being victimized by individuals pretending to need to raise funds to find a missing relative ([Gunderson and Ten Brinke, 2022](#)).

The purple cluster includes just three papers related to external/societal factors that influence the degree of financial vulnerability of the eldest. Therefore, as an exception, the journals that have published these studies do not only deal with gerontology but also with consumer issues or even directly with economics.

In a study that differentiates between fraud exposure and fraud victimization after this exposure, [Fan and Zhou \(2022\)](#) find out that older age, lower income, higher debt, lower education and rural residency are associated with a lower risk of fraud exposure, but a higher risk of fraud victimization after exposure. [Yu et al. \(2022b\)](#) associated financial fragility in

community-dwelling older adults with a higher susceptibility to scams, being financial fragility in turn associated with lower levels of income, global cognition, general literacy and financial literacy. [DeLiema et al. \(2023\)](#), in turn, analyse different kinds of scams, finding a higher vulnerability of lonely and socially isolated people.

Finally, the blue cluster includes four papers which analyse the situation after being bullied, as well as the different kinds of interventions which aim at preventing the financial victimization of the eldest. Consequently, this literature lays somewhere amongst gerontology and psychology, as it tries to develop the best possible actions to refrain the eldest from falling in scams, while being concerned about the feelings of previously abused people.

[Von Humboldt et al. \(2022\)](#), the most cited paper of the sample, compare the feelings about the reasons for having been abused between Portuguese and British victimized older adults, finding out that Portuguese older adults felt mostly bullied due to their reduced decision-making capacity, lower attractive appearance and social skills and less financial resources, while British participants considered that the main reasons were their compromised learning capacity and asexuality. [Gray et al. \(2022\)](#) analysed the effects of general or specific (finance and driving) abilities' training interventions, showing the later some effects in the short run compared with the control group, but these improvements do not stand along the time once they cease to receive further training. The study of [Rosen et al. \(2022\)](#) focuses on the experience of the Vulnerable Elder Protection Team in the USA, which has revealed that some changes in the living environment, along with additional home support, can improve the degree of protection against financial fraud of the eldest. [Burnes et al. \(2022\)](#), in turn, analysed the data of the Canadian Longitudinal Study on Aging, which revealed the main risk and protective factors related to financial abuse of the eldest, helping to develop prevention and shield strategies.

7. Implications

This study provides a comprehensive overview of the field of financial fraud exploiting the elderly, presenting itself as a knowledge base for academics, policy makers and authorities and as a pathway to future research.

The proliferation of academic production in this field, as well as its multidisciplinary character, makes it difficult for researchers to be aware of all discoveries and findings, turning this paper into a key reference for any academic interested in this field. This section highlights the main implications of the study.

7.1 Academic implications

This paper contributes significantly to the expansion of the existing literature on financial fraud exploiting the elderly. By identifying and analysing trends, patterns and relationships among scientific publications, the theoretical knowledge base in the field of financial fraud is enriched.

The results of the present bibliometric analysis validate the observation of the growth of the academic literature on financial fraud exploiting the elderly. This fact is fundamentally due to the increasing dynamism of the financial sector, caused by the constant technological transformation and the low adaptability of elderly users. Therefore, this paper has revealed the consolidation of this topic, as a highly dynamic research stream with the continuous emergence of new variables, subtopics and factors to be examined.

As has been analysed, the concentration of publications within the same country and the same research area (USA and Gerontology and Geriatrics, respectively) is very high. As this is a topic that affects an increasingly large population segment globally, a broader view in its study, as well as greater cooperation between professionals from different countries and disciplines, are recommended. Business Economics stands out as a particularly underdeveloped area of research, considering that fraud and financial exploitation are economic issues.

In addition, emerging themes, and trends in the scientific literature, such as the relevance of financial literacy, vulnerability to fraud and psychological aspects such as depression and mental health linked to fraud victimization in the elderly, have been identified. These emerging trends arise as promising lines of future research.

7.2 Managerial implications

This study provides several guidelines for understanding the internal and external factors that influence financial fraud exploiting the elderly. Trends such as the importance of decision-making capacity or cognitive impairment, as well as the significance of social support after suffering fraudulent activities, provide a valuable research agenda for academics and research institutions to allocate their resources efficiently.

Similarly, the results of this bibliometric review provide information from several institutions, countries or research areas. Thus, financial institutions and authorities can emulate and adapt financial fraud security systems according to the characteristics of users, providing insights on strengths, weaknesses and opportunities for improvement in the fight against financial fraud and the financial protection of the elderly.

This bibliometric analysis has revealed a close interrelationship between the variables of financial inclusion, financial literacy and financial fraud, particularly in the context of older people. The findings of this study are in line with the recommendations of the OECD, which advocates the implementation of national financial literacy strategies. These strategies should be aligned with financial inclusion and consumer protection initiatives, thus promoting a comprehensive approach to consumer empowerment (OECD, 2023).

Finally, the findings of this analysis can inform the strategic planning of government organizations and the development of policies to combat financial fraud exploiting the elderly. In this regard, more dynamic and adaptive legislation is needed, due to the incessant changes in the financial sector stemming from technological and digital innovation. Public institutions should be empowered, through additional resources and improved governance, in order to improve citizens' protection against fraud (Mohd-Sulaiman, 2013). The World Bank is already implementing different measures, such as strengthening the effectiveness and accountability of public institutions, establishing a new data centre and introducing risk management frameworks (World Bank, 2023). The growing prominence of financial fraud exploiting the elderly calls for robust international cooperation to effectively address this major issue.

7.3 Social implications

The impact of financial fraud and exploitation on society has several implications that are reflected in this study. This research helps to raise awareness among the academic community and financial institutions of the problems caused by financial fraud exploiting the elderly and the need to focus attention on this growing problem. Likewise, the findings of the analysis show the importance of promoting the autonomy and empowerment of the elderly, with the objective of maintaining their management and financial decision-making capacity for a longer period.

This review highlights the importance of strengthening the social support networks of the elderly, providing financial advice adapted to their needs, as well as personalized attention for those who have been victims of fraud. In addition, the involvement of financial institutions is fundamental, appealing to their corporate responsibility by developing practices that promote transparency, ethics and financial protection for their clients.

8. Conclusion and limitations

Financial scams have taken many forms, from manipulation and misrepresentation of financial documents and products to complex fraudulent investment schemes. In the digital age, criminals tend to use ICTs to achieve their fraudulent goals. Financial institutions and political

authorities attempt to get permanently updated in order to detect and prevent digital financial fraud, as well as to protect citizens, businesses and governments. The elderly stand out as the group of the population that probably presents the clearest situation of exclusion and lack of protection.

The main goal of this bibliometric review is to provide a clear and comprehensive picture of the state of the art of literature on financial fraud exploiting the elderly, as well as to give an answer to the RQs. For this purpose, this study has conducted a performance analysis, which examines the evolution of this research line, and the most productive countries, institutions, authors, journals and research areas; and a science mapping analysis, which unravels the intellectual structure of financial fraud exploiting the elderly.

The evolution in the number of publications on financial fraud exploiting the elderly has accelerated notably, especially since 2018. The increase in fraudulent activities and the growing sophistication of these practices have made their detection and prevention more difficult, particularly for the most vulnerable users, such as the elderly. This abundant scientific production is mainly due to the contribution of institutions and authors from the USA, specialized in geriatrics, gerontology and psychiatry. Journals such as the *Journal of Elder Abuse and Neglect* and *Gerontologist* are among the most prolific in this field. Authors such as Lichtenberg, Boyle and Dong have made significant contributions to the literature on fraud and financial exploitation, standing out for the depth and impact of their research.

The conceptual structure of financial fraud exploiting the elderly reveals four major clusters: differentiation of types of elder abuse, protection of the elderly from fraud, cognitive and decision-making capacity in ageing and variables influencing fraud victimization of the elderly. The thematic evolution in this field of research reflects a transition from a general focus on elder abuse to a more precise delimitation of the theoretical framework of financial exploitation, as well as a detailed analysis of the variables that affect fraud victimization. The findings of this study reveal a robust, dynamic and evolving area of research that incorporates new variables and establishes the groundings for future research. This progression demonstrates not only the maturity of the field but also its ability to adapt and expand in order to address emerging challenges in the financial exploitation of the elderly.

Future research relating financial fraud to financial behaviour, financial capability and financial decision-making would be desirable to gain a better understanding of the problem. The influence of technology and digital innovations on financial fraud needs to be further analysed from different perspectives, such as regulation and legislation approach or the social responsibility of the financial sector in financial fraud of the elderly. The results of this study have important implications for banks and researchers, providing a set of guidelines for a more efficient allocation of resources and efforts. This study encourages international and interdisciplinary cooperation, promoting innovative research that contributes to the fight against financial fraud. In addition, it provides policymakers and legislators with a solid basis for designing and developing more effective fraud prevention strategies by identifying the main variables that influence this phenomenon. The significance of financial fraud in the elderly has numerous social consequences, and this article seeks to raise awareness of this problem among professionals and individuals. It also calls on the corporate responsibility of banks and financial institutions to protect their most vulnerable clients through transparent and ethical practices.

The Sustainability Development Goals (SDGs) specifically require the wellbeing of all people regardless of their age (SDG 3), as well as their social, economic and political inclusion (SDG 10). The achievement of both goals for the eldest should motivate practitioners and researchers to broaden their perspectives in order to address the implications of financial fraud exploiting the elderly.

This analysis presents limitations that should be considered. Firstly, even though we have used an adequate combination of keywords, some articles may have not specified any, so they would be missing from our selection. Furthermore, the use of a different research database could slightly modify the results obtained. Despite this, as it has been specified and justified,

these issues do not reduce the representativity of the analysis carried out. This study can be deemed as the first systematic literature review on financial fraud in the elderly, providing a comprehensive, reliable and unbiased view of the research line through a bibliometric analysis of 434 research articles indexed in the WoS database.

A sustainable and fair society should show a deep concern about its weakest members, amongst which, due to different reasons, the eldest are frequently placed. Financial and marketing strategies need to be considered to ensure the financial well-being and protection of elderly customers. With this work, we hope to contribute to the proper development of this emerging research field, as well as to encourage scholars to engage and commit with this major social claim.

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