

## APPROACHES TO TAX EVASION: A BIBLIOMETRIC AND MAPPING ANALYSIS OF WEB OF SCIENCE INDEXED STUDIES

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**Abstract.** The primary objective of this study is to uncover and examine the patterns of scientific collaboration within the domain of tax evasion and tax avoidance spanning the years 1975 to 2022. To analyze the dissemination of knowledge on a worldwide scale, we investigated the interconnections among authors, journals, countries, and institutions. A total of 1456 publications were retrieved from the Web of Science repository. Bibliographic analysis and network visualization were conducted using CiteSpace. The publications analysed in this study consisted of 1,456 articles authored by 2478 scholars affiliated with 1355 institutions. The publications were distributed among 724 distinct journals and originated from 98 countries. The United States of America is found to be the most productive nation, with McGee, R.W. being recognised as the most prolific author. The League of European Research Universities is recognised as the most productive institution, whereas the Journal of Public Economics is identified as the most productive publication. The findings show that authors who exhibit high levels of productivity also tend to demonstrate a strong inclination toward collaboration. Furthermore, the findings reveal that the interest of the scholars in particular topics in this research has evolved over time.

**Keywords:** tax evasion, tax avoidance, tax fraud, bibliometric analysis, CiteSpace, visual analysis.

**JEL Classification:** H26.

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## 1. Introduction

To reduce their tax obligations, individuals and companies engage in a variety of activities. Taxpayers, tax professionals, tax authorities, and tax politicians play a strategic role in taxation. The interactions between tax authorities and taxpayers, which are hierarchical and heavily formalized, are fundamental to the issue. In addition to paying their taxes on time, taxpayers use tax evasion as a strategy (Pickhardt & Prinz, 2014). The act of misrepresenting or concealing the amount of taxable income on an annual tax return is known as tax evasion, which is frequently regarded as synonymous with tax fraud. The term “tax evasion” refers to unethical and deliberate behaviors of individuals and businesses to reduce their statutory tax obligations (Alm, 2012). Simply not paying tax is also regarded as a tax offence, as is failing to file the return entirely or on time (Alstadsaeter et al., 2022). Inadvertent tax avoidance includes mistakes made during the calculating and filing processes. Furthermore, tax havens, which serve as an institutional structure ensuring very low or zero income and wealth taxes, play an important role when it comes to tax evasion and avoidance internationally (Sacco et al., 2023). As a result, many countries have made it a priority to reduce tax evasion and

avoidance. The government can combat tax evasion and tax avoidance in two different ways: first, by developing services and values; and second, by using coercion and sanctions (Rainone, 2023).

Thousands of journals have published articles on tax evasion and tax avoidance around the world. Literature on tax evasion and tax avoidance can be seen as a data set and analysed by using different methods and tools. Bibliometrics is a quantitative tool for studying patterns in scientific and academic publications to gain a better understanding of the present state of knowledge and identify emerging trends in a certain field of study. Many research fields use bibliometric analyses to assess patterns and emerging trends in topics, authors, journals, geographies, and organizations (Chen et al., 2016).

Based on a bibliometric analysis, this work attempts to present a macroscopic overview of the key features of publications on tax evasion and tax avoidance. The goal of this study is to generate an in-depth visual investigation of studies on tax avoidance and evasion. The main objective is to map the research on tax evasion and tax avoidance in terms of collaborations, publications, and trends. The secondary research objectives of the paper are as follows: (a) chart the evolution of tax evasion and tax avoidance studies and the distribution of scientific publications across countries, organizations, and paper types over time; (b) identify journals, authors, and papers with significant influence in this field of research; and (c) highlight the relationships between topics, authors, and academic journals.

The remainder of the paper consists of the following sections: Section 2 provides a succinct summary of the relevant literature; Section 3 introduces the bibliometric methods which are used in this paper; Section 4 covers the bibliometric analyses; and Section 5 outlines the most important conclusions and suggests avenues for future research.

## 2. Literature background

Tax evasion is a topic of interest on a global scale that can be studied from different points of view. The literature on tax evasion was previously surveyed and bibliometrically analyzed. Very few research studies have contributed to the field. One of the most recent studies was done by Buele and Guerra (2021). They examined the research on tax evasion that was published between 2010 and 2019 in the ScienceDirect database and discovered that the effectiveness of the tax authorities was the subject of most of their analyses (Buele & Guerra, 2021). Another study from 2021 was done by Alkausar, Soemarsono, and Pengesti. By studying Scopus database between 2009 and 2018, the authors demonstrate that western nations continue to dominate the quantity of publications in this field. Their research shows that this field is producing more research articles (Alkausar et al., 2021).

In 2016, Nevzorova, E. and his colleagues studied publications on tax evasion using the e-electronic Library's database as a source for research papers of academicians. They have made a quantitative analysis using 301 publications from *Kommersant Rossiyskaya Gazeta* to represent the practical concerns brought forth by the stakeholders. The survey found certain differences in the subjects covered by the academic community and stakeholders. The subjects covered in most scientific texts are not found in the publications of practitioners who focus mainly on matters of legislation (Nevzorova et al., 2016). The second study by E. Nevzorova and coauthors focusses on the examination of the tax evasion literature published in Russian and English available in eLIBRARY.RU, RePEc, and SSRN up to the end of 2016. According to the study findings, tax evasion in Russia is mostly perceived as a criminal issue (Nevzorova et al., 2017). A third study by the author Nevzorova examines the underground

economy and tax evasion using biometric methods. The analysed publications have as source the online archives Library, RePEc and SSRN, published both in Russian and in English. Research findings lead to an insufficient analysis of methodological aspects of tax evasion in the Russian literature compared to the English literature (Kireenko & Nevzorova, 2019).

Other bibliometric studies focus on shadow-economy publications. One example is the research of Rahman, S. U., Faisal, F., and Ali, A., which is an assessment of global research trends in the underground economy and financial development. Their study focusses on 386 publications retrieved from the Scopus database. Among other findings, the authors discovered that fintech, institutional changes, a market-driven financial system, the credit cycle, the importance of bankable adults, but also nonbank financial institutions are the factors most commonly used in the literature on shadow economy (Ali et al., 2023). The link between the underground economy and corruption was bibliometrically analysed by Bozhenko and Kuzmenko in 2021. Their analysis contained 4696 publications for the years 1996–2021 from the Scopus database and provided a theoretical framework that explains the intricate and multifaceted nature of corruption and the shadow economy. Moreover, it highlights their potential to mutually reinforce and influence each other, thereby exerting a substantial systemic influence on the pace of a nation's socioeconomic progress (Bozhenko & Kuzmenko, 2021).

Although recent bibliometric articles have been published on the topic of tax evasion, our study differs from previous works in terms of its utilisation of distinct data sources, its wider coverage of time, and its implementation of visualisation techniques.

### 3. Research methodology

#### 3.1. Research methods

This study employs two methodologies, namely bibliometric analysis and science mapping, to perform a quantitative and graphical analysis of scholarly literature on tax evasion and tax avoidance. Bibliometric analysis is used to track scientific advancements and visualise scientific information in relation to concepts, intelligence, and social structures (Boateng et al., 2022). Bibliometric techniques employ bibliographic data to evaluate the performance of authors and institutions, facilitating the identification and analysis of the underlying structure within various fields of study (Fahimnia et al., 2015). To analyse a huge number of references and extract quantifiable data for the progress of knowledge through statistics and quantitative analysis, bibliometrics is frequently utilised as an accurate and apparently objective method (Yi & Xi, 2008). The most obvious benefit of bibliometrics is that it enables researchers to analyse citations, co-citations, geographic distribution, and word frequency to examine a particular research topic and come to extremely insightful findings. The visualization method enables visualization of the relationships between publications in the form of scientific mapping (Zhang et al., 2023).

Many fields have used mapping knowledge as a practical technique to reveal trends in specific domains (Liu et al., 2014). Citation and co-citation analysis, along with bibliographic coupling, co-author analysis, and co-word analysis are among the techniques employed in the field of science network mapping. This study mainly uses metrics such as frequency or count, co-occurrence, co-citation, citation burst, and betweenness centrality to discern significant critical elements inside research (Chen, 2017). Researchers are now able to analyse and evaluate the trends and research frontiers of topic areas thanks to the increasingly potent data visualization techniques known as knowledge maps.

### 3.2. Data sources and data collection

One of the most reliable databases utilized in bibliometric studies is Web of Science (WoS), and the literature it contains spans a considerable amount of time. With the advanced search tool, the Web of Science (WoS) Core Collection literature data were retrieved for this study, we searched the titles of the articles for tax evasion\*, fiscal evasion\*, tax avoidance\*, fiscal avoidance\*, tax fraud\* and fiscal fraud\*. We used the Boolean operator 'OR' to identify papers that contain two or more of these terms. The Asterix "\*" was used to capture the plural of query words. We searched for various relevant search terms related to tax evasion, tax fraud and tax avoidance and checked for exact search. No limits were imposed with respect to the subject matter or temporal scope of document retrieval. Our objective was to gain an in-depth knowledge of the research domain and observe its temporal progression. Consequently, a total of 1719 documents were obtained. Articles were the predominant form of documents among publications, accounting for 78% of the total. This was followed by proceeding papers, which constituted 12% of the documents. English is the predominant language used in nearly all publications, accounting for approximately 94% of the total. The overall proportion of publications generated in languages other than English, including Spanish, French, German, and Russian, is below 1.5%.

The efficacy of the analysis and interpretation of the results was then improved by filtering journal articles and conference papers written in English. Following this stage, 1456 English-language articles comprise the sample size, and an Excel tool was used to ensure that there were no duplicates. The "Full Record" of these documents was obtained and further utilized as the raw data for science mapping and bibliometric analysis. The ultimate compilation of data encompasses a total of 1456 publications and 8788 citing articles, excluding any self-citations. Furthermore, the aforementioned publications have received a total of 16984 citations, excluding any self-citations, for a combined H-index of 72.

### 3.3. Visualization tools

As a well-known tool for bibliometric analysis, CiteSpace offers several ways to investigate the potential network relationships between articles and demonstrates benefits in spotting new patterns and abrupt changes in scientific publications (Chen et al., 2012). With the advancement of scientometrics and other data and information visualization technologies, CiteSpace is a complex, time-sharing, and dynamic analytical tool based on information visualization technologies that utilizes scientometrics and other data. Its primary objective is to visually represent citations to investigate the fundamental knowledge embedded within scientific publications (Chen, 2006). A free Java-based tool for analyzing co-citations, creating visual maps, and spotting trends and patterns is called CiteSpace (6.1.R2). The software is freely available to download at: <https://citespace.podia.com/>. CiteSpace allows searching for emerging trends and transient patterns in the scientific literature (Zhang et al., 2022).

CiteSpace integrates data mining, computer graphics, pictures, and intellectual technology with citation analysis, cluster, network, and multidimensional scaling to provide a knowledge map that is dynamic, diverse, and time-sharing. CiteSpace contains nodes and linkages in graphs. In a graphical knowledge map, different nodes stand in for various components like country, reference, institution, and author. The strength of relationships should be measured through links between nodes. The color of the ring depicted on a map indicates the temporal distribution of co-occurrence instances for a given item, whilst the dimensions of the nodes correspond to the cumulative frequency of co-occurrence for a specific element.

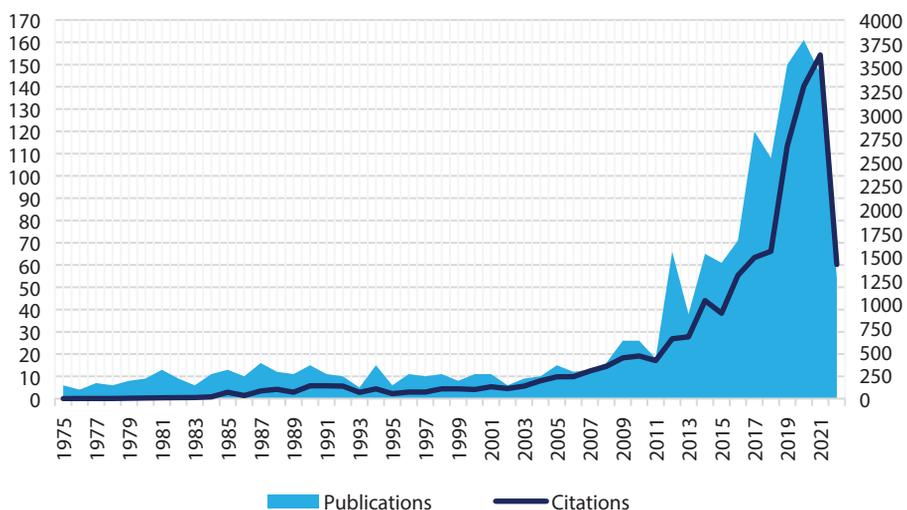
The parameters of CiteSpace were configured as follows in this study: time-slicing covered the period from 1975 to 2022, with each time slice spanning one year. The Look Back Years (LBY) parameter was set to  $-1$ . Similarly, the Link Retaining Factor (LRF) was set to  $-1$ . The default settings were maintained for text processing and links. We employed various node types and evaluated temporal and structural metrics, including citation burstiness, Sigma, Silhouette, rad Q, and betweenness centrality, depending on the specific nature of the investigation conducted. The value of the top N% is defined as 100%, the value of the top N is defined as 50, and the value of the g-index is defined as 25.

## 4. Results

### 4.1. Descriptive analysis

The annual distribution of the 1456 publications between 1975 and 2022 may be an indication of how tax evasion and tax avoidance research is progressing. The first six papers were published in 1975, which means that the research topic is 47 years old. In 2020 there were published 161 papers about tax evasion and tax avoidance, and this is the largest value and represents 11% of total records. Figure 1 illustrates the annual number of publications about tax evasion and tax avoidance research are growing year by year and nowadays represent a hot topic of research. The lowest number of publications was recorded in 1976, only 4 papers. It can be noticed that the period 1975–2008 (33 years) is characterized by a very small number of tax evasion and tax avoidance published papers, below 16 papers per year.

During this period there are 346 published papers about tax evasion and tax avoidance in WoS and they were written by approximately 400 authors. The second period 2009–2016 (8 years) brings a shy, but confident increase in the research papers from tax evasion / avoidance field. In 2009 there were 26 papers indexed and in 2016 71 papers. The third period 2017–2021 shows a boom in this research area, more and more papers about tax evasion and tax avoidance are published, exceeding 100 papers per year. Between 2009



**Figure 1.** Evolution of literature outputs on tax evasion, 1975–2022 (source: authors' work)

and 2022 there were approximately 2000 authors contributing to tax evasion and tax avoidance research. All these mean that in the last 5 years researchers and academia focus on tax evasion and tax avoidance characteristics and the development will continue.

A worldwide view of research findings associated with tax evasion and tax avoidance from 1975 to 2022 contributes to a better comprehension of this research field. The 1456 articles considered in the current analysis were produced by 98 countries. Top-10 countries contribution to tax evasion / avoidance field are The USA (444 papers), China (131), The UK (123), Germany (112), Italy (83), Australia (75), Canada (59), Romania (45), France (42) and Indonesia (39). A share of 79% of total publication belongs to the top-10 countries. The data indicates that the United States is the foremost nation, with American authors contributing to 30% of the evaluated documents. This percentage is 3.4 times more than the corresponding figure for China, which holds the second position. There are 54 nations in which the annual number of publications is less than or equal to 5.

In the present investigation, a total of 2478 distinct authors were identified, with each author having published a range of one to 33 papers. Table 1 presents a compilation of the ten most prominent authors in the field of tax evasion and tax avoidance research. *McGee R.*, a scholar affiliated to Institute National de la Recherche Scientifique (INRS) and Fayetteville State University, is the leading author with 2.3% of all papers published on the topic. The authors who were among the top ten in terms of productivity have collectively produced 126 papers, accounting for around 8.6% of the overall publications. These ten authors made significant contributions to the field of tax evasion and avoidance. Most authors (94.3% of the total) authored only one paper. It is evident that the quantity of authors surpasses the number of papers by a factor of 1.7, indicating that publications are the result of collaborative efforts among scholars.

**Table 1.** Tax evasion research: top 10 most productive authors (source: authors' work)

Rank	Authors	Number of publications	% of total publications	WoS h-index	Main sub-topics
1	McGee R.W.	33	2.266	6	tax evasion ethics, tax evasion attitude
2	Zheng Q.H.	14	0.962	28	tax evasion detection, tax evasion groups
3	Alm J.	12	0.824	38	tax evasion games, firm tax evasion
4	Dong B.	11	0.755	20	tax evasion detection, tax evasion groups
5	Shevlin T.	11	0.755	32	corporate tax avoidance, effects of tax avoidance
6	Richardson G.	10	0.687	19	corporate tax avoidance, determinants of tax avoidance
7	Goerke L.	9	0.618	8	income tax evasion, profit tax evasion
8	Schneider F.	9	0.618	28	education and tax evasion, tax rates and tax evasion
9	Yaniv G.	9	0.618	10	income tax evasion, employer tax evasion
10	Slemrod J.	8	0.549	42	the economics of tax evasion, corporate tax evasion

Note: h-index is the combined index from the Web of Science Core Collection citations of publications.

Regarding the authors' affiliation, figures show that they belong to 1355 institutions. The most prolific organizations tax evasion and avoidance are the *League of European Research Universities* (47 publications), State University System of Florida (36), University of California System (31), Florida International University (25), IFO Institute (20), University of North Carolina (19), National Bureau of Economic Research (18), University of Illinois System (18), University System of Georgia (18) and University of London (17). As it can be easily noticed, American institutions dominate the top 10: they contributed to research on tax evasion and tax avoidance with 249 papers or 17.1% of total publications.

Due to its ability to identify journals with the greatest potential to publish pertinent findings, journal analysis is also highly relevant for bibliometric analysis. Regarding the source journals, 724 distinct journals published all 1456 articles linked to tax evasion and tax avoidance. Among all these, 600 journals published one or two articles on tax evasion during the research period. However, 85.6% of 724 journals have contributed to the investigated research field with less than five papers. Table 2 shows the top 10 most active journals which have collectively produced 257 articles, or 35.5% of all publications in this area. *Journal of Public Economics* (Impact Factor = 3.111) is the top-ranked journal, with 51 articles total that represent 3.5 percent of all publications on tax evasion and tax avoidance. It is interesting to notice that three publication titles lacked information in the Journal Citation Report provided by Clarivate.

**Table 2.** Top 10 most productive journals (source: authors' work)

Rank	Journals	Number of publications	% of total	Category and WoS index	JIF	Quartile
1	Journal of Public Economics	51	3.503	Economics – SSCI	3.111	Q1
2	Journal of Economic Psychology	30	2.060	Economics – SSCI	2.037	Q2
3	Public Finance Finances Publiques	28	1.923	–	–	–
4	Ethics of Tax Evasion Perspectives in Theory and Practice	25	1.717	–	–	–
5	International Tax and Public Finance	24	1.648	Economics – SSCI	1.340	Q3
6	National Tax Journal	23	1.580	Economics – SSCI	1.052	Q4
7	Accounting Review	22	1.511	Business, Finance – SSCI	4.301	Q1
8	Journal of Business Ethics	18	1.236	Business – SSCI	6.430	Q2
9	Journal of Economic Behavior Organization	18	1.236	Economics – SSCI	1.635	Q3
10	Routledge Companions in Business Management and Accounting	18	1.236	–	-	-

Note: SSCI – Social Science Citation Index, JIF – Journal Impact Factor from Journal Citation Reports (JCR) 2020, Quartile – category ranking by JIF.

## 4.2. Collaboration (co-authorship) analysis

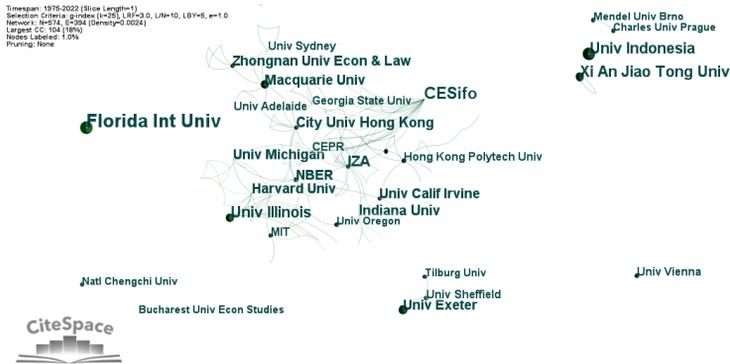
The use of the author collaboration network facilitates the identification of authors who have made noteworthy contributions to the research field, while also revealing the interconnections among these authors. The sliced networks were not pruned. After the software has been executed results a network of co-authors with 832 nodes (at least two publications) and 486 links which are shown in Figure 2. Each node label represents a distinct author, and the font size corresponds to each author's number of documents. The links between each pair of nodes show the ties formed by co-authorship. The thickness of the link indicates the degree of collaboration between the two authors. The greater the density of the connectivity, the greater the degree of collaboration.

The network density for cooperative relationships revealed in Figure 2 is 0.0014, which shows that the authors that have published works on tax evasion and tax avoidance have not developed many solid collaborations. Collaboration is an essential step for the progress of scientific communities and research topics; however, in this case, the authors' network is split into various qualitative groups. McGee R. (26 cooperative publications), Zheng Q. (12) and Alm J. (11) were the top three authors in terms of collaboration. Papers published by McGee R. are co-authored by Benk S. (5) and Alm J. cooperates with Liu Y. (4). There is one large group of authors concentrated around Zheng Q., as can be seen in Figure 2, and their research subject is the detection of tax evasion (Wang et al., 2020; Zhu et al., 2018). Regarding tax evasion and tax avoidance research the overall cooperation is not achieved. Only 19 academics have co-authored at least five articles, while hundreds of them have co-authored one or more joint research papers on tax avoidance. From the citation burst's point, no one was detected for authors.

The investigation of institutions and collaborative networks in the field of tax evasion / avoidance research follows in this study. In Figure 3, an organization's font size varies in direct proportion to the volume of its publications, and the connection and thickness between nodes show the relationship and frequency of cooperation between two institutions. The institutions whose scholars published papers on tax evasion and tax avoidance that are indexed in WoS are represented in Figure 3. 574 nodes, 394 links, and a density of 0.0024 were added to the network after the software was run. The map was produced without using a pruning parameter. We cannot find close collaboration among the investigated institutions, as the relationships in Figure 3 are tiny and difficult to detect.



**Figure 2.** Network map of authors' collaboration (source: authors' work on CiteSpace)



**Figure 3.** Network map of collaboration among institutions (source: authors' work in CiteSpace)

As seen in Figure 3, most papers on tax evasion / avoidance field were issued by the following top-10 most collaborative institutions *Florida International University* (24 publications), CESifo (16), University Illinois (14), Xi'an Jiaotong University (13), University Indonesia (13), IZA (12), City University Hong Kong (11), Indiana University (10), University California Irvine (9) and National Bureau of Economic Research NBER (9). It is interesting that the rank of institutions is the same for the metrics centrality and Sigma value, where on the first three position are CESifo, IZA and the Centre for Economic Policy Research CEPR. In the case of three institutions some citation burst has been identified, as follows: Florida International University (2011–2012, 13.56), University of Indonesia (2017–2020, 5.19) and Xi'an Jiaotong University (2016–2020, 4.58). It should be mentioned that among the most collaborative institutions are integrated global independent research networks such as CESifo, NBER, IZA, CEPR etc. All of them are networks of economists who are affiliated but not employed by these organizations.

The analysis of country co-authorship can show the level of international communication and the powerful nations in this area. Figure 4 displays the nations having more than 10 collaborative tax evasion and tax avoidance-related publications as a network of national collaborations. The network has 109 nodes (countries) and 310 linkages, for a density of 0.0527. The most influential countries are revealed by the largest nodes, as follows: USA (372 citation counts), China (120), the UK (103), Germany (100), Italy (77), Australia (62), Canada (50), Romania (44), Indonesia (38) and France (37).

The collaboration between institutions from these nations is shown by the links between the nodes. The degree of country collaboration is indicated by the links' thickness. As we



**Figure 4.** Countries' collaboration network (source: authors' work in CiteSpace)

can see there are not strong cooperation links, but almost invisible. The United States has the most extensive cross-national collaboration network, which plays an essential role in academic exchanges in this field.

The centrality of each node showed null values for all countries. The top 5 countries by centrality are the USA, the UK, Germany, France and Australia. Metrics show a weak influence of these networks on tax evasion and tax avoidance research and less cooperation between countries.

### 4.3. Co-citation analysis

One of the most significant citation networks in bibliometrics analysis is the co-cited references list, which includes a wide range of distinct indicators. Reference co-citation (citing document) occurs when two documents (cited documents) are cited by a third document. The reference analysis identifies and highlights the authors of the most frequently referenced articles, which are recognized as major references in their respective disciplines of study. Based on the graphical analysis obtained after editing the Pathfinder / Pruning sliced network, we get a co-citation network with 1584 nodes and 8004 links, a density of 0.0064, a modularity (Q) of 0.5987, and a silhouette (S) of 0.8949. The publications with more than 50 co-citations are depicted in Figure 5. Table 3 lists the top ten publications with the most citations in the field of tax evasion / avoidance, which represent the most important works in this research area.

The most influential paper was published by Hanlon M. and Heitzman S. in 2010. In their paper the authors detail a large review of tax research. The article discusses corporate tax evasion, as well as the usefulness of income tax expense reported for financial accounting, business decision-making, and taxation (Hanlon & Heitzman, 2010). Desai and Dharmapala (2006) wrote the second most influential work, which focuses on the links between corporate tax avoidance and the expansion of managerial incentives. The third most cited reference belongs to Dyreng, Hanlon, and Maydew (2008) and their research goal was to assess long-term corporate tax avoidance (Dyreng et al., 2008).

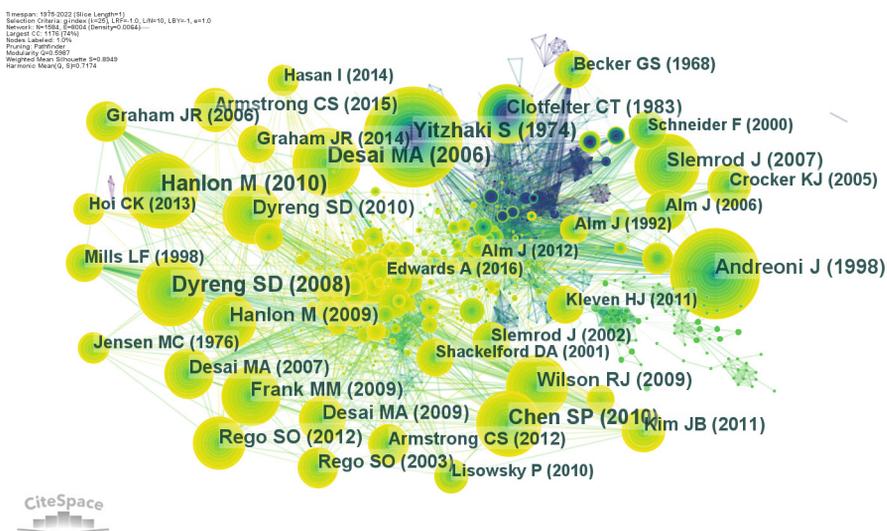


Figure 5. Co-citation networks visualization (source: authors' work in CiteSpace)

**Table 3.** Distribution of the top 10 cited references in tax evasion and tax avoidance research (source: authors' work in CiteSpace)

Rank	Reference	Journal	Year of publication	Frequency	Burst	DOI
1	Hanlon M.	Journal of Accounting and Economics	2010	241	–	10.1016/j.jacceco.2010.09.002
2	Desai M.A.	Journal of Financial Economics	2006	210	–	10.1016/j.jfineco.2005.02.002
3	Dyreng S.D.	The Accounting Review	2008	195	–	10.2308/accr.2008.83.1.61
4	Chen S.P.	Journal of Financial Economics	2010	179	–	10.1016/j.jfineco.2009.02.003
5	Yitzhaki S.	Journal of Public Economics	1974	173	25.31	10.1016/0047-2727(74)90037-1
6	Andreoni J.	Journal of Economic Literature	1998	151	25.66	–
7	Dyreng S.D.	The Accounting Review	2010	135	–	10.2308/accr.2010.85.4.1163
8	Wilson R.J.	The Accounting Review	2009	133	–	10.2308/accr.2009.84.3.969
9	Frank M.M.	The Accounting Review	2009	133	–	10.2308/accr.2009.84.2.467
10	Hanlon M.	Journal of Public Economics	2009	118	5.23	10.1016/j.jpubeco.2008.09.004

To establish the research horizon for the targeted scientific topic, burst terms – described as a sudden surge in the use of a keyword or the mention of a publication during a specific time frame – must be taken into consideration (Chen, 2006). Thus, a cited document burst defines an event in which the number of document citations suddenly increases. We identified 138 cited papers with citation bursts. The top ranked paper by bursts is Clotfelter C. T. 1983 (period 1985–2010, citation burst of 27.78), followed by Andreoni J. 1998 (2000–2016, 25.66), Yitzhaki S. 1974 (1983–2010, 25.31), Srinivasan T. N. 1973 (1978–1994, 17.80), Sandmo A. 1981 (1984–2008, 16.79), Slemrod J. 2007 (2009–2016, 13.66), Balakrishnan K. 2019 (2020–2022, 13.62), Schneider F. 2000 (2005–2016, 12.98), Cowell 1990 (1994–2012, 11.41) and Pencavel J. H. 1979 (1985–2008, 11.02).

From an econometric standpoint, Clotfelter (1983) investigates the sensitivity of tax evasion to marginal tax rates. The author suggests that the forms of tax evasion differ from person to person based on opportunities to evade (Clotfelter, 1983). The paper with the second highest citation burst was published by Andreoni J., Erard B., and Feinstein J. in 1998 and it consist in a review of literature about tax compliance. They conclude that many issues about tax compliance were not investigated and there are a few models describing the concept (Andreoni et al., 1998). The third paper with a major citation burst was published by Yitzhaki (1974), and it is a two-page remark on income tax evasion from a theoretical point of view. The author improves the model published in 1972 by Allingham and Sandmo (Yitzhaki, 1974).

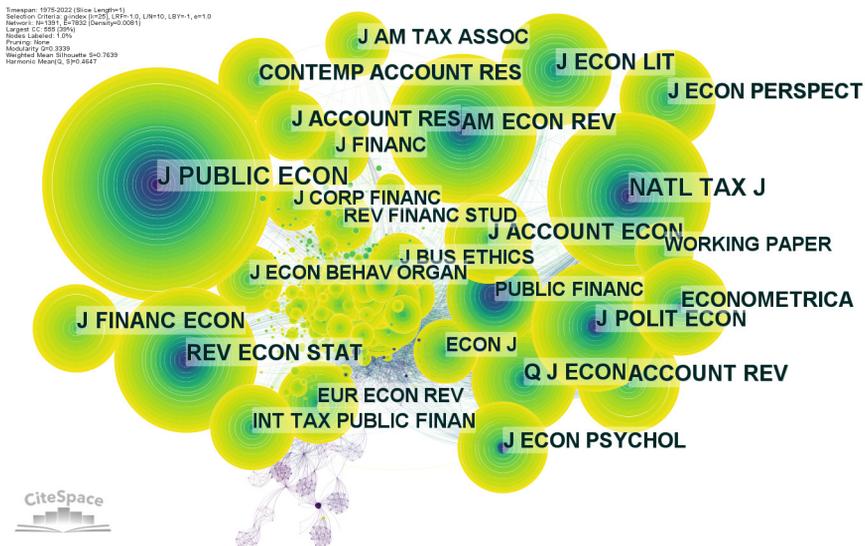


**Table 4.** Top 10 cited authors in tax evasion and tax avoidance research (source: authors’ work in CiteSpace)

Rank	Authors	Year of publication	Frequency	Centrality	Burst	Sigma
1	Allingham M.	1975	351	0	38.40	1
2	Slemrod J.	1987	337	0	10.07	1
3	Hanlon M.	2008	301	0	–	1
4	Desai M.A.	2008	287	0	–	1
5	Alm J.	1988	266	0	5.34	1
6	Dyreng S.D.	2012	261	0	–	1
7	Yitzhaki S.	1980	196	0	29.85	1
8	Chen S.P.	2011	185	0	–	1
9	Graham J.R.	2011	175	0	–	1
10	[anonymous]	2008	168	0	8,7	1

The pathfinder/pruning sliced networks were used to create the cited article visualization map for tax evasion and tax avoidance research, which has 1391 nodes (cited journals) and 7832 linkages. The density of the network was 0.0081, the modularity Q 0.3339, and the Silhouette value was 0.7639 (Figure 7).

Table 5 presents the top 10 cited journals that published papers on tax evasion and tax avoidance. The highest number of citations was received for the papers published in the Journal of Public Economics (725 citations), followed by National Tax Journal (494 citations) and American Economic Review (385 citations). These are the most influential journal publishing papers about tax evasion and tax avoidance.



**Figure 7.** Journal co-citation networks (source: authors’ work in CiteSpace)

**Table 5.** Top 10 cited journals (source: authors' work in CiteSpace)

Rank	Cited journal	Frequency	Centrality	Burst	Sigma
1	Journal of Public Economics	725	0	33.78	1
2	National Tax Journal	494	0	14.92	1
3	American Economic Review	385	0	16.93	1
4	Accounting Review	383	0		1
5	Journal of Financial Economics	349	0		1
6	The Review of Economic Statistics	344	0	11.42	1
7	Journal of Political Economy	325	0	13.12	1
8	Journal of Accounting and Economics	321	0		1
9	The Quarterly Journal of Economics	289	0		1
10	Journal of Economic Literature	267	0	29.60	1

A journal with a high citation burstiness score and a high number of citations has recently sparked the interest of academics. Therefore, when we consider the top 5 journals with the strongest citation burst out of the 114 cited journals, these are Public Finance (citation burst of 48.41), Journal of Public Economics (33.78), Journal of Economic Literature (29.60), American Economic Review (16.93) and Working Papers (16.42). This indicates these journals as attracting the most interest in their works within the academic community that addresses topics on tax evasion and tax avoidance.

#### 4.4. Analysis of keywords co-occurrence

In this section we highlight the important ideas and areas of interest in the subject of tax evasion and tax avoidance research. The field's conceptual structure is shown via the co-word analysis. We did not prune to obtain the network map of co-occurrence. Figure 8 displays the network of co-occurring terms. The network has a density of 0.0304, a modularity  $Q$  of 0.3339, a silhouette score of 0.7639, as well as 586 nodes and 5214 links. The co-word analysis networks, which were mapped according to their frequency, exhibit nodes with a frequency greater than or equal to 25. The nodes represent keywords, while the links reflect keyword associations.

Table 6 presents the top 30 terms that appear often in the 1456 papers examined. "Tax evasion" ranks first among all keywords, reaching a frequency of 261. The second most common keyword is "tax avoidance" (253). "Aggressiveness" (133) is ranked third. Centrality is an important metric used in the analysis of the keyword co-occurrence network to determine the strength, influence, or other unique qualities of a keyword. All of the terms in our analysis had a null betweenness centrality, making them pointless.

To locate research hotspots in tax evasion and tax avoidance, we used keywords burst detection. There are seven bursting keywords. Burst-style keywords are often used to refer to topics that have piqued the attention of other scientists. The strongest burst from this perspective is "income tax" (14.33, 1990–2011), which is followed by "taxation" (9.90, 1994–2010), "model" (7.73, 1991–2016), "behaviour" (4.84, 1991–2012), and "tax evasion" (4.33, 2013–2015). In their respective time periods, they are all research hotspots. It should be noticed that four terms (income tax, model, behavior, and decision) have a burst period of more than 20 years. Because they had a greater influence than other keywords, they developed



research topics. Their Silhouette values varies from 0.669 to 1, which means that keywords match well to their own cluster.

**Table 7.** List of top 5 keywords clusters in tax evasion

Cluster ID	Cluster size	Silhou-ette	Cluster label	Tag words (frequency)
#0	170	0.727	Tax avoidance	Tax avoidance (289), aggressiveness (141), incentives (113), ownership (61), performance (60), corporate governance (51), earnings management (50), governance (40), management (40), earnings (41), corporate tax avoidance (41), corporate social responsibility (39), cost (39), financial constraints (36)
#1	131	0.669	Tax evasion	Tax evasion (280), taxation (84), income (49), enforcement (33), competition (24), havens (13), choice (11), tax morale (10)
#2	98	0.733	Values	Impact (56), morale (47), behaviour (43), corruption (34), shadow economy (22), tax compliance (22), growth (20), attitudes (20), social norms (17)
#3	68	0.782	Rates	Rates (62), evasion (38), income tax (37), economics (36), determinants (35), audit (16), elasticity (12), avoidance (12), taxable income (11)
#4	44	0.807	Multi-national companies	Firms (57), state (15), reputational costs (8), corporate (7), multinational corporations (7), tax transparency (5)

The largest cluster (#0) is labelled "Tax avoidance" and has 170 components. It contains publications about tax avoidance, aggressiveness, incentives, ownership, and performance. Tax evasion, taxation, and income are subjects in the second largest cluster (#1). It is labelled "Tax evasion" and has 131 topics. The third cluster (#2) "Values" contains 98 topics and the most important are impact, morale, behaviour, corruption, and shadow economy. Other research topics from other clusters refer to rates, income tax, firms, model, policy, optimal taxation.

Figure 9 depicts the chronological progression of the keywords by cluster and shows the topics with a frequency superior to 48. To note, CiteSpace limits time analyses to the years 1990 to 2022.

In the 1990s the hot topics of research were tax avoidance, tax evasion, behaviour, risk, information, taxation, rates. However, the most debated research topics in the 2000s were incentives, earnings, ownership, governance, determinants, corruption, management. In the next decade the focus has changed, as highlighted by the topics of aggressiveness, corporate tax avoidance, corporate social responsibility, financial constraints, performance, tax compliance.

How does the future of research in tax evasion research look like? It cannot be estimated with certainty, but some directions may be already observed in more recent research: tax administration, heavens, law, ethics, tax transparency, automatic change of information, innovation. These topics have the potential to shape the future literature in tax evasion and tax avoidance. We expect that future research challenges in tax evasion will bring different panel data analysis starting with administrative data, lab and natural experiments, mergers in tax administration institutions, behavioral reactions of taxpayers to law changes, institutional independence in tax audit, managerial tax abilities.



Universities, followed by the State University System of Florida and the University of California System. In terms of source journals, 724 distinct journals published all 1456 articles linked to tax evasion and tax avoidance. The Journal of Public Economics is the publication that is the most popular, followed by the Journal of Economic Psychology and Public Finance.

From the co-authorship analysis several conclusions can be drawn. The most productive authors in tax fraud are also the most collaborative, but without giving birth to large and strong collaborative groups. The most collaborative institutions are not the most productive ones, the top three are Florida International University, CESifo and University of Illinois. In terms of countries, the most cooperative nations are also the most productive. This shows that research undertaken through collaborative efforts, which incorporate the experience and expertise of researchers familiar with a wide range of economic and fiscal contexts, has a substantial potential in this field.

The analysis of the keywords highlighted the most popular subjects, represented by "tax evasion" and "tax avoidance". The other up-to-date topics of scientific inquiry in this field of research are "aggressiveness", "incentive", "firm", "taxation", "model" and "rate". By burst detection, several hot research topics were identified, such as "income tax", "taxation", "model" and "behavior". Our study estimates that the following subjects may shape future tax evasion and tax avoidance research: "tax administration", "heavens", "law", "ethics", "tax transparency", "automatic change of information", and "innovation".

The distinctive feature of our analysis is that it offers a comprehensive image of the authors, organizations, countries, journals, keywords, and research topics in tax evasion and tax avoidance. The quantitative perspective of the study covers the past five decades, including the most recent articles about tax evasion and tax avoidance. This study has several limitations, despite the fact that the bibliometric analysis and visualization of articles connected to tax evasion and tax avoidance produced some interesting results: first, any computational analysis reduces the subjective judgements and cannot substitute manual research; second, the word-based search strategy may be subjective, and some articles can be left outside of the sample because they do not contain the query word; third, when authors co-cite one another, only the first author is considered by the bibliometric software, which automatically diminishes the importance of co-authors in terms of citations; fourth, problems may occur in case of similar names among the authors; fifth, we used only the Web of Science as an indexation source for the document sent, but other sources such as Scopus, Dimensions, or Google Scholar may provide more insight into the scholarly research in the field; sixth, books on tax evasion and tax avoidance and papers in other languages than English were not included in the sample and analysis.

These issues may be considered as ideas for additional research. Thus, different databases, research queries, time periods, or bibliometric analytic criteria could be used to conduct this study. Nevertheless, the aim of this study was a quantitative, current assessment of the field of tax evasion and tax avoidance research. A thorough mapping of the tax evasion research field enhances the study's added value for research practice and tax theory. The paper can help scholars in finding new partners, institutions, publishing opportunities and even gaps in existing research.

## Author contributions

LBa and AH conceived the study and were responsible for the design and development of the data analysis. LBe and AGI were responsible for data collection and analysis. LBa and AH were responsible for data interpretation. LBa wrote the first draft of the article.

## Disclosure statement

Authors do not have any competing financial, professional, or personal interests from other parties.

## Conflict of interest

The authors declare no conflict of interest.

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